



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id

75

Component

Rear Diesel Engine

Fluid

TRC MOLY XL PRO-SPEC IV XP 15W40 (10 GAL)

RECOMMENDATION

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR0001244	TR05191100	TR05120252
Sample Date		Client Info		14 Nov 2023	02 Feb 2021	19 Oct 2020
Machine Age	hrs	Client Info		19490	17779	17145
Oil Age	hrs	Client Info		665	0	0
Filter Age	hrs	Client Info		665	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The copper level is abnormal. Elemental level of copper (Cu) probably due to leaching of copper from copper components (i.e. cooling core) by the oil additives. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	62	12	31
Chromium	ppm	ASTM D5185m	>20	2	<1	1
Nickel	ppm	ASTM D5185m	>2	1	0	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>25	▲ 6	2	0
Lead	ppm	ASTM D5185m	>40	1	1	7
Copper	ppm	ASTM D5185m	>330	▲ 425	6	17
Tin	ppm	ASTM D5185m	>15	2	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

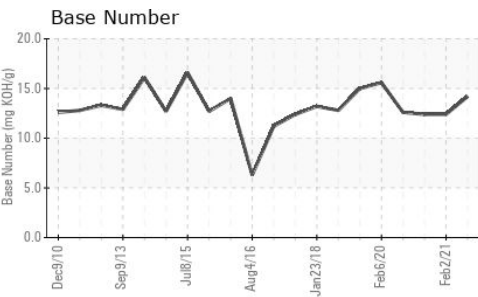
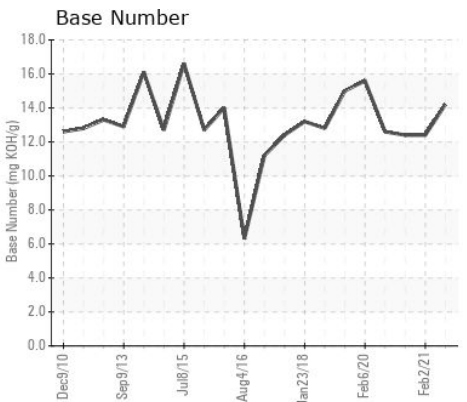
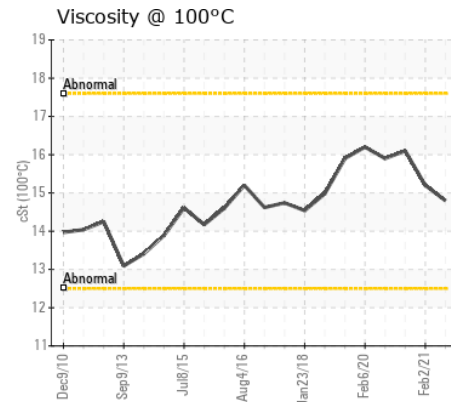
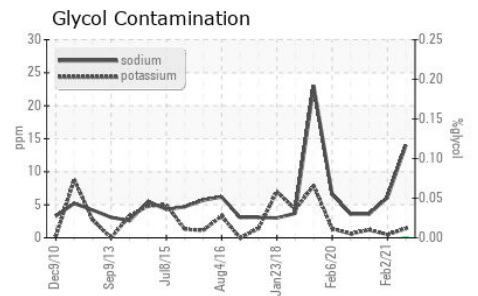
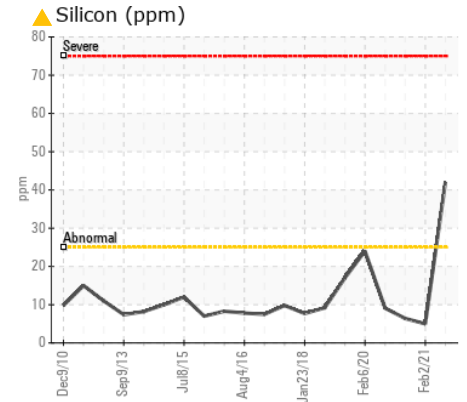
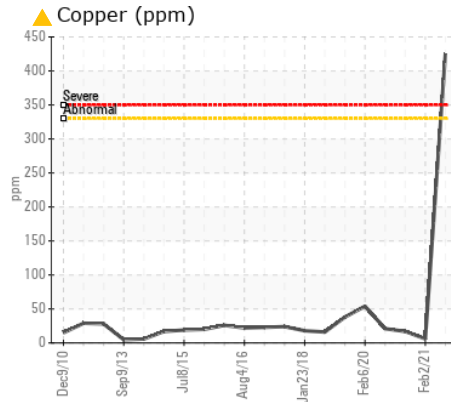
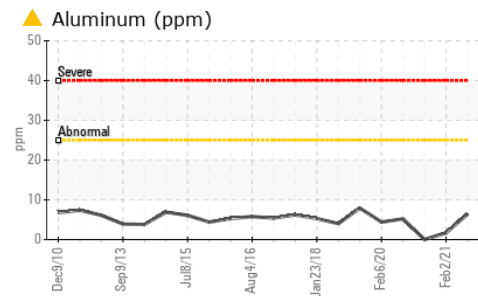
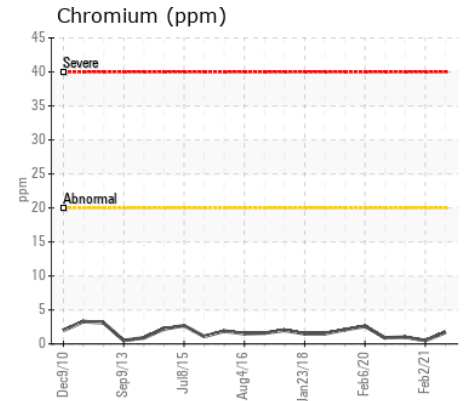
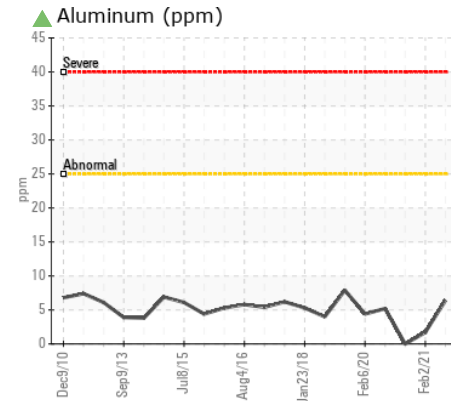
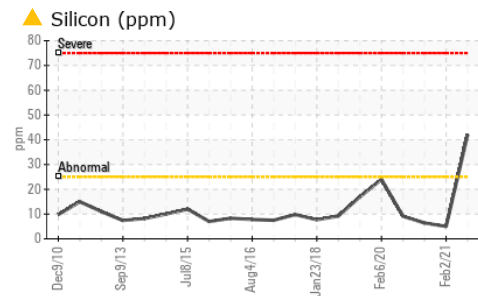
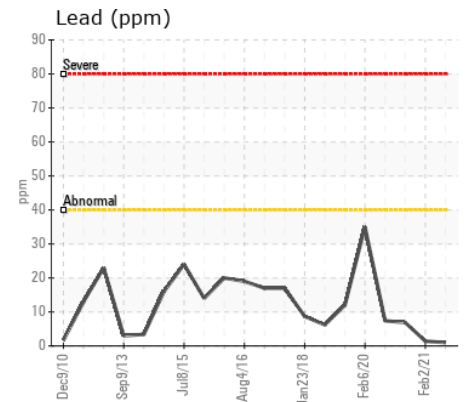
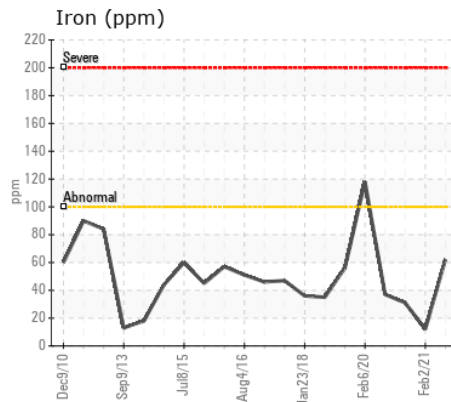
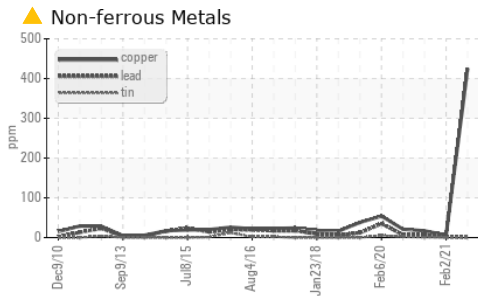
Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

Silicon	ppm	ASTM D5185m	>25	▲ 42	5	6
Potassium	ppm	ASTM D5185m	>20	1	<1	1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		0.0	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.4
Nitration	Abs/cm	*ASTM D7624	>20	10.5	13.8	14.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2	24.2	29
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		14	6	4
Boron	ppm	ASTM D5185m		2	5	36
Barium	ppm	ASTM D5185m		0	0	<1
Molybdenum	ppm	ASTM D5185m		117	152	175
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m		19	27	141
Calcium	ppm	ASTM D5185m		3961	4850	5060
Phosphorus	ppm	ASTM D5185m		901	1006	1059
Zinc	ppm	ASTM D5185m		1028	1141	1231
Sulfur	ppm	ASTM D5185m		4107	3998	3898
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.6	16	22
Base Number (BN)	mg KOH/g	ASTM D2896		14.20	12.4	12.4
Visc @ 100°C	cSt	ASTM D445		14.8	15.2	16.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR0001244
Lab Number : 06011657
Unique Number : 10750801
Test Package : MOB 2 (Additional Tests: Glycol)

S S CONCRETE MATERIALS LLC
 P.O. BOX 23283
 BULLHEAD CITY, AZ
 US 86439
 Contact: MARK OPHEIM

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: (928)754-1991
 F: (928)754-1991