



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	SEVERE
FLUID CONDITION	ATTENTION

Machine Id
1997 PETERBILT 97 PETE
 Component
Diesel Engine
 Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (10 GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR04139948	TR03642197	---
Sample Date		Client Info		23 Sep 2016	15 Sep 2014	---
Machine Age	mls	Client Info		517434	513927	---
Oil Age	mls	Client Info		3507	5190	---
Filter Age	mls	Client Info		3507	5190	---
Oil Changed		Client Info		Changed	Changed	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				SEVERE	NORMAL	---

WEAR

Bearing and/or bushing wear is indicated.

Iron	ppm	ASTM D5185m	>100	23	12	---
Chromium	ppm	ASTM D5185m	>20	1	<1	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m	>2	0	<1	---
Silver	ppm	ASTM D5185m	>2	<1	0	---
Aluminum	ppm	ASTM D5185m	>25	4	4	---
Lead	ppm	ASTM D5185m	>40	▲ 20	<1	---
Copper	ppm	ASTM D5185m	>330	▲ 256	4	---
Tin	ppm	ASTM D5185m	>15	▲ 10	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

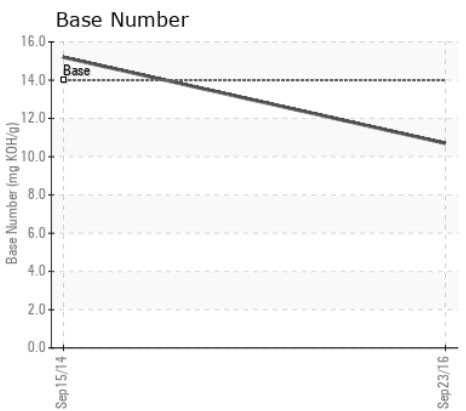
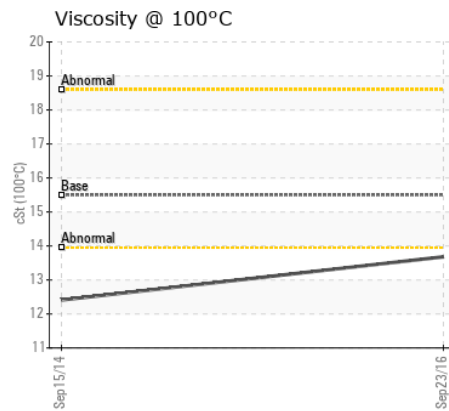
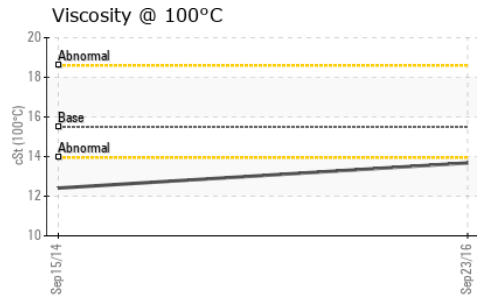
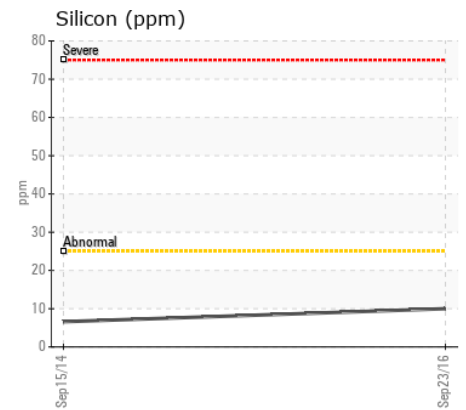
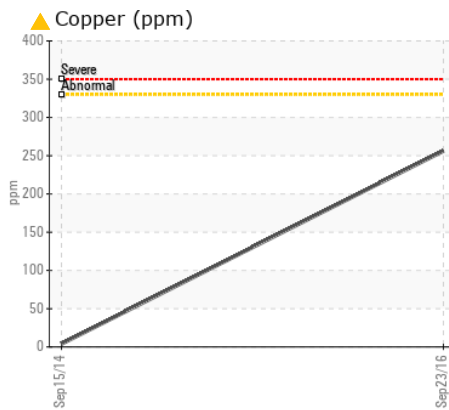
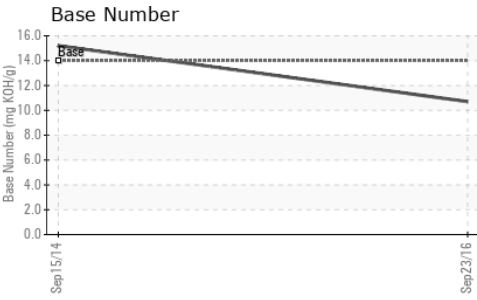
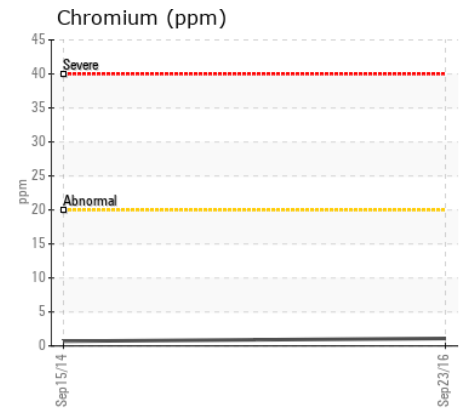
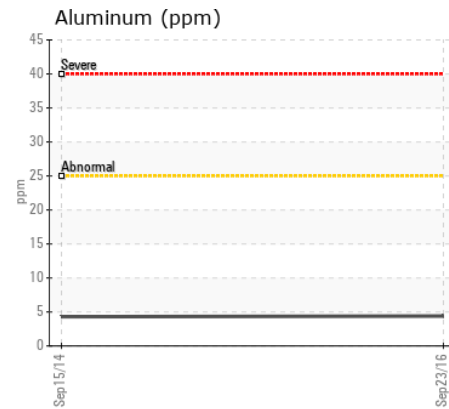
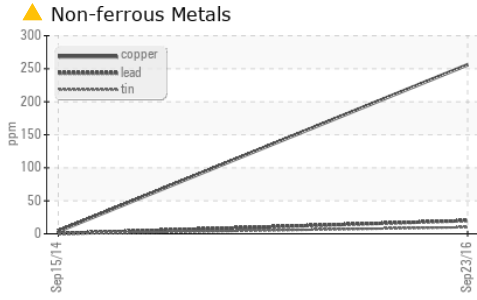
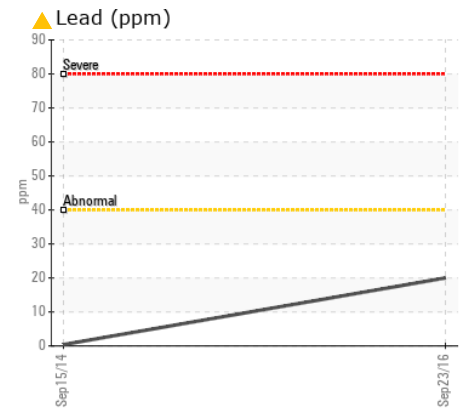
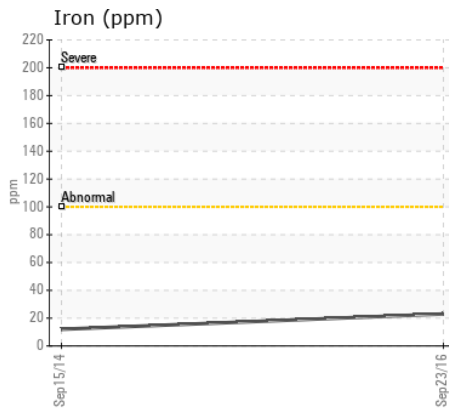
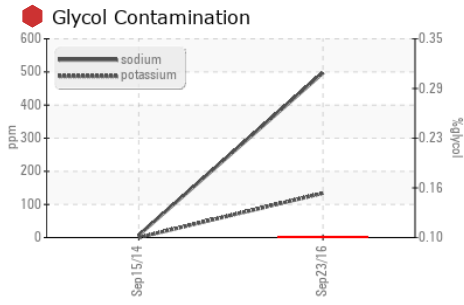
Sodium and/or potassium levels are high. Test for glycol is positive.

Silicon	ppm	ASTM D5185m	>25	10	7	---
Potassium	ppm	ASTM D5185m	>20	▲ 134	<1	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol	%	*ASTM D2982		● 0.10	NEG	---
Soot %	%	*ASTM D7844	>3	0	0.1	---
Nitration	Abs/cm	*ASTM D7624		8.	7.	---
Sulfation	Abs/.1mm	*ASTM D7415		17.	19.	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil.

Sodium	ppm	ASTM D5185m		▲ 497	7	---
Boron	ppm	ASTM D5185m		23	197	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		230	194	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		801	397	---
Calcium	ppm	ASTM D5185m	1300	1700	4365	---
Phosphorus	ppm	ASTM D5185m		1132	1014	---
Zinc	ppm	ASTM D5185m	1300	1283	1183	---
Sulfur	ppm	ASTM D5185m		3964	3822	---
Oxidation	Abs/.1mm	*ASTM D7414		13.	13.	---
Base Number (BN)	mg KOH/g	ASTM D2896	14	10.7	15.2	---
Visc @ 100°C	cSt	ASTM D445	15.5	13.68	12.41	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR04139948 **Received** : 11 Jan 2017
Lab Number : 04139948 **Tested** : 13 Jan 2017
Unique Number : 7663334 **Diagnosed** : 13 Jan 2017 - Doug Bogart
Test Package : MOB 2 (Additional Tests: Glycol)

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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