



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**CASE IH 6088**

Component  
**Diesel Engine**

Fluid  
**TRC MOLY XL PRO-SPEC IV 15W40 (22 QTS)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TR04374734</b>	TR04139949	TR03895197
Sample Date		Client Info		<b>15 Nov 2017</b>	14 Nov 2016	05 Nov 2015
Machine Age	hrs	Client Info		<b>1171</b>	1001	836
Oil Age	hrs	Client Info		<b>170</b>	165	168
Filter Age	hrs	Client Info		<b>170</b>	165	168
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>Changed</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	<b>25</b>	29	31
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	<1	1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	2
Titanium	ppm	ASTM D5185m	>2	<b>&lt;1</b>	0	<1
Silver	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>20	<b>4</b>	2	2
Lead	ppm	ASTM D5185m	>40	<b>2</b>	<1	4
Copper	ppm	ASTM D5185m	>330	<b>36</b>	37	8
Tin	ppm	ASTM D5185m	>15	<b>0</b>	11	0
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

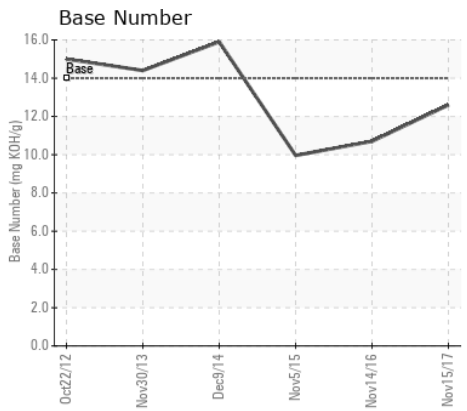
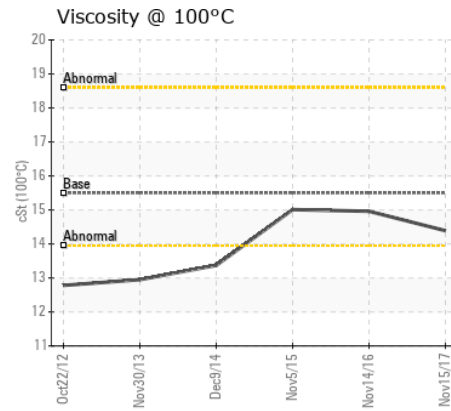
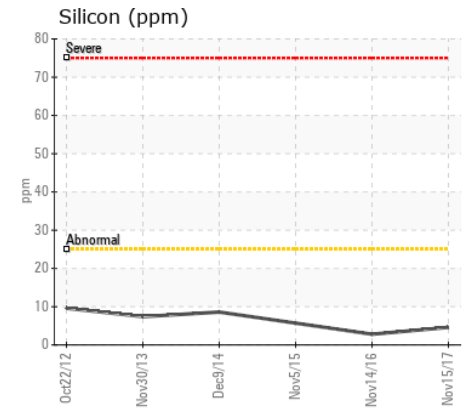
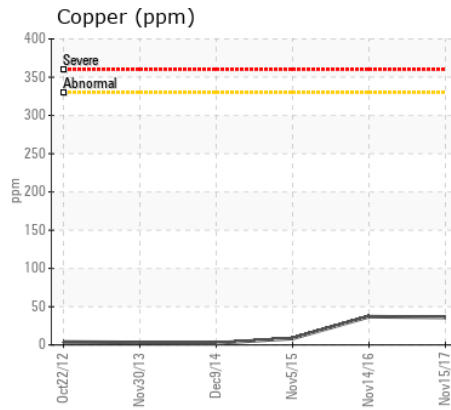
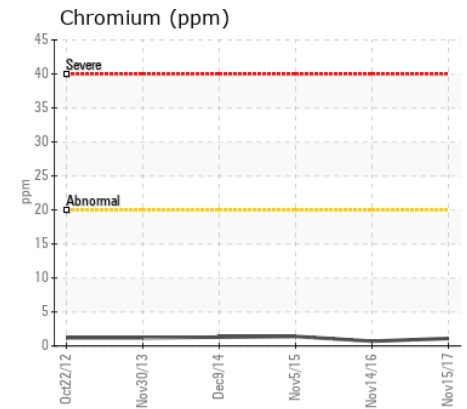
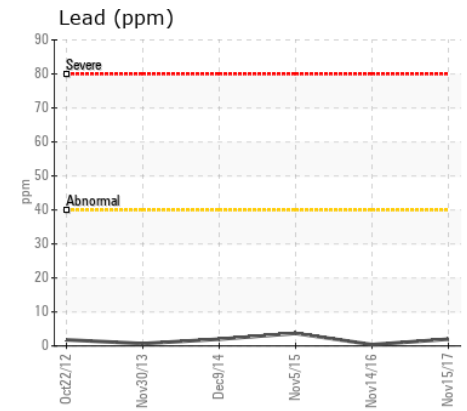
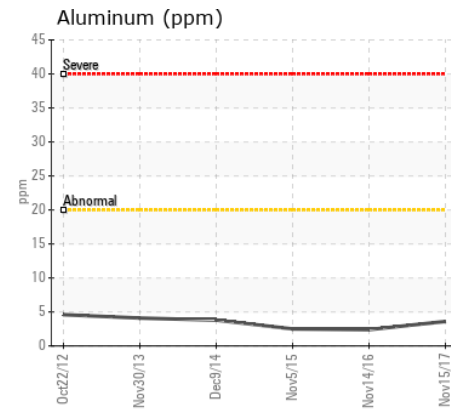
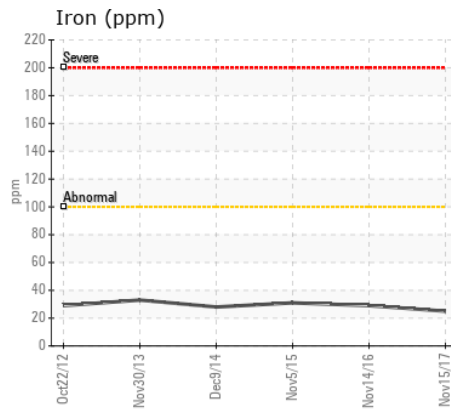
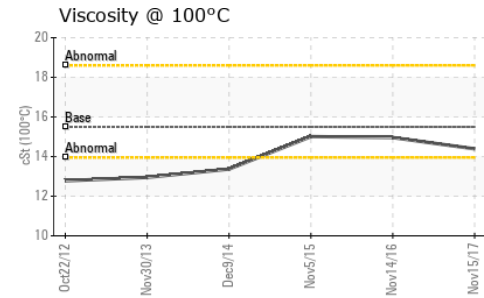
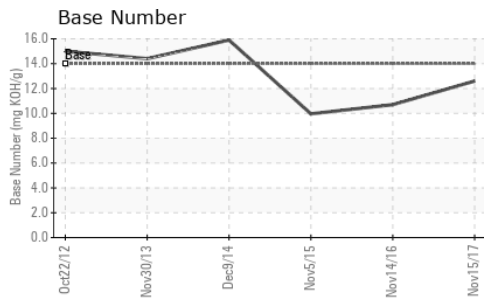
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>5</b>	3	6
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	2	3
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>	0.4	0.3
Nitration	Abs/cm	*ASTM D7624	>25	<b>8.</b>	8.	5.
Sulfation	Abs/.1mm	*ASTM D7415	>35	<b>17.</b>	18.	11.
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>3</b>	7	3
Boron	ppm	ASTM D5185m		<b>&lt;1</b>	2	10
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>175</b>	190	193
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>846</b>	910	1025
Calcium	ppm	ASTM D5185m	1300	<b>1656</b>	1401	1640
Phosphorus	ppm	ASTM D5185m		<b>1079</b>	1053	1116
Zinc	ppm	ASTM D5185m	1300	<b>1264</b>	1327	1336
Sulfur	ppm	ASTM D5185m		<b>3326</b>	3725	3681
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>13.</b>	14.	9.
Base Number (BN)	mg KOH/g	ASTM D2896	14	<b>12.6</b>	10.7	9.96
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.39</b>	14.96	15.01



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : TR04374734

Lab Number : 04374734

Unique Number : 8043373

Test Package : MOB 2

Received : 26 Dec 2017

Tested : 27 Dec 2017

Diagnosed : 27 Dec 2017 - Wes Davis

PHIL HARDER

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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)