TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
CATERPILLAR 972K L11 Z4W00459
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (9 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

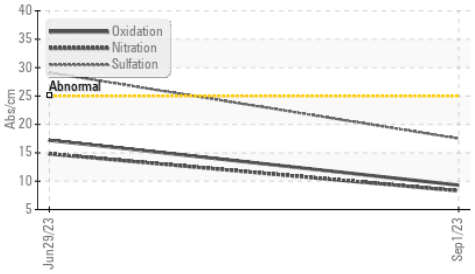
There is no indication of any contamination in the oil.

FLUID CONDITION

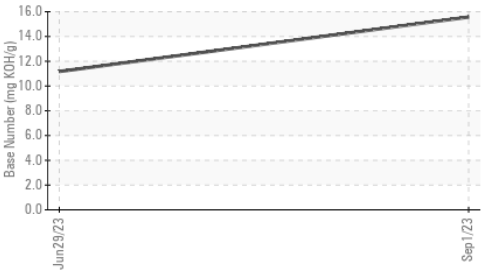
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR0594874	TR05889800	---
Sample Date		Client Info		01 Sep 2023	29 Jun 2023	---
Machine Age	hrs	Client Info		16767	16351	---
Oil Age	hrs	Client Info		171	987	---
Filter Age	hrs	Client Info		171	987	---
Oil Changed		Client Info		Not Changd	Not Changd	---
Filter Changed		Client Info		Not Changd	Not Changd	---
Sample Status				NORMAL	ABNORMAL	---
Iron	ppm	ASTM D5185m	>100	7	39	---
Chromium	ppm	ASTM D5185m	>20	<1	2	---
Nickel	ppm	ASTM D5185m	>2	0	<1	---
Titanium	ppm	ASTM D5185m	>2	<1	<1	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>25	0	7	---
Lead	ppm	ASTM D5185m	>40	<1	2	---
Copper	ppm	ASTM D5185m	>330	<1	2	---
Tin	ppm	ASTM D5185m	>15	<1	<1	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---
Silicon	ppm	ASTM D5185m	>25	6	8	---
Potassium	ppm	ASTM D5185m	>20	3	2	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.6	▲ 3.3	---
Nitration	Abs/cm	*ASTM D7624	>20	8.3	14.8	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.5	29.1	---
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	---
Sodium	ppm	ASTM D5185m		3	5	---
Boron	ppm	ASTM D5185m		0	12	---
Barium	ppm	ASTM D5185m		0	0	---
Molybdenum	ppm	ASTM D5185m		130	129	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m		26	161	---
Calcium	ppm	ASTM D5185m		4575	4195	---
Phosphorus	ppm	ASTM D5185m		950	980	---
Zinc	ppm	ASTM D5185m		1148	1171	---
Sulfur	ppm	ASTM D5185m		5568	5317	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	9.3	17.2	---
Base Number (BN)	mg KOH/g	ASTM D2896		15.57	11.17	---
Visc @ 100°C	cSt	ASTM D445		15.2	16.2	---

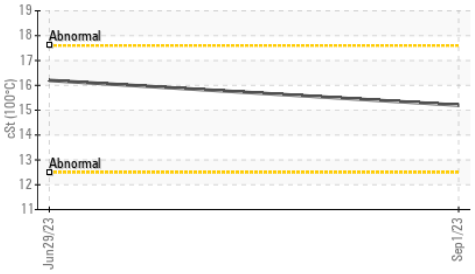
FT-IR (Direct Trend)



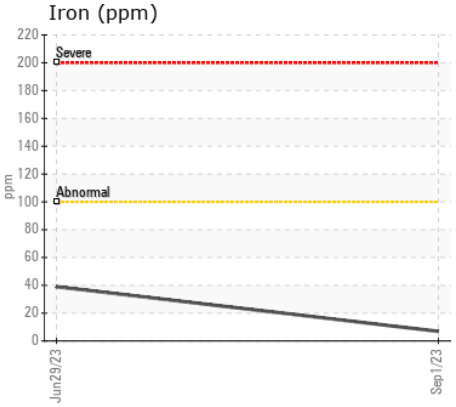
Base Number



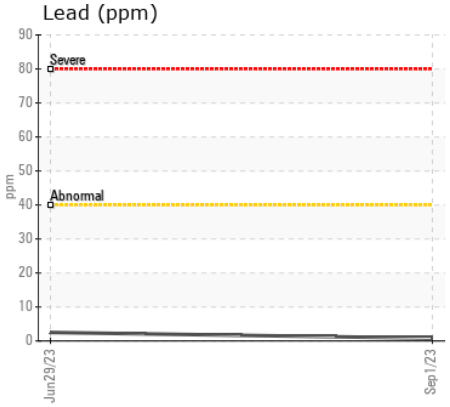
Viscosity @ 100°C



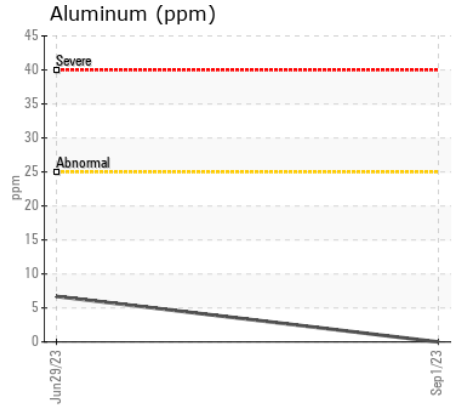
Iron (ppm)



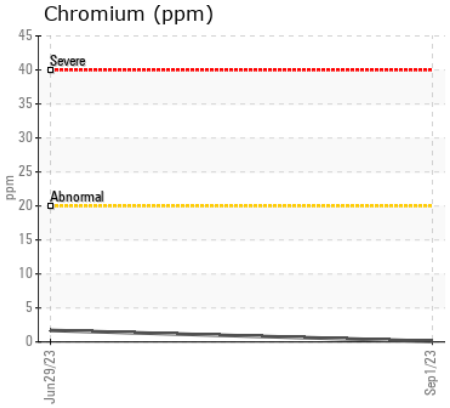
Lead (ppm)



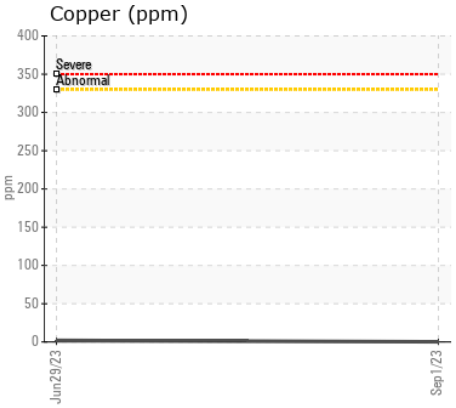
Aluminum (ppm)



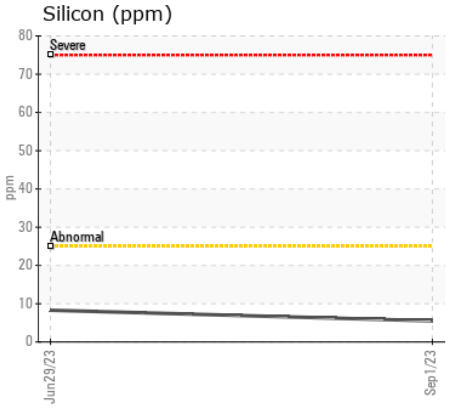
Chromium (ppm)



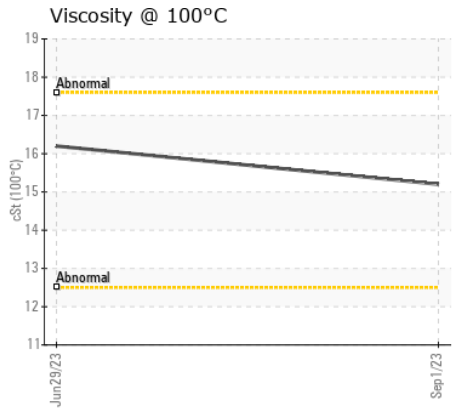
Copper (ppm)



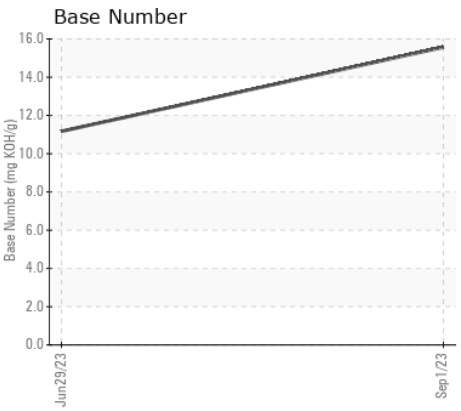
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR0594874
Lab Number : 05948274
Unique Number : 10644233
Test Package : MOB 2

Received : 12 Sep 2023
Tested : 13 Sep 2023
Diagnosed : 13 Sep 2023 - Wes Davis

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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