TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
KENWORTH 5
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

WEAR

All component wear rates are normal.

CONTAMINATION

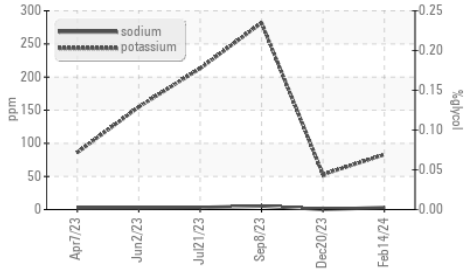
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. No other contaminants were detected in the oil.

FLUID CONDITION

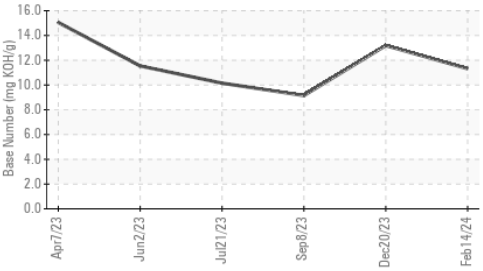
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06100311	TR06045124	TR05950918
Sample Date		Client Info		14 Feb 2024	20 Dec 2023	08 Sep 2023
Machine Age	mls	Client Info		22424	70000	50000
Oil Age	mls	Client Info		22424	10000	40000
Filter Age	mls	Client Info		22424	10000	40000
Oil Changed		Client Info		Not Changd	Changed	Not Changd
Filter Changed		Client Info		Not Changd	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
Iron	ppm	ASTM D5185m	>100	35	16	73
Chromium	ppm	ASTM D5185m	>20	2	<1	7
Nickel	ppm	ASTM D5185m	>4	<1	0	<1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>20	27	19	95
Lead	ppm	ASTM D5185m	>40	4	0	7
Copper	ppm	ASTM D5185m	>330	4	1	22
Tin	ppm	ASTM D5185m	>15	2	<1	4
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Silicon	ppm	ASTM D5185m	>25	14	10	27
Potassium	ppm	ASTM D5185m	>20	83	53	282
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	1	0.5	1
Nitration	Abs/cm	*ASTM D7624	>20	14.4	10.3	14.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	28.3	21.1	29.9
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
Sodium	ppm	ASTM D5185m		3	<1	5
Boron	ppm	ASTM D5185m		2	<1	6
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		41	38	118
Manganese	ppm	ASTM D5185m		1	<1	3
Magnesium	ppm	ASTM D5185m		25	24	73
Calcium	ppm	ASTM D5185m		4275	4050	4136
Phosphorus	ppm	ASTM D5185m		871	928	881
Zinc	ppm	ASTM D5185m		1079	1058	1066
Sulfur	ppm	ASTM D5185m		4052	4098	4716
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	12.7	22.6
Base Number (BN)	mg KOH/g	ASTM D2896		11.32	13.19	9.15
Visc @ 100°C	cSt	ASTM D445		15.3	15.1	14.5

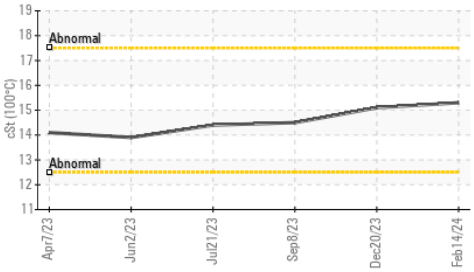
Glycol Contamination



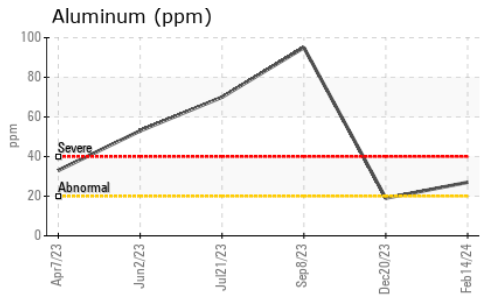
Base Number



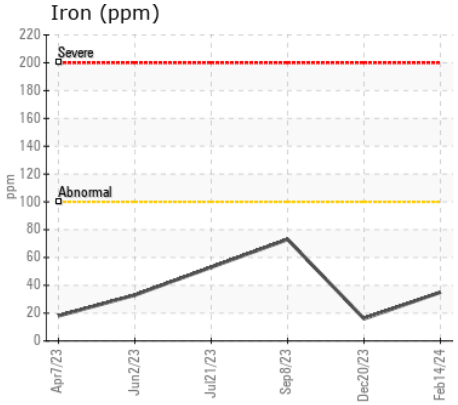
Viscosity @ 100°C



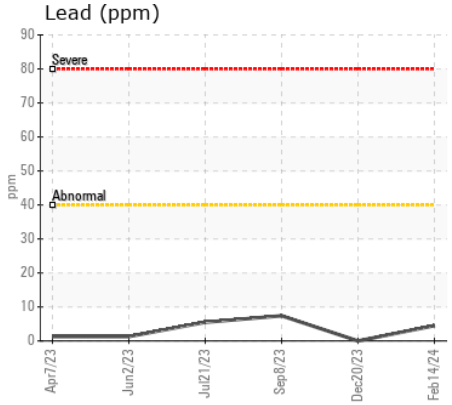
Aluminum (ppm)



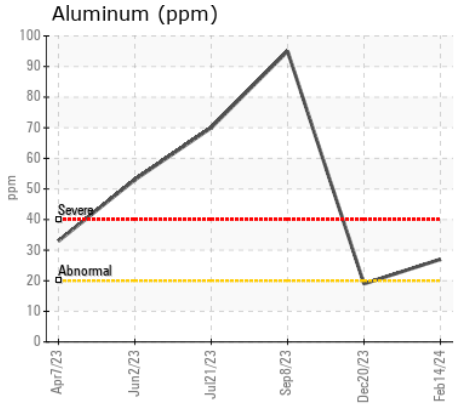
Iron (ppm)



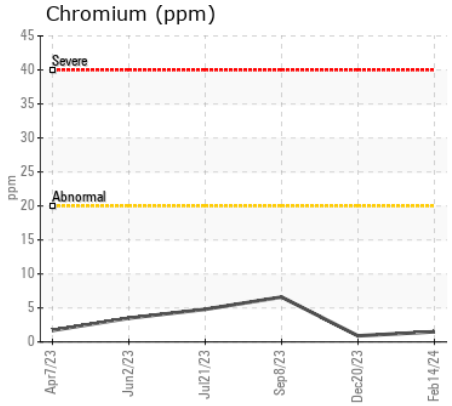
Lead (ppm)



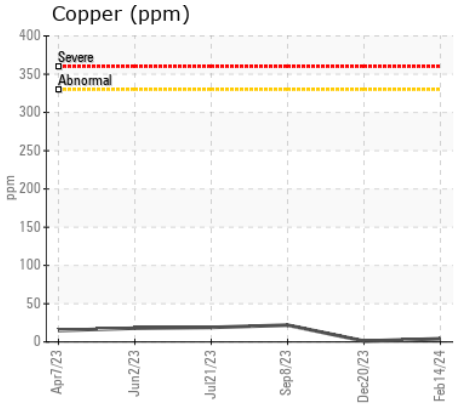
Aluminum (ppm)



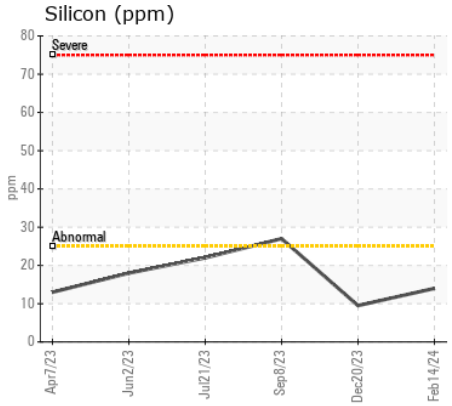
Chromium (ppm)



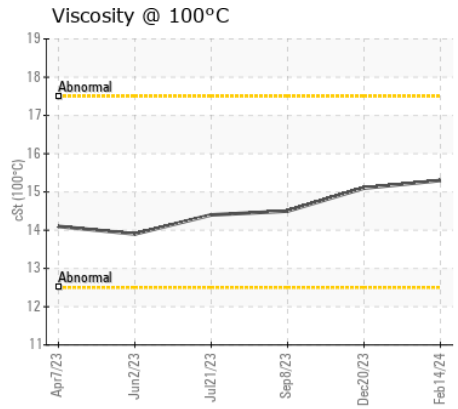
Copper (ppm)



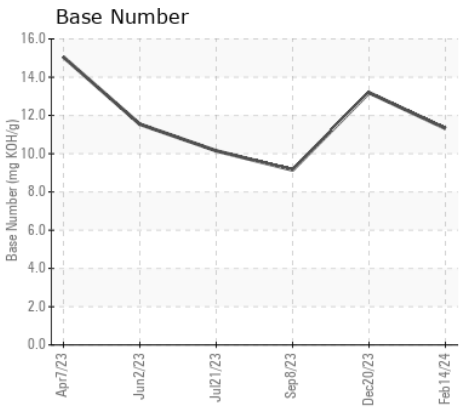
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06100311
Lab Number : 06100311
Unique Number : 10898541
Test Package : MOB 2

Received : 26 Feb 2024
Tested : 27 Feb 2024
Diagnosed : 28 Feb 2024 - Don Baldridge

VAUGHN TRUCKING
90911 LEWIS AND CLARK RD
ASTORIA, OR
US 97103
Contact: JEFF WARREN

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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