TRAAP
Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
THOMAS BUS 0
Component
Diesel Engine
Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (18 QTS)

RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

WEAR

Piston, ring and cylinder wear is indicated.

CONTAMINATION

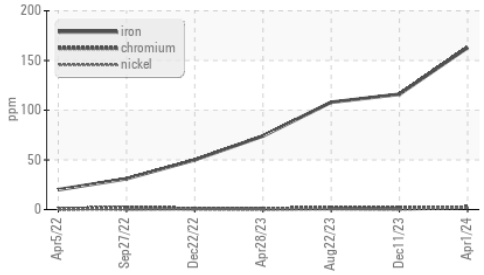
Elevated aluminum (Al) and/or lead (Pb) and potassium (K) levels in your metals analysis are likely a result of solder flux release into the lubricant and is common on new equipment/components. Test for glycol is negative. There is no indication of any contamination in the oil. No other contaminants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

FLUID CONDITION

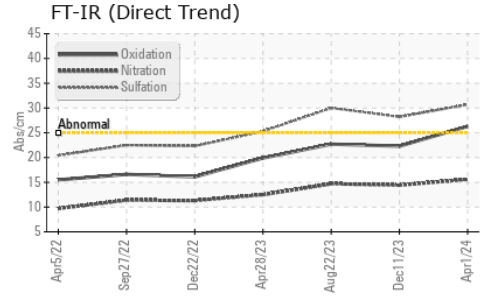
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06160593	TR06046340	TR05956583
Sample Date		Client Info		01 Apr 2024	11 Dec 2023	22 Aug 2023
Machine Age	hrs	Client Info		1742	1488	1358
Oil Age	hrs	Client Info		1120	866	736
Filter Age	hrs	Client Info		254	130	197
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Iron	ppm	ASTM D5185m	>90	▲ 163	▲ 116	▲ 108
Chromium	ppm	ASTM D5185m	>20	2	1	1
Nickel	ppm	ASTM D5185m	>2	2	0	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	45	▲ 36	▲ 34
Lead	ppm	ASTM D5185m	>40	<1	0	<1
Copper	ppm	ASTM D5185m	>330	66	63	75
Tin	ppm	ASTM D5185m	>15	1	<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
Silicon	ppm	ASTM D5185m	>25	22	20	21
Potassium	ppm	ASTM D5185m	>20	232	199	237
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	0.0	NEG
Soot %	%	*ASTM D7844	>6	0.9	0.8	0.1
Nitration	Abs/cm	*ASTM D7624	>20	15.6	14.4	14.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	30.7	28.2	30.0
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		9	6	10
Boron	ppm	ASTM D5185m		5	7	7
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		102	99	102
Manganese	ppm	ASTM D5185m		2	2	2
Magnesium	ppm	ASTM D5185m		91	95	104
Calcium	ppm	ASTM D5185m		3205	3041	3068
Phosphorus	ppm	ASTM D5185m		1046	907	950
Zinc	ppm	ASTM D5185m		1203	1148	1190
Sulfur	ppm	ASTM D5185m		4593	3513	4293
Oxidation	Abs/.1mm	*ASTM D7414	>25	26.3	22.3	22.7
Base Number (BN)	mg KOH/g	ASTM D2896		7.00	9.59	6.53
Visc @ 100°C	cSt	ASTM D445		13.1	13.5	13.5

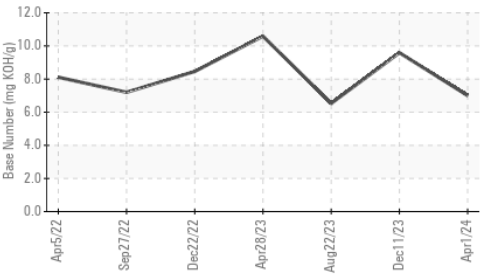
Ferrous Alloys



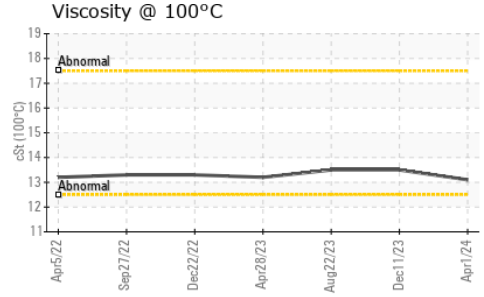
FT-IR (Direct Trend)



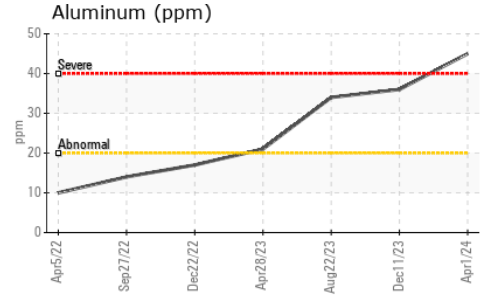
Base Number



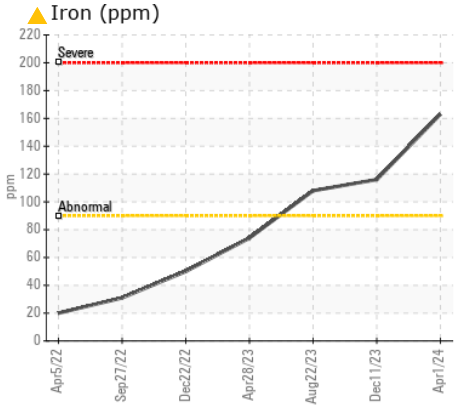
Viscosity @ 100°C



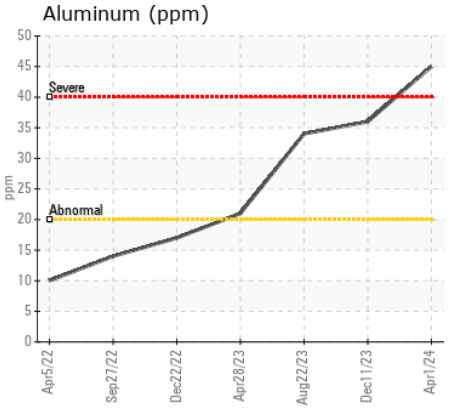
Aluminum (ppm)



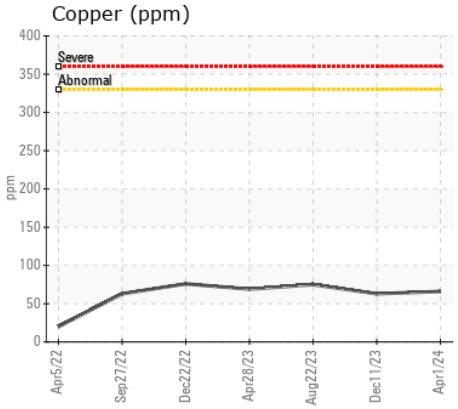
Iron (ppm)



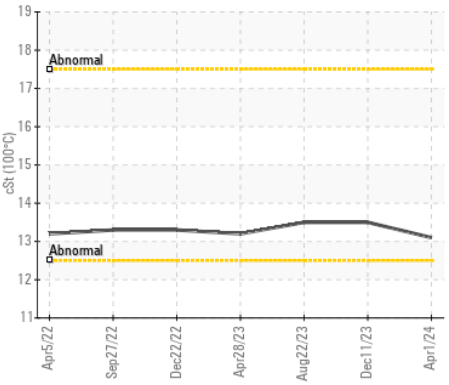
Aluminum (ppm)



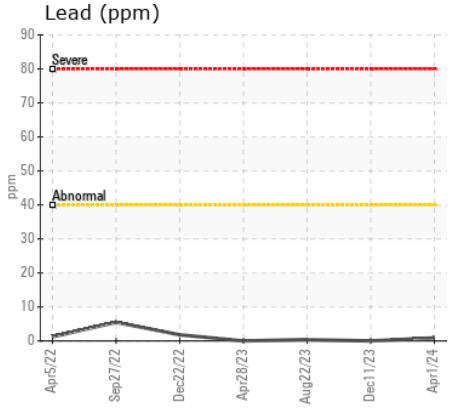
Copper (ppm)



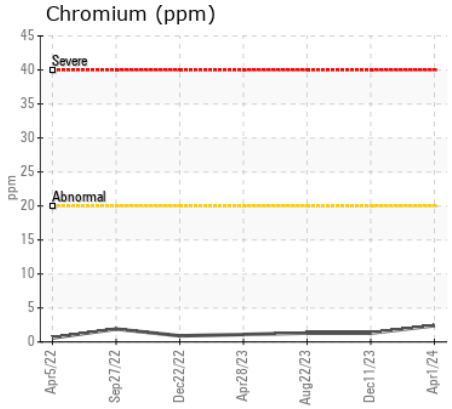
Viscosity @ 100°C



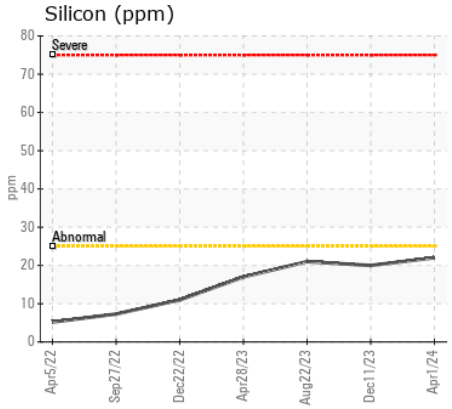
Lead (ppm)



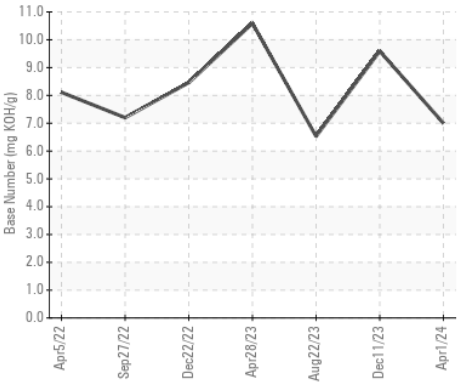
Chromium (ppm)



Silicon (ppm)



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06160593
Lab Number : 06160593
Unique Number : 10996016
Test Package : MOB 2 (Additional Tests: Glycol)

Received : 25 Apr 2024
Tested : 26 Apr 2024
Diagnosed : 26 Apr 2024 - Sean Felton

BOW SCHOOL DIST BUS GARAGE
12 RODINSON RD
BOW, NH
US 03304
Contact: DON PERCY

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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