



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
KENWORTH 1950
 Component
Diesel Engine
 Fluid
VALVOLINE PREMIUM BLUE GEN2 SAE 10W30 (13 GAL)

RECOMMENDATION

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

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0837734	WC0694161	WC0694165
Sample Date		Client Info		05 Apr 2024	01 Aug 2023	06 Apr 2023
Machine Age	mls	Client Info		855268	628092	599332
Oil Age	mls	Client Info		40000	29760	24000
Filter Age	mls	Client Info		40000	29760	24000
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The chromium level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>165	75	23	18
Chromium	ppm	ASTM D5185m	>5	▲ 9	3	2
Nickel	ppm	ASTM D5185m	>4	<1	<1	<1
Titanium	ppm	ASTM D5185m	>2	<1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	<1
Aluminum	ppm	ASTM D5185m	>20	7	2	0
Lead	ppm	ASTM D5185m	>150	8	4	3
Copper	ppm	ASTM D5185m	>90	6	0	1
Tin	ppm	ASTM D5185m	>5	4	<1	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

Elemental level of silicon (Si) above normal.

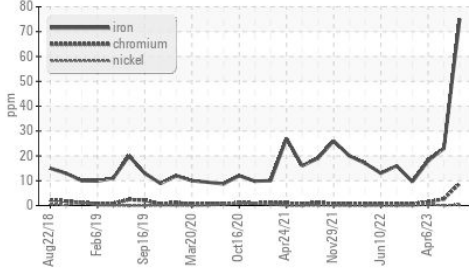
Silicon	ppm	ASTM D5185m	>35	▲ 35	7	6
Potassium	ppm	ASTM D5185m	>20	5	1	3
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>7.5	0.7	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	14.6	14.0	13.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.3	27.5	25.6
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

FLUID CONDITION

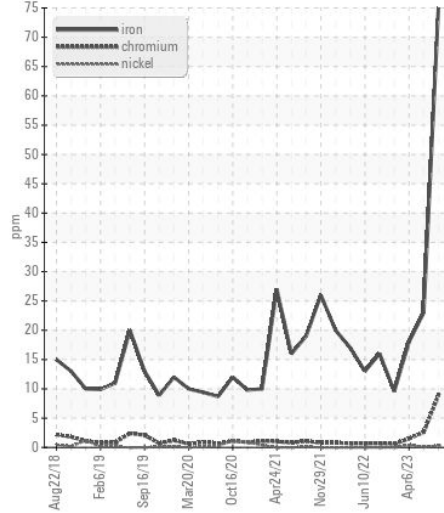
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		10	2	6
Boron	ppm	ASTM D5185m		25	18	29
Barium	ppm	ASTM D5185m		7	0	4
Molybdenum	ppm	ASTM D5185m		62	61	44
Manganese	ppm	ASTM D5185m		4	<1	1
Magnesium	ppm	ASTM D5185m		772	843	856
Calcium	ppm	ASTM D5185m		1318	1238	1405
Phosphorus	ppm	ASTM D5185m	800	812	668	727
Zinc	ppm	ASTM D5185m	890	988	918	952
Sulfur	ppm	ASTM D5185m		2777	2200	2994
Oxidation	Abs/.1mm	*ASTM D7414	>25	27.0	31.9	25.3
Base Number (BN)	mg KOH/g	ASTM D2896	11	5.0	3.9	6.3
Visc @ 100°C	cSt	ASTM D445	12.0	11.9	11.5	11.8

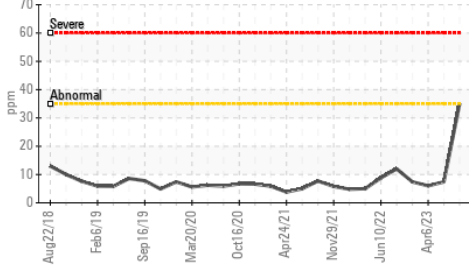
▲ Ferrous Alloys



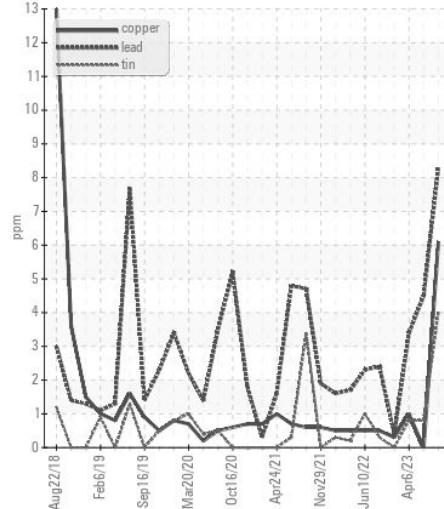
▲ Ferrous Alloys



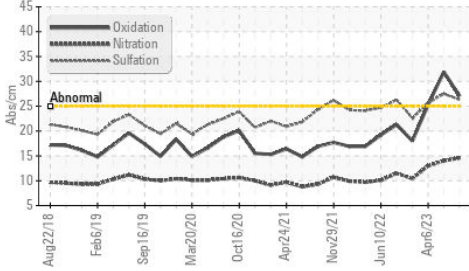
▲ Silicon (ppm)



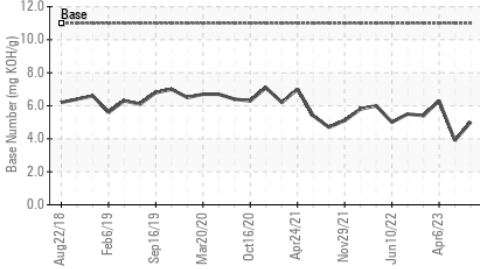
Non-ferrous Metals



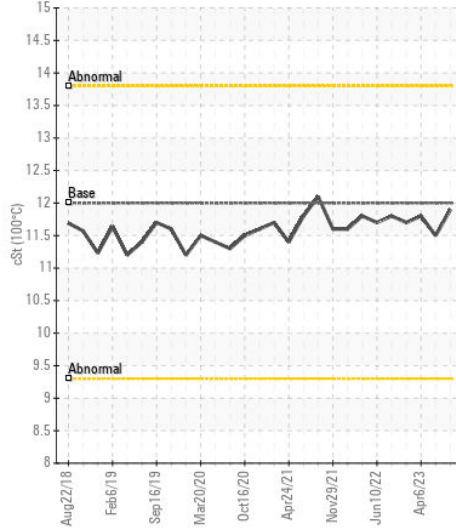
FT-IR (Direct Trend)



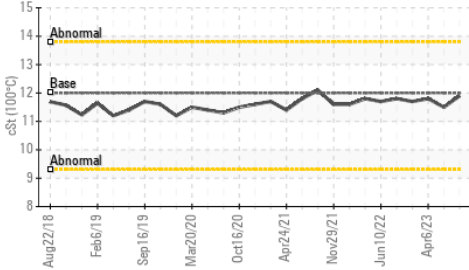
Base Number



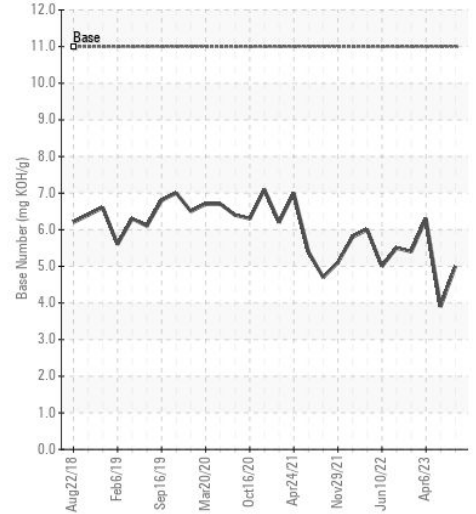
Viscosity @ 100°C



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0837734

Lab Number : 06231983

Unique Number : 11115476

Test Package : FLEET

Received : 10 Jul 2024

Tested : 10 Jul 2024

Diagnosed : 11 Jul 2024 - Don Baldridge

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To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - 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)