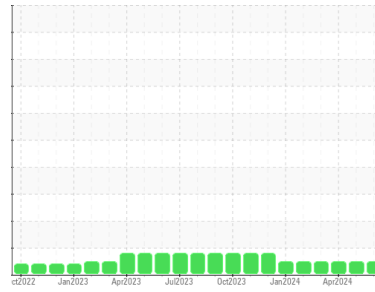




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
ARIZONA
Machine Id
VOLVO 4903
Component
Diesel Engine
Fluid
NAPA Motor Oil 15W40 (--- QTS)

DIAGNOSIS

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.

SAMPLE INFORMATION

method	limit/base	current	history1	history2	
Sample Number	Client Info	WC0935451	WC0935447	WC0899585	
Sample Date	Client Info	19 Jun 2024	04 May 2024	08 Apr 2024	
Machine Age	hrs	Client Info	0	3073	2931
Oil Age	hrs	Client Info	0	2257	2115
Oil Changed	Client Info	N/A	Not Changd	Not Changd	
Sample Status		NORMAL	NORMAL	NORMAL	

CONTAMINATION

method	limit/base	current	history1	history2
Fuel	WC Method >6.0	<1.0	<1.0	<1.0
Water	WC Method >0.2	NEG	NEG	NEG
Glycol	WC Method	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >100	76	92	76
Chromium	ppm ASTM D5185m >20	1	2	<1
Nickel	ppm ASTM D5185m >2	6	8	7
Titanium	ppm ASTM D5185m	0	<1	0
Silver	ppm ASTM D5185m >2	<1	<1	<1
Aluminum	ppm ASTM D5185m >25	7	8	7
Lead	ppm ASTM D5185m >40	4	5	4
Copper	ppm ASTM D5185m >330	162	231	206
Tin	ppm ASTM D5185m >15	4	4	4
Vanadium	ppm ASTM D5185m	<1	<1	0
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	19	17	16
Barium	ppm ASTM D5185m	0	0	<1
Molybdenum	ppm ASTM D5185m	23	32	27
Manganese	ppm ASTM D5185m	2	2	2
Magnesium	ppm ASTM D5185m	706	642	624
Calcium	ppm ASTM D5185m	1459	1468	1475
Phosphorus	ppm ASTM D5185m	774	807	747
Zinc	ppm ASTM D5185m	910	913	913
Sulfur	ppm ASTM D5185m	2932	2694	2909

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	12	14	12
Sodium	ppm ASTM D5185m	5	4	4
Potassium	ppm ASTM D5185m >20	17	19	16

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >3	0.8	0.9	0.8
Nitration	Abs/cm *ASTM D7624 >20	10.9	11.2	11.1
Sulfation	Abs/.1mm *ASTM D7415 >30	22.1	23.1	22.6

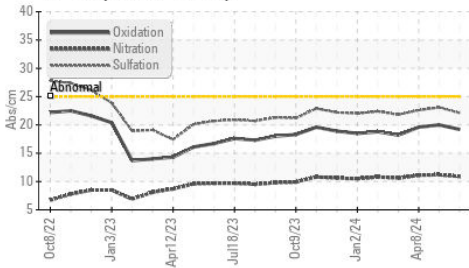
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	19.2	20.0	19.6
Base Number (BN)	mg KOH/g ASTM D2896	5.2	5.4	5.6

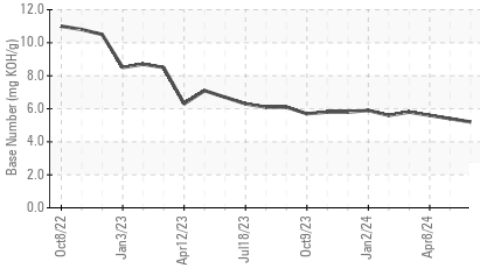


OIL ANALYSIS REPORT

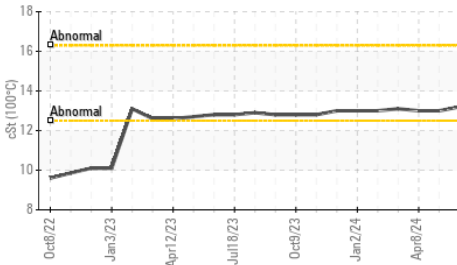
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

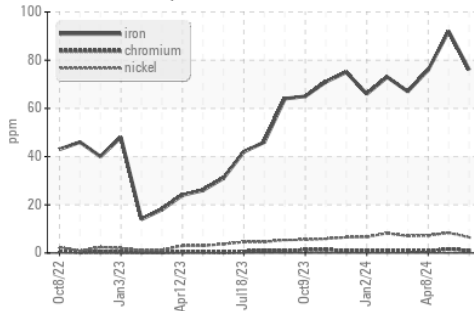


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

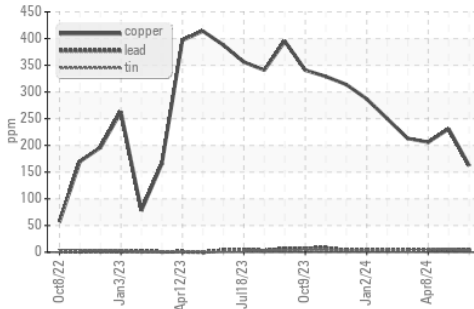
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.2	13.0	13.0

GRAPHS

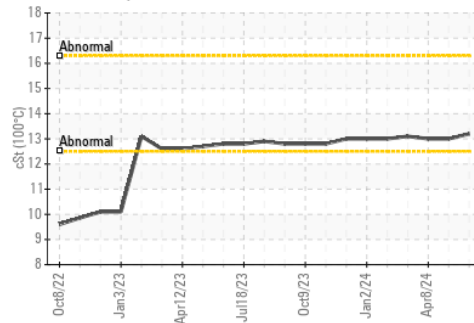
Ferrous Alloys



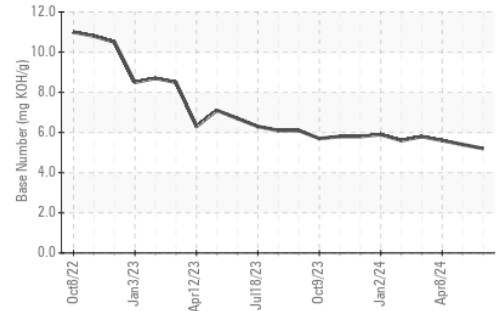
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0935451

Lab Number : 06215378

Unique Number : 11088242

Test Package : FLEET

Received : 20 Jun 2024

Tested : 21 Jun 2024

Diagnosed : 21 Jun 2024 - Sean Felton

LIBERTY DISPOSAL

6401 S EASTERN AVE

OKLAHOMA CITY, OK

US 73149

Contact: M Rutherford

M.Rutherford@ldi89.com

T:

F:

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)