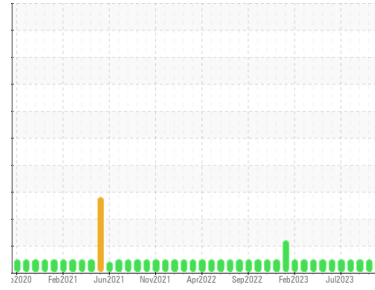




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
ARIZONA GROUPING
 Machine Id
2015 MACK 2696
 Component
Diesel Engine
 Fluid
NAPA Motor Oil 15W40 (9 GAL)

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	WC0857165	WC0857172	WC0838563
Sample Date	Client Info	13 Nov 2023	09 Oct 2023	05 Sep 2023
Machine Age	hrs	16900	16730	16601
Oil Age	hrs	1209	1039	910
Oil Changed	Client Info	Not Changed	Not Changed	Not Changed
Sample Status		NORMAL	NORMAL	NORMAL

CONTAMINATION

method	limit/base	current	history1	history2
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

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185m >120	19	17	15
Chromium	ppm ASTM D5185m >20	<1	<1	<1
Nickel	ppm ASTM D5185m >5	1	1	<1
Titanium	ppm ASTM D5185m >2	<1	<1	0
Silver	ppm ASTM D5185m >2	0	0	0
Aluminum	ppm ASTM D5185m >20	4	4	4
Lead	ppm ASTM D5185m >40	3	2	1
Copper	ppm ASTM D5185m >330	7	9	<1
Tin	ppm ASTM D5185m >15	1	1	<1
Vanadium	ppm ASTM D5185m	<1	<1	<1
Cadmium	ppm ASTM D5185m	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	18	19	27
Barium	ppm ASTM D5185m	0	0	0
Molybdenum	ppm ASTM D5185m	24	23	23
Manganese	ppm ASTM D5185m	<1	<1	<1
Magnesium	ppm ASTM D5185m	642	599	700
Calcium	ppm ASTM D5185m	1482	1397	1783
Phosphorus	ppm ASTM D5185m	858	760	888
Zinc	ppm ASTM D5185m	1009	920	1044
Sulfur	ppm ASTM D5185m	3113	2796	3997

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	7	7	7
Sodium	ppm ASTM D5185m	15	15	18
Potassium	ppm ASTM D5185m >20	5	5	2

INFRA-RED

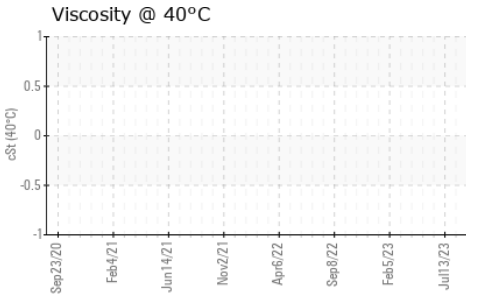
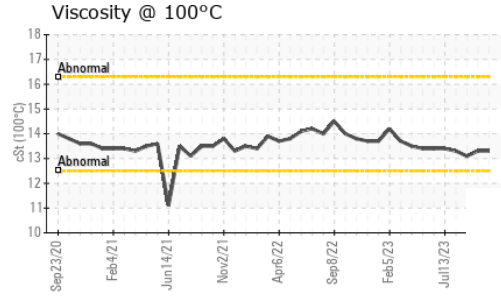
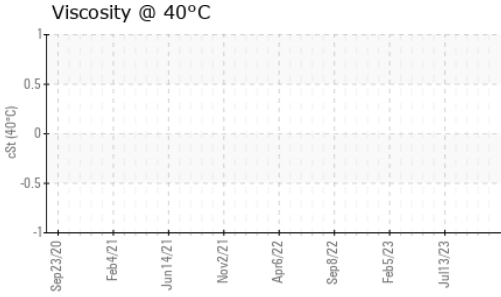
method	limit/base	current	history1	history2
Soot %	% *ASTM D7844 >4	0.5	0.5	0.5
Nitration	Abs/cm *ASTM D7624 >20	10.4	9.5	9.6
Sulfation	Abs/.1mm *ASTM D7415 >30	25.4	23.7	23.5

FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	22.0	19.9	19.5
Base Number (BN)	mg KOH/g ASTM D2896	4.7	4.6	4.7



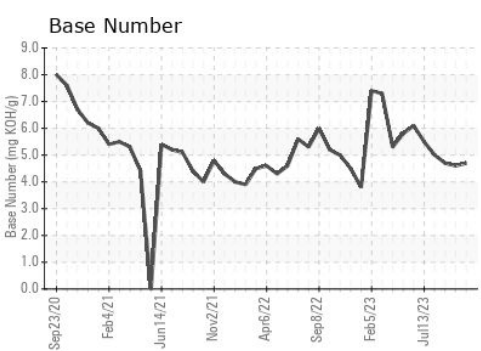
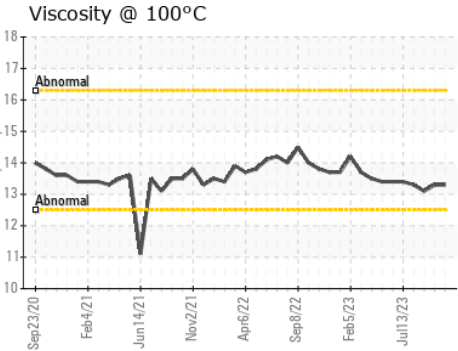
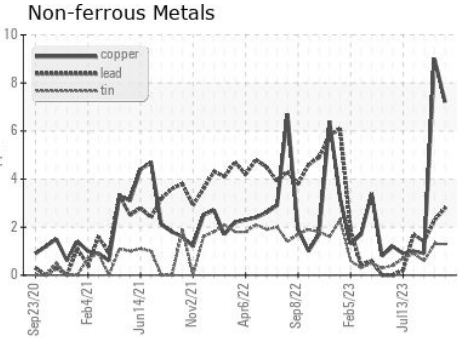
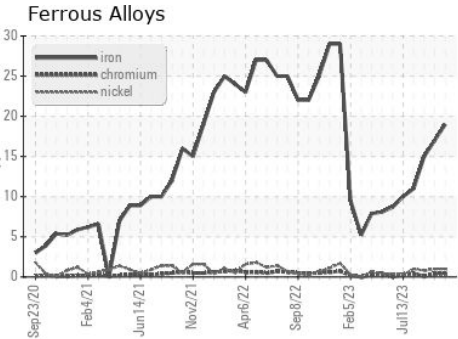
OIL ANALYSIS REPORT



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	13.3	13.3	13.1

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0857165 **Received** : 20 Nov 2023
Lab Number : **06013101** **Diagnosed** : 28 Nov 2023
Unique Number : 10752245 **Diagnostician** : Angela Borella
Test Package : FLEET (Additional Tests: KV40)

LIBERTY DISPOSAL
 6401 S EASTERN AVE
 OKLAHOMA CITY, OK
 US 73149
 Contact: CATHY ROSA
 c.rosa@ldi89.com

Certificate L2367
 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)