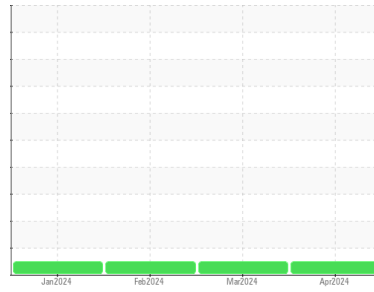




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

Bernardsville

Machine Id

FREIGHTLINER 2491

Component

Diesel Engine

Fluid

GIBRALTAR 15W/40 SUPER S-3 LX (11)

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			WC0900038	WC0900064	WC0900055
Sample Date	Client Info			08 Apr 2024	23 Mar 2024	13 Feb 2024
Machine Age	hrs	Client Info		11281	11195	10994
Oil Age	hrs	Client Info		11281	11195	10994
Oil Changed	Client Info			Not Chngd	Not Chngd	Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>5		<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	>80	18	16	66
Chromium	ppm	ASTM D5185m	>5	3	2	6
Nickel	ppm	ASTM D5185m	>2	1	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	0	0
Aluminum	ppm	ASTM D5185m	>30	14	12	56
Lead	ppm	ASTM D5185m	>30	1	0	0
Copper	ppm	ASTM D5185m	>150	5	2	7
Tin	ppm	ASTM D5185m	>5	1	0	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		1	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		12	13	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m	66	57	59	59
Manganese	ppm	ASTM D5185m		1	<1	1
Magnesium	ppm	ASTM D5185m	1000	716	825	972
Calcium	ppm	ASTM D5185m	1050	1219	1400	1218
Phosphorus	ppm	ASTM D5185m	1150	1049	1122	1020
Zinc	ppm	ASTM D5185m	1270	1170	1361	1310
Sulfur	ppm	ASTM D5185m		3513	4171	2652

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	5	3	8
Sodium	ppm	ASTM D5185m		1	1	3
Potassium	ppm	ASTM D5185m	>20	22	18	105

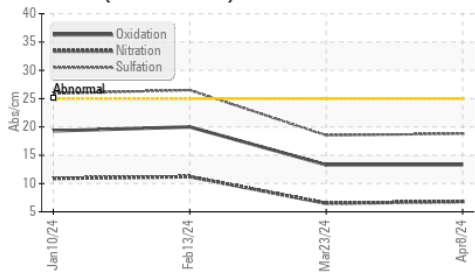
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.5	0.5	2.1
Nitration	Abs/cm	*ASTM D7624	>20	6.8	6.5	11.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.8	18.5	26.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.3	13.3	20.0
Base Number (BN)	mg KOH/g	ASTM D2896	10.1	8.5	8.6	5.5

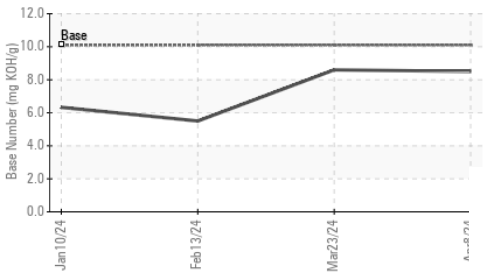


OIL ANALYSIS REPORT

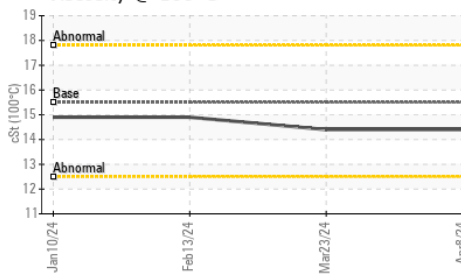
FT-IR (Direct Trend)



Base Number



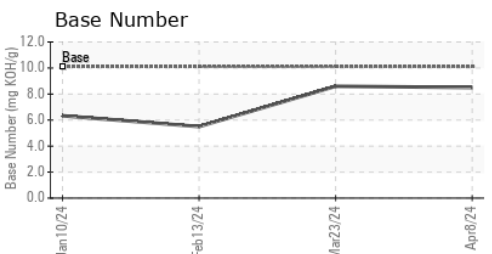
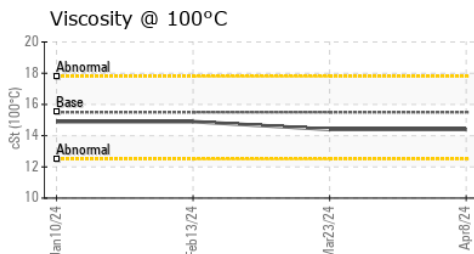
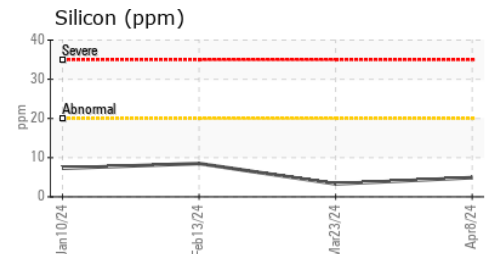
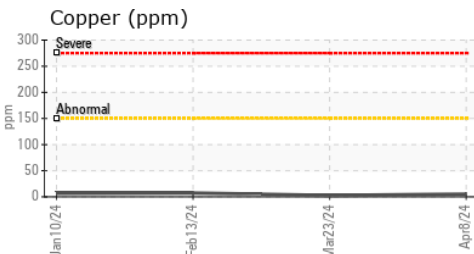
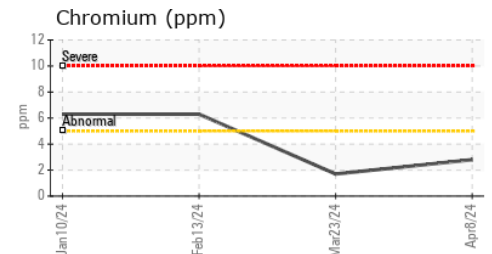
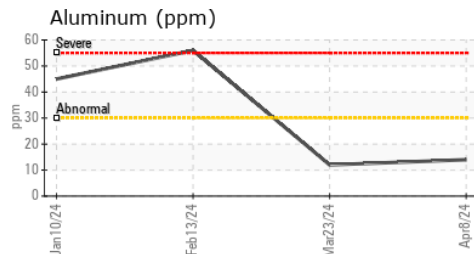
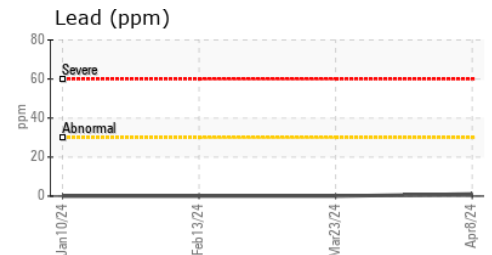
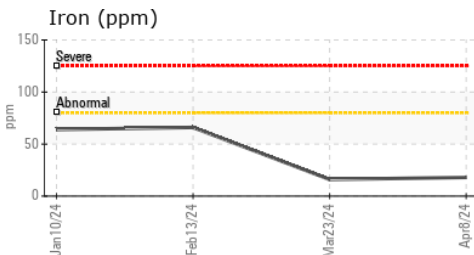
Viscosity @ 100°C



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	15.5	14.4	14.4

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0900038 **Received** : 18 Apr 2024
Lab Number : **06152828** **Tested** : 19 Apr 2024
Unique Number : 10982906 **Diagnosed** : 19 Apr 2024 - Wes Davis
Test Package : MOB 1 (Additional Tests: TBN)

INTERSTATE WASTE-BERNARDSVILLE
 33 OLD QUARRY ROAD
 BERNARDSVILLE, NJ
 US 07924
 Contact: Pablo Chardon
 PChardon@interstatewaste.com

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)