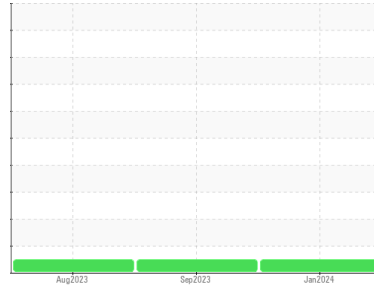




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
Bernardsville
 Machine Id
WESTERN STAR 1209
 Component
Diesel Engine
 Fluid
SHELL ROTELLA T 15W40 (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		WC0875316	WC0840484	WC0830839
Sample Date	Client Info		11 Jan 2024	30 Sep 2023	29 Aug 2023
Machine Age	hrs	Client Info	10273	9504	156193
Oil Age	hrs	Client Info	10273	0	9241
Oil Changed	Client Info		Changed	Changed	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 >100	15	6	9
Chromium	ppm	ASTM D5185m >20	2	<1	<1
Nickel	ppm	ASTM D5185m >4	0	0	0
Titanium	ppm	ASTM D5185m	0	<1	0
Silver	ppm	ASTM D5185m >3	0	0	0
Aluminum	ppm	ASTM D5185m >20	6	6	11
Lead	ppm	ASTM D5185m >40	0	<1	0
Copper	ppm	ASTM D5185m >330	<1	<1	<1
Tin	ppm	ASTM D5185m >15	0	<1	<1
Vanadium	ppm	ASTM D5185m	0	<1	0
Cadmium	ppm	ASTM D5185m	0	<1	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 316	16	33	8
Barium	ppm	ASTM D5185m 0.0	0	12	0
Molybdenum	ppm	ASTM D5185m 1.2	61	68	58
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m 24	404	443	813
Calcium	ppm	ASTM D5185m 2292	1521	1539	1124
Phosphorus	ppm	ASTM D5185m 1064	902	943	945
Zinc	ppm	ASTM D5185m 1160	1078	1133	1134
Sulfur	ppm	ASTM D5185m 4996	3358	3332	3525

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	6	4	3
Sodium	ppm	ASTM D5185m	1	1	2
Potassium	ppm	ASTM D5185m >20	12	15	22

INFRA-RED

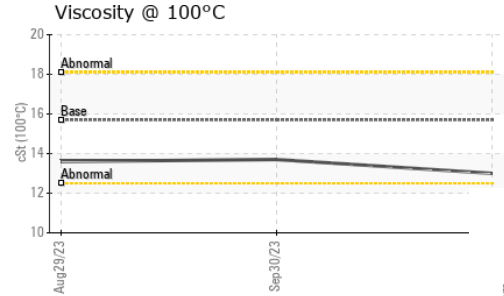
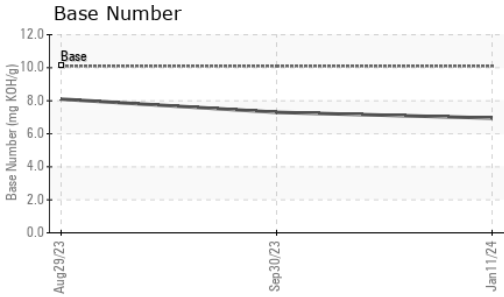
	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844 >3	1.3	0.5	0.7
Nitration	Abs/cm	*ASTM D7624 >20	9.4	7.3	7.4
Sulfation	Abs/.1mm	*ASTM D7415 >30	21.5	17.6	18.9

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	15.1	12.2	13.4
Base Number (BN)	mg KOH/g	ASTM D2896 10.1	6.95	7.3	8.1



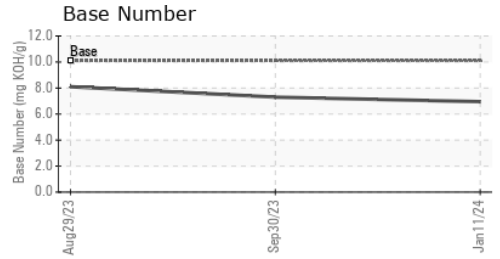
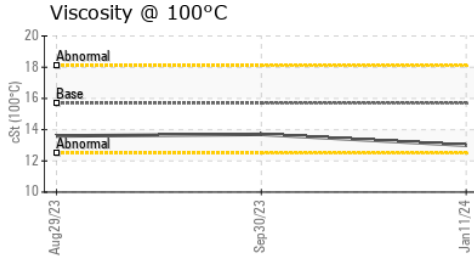
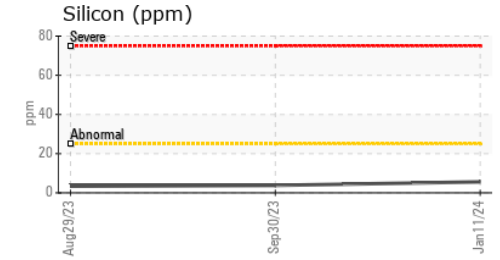
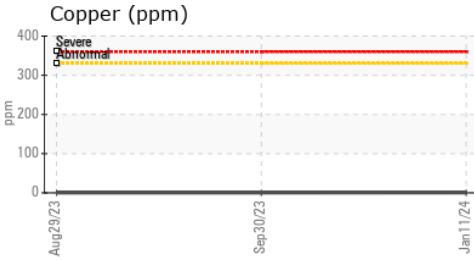
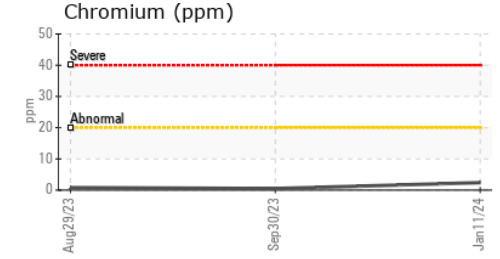
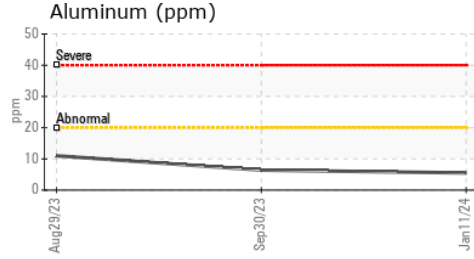
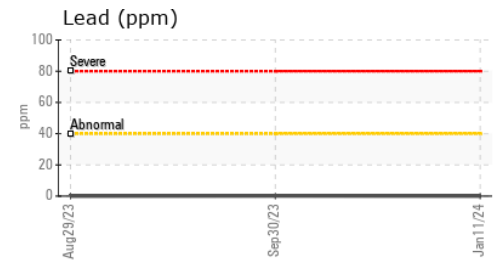
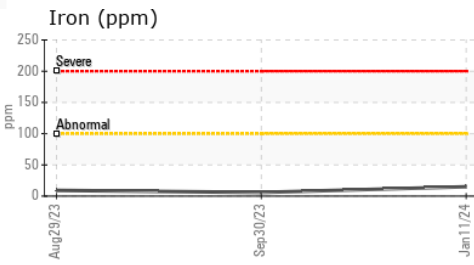
OIL ANALYSIS REPORT



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	15.7	13.0	13.7	13.6

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0875316 **Recieved** : 17 Jan 2024
Lab Number : 06063789 **Diagnosed** : 19 Jan 2024
Unique Number : 10835171 **Diagnostician** : Wes Davis
Test Package : MOB 2

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