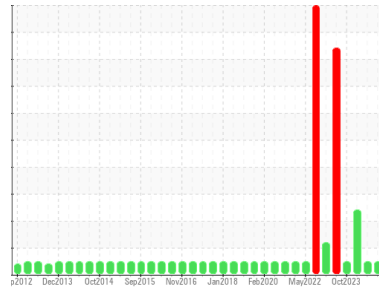


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
WESTERN STAR 27
 Component
Diesel Engine
 Fluid
FLEETLINE SUPERFLEET XHD 15W40 (10 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

Metal levels are typical for a new component breaking in.

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			PCA0110131	LP0000881	LP0000873
Sample Date	Client Info			24 May 2024	10 Feb 2024	09 Feb 2024
Machine Age	mls	Client Info		20066	268	641026
Oil Age	mls	Client Info		7066	268	9340
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

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	44	11	43
Chromium	ppm	ASTM D5185m	>20	2	1	2
Nickel	ppm	ASTM D5185m	>2	0	<1	1
Titanium	ppm	ASTM D5185m	>2	<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	<1
Aluminum	ppm	ASTM D5185m	>25	3	3	1
Lead	ppm	ASTM D5185m	>40	1	3	2
Copper	ppm	ASTM D5185m	>330	169	10	▲ 651
Tin	ppm	ASTM D5185m	>15	1	2	3
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		0	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		6	79	21
Barium	ppm	ASTM D5185m		0	11	0
Molybdenum	ppm	ASTM D5185m		18	71	46
Manganese	ppm	ASTM D5185m		<1	2	2
Magnesium	ppm	ASTM D5185m		112	188	212
Calcium	ppm	ASTM D5185m		1883	2353	1673
Phosphorus	ppm	ASTM D5185m		730	970	807
Zinc	ppm	ASTM D5185m		988	1398	1015
Sulfur	ppm	ASTM D5185m		2818	4469	3072

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	18	18	▲ 49
Sodium	ppm	ASTM D5185m		3	3	0
Potassium	ppm	ASTM D5185m	>20	3	2	2

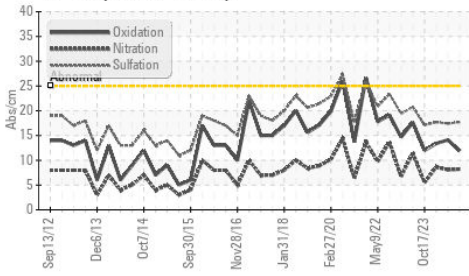
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.5	0.1	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.2	8.1	8.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.7	17.4	17.7

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.9	14.1	13.4
Base Number (BN)	mg KOH/g	ASTM D2896		7.18	8.79	7.85

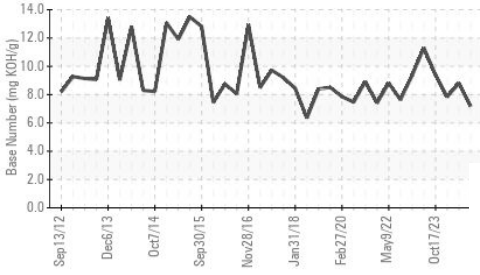


OIL ANALYSIS REPORT

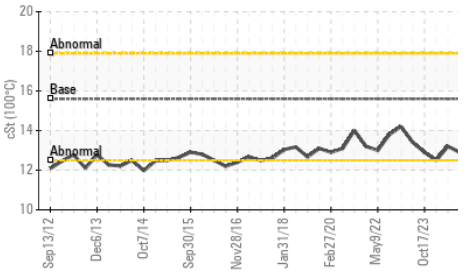
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

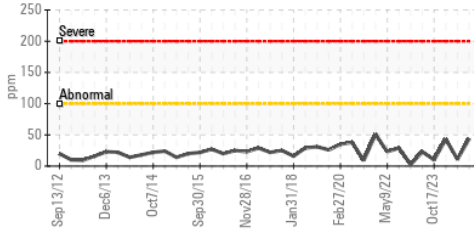


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

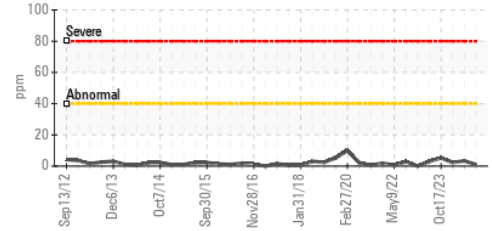
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	15.6	12.9	13.2

GRAPHS

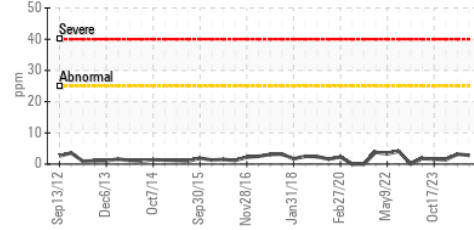
Iron (ppm)



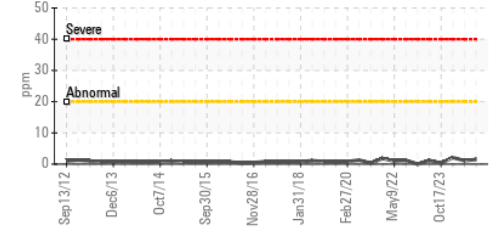
Lead (ppm)



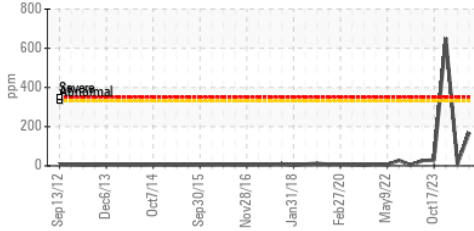
Aluminum (ppm)



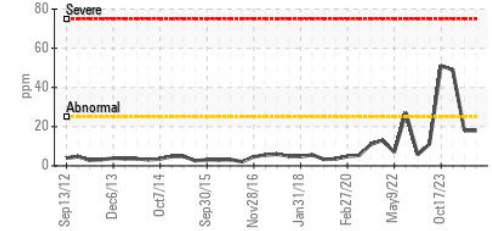
Chromium (ppm)



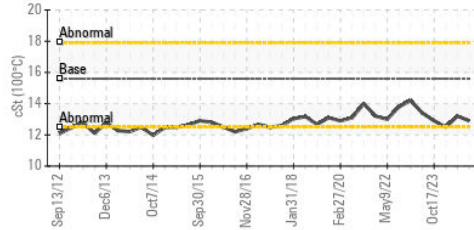
Copper (ppm)



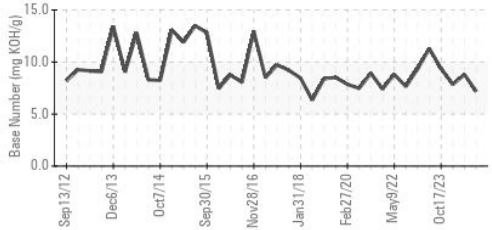
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0110131

Lab Number : 06198338

Unique Number : 11060461

Test Package : MOB 2

Received : 03 Jun 2024

Tested : 04 Jun 2024

Diagnosed : 04 Jun 2024 - Wes Davis

S.M. LORUSSO & SONS

221 NORFOLK ST.

WALPOLE, MA

US 02081

Contact: PAUL BECKMAN

pbeckman@smlorusso.com

T: (508)668-2603

F: (508)660-0232

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)