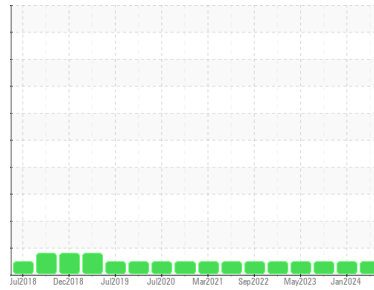


OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
WESTERN STAR 35 - WESTERN STAR
 Component
Diesel Engine
 Fluid
FLEETLINE SUPERFLEET XHD 15W40 (10 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			PCA0109967	LP0000530	LP0000798
Sample Date	Client Info			14 May 2024	02 Jan 2024	06 Sep 2023
Machine Age	mls	Client Info		204768	193265	182389
Oil Age	mls	Client Info		11503	10876	12509
Oil Changed	Client Info			Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
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	>65	12	13	23
Chromium	ppm	ASTM D5185m	>5	1	<1	2
Nickel	ppm	ASTM D5185m	>3	<1	0	0
Titanium	ppm	ASTM D5185m	>5	<1	0	0
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>35	7	6	9
Lead	ppm	ASTM D5185m	>10	0	0	<1
Copper	ppm	ASTM D5185m	>180	3	8	17
Tin	ppm	ASTM D5185m	>8	0	0	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		<1	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		11	7	7
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		31	32	68
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m		167	413	855
Calcium	ppm	ASTM D5185m		1885	1721	1448
Phosphorus	ppm	ASTM D5185m		778	896	1066
Zinc	ppm	ASTM D5185m		1001	1078	1355
Sulfur	ppm	ASTM D5185m		3095	3255	3845

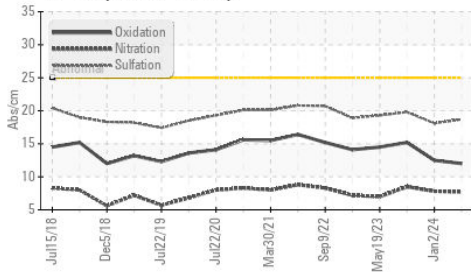
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	4	4	4
Sodium	ppm	ASTM D5185m		6	<1	9
Potassium	ppm	ASTM D5185m	>20	4	8	11
Fuel	%	ASTM D3524	>3.0	<1.0	<1.0	<1.0

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>3	0.4	0.4	0.6
Nitration	Abs/cm	*ASTM D7624	>20	7.7	7.8	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.7	18.1	19.8

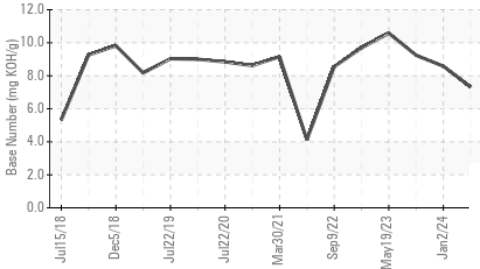
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.0	12.5	15.2
Base Number (BN)	mg KOH/g	ASTM D2896		7.32	8.58	9.24

OIL ANALYSIS REPORT

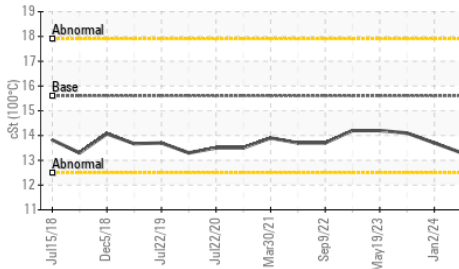
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

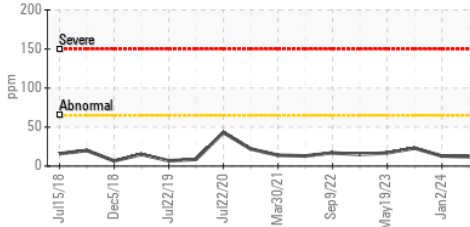


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

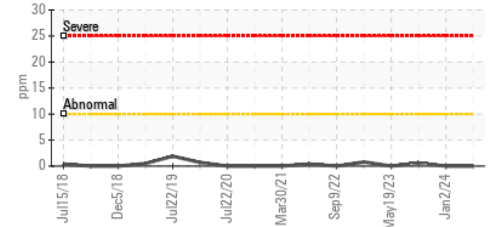
FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.6	13.3	13.7	14.1

GRAPHS

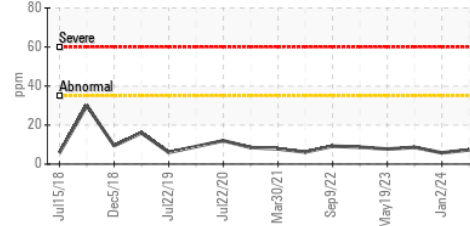
Iron (ppm)



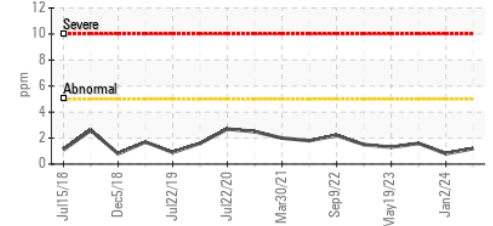
Lead (ppm)



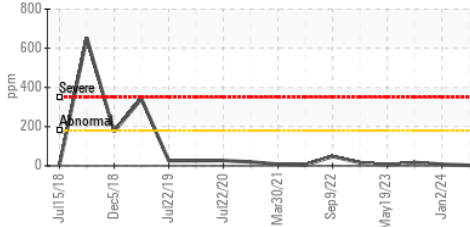
Aluminum (ppm)



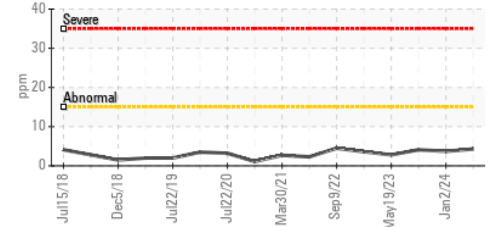
Chromium (ppm)



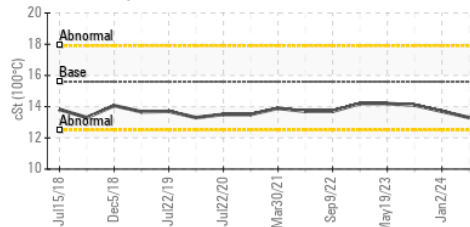
Copper (ppm)



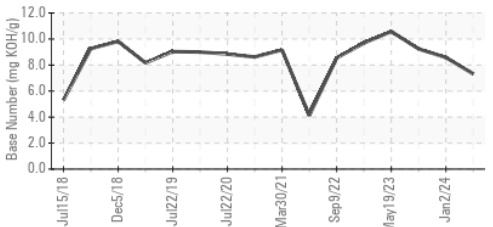
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : PCA0109967

Lab Number : 06189776

Unique Number : 11046528

Test Package : MOB 2 (Additional Tests: FuelDilution)

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)

Received : 23 May 2024

Tested : 29 May 2024

Diagnosed : 29 May 2024 - Wes Davis

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US 02081

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