



LUBE PLUS+

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 16

Component
Diesel Engine

Fluid
FLEETLINE SUPERFLEET XHD 15W40 (10 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LP0000528	LP0000422	WC0661486
Sample Date		Client Info		02 Jan 2024	12 Oct 2023	01 Mar 2023
Machine Age	mls	Client Info		280763	27165	243537
Oil Age	mls	Client Info		9211	15817	8801
Filter Age	mls	Client Info		9211	15817	8801
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	11	19	12
Chromium	ppm	ASTM D5185m	>20	<1	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	3	9	6
Lead	ppm	ASTM D5185m	>40	0	<1	0
Copper	ppm	ASTM D5185m	>330	2	2	5
Tin	ppm	ASTM D5185m	>15	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

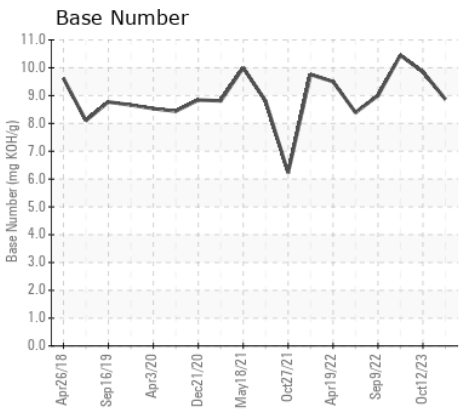
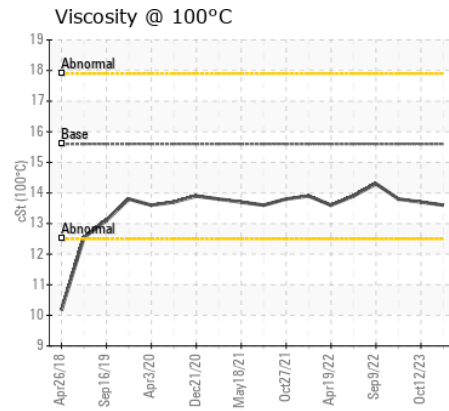
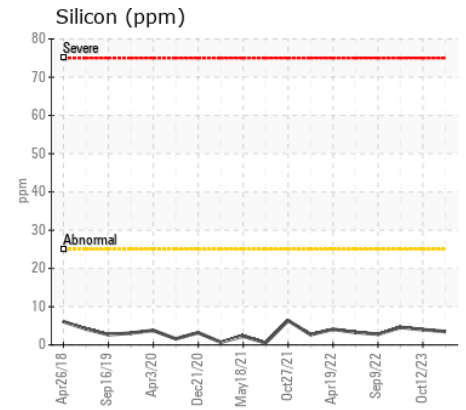
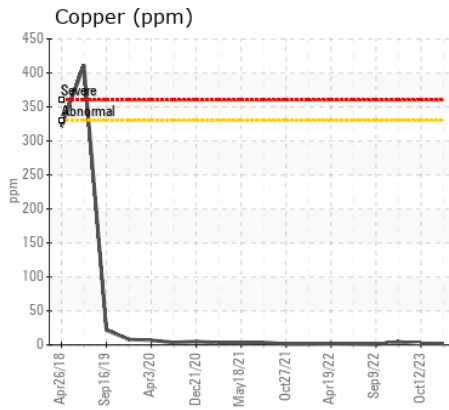
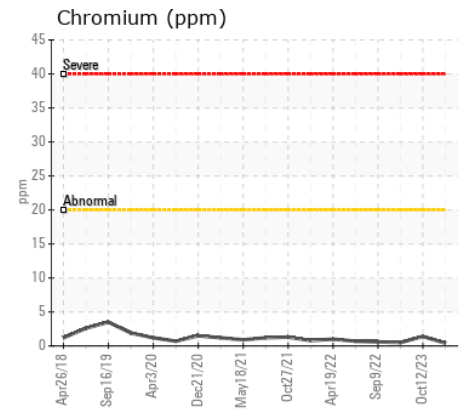
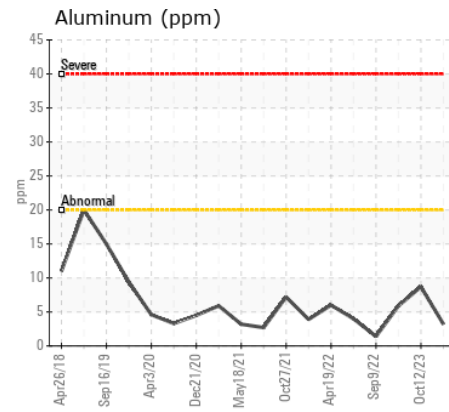
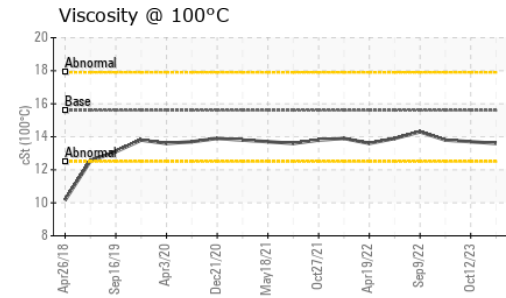
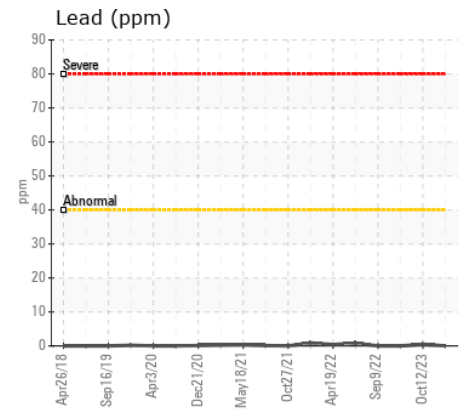
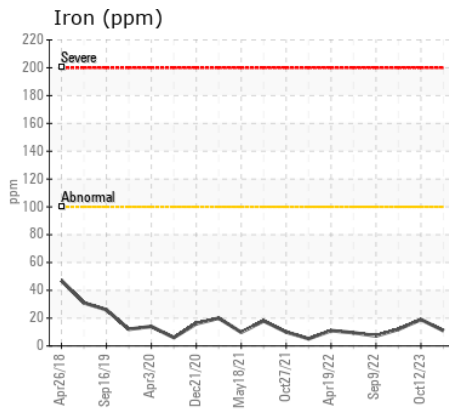
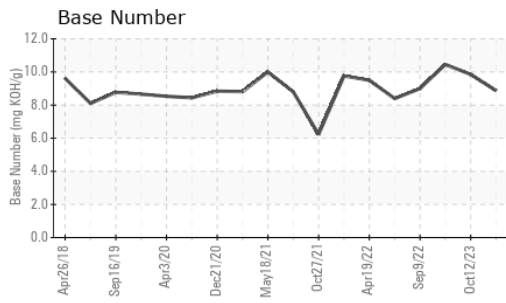
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	4	4	5
Potassium	ppm	ASTM D5185m	>20	7	9	5
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.6	0.3
Nitration	Abs/cm	*ASTM D7624	>20	7.3	8.6	6.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.3	19.9	18.3
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	NEG

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.

Sodium	ppm	ASTM D5185m		0	1	3
Boron	ppm	ASTM D5185m		10	8	12
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		35	68	69
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		384	963	1108
Calcium	ppm	ASTM D5185m		1749	1366	1293
Phosphorus	ppm	ASTM D5185m		879	1105	1149
Zinc	ppm	ASTM D5185m		1077	1563	1492
Sulfur	ppm	ASTM D5185m		3138	3699	3980
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.5	15.3	13.7
Base Number (BN)	mg KOH/g	ASTM D2896		8.87	9.85	10.45
Visc @ 100°C	cSt	ASTM D445	15.6	13.6	13.7	13.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LP0000528 **Received** : 10 Jan 2024
Lab Number : 06057466 **Diagnosed** : 12 Jan 2024
Unique Number : 10823415 **Diagnostician** : Sean Felton
Test Package : MOB 2

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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)