



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
WESTERN STAR 28
 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		LP0002089	LP0000522	LP0000499
Sample Date		Client Info		20 May 2024	12 Dec 2023	01 Aug 2023
Machine Age	mls	Client Info		203232	37361	27637
Oil Age	mls	Client Info		10000	9724	11291
Filter Age	mls	Client Info		10000	9724	11291
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	51	30	31
Chromium	ppm	ASTM D5185m	>20	1	1	1
Nickel	ppm	ASTM D5185m	>2	<1	<1	0
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>25	<1	2	<1
Lead	ppm	ASTM D5185m	>40	3	3	4
Copper	ppm	ASTM D5185m	>330	10	5	6
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

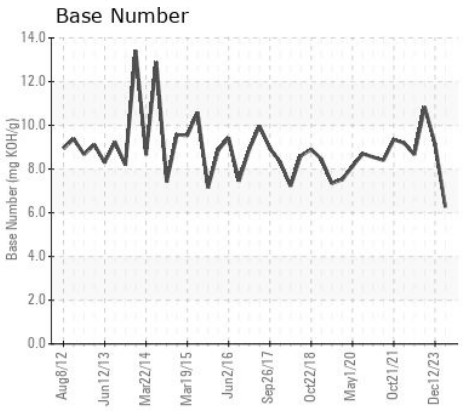
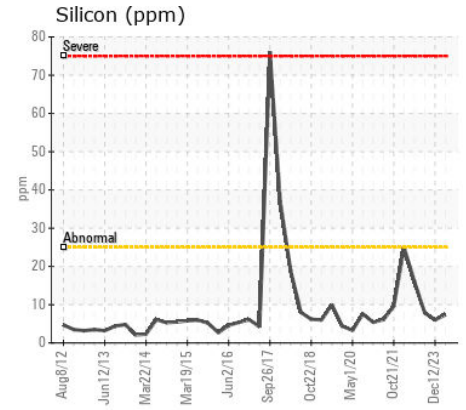
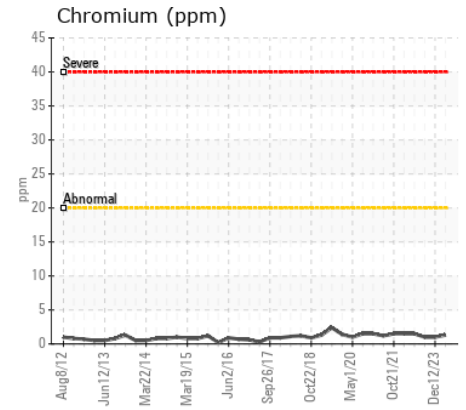
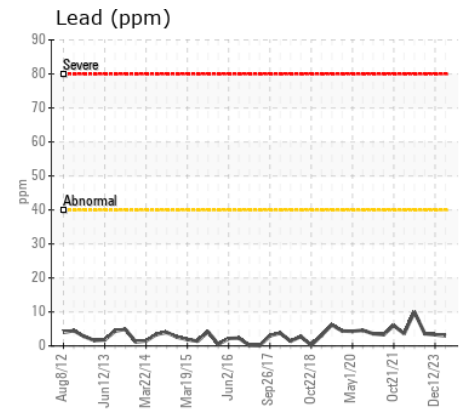
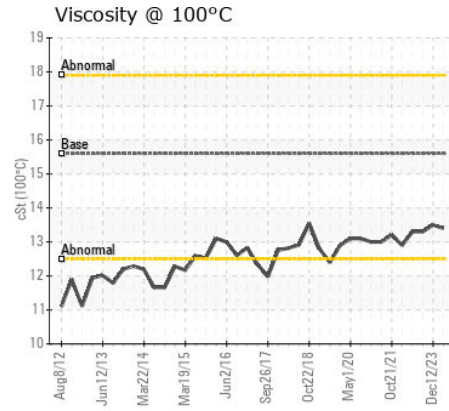
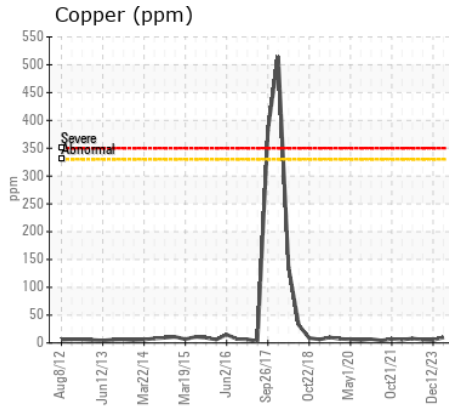
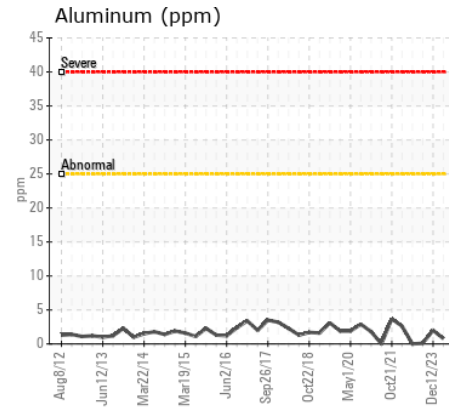
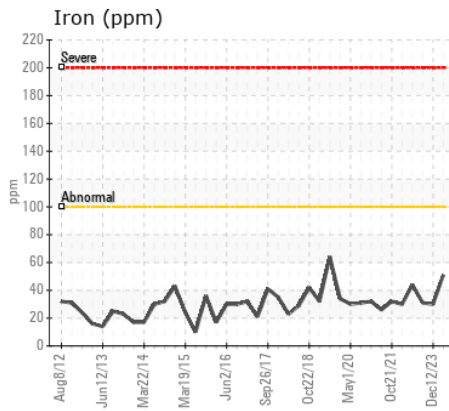
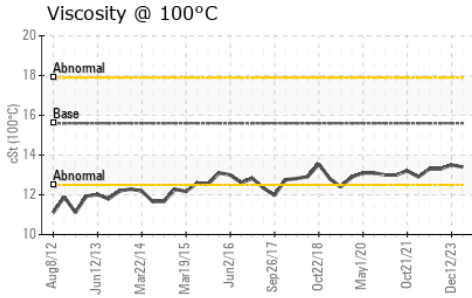
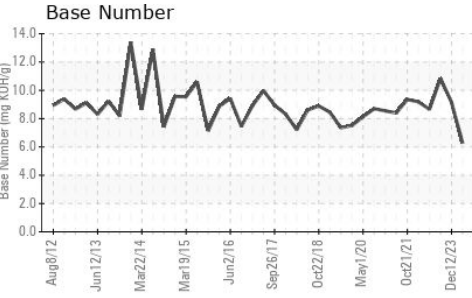
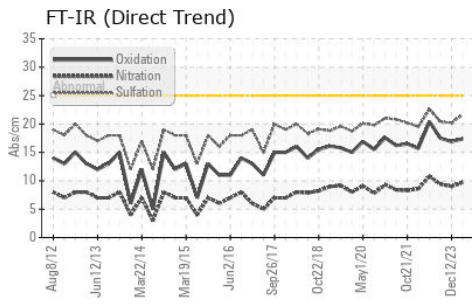
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	7	6	8
Potassium	ppm	ASTM D5185m	>20	4	0	1
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	0.4	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	9.7	9.0	9.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.6	20.2	20.4
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		11	12	8
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		24	57	58
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		140	792	944
Calcium	ppm	ASTM D5185m		1901	1199	1075
Phosphorus	ppm	ASTM D5185m		789	1010	962
Zinc	ppm	ASTM D5185m		961	1192	1233
Sulfur	ppm	ASTM D5185m		2957	2966	3440
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.4	16.9	17.5
Base Number (BN)	mg KOH/g	ASTM D2896		6.26	9.15	10.84
Visc @ 100°C	cSt	ASTM D445	15.6	13.4	13.5	13.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : LP0002089
Lab Number : 06192996
Unique Number : 11049748
Test Package : MOB 2
Received : 28 May 2024
Tested : 30 May 2024
Diagnosed : 30 May 2024 - Wes Davis

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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)