



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
WMR-Plymouth
 Machine Id
625479 LIEBHERR L90H 625479
 Component
Diesel Engine
 Fluid
PHILLIPS 66 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DJJ0009057	DJJ0009053	DJJ0009423
Sample Date		Client Info		20 May 2024	28 Mar 2024	08 Feb 2024
Machine Age	hrs	Client Info		5526	5292	5032
Oil Age	hrs	Client Info		250	300	250
Filter Age	hrs	Client Info		250	300	250
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	5	3	8
Chromium	ppm	ASTM D5185m	>5	<1	0	<1
Nickel	ppm	ASTM D5185m	>5	<1	1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	3	3
Lead	ppm	ASTM D5185m	>30	0	<1	0
Copper	ppm	ASTM D5185m	>125	<1	0	<1
Tin	ppm	ASTM D5185m	>5	<1	<1	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

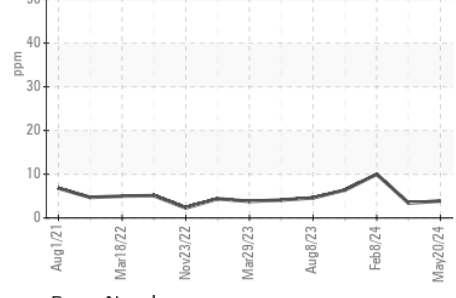
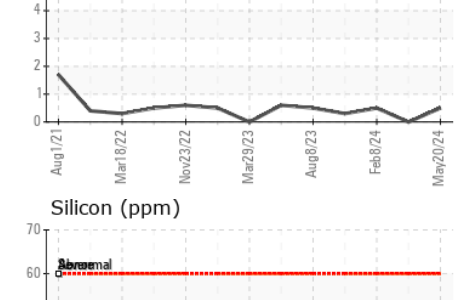
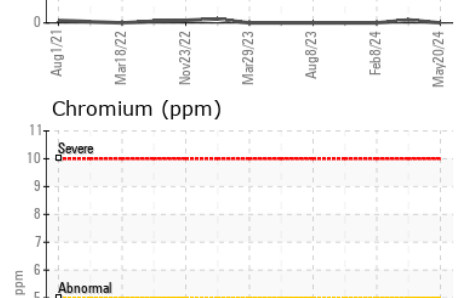
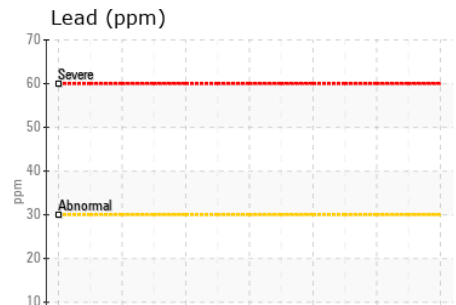
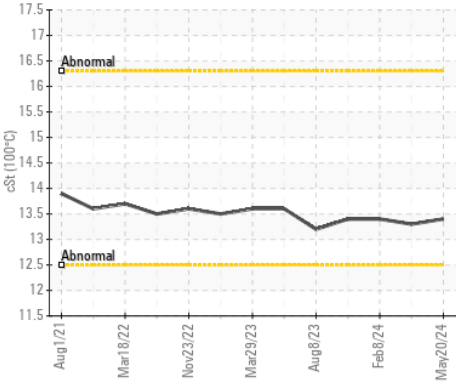
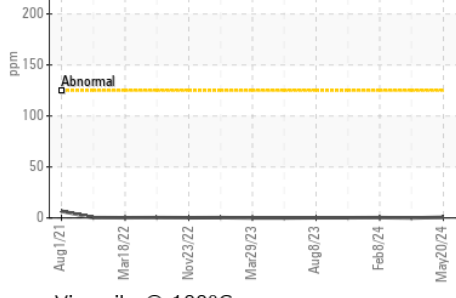
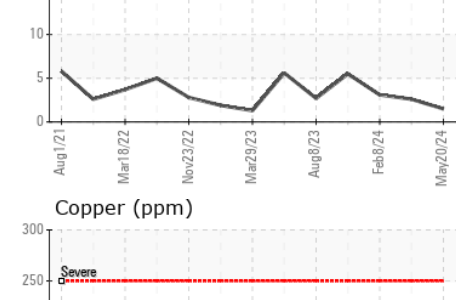
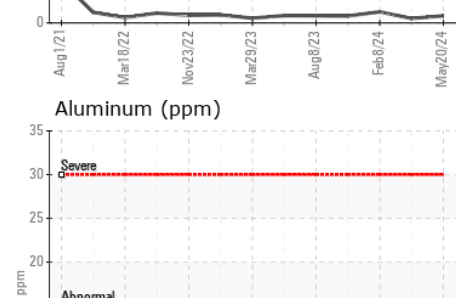
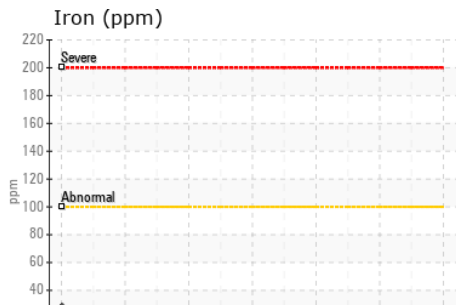
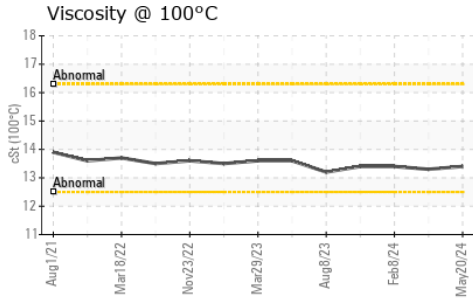
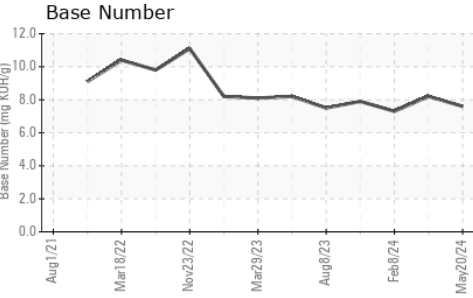
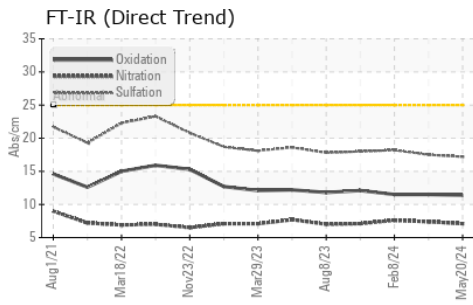
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>60	4	3	10
Potassium	ppm	ASTM D5185m	>20	4	4	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	0.5	0.7
Nitration	Abs/cm	*ASTM D7624	>20	7.1	7.4	7.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.2	17.5	18.2
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		<1	1	2
Boron	ppm	ASTM D5185m		112	91	100
Barium	ppm	ASTM D5185m		0	0	10
Molybdenum	ppm	ASTM D5185m		9	7	13
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		659	660	640
Calcium	ppm	ASTM D5185m		1265	1256	1155
Phosphorus	ppm	ASTM D5185m		703	701	567
Zinc	ppm	ASTM D5185m		809	787	792
Sulfur	ppm	ASTM D5185m		3072	3360	2587
Oxidation	Abs/.1mm	*ASTM D7414	>25	11.4	11.5	11.5
Base Number (BN)	mg KOH/g	ASTM D2896		7.6	8.2	7.3
Visc @ 100°C	cSt	ASTM D445		13.4	13.3	13.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DJJ0009057 **Received** : 03 Jun 2024
Lab Number : 06197420 **Tested** : 04 Jun 2024
Unique Number : 11059543 **Diagnosed** : 04 Jun 2024 - Don Baldrige
Test Package : MOBCE (Additional Tests: TBN)

WESTERN METALS RECYCLING - PLYMOUTH
 7400 WEST CEMETERY ROAD
 PLYMOUTH, UT
 US 84330
 Contact: JARDEE STEED
 jardee.steed@wmrecycling.com
 T: (435)458-3851
 F: (435)458-3601

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)