



# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>



Area  
**RMR-Newport**  
 Machine Id  
**23617 LIEBHERR A934C 040933-1007**  
 Component  
**Diesel Engine**  
 Fluid  
**SHELL RIMULA SUPER SAE 15W40 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>DJJ0017644</b>	DJJ0016262	DJJ0004064
Sample Date		Client Info		<b>24 May 2024</b>	15 Feb 2023	23 Sep 2021
Machine Age	hrs	Client Info		<b>13856</b>	12299	10715
Oil Age	hrs	Client Info		<b>250</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	Changed	Changed
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>66	<b>5</b>	4	6
Chromium	ppm	ASTM D5185m	>4	<b>0</b>	<1	<1
Nickel	ppm	ASTM D5185m	>4	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>0</b>	0	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>8	<b>&lt;1</b>	2	1
Lead	ppm	ASTM D5185m	>10	<b>0</b>	<1	1
Copper	ppm	ASTM D5185m	>74	<b>0</b>	<1	<1
Tin	ppm	ASTM D5185m	>4	<b>&lt;1</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	<1
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

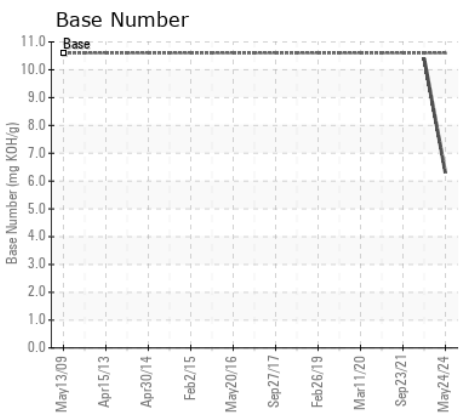
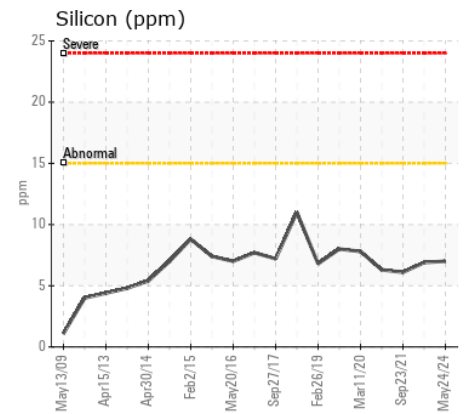
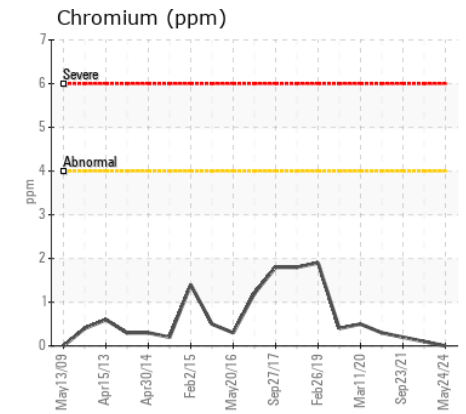
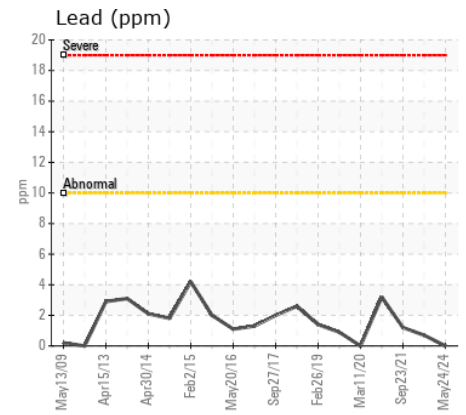
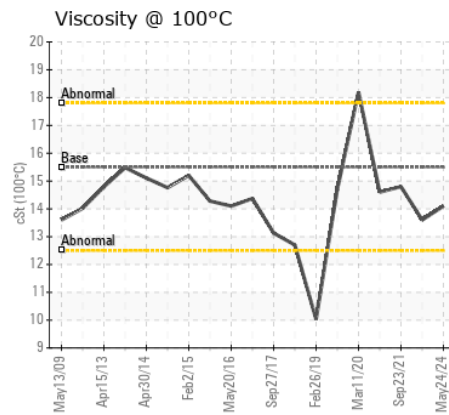
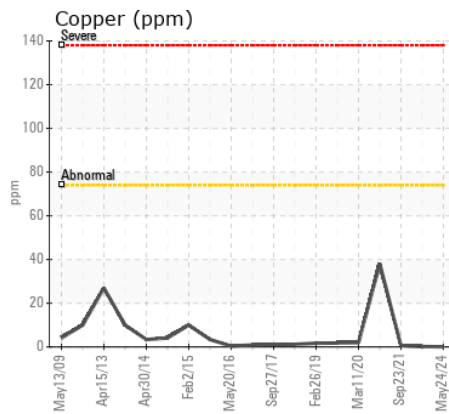
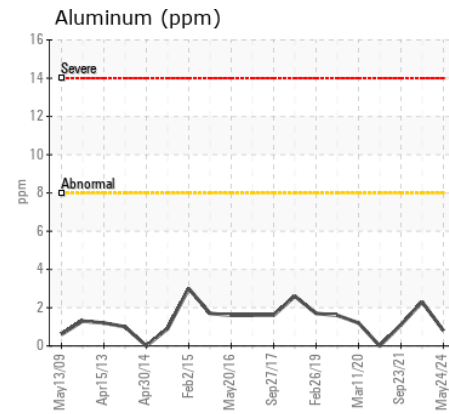
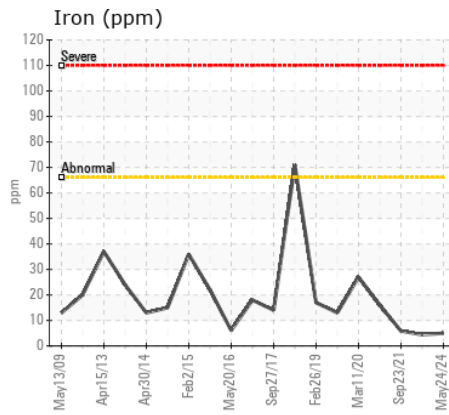
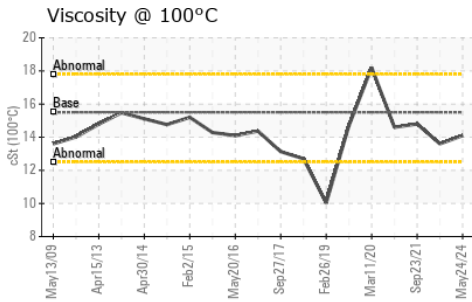
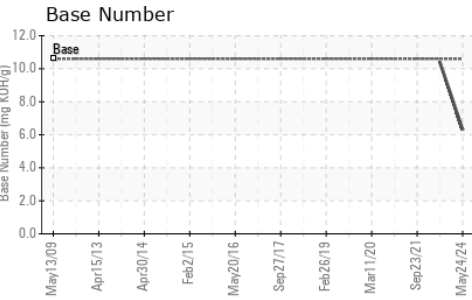
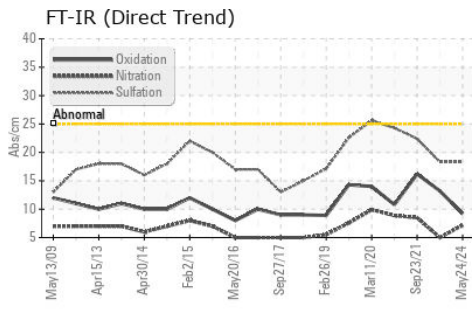
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>7</b>	7	6
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	6
Fuel		WC Method	>5	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>1.4</b>	0.1	1.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>7.2</b>	5.0	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.3</b>	18.3	22.4
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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		<b>1</b>	3	2
Boron	ppm	ASTM D5185m		<b>9</b>	71	164
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>10</b>	90	7
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>46</b>	36	11
Calcium	ppm	ASTM D5185m	2840	<b>2357</b>	2167	2415
Phosphorus	ppm	ASTM D5185m	1150	<b>963</b>	1005	1030
Zinc	ppm	ASTM D5185m	1270	<b>1112</b>	1189	1299
Sulfur	ppm	ASTM D5185m	2829	<b>4129</b>	4878	3347
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>9.2</b>	13.2	16.2
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	<b>6.3</b>	10.4	---
Visc @ 100°C	cSt	ASTM D445	15.5	<b>14.1</b>	13.6	14.8



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : DJJ0017644 **Received** : 31 May 2024  
**Lab Number** : 06196222 **Tested** : 03 Jun 2024  
**Unique Number** : 11058345 **Diagnosed** : 03 Jun 2024 - Don Baldrige  
**Test Package** : MOBCE ( Additional Tests: TBN )

**RIVER METALS RECYCLING - NEWPORT**  
P.O. BOX 72-220  
NEWPORT, KY  
US 41072  
Contact: RYAN BOWDEN

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)

T: (859)291-0086