



# OIL ANALYSIS REPORT

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

Machine Id  
**ENGEL ENGEL 1000/02**  
 Component  
**Hydraulic System**  
 Fluid  
**SHELL TELLUS S2 MX 46 (--- GAL)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TLC0001718</b>	TLC0001106	TLC0000843
Sample Date		Client Info		<b>20 May 2024</b>	04 Dec 2023	27 Aug 2022
Machine Age	hrs	Client Info		<b>0</b>	0	0
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	<1
Chromium	ppm	ASTM D5185m	>20	<b>1</b>	3	1
Nickel	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>20	<b>0</b>	0	<1
Lead	ppm	ASTM D5185m	>20	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>20	<b>2</b>	3	<1
Tin	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

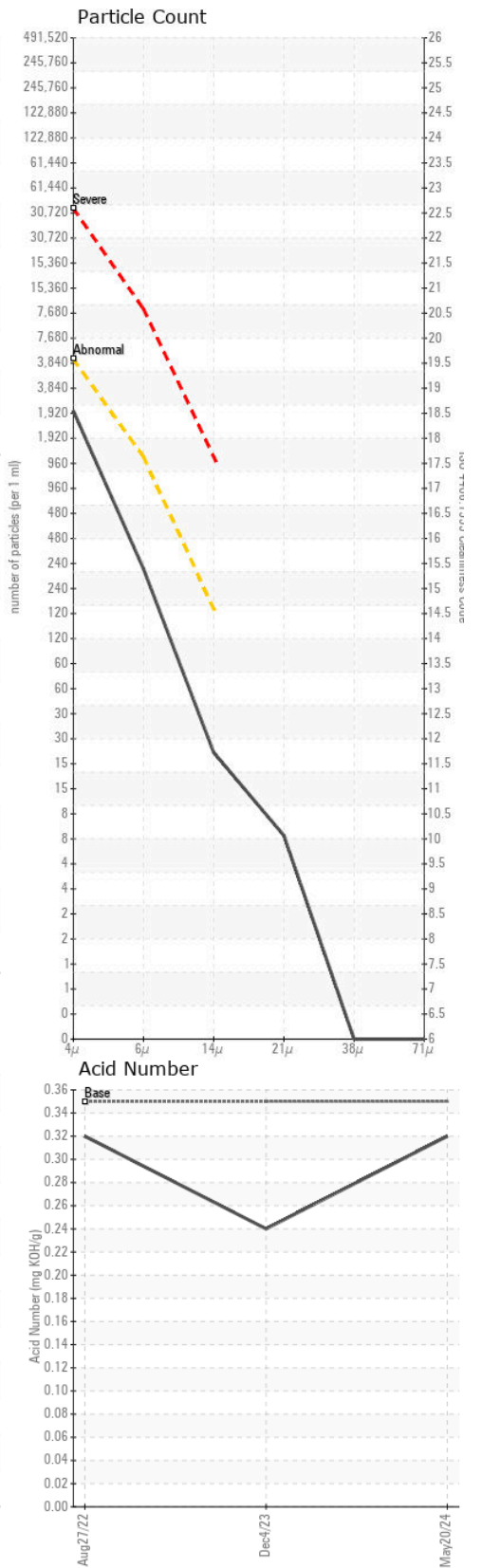
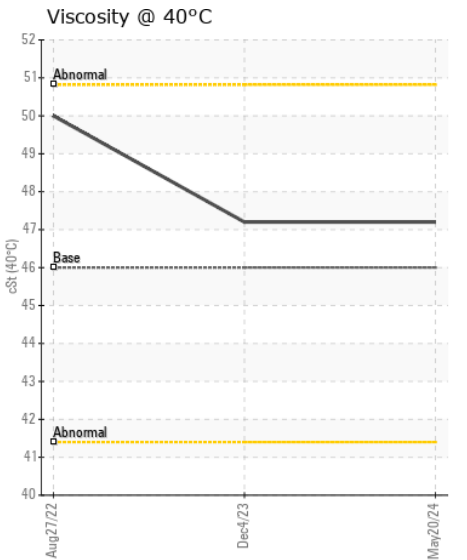
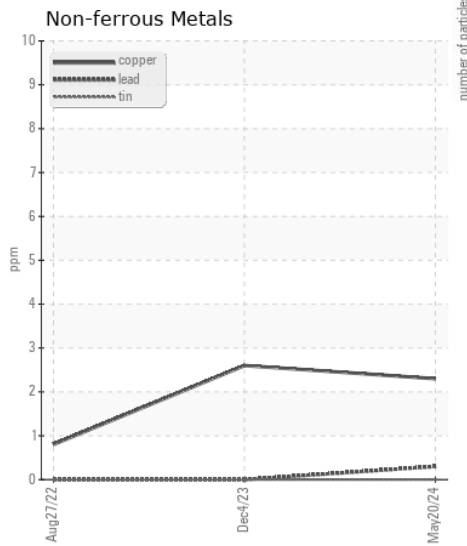
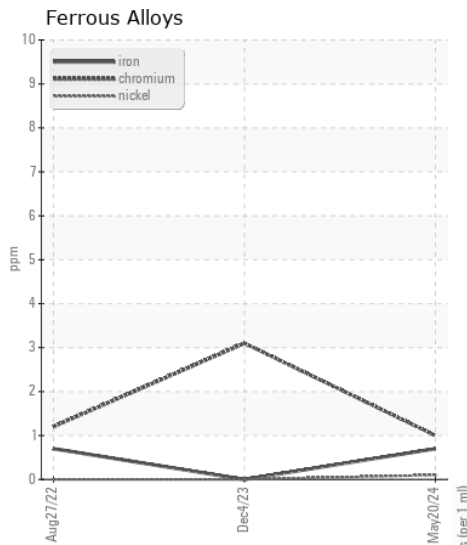
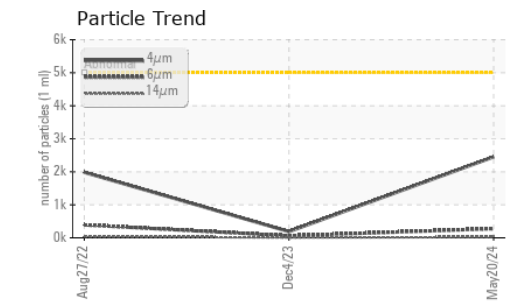
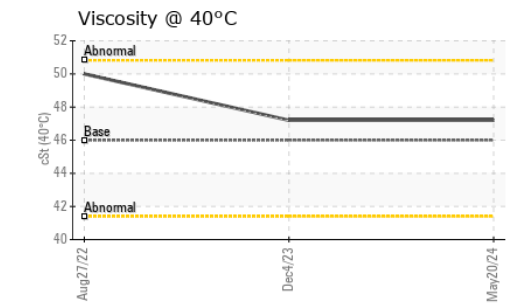
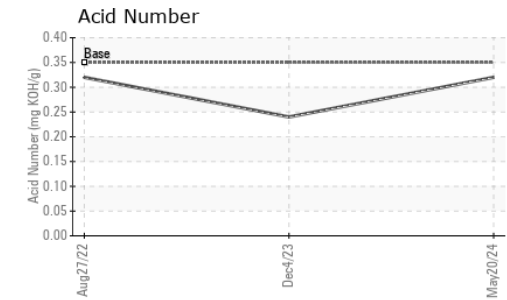
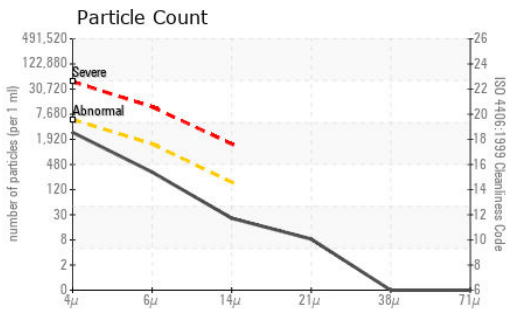
The amount and size of particulates present in the system are acceptable. There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>15	<b>&lt;1</b>	<1	<1
Potassium	ppm	ASTM D5185m	>20	<b>0</b>	0	0
Water	%	ASTM D6304	>0.05	<b>NEG</b>	NEG	NEG
Particles >4µm		ASTM D7647	>5000	<b>2453</b>	189	1985
Particles >6µm		ASTM D7647	>1300	<b>277</b>	61	391
Particles >14µm		ASTM D7647	>160	<b>22</b>	7	37
Particles >21µm		ASTM D7647	>40	<b>7</b>	2	9
Particles >38µm		ASTM D7647	>10	<b>0</b>	0	1
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>18/15/12</b>	15/13/10	18/16/12
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	>0.05	<b>NEG</b>	NEG	NEG

## FLUID CONDITION

The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		<b>&lt;1</b>	1	0
Boron	ppm	ASTM D5185m	0	<b>0</b>	0	0
Barium	ppm	ASTM D5185m	0	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	0	<b>1</b>	0	<1
Manganese	ppm	ASTM D5185m	0	<b>&lt;1</b>	<1	0
Magnesium	ppm	ASTM D5185m	70	<b>27</b>	8	<1
Calcium	ppm	ASTM D5185m	10	<b>58</b>	44	43
Phosphorus	ppm	ASTM D5185m	300	<b>286</b>	243	277
Zinc	ppm	ASTM D5185m	325	<b>362</b>	278	335
Sulfur	ppm	ASTM D5185m	665	<b>1181</b>	3862	935
Acid Number (AN)	mg KOH/g	ASTM D8045	0.35	<b>0.32</b>	0.24	0.32
Visc @ 40°C	cSt	ASTM D445	46.0	<b>47.2</b>	47.2	50.0



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TLC0001718  
**Lab Number** : 06186690  
**Unique Number** : 11043442  
**Test Package** : PLANT

**Received** : 21 May 2024  
**Tested** : 23 May 2024  
**Diagnosed** : 23 May 2024 - Jonathan Hester

**WIRTHWEIN**  
 800 WOODSIDE AVE  
 FOUNTAIN INN, SC  
 US 29644  
 Contact: Service Manager

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)

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F: