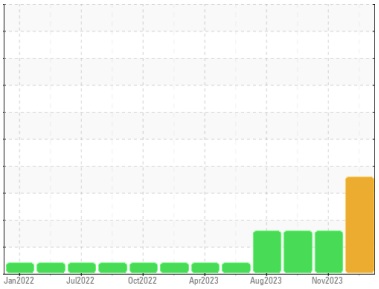
OIL ANALYSIS REPORT

Sample Rating Trend



WATER

Area
TUMBLE ROOM [98763405]
Machine Id
KR-GR-003067 - TUMBLER 2 (S/N TUMBLE ROOM - 11513090)
Component
Hydraulic System
Fluid
AW HYDRAULIC OIL ISO 46 (10 GAL)

DIAGNOSIS

Recommendation
We advise that you check for the source of water entry. We advise that you follow the water drain-off procedure for this component. We recommend an early resample to monitor this condition. There is too much water present in this sample to perform a particle count. (Customer Sample Comment: 98763405)

Wear
All component wear rates are normal.

Contamination
There is a light concentration of water present in the oil. Free water present.

Fluid Condition
Viscosity of sample indicates oil is within ISO 68 range, advise investigate. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PCA0115885**	PCA0113109	PCA0104783
Sample Date		Client Info		**11 Mar 2024**	30 Nov 2023	25 Oct 2023
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	**1**	2	1
Chromium	ppm	ASTM D5185m	>20	**<1**	<1	1
Nickel	ppm	ASTM D5185m	>20	**<1**	0	<1
Titanium	ppm	ASTM D5185m		**<1**	0	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>20	**3**	<1	<1
Lead	ppm	ASTM D5185m	>20	**<1**	0	4
Copper	ppm	ASTM D5185m	>20	**3**	1	7
Tin	ppm	ASTM D5185m	>20	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**<1**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	5	**0**	0	0
Barium	ppm	ASTM D5185m	5	**0**	0	0
Molybdenum	ppm	ASTM D5185m	5	**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	<1
Magnesium	ppm	ASTM D5185m	25	**<1**	0	5
Calcium	ppm	ASTM D5185m	200	**5**	9	17
Phosphorus	ppm	ASTM D5185m	300	**472**	423	336
Zinc	ppm	ASTM D5185m	370	**13**	64	248
Sulfur	ppm	ASTM D5185m	2500	**709**	1106	3383

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**4**	4	4
Sodium	ppm	ASTM D5185m		**0**	0	0
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0
Water	%	ASTM D6304	>0.05	▲ **0.241**	---	---
ppm Water	ppm	ASTM D6304	>500	▲ **2410**	---	---

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	**---**	▲ 102985	▲ 82364
Particles >6µm		ASTM D7647	>2500	**---**	▲ 17522	▲ 8088
Particles >14µm		ASTM D7647	>640	**---**	258	33
Particles >21µm		ASTM D7647	>160	**---**	50	3
Particles >38µm		ASTM D7647	>40	**---**	1	0
Particles >71µm		ASTM D7647	>10	**---**	0	0
Oil Cleanliness		ISO 4406 (c)	>20/18/16	**---**	▲ 24/21/15	▲ 24/20/12

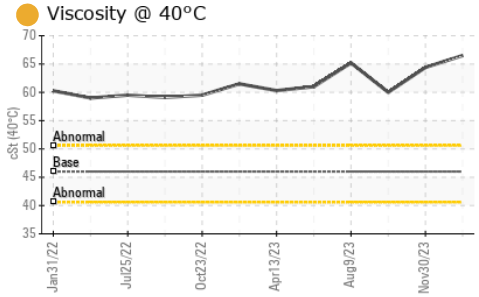
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.57	**0.25**	0.21	0.35

OIL ANALYSIS REPORT

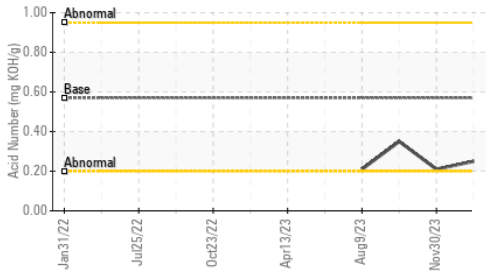
OIL DIAGNOSTICS

Water (KF)

Viscosity @ 40°C

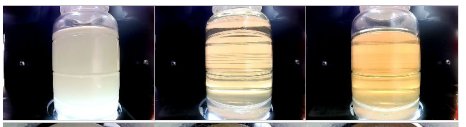


Acid Number



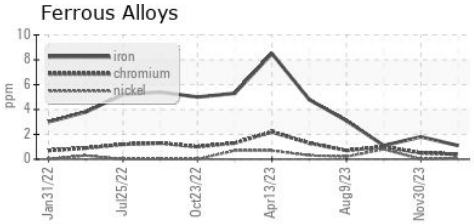
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>0.05	▲ **0.2%**	NEG	NEG
Free Water	scalar	*Visual		▲ **2.0**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	**66.5**	64.4	60.0

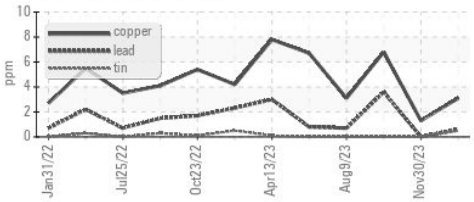
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

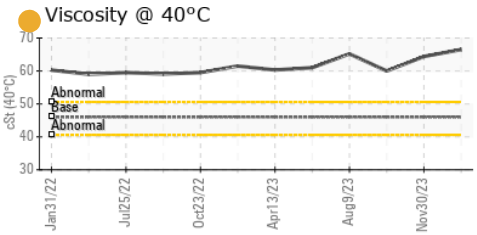
Ferrous Alloys



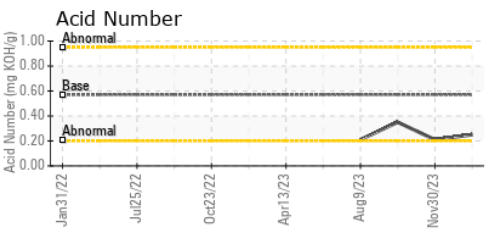
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PCA0115885
Lab Number : 06133248
Unique Number : 10952713
Test Package : IND 2 (Additional Tests: KF)

Received : 29 Mar 2024
Tested : 03 Apr 2024
Diagnosed : 03 Apr 2024 - Don Baldridge

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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