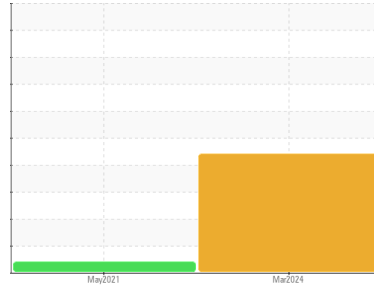




OIL ANALYSIS REPORT

Sample Rating Trend



WATER



Machine Id
5590981 (S/N 1023)
 Component
Compressor
 Fluid
KAESER SIGMA (OEM) M-460 (--- GAL)

DIAGNOSIS

▲ Recommendation

The filter change at the time of sampling has been noted. We were unable to perform a particle count due to a high concentration of particles present in this sample. We advise that you stop the unit and follow the water drain-off procedure for this component. We recommend an early resample in 500 hours to monitor this condition.

Wear

All component wear rates are normal.

▲ Contamination

Moderate concentration of visible dirt/debris present in the oil. There is a moderate concentration of water present in the oil. Free water present.

Fluid Condition

The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			KCPA016333	KCP33478	---
Sample Date	Client Info			28 Mar 2024	21 May 2021	---
Machine Age	hrs	Client Info		38798	23885	---
Oil Age	hrs	Client Info		0	13378	---
Oil Changed	Client Info			Not Changed	Changed	---
Sample Status				ABNORMAL	ABNORMAL	---

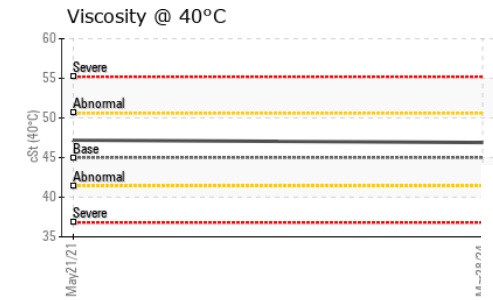
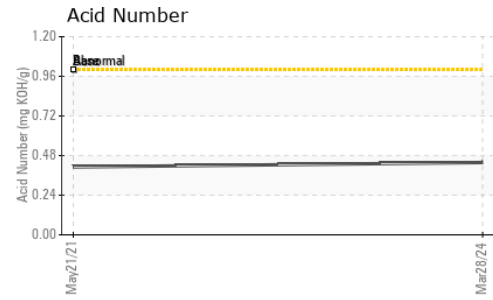
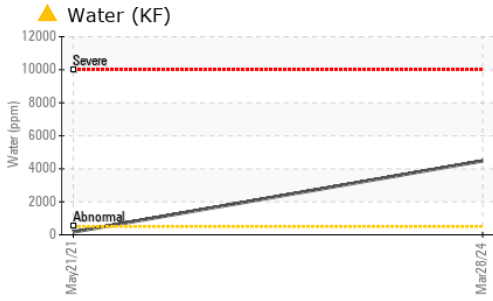
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	<1	0	---
Chromium	ppm	ASTM D5185m	>10	<1	0	---
Nickel	ppm	ASTM D5185m	>3	<1	0	---
Titanium	ppm	ASTM D5185m	>3	<1	0	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>10	2	0	---
Lead	ppm	ASTM D5185m	>10	<1	<1	---
Copper	ppm	ASTM D5185m	>50	6	7	---
Tin	ppm	ASTM D5185m	>10	<1	0	---
Antimony	ppm	ASTM D5185m		---	0	---
Vanadium	ppm	ASTM D5185m		<1	0	---
Cadmium	ppm	ASTM D5185m		<1	0	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	0	<1	---
Barium	ppm	ASTM D5185m	90	0	0	---
Molybdenum	ppm	ASTM D5185m	0	<1	0	---
Manganese	ppm	ASTM D5185m		<1	<1	---
Magnesium	ppm	ASTM D5185m	100	31	29	---
Calcium	ppm	ASTM D5185m	0	4	0	---
Phosphorus	ppm	ASTM D5185m	0	1	0	---
Zinc	ppm	ASTM D5185m	0	52	119	---
Sulfur	ppm	ASTM D5185m	23500	20994	17216	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	1	0	---
Sodium	ppm	ASTM D5185m		12	9	---
Potassium	ppm	ASTM D5185m	>20	3	2	---
Water	%	ASTM D6304	>0.05	▲ 0.448	0.017	---
ppm Water	ppm	ASTM D6304	>500	▲ 4480	170.3	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.0	0.438	0.411	---

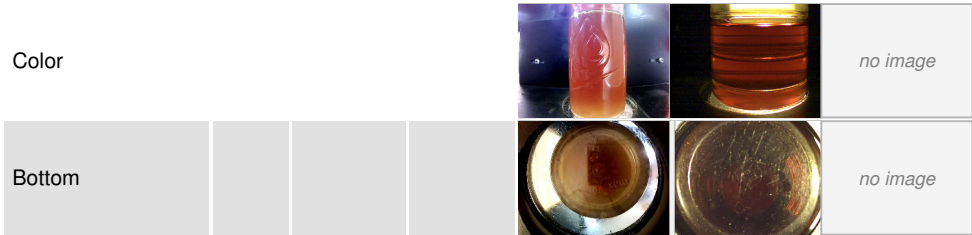
OIL ANALYSIS REPORT



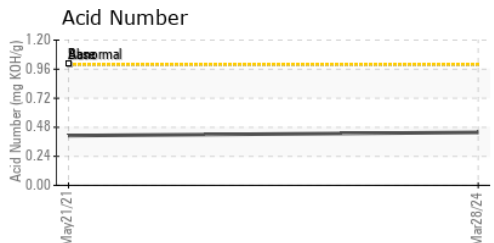
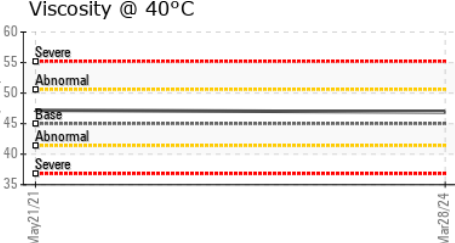
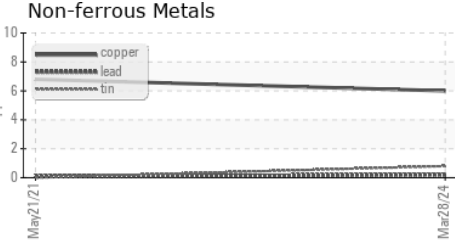
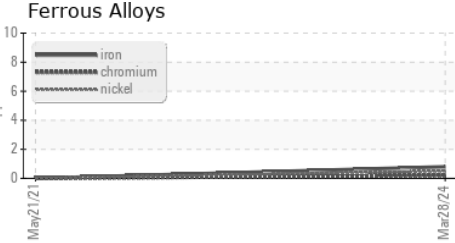
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	▲ MODER	▲ MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	● HAZY	NORML
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.05	▲ 0.2%	NEG
Free Water	scalar	*Visual		▲ 1.0	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	45	46.9	47.2

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA016333 **Received** : 03 Apr 2024
Lab Number : 06138062 **Tested** : 05 Apr 2024
Unique Number : 10962870 **Diagnosed** : 05 Apr 2024 - Don Baldrige
Test Package : IND 2 (Additional Tests: KF, PrtCount)

PENUMBRA
 1321 HARBOR BAY PKWY
 ALAMEDA, CA
 US 94502
 Contact: GEORGE TAY
 georgetay@penumbrainc.com

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)