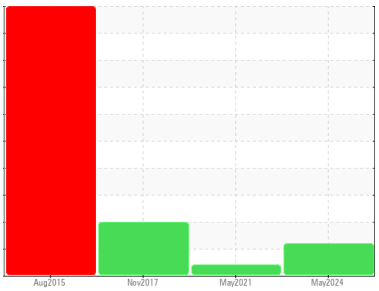
KAESER COMPRESSORS
Built for a lifetime.

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Machine Id
KAESER DS140 1427615 (S/N 142981)
Component
Compressor
Fluid
KAESER SIGMA (OEM) S-460 (--- LTR)

DIAGNOSIS

Recommendation
Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of particulates present in the oil.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KCPA016537**	KCP37427	KCP03581
Sample Date		Client Info		**01 May 2024**	07 May 2021	07 Nov 2017
Machine Age	hrs	Client Info		**43973**	43959	12957
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**Changed**	Changed	Changed
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**<1**	<1	2
Chromium	ppm	ASTM D5185m	>10	**<1**	0	0
Nickel	ppm	ASTM D5185m	>3	**<1**	0	<1
Titanium	ppm	ASTM D5185m	>3	**<1**	0	0
Silver	ppm	ASTM D5185m	>2	**<1**	<1	0
Aluminum	ppm	ASTM D5185m	>10	**2**	<1	1
Lead	ppm	ASTM D5185m	>10	**<1**	0	0
Copper	ppm	ASTM D5185m	>50	**3**	18	9
Tin	ppm	ASTM D5185m	>10	**<1**	0	0
Antimony	ppm	ASTM D5185m		**---**	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		**0**	10	0
Barium	ppm	ASTM D5185m	90	**0**	0	0
Molybdenum	ppm	ASTM D5185m		**<1**	0	0
Manganese	ppm	ASTM D5185m		**<1**	0	0
Magnesium	ppm	ASTM D5185m	90	**<1**	<1	0
Calcium	ppm	ASTM D5185m	2	**4**	8	0
Phosphorus	ppm	ASTM D5185m		**50**	45	144
Zinc	ppm	ASTM D5185m		**2**	<1	2
Sulfur	ppm	ASTM D5185m		**19469**	13720	10135

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	**2**	0	2
Sodium	ppm	ASTM D5185m		**0**	<1	<1
Potassium	ppm	ASTM D5185m	>20	**1**	0	7
Water	%	ASTM D6304	>0.05	**0.003**	0.009	0.010
ppm Water	ppm	ASTM D6304	>500	**38**	95.8	100

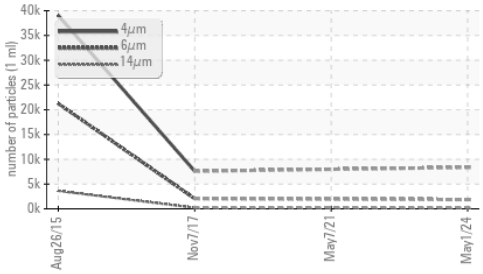
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**8364**	---	7599
Particles >6µm		ASTM D7647	>1300	**1864**	---	▲ 2055
Particles >14µm		ASTM D7647	>80	▲ **192**	---	▲ 207
Particles >21µm		ASTM D7647	>20	▲ **61**	---	▲ 70
Particles >38µm		ASTM D7647	>4	**4**	---	▲ 9
Particles >71µm		ASTM D7647	>3	**0**	---	▲ 3
Oil Cleanliness		ISO 4406 (c)	>--/17/13	▲ **20/18/15**	---	▲ 18/15

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.4	**0.46**	0.508	0.636

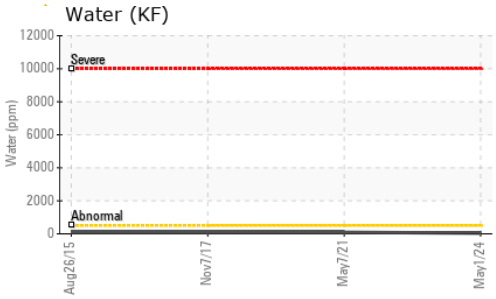
KAESER COMPRESSORS
Built for a lifetime.

OIL ANALYSIS REPORT

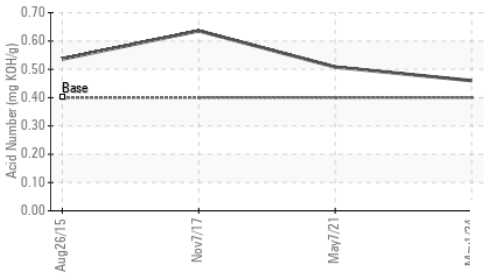
Particle Trend



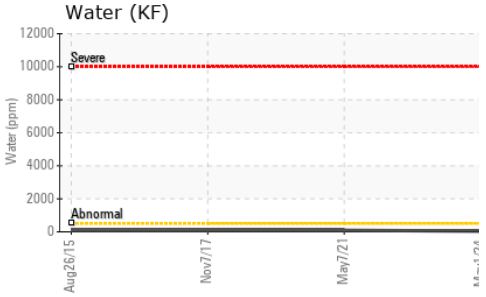
Water (KF)



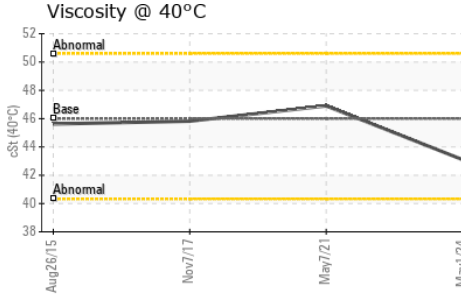
Acid Number



Water (KF)

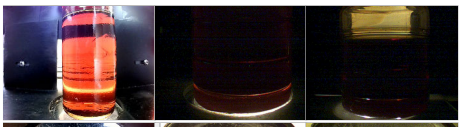
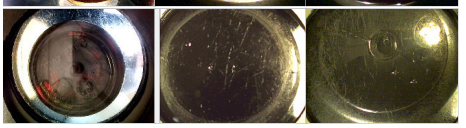


Viscosity @ 40°C



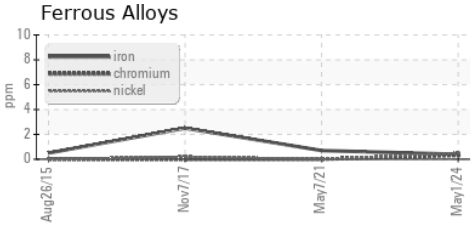
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	▲ MODER	VLITE
Sand/Dirt	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	**NEG**	NEG	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	**43.1**	46.9	45.82

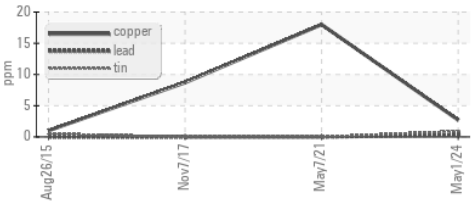
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

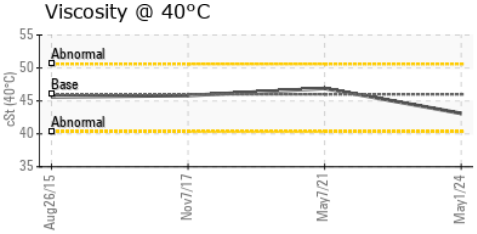
Ferrous Alloys



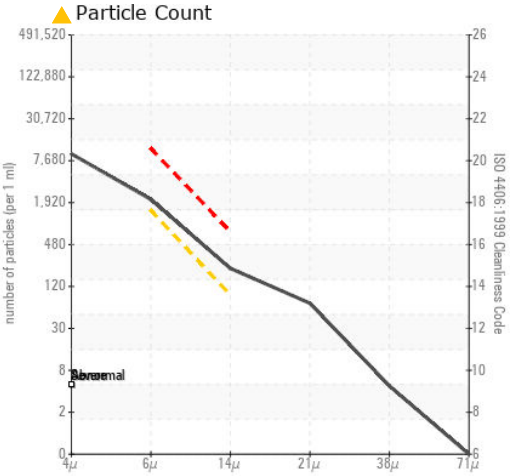
Non-ferrous Metals



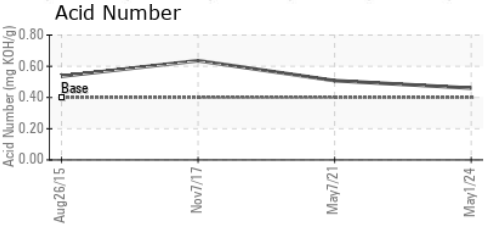
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KCPA016537 **Received** : 17 May 2024
Lab Number : 06183336 **Tested** : 20 May 2024
Unique Number : 11034662 **Diagnosed** : 21 May 2024 - Don Baldridge
Test Package : IND 2 (Additional Tests: KF, PrtCount)

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)

BANKHEAD RAILWAY SERVICES - NORFOLK SOUTHERN CORP
1680 MARIETTA RD NW
ATLANTA, GA
US 30318
Contact: BRIAN MULLINS
brian.mullins@nscorp.com
T:
F:

Report Id: BANATL [WUSCAR] 06183336 (Generated: 05/21/2024 18:41:07) Rev: 1
Contact/Location: BRIAN MULLINS - BANATL