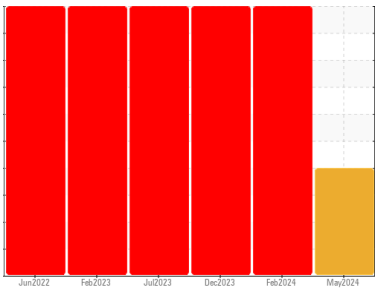
KIMBRO FLUID SOLUTIONS

OIL ANALYSIS REPORT

Area
HOTLINE/CRANES
Machine Id
86 CRANE - EAST BRIDGE 86 CRANE - EAST BRIDGE
Component
Gearbox
Fluid
CITGO COMPOUND EP 320 (--- GAL)

Sample Rating Trend



VISUAL METAL

DIAGNOSIS

Recommendation
We recommend that you drain the oil and perform a filter service on this component if not already done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition. We were unable to perform a particle count due to metal particles present in this sample.

Wear
High concentration of visible metal present. Bearing and/or gear wear is indicated.

Contamination
There is no indication of any contamination in the oil.

Fluid Condition
The oil viscosity is higher than normal. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KFS0004618**	KFS0004607	KFS0004878
Sample Date		Client Info		**15 May 2024**	28 Feb 2024	19 Dec 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**	SEVERE	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>200	▲ **497**	▲ 822	▲ 925
Chromium	ppm	ASTM D5185m	>15	**5**	8	9
Nickel	ppm	ASTM D5185m	>15	**<1**	2	2
Titanium	ppm	ASTM D5185m		**3**	5	6
Silver	ppm	ASTM D5185m		**<1**	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ **36**	● 61	● 72
Lead	ppm	ASTM D5185m	>100	**37**	67	79
Copper	ppm	ASTM D5185m	>200	▲ **267**	▲ 675	▲ 789
Tin	ppm	ASTM D5185m	>25	**2**	2	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**<1**	<1	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**50**	96	113
Barium	ppm	ASTM D5185m		**36**	78	77
Molybdenum	ppm	ASTM D5185m		**7**	8	13
Manganese	ppm	ASTM D5185m		**6**	9	11
Magnesium	ppm	ASTM D5185m		**6**	22	21
Calcium	ppm	ASTM D5185m		**1123**	1809	2116
Phosphorus	ppm	ASTM D5185m		**347**	520	618
Zinc	ppm	ASTM D5185m		**713**	1390	1627
Sulfur	ppm	ASTM D5185m		**8074**	7871	10499

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**35**	▲ 60	▲ 76
Sodium	ppm	ASTM D5185m		**17**	36	40
Potassium	ppm	ASTM D5185m	>20	**2**	2	6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.79**	0.93	1.792

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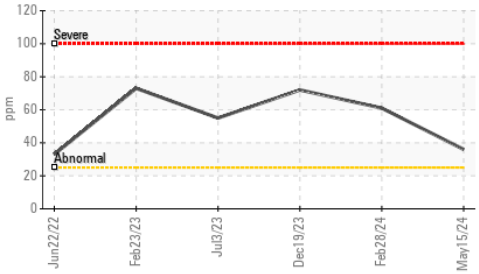
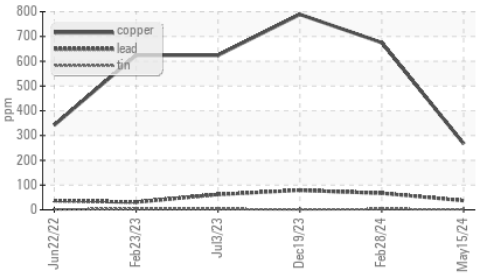
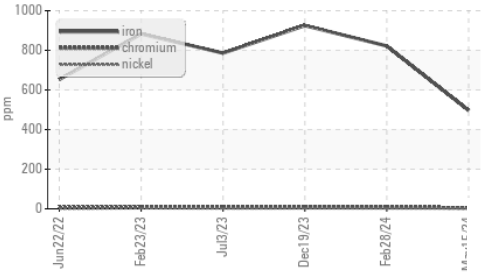
Aluminum (ppm)



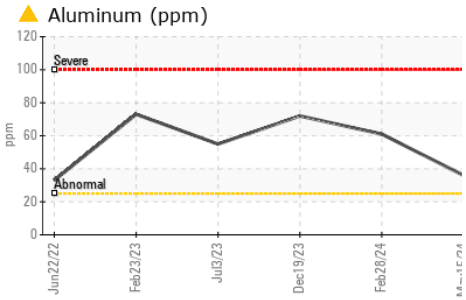
Non-ferrous Metals



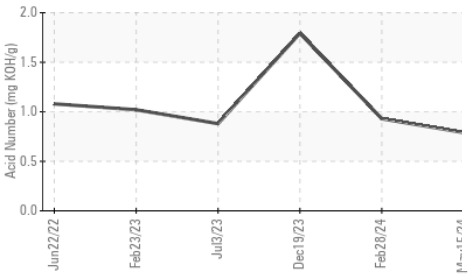
Ferrous Alloys



Aluminum (ppm)

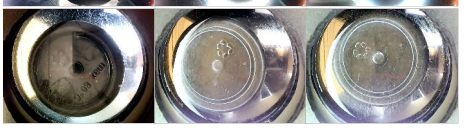


Acid Number



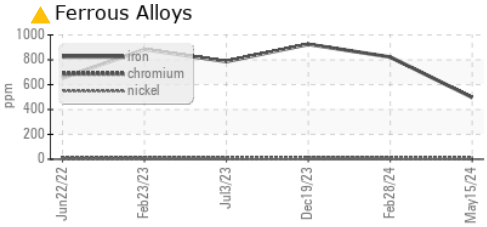
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	▲ **HEAVY**	▲ MODER	▲ HEAVY
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
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	>0.2	**NEG**	0.2%	NEG
Free Water	scalar	*Visual		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	314	▲ **556**	---	---

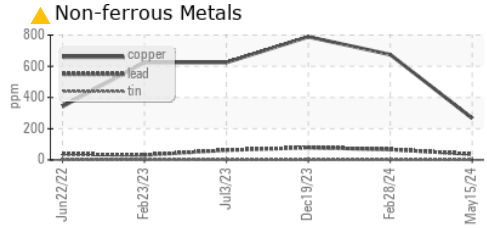
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

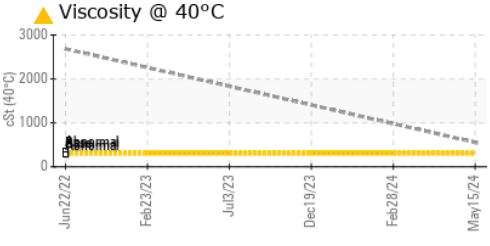
Ferrous Alloys



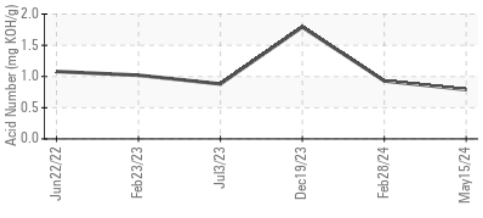
Non-ferrous Metals



Viscosity @ 40°C



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KFS0004618
Lab Number : 06182792
Unique Number : 11034118
Test Package : IND 2 (Additional Tests: PrtCount)

Received : 17 May 2024
Tested : 29 May 2024
Diagnosed : 29 May 2024 - Jonathan Hester

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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US 35661
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randall.nichols@constellium.com
T: (256)386-6956
F:

Report Id: CONMUSAL [WUSCAR] 06182792 (Generated: 05/29/2024 17:07:54) Rev: 1

Submitted By: COLD MILL - Josh Edwards