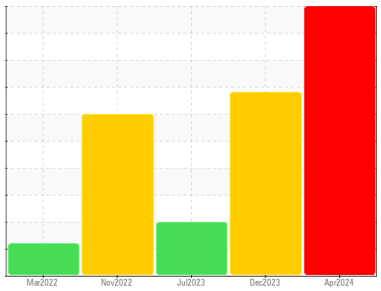
KIMBRO FLUID SOLUTIONS

PROBLEM SUMMARY

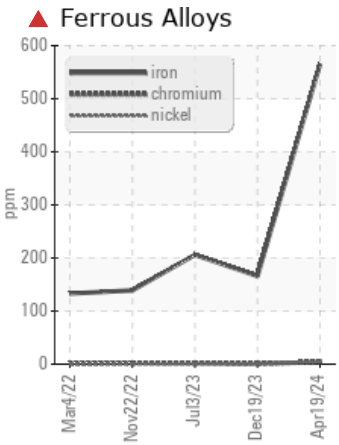
Area
CAST HOUSE/CRANES
Machine Id
92 EAST BRIDGE GEARBOX 1015-M92-1000
Component
Gearbox
Fluid
CITGO COMPOUND EP 320 (15 GAL)

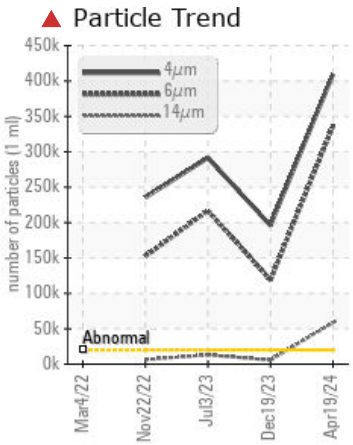
Sample Rating Trend

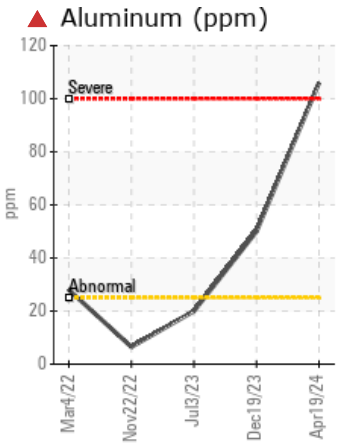


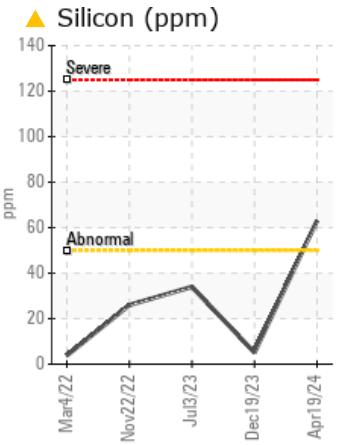
WEAR

COMPONENT CONDITION SUMMARY









RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m	>200	▲ **565**	166	206
Aluminum	ppm	ASTM D5185m	>25	▲ **106**	▲ 50	20
Silicon	ppm	ASTM D5185m	>50	▲ **63**	5	34
Particles >4µm		ASTM D7647	>20000	▲ **409459**	▲ 195947	▲ 291566
Particles >6µm		ASTM D7647	>5000	▲ **336555**	▲ 118916	▲ 216812
Particles >14µm		ASTM D7647	>640	▲ **58618**	▲ 5760	▲ 13005
Particles >21µm		ASTM D7647	>160	▲ **6412**	▲ 961	▲ 316
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **26/26/23**	▲ 25/24/20	▲ 25/25/21

Customer Id: CONMUSAL
Sample No.: KFS0004636
Lab Number: 06179316
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Angela Borella +1 800-237-1369
angela.borella@wearcheckusa.com

To change component or sample information:
Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Inspect Wear Source	---	---	?	We advise that you inspect for the source(s) of wear.
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

ISO

19 Dec 2023 Diag: Angela Borella
Check seals and/or filters for points of contaminant entry. Resample at the next service interval to monitor.The aluminum level is abnormal. All other component wear rates are normal. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report

ISO

03 Jul 2023 Diag: Doug Bogart
We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor.Gear wear is indicated. There is a high amount of particulates present in the oil. The AN level is acceptable for this fluid.

view report

ISO

22 Nov 2022 Diag: Wes Davis
We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. Resample in 30-45 days to monitor this situation.All component wear rates are normal. Particles >14µm are severely high. Particles >6µm are severely high. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >21µm are abnormally high. The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

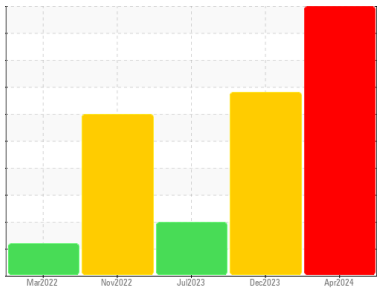
view report

KIMBRO FLUID SOLUTIONS

OIL ANALYSIS REPORT

Area
CAST HOUSE/CRANES
Machine Id
92 EAST BRIDGE GEARBOX 1015-M92-1000
Component
Gearbox
Fluid
CITGO COMPOUND EP 320 (15 GAL)

Sample Rating Trend



WEAR

DIAGNOSIS

▲ Recommendation
We recommend that you drain the oil from the component if this has not already been done. We advise that you inspect for the source(s) of wear. We recommend an early resample to monitor this condition.

▲ Wear
Gear wear is indicated.

▲ Contamination
There is a high amount of particulates present in the oil. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Fluid Condition
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		**KFS0004636**	KFS06041478	KFS0003315
Sample Date		Client Info		**19 Apr 2024**	19 Dec 2023	03 Jul 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				**SEVERE**	SEVERE	ABNORMAL

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	▲ **565**	166	206
Chromium	ppm	ASTM D5185m	>15	**4**	<1	2
Nickel	ppm	ASTM D5185m	>15	**4**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	▲ **106**	▲ 50	20
Lead	ppm	ASTM D5185m	>100	**0**	0	0
Copper	ppm	ASTM D5185m	>200	**4**	4	8
Tin	ppm	ASTM D5185m	>25	**<1**	0	<1
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**6**	5	19
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**3**	1	3
Manganese	ppm	ASTM D5185m		**7**	2	3
Magnesium	ppm	ASTM D5185m		**6**	2	6
Calcium	ppm	ASTM D5185m		**21**	9	89
Phosphorus	ppm	ASTM D5185m		**272**	294	302
Zinc	ppm	ASTM D5185m		**95**	69	63
Sulfur	ppm	ASTM D5185m		**9190**	8574	7958

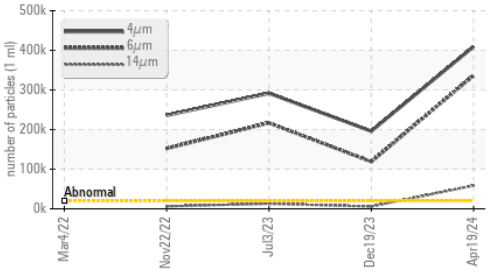
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	▲ **63**	5	34
Sodium	ppm	ASTM D5185m		**1**	0	2
Potassium	ppm	ASTM D5185m	>20	**1**	<1	12

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **409459**	▲ 195947	▲ 291566
Particles >6µm		ASTM D7647	>5000	▲ **336555**	▲ 118916	▲ 216812
Particles >14µm		ASTM D7647	>640	▲ **58618**	▲ 5760	▲ 13005
Particles >21µm		ASTM D7647	>160	▲ **6412**	▲ 961	▲ 316
Particles >38µm		ASTM D7647	>40	**42**	11	1
Particles >71µm		ASTM D7647	>10	**2**	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **26/26/23**	▲ 25/24/20	▲ 25/25/21

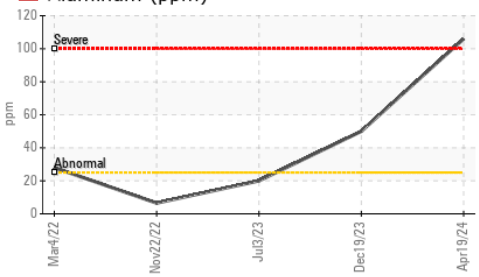
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.64**	0.58	0.97

OIL ANALYSIS REPORT

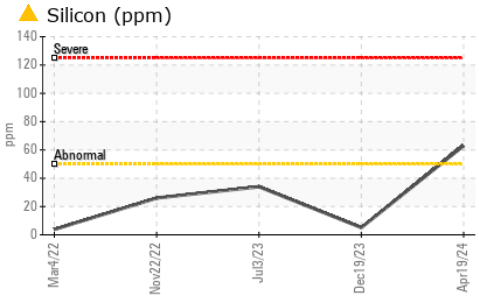
Particle Trend



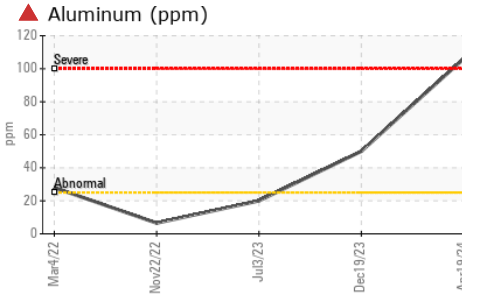
Aluminum (ppm)



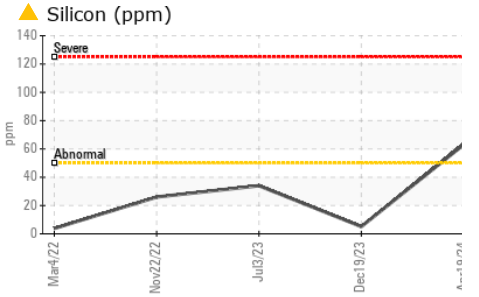
Silicon (ppm)



Aluminum (ppm)



Silicon (ppm)



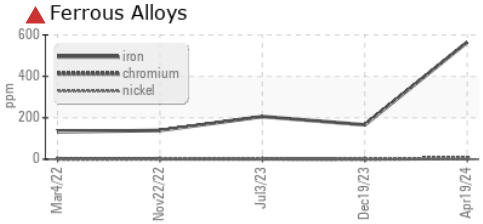
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	314	**342**	319	321

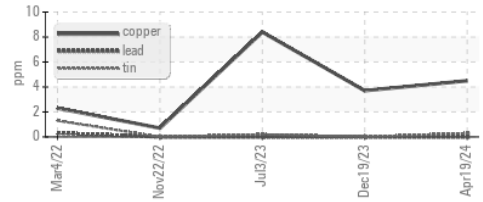
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

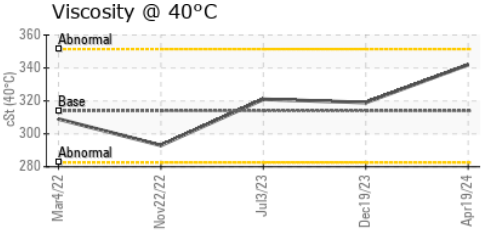
Ferrous Alloys



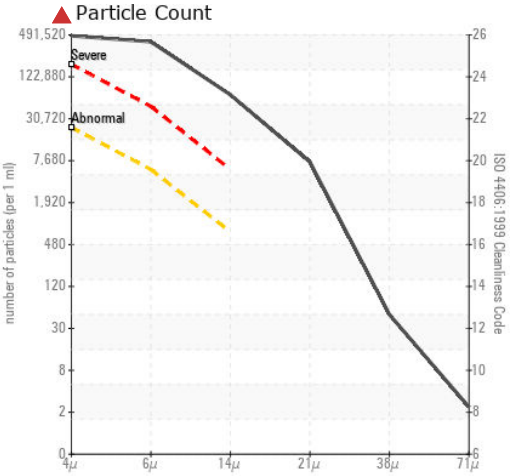
Non-ferrous Metals



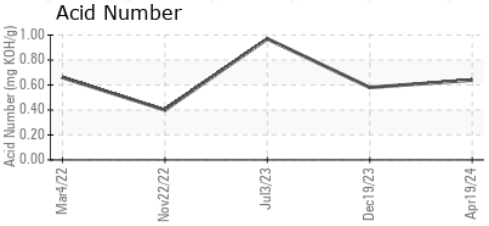
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KFS0004636
Lab Number : 06179316
Unique Number : 11030642
Test Package : IND 2 (Additional Tests: PrtCount)

Received : 14 May 2024
Tested : 15 May 2024
Diagnosed : 16 May 2024 - Angela Borella

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)

CONSTELLIUM
4805 SECOND STREET
MUSCLE SHOALS, AL
US 35661
Contact: Randy Nichols
randall.nichols@constellium.com
T: (256)386-6956
F:

Report Id: CONMUSAL [WUSCAR] 06179316 (Generated: 05/16/2024 18:50:07) Rev: 1

Submitted By: COLD MILL - Josh Edwards