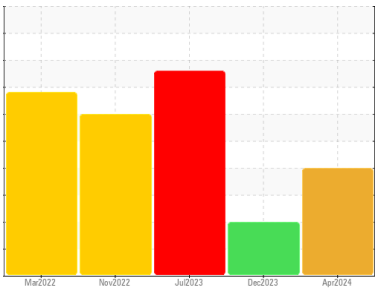
PROBLEM SUMMARY

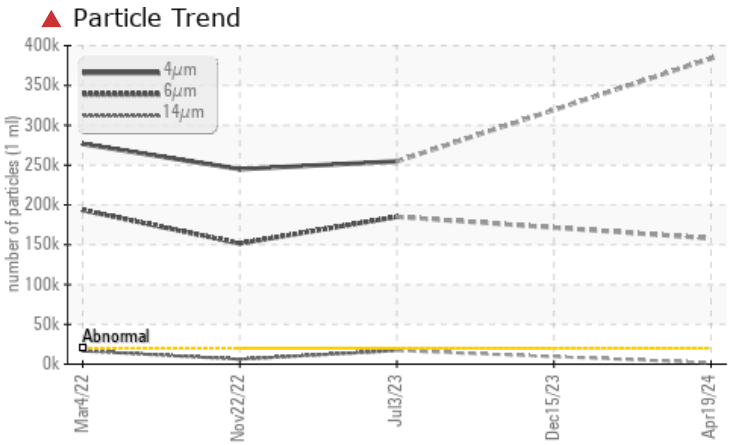
Area
CAST HOUSE/CRANES
Machine Id
92 TROLLEY GEARBOX 1015-M92-6000
Component
Gearbox
Fluid
CITGO COMPOUND EP 320 (10 GAL)

Sample Rating Trend



ISO

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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 at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	SEVERE
Particles >4µm		ASTM D7647	>20000	▲ **383966**	---	▲ 254698
Particles >6µm		ASTM D7647	>5000	▲ **157973**	---	▲ 185022
Particles >14µm		ASTM D7647	>640	▲ **1781**	---	▲ 16998
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **26/24/18**	---	▲ 25/25/21

Customer Id: CONMUSAL
Sample No.: KFS0004638
Lab Number: 06179318
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
Change Filter	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Check Breathers	---	---	?	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.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

VISUAL METAL

15 Dec 2023 Diag: Jonathan Hester

We recommend you service the filters on this component if applicable. Resample at the next service interval to monitor. We were unable to perform a particle count due to metal particles present in this sample.High concentration of visible metal present. All component wear rates are normal. There is a moderate amount of visible silt present in the sample. The AN level is acceptable for this fluid.

view report

ISO

03 Jul 2023 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. There is a high amount of particulates (2 to 100 microns in size) present in the oil. 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

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.

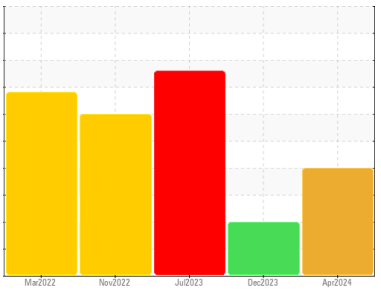
view report

KIMBRO FLUID SOLUTIONS

OIL ANALYSIS REPORT

Area
CAST HOUSE/CRANES
Machine Id
92 TROLLEY GEARBOX 1015-M92-6000
Component
Gearbox
Fluid
CITGO COMPOUND EP 320 (10 GAL)

Sample Rating Trend



ISO

DIAGNOSIS

▲ Recommendation
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 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KFS0004638**	KFS0002631	KFS0003099
Sample Date		Client Info		**19 Apr 2024**	15 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**	ABNORMAL	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	**73**	46	105
Chromium	ppm	ASTM D5185m	>15	**0**	<1	<1
Nickel	ppm	ASTM D5185m	>15	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	0	<1
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	**6**	14	5
Lead	ppm	ASTM D5185m	>100	**0**	0	<1
Copper	ppm	ASTM D5185m	>200	**<1**	0	9
Tin	ppm	ASTM D5185m	>25	**<1**	0	0
Vanadium	ppm	ASTM D5185m		**0**	0	<1
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		**23**	<1	0
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**0**	0	0
Manganese	ppm	ASTM D5185m		**2**	<1	2
Magnesium	ppm	ASTM D5185m		**6**	2	3
Calcium	ppm	ASTM D5185m		**25**	13	13
Phosphorus	ppm	ASTM D5185m		**273**	102	92
Zinc	ppm	ASTM D5185m		**18**	4	0
Sulfur	ppm	ASTM D5185m		**8015**	4913	7979

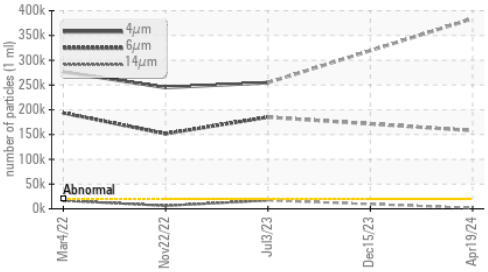
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	**4**	4	42
Sodium	ppm	ASTM D5185m		**2**	0	1
Potassium	ppm	ASTM D5185m	>20	**11**	2	2

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **383966**	---	▲ 254698
Particles >6µm		ASTM D7647	>5000	▲ **157973**	---	▲ 185022
Particles >14µm		ASTM D7647	>640	▲ **1781**	---	▲ 16998
Particles >21µm		ASTM D7647	>160	**131**	---	▲ 1750
Particles >38µm		ASTM D7647	>40	**0**	---	8
Particles >71µm		ASTM D7647	>10	**0**	---	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **26/24/18**	---	▲ 25/25/21

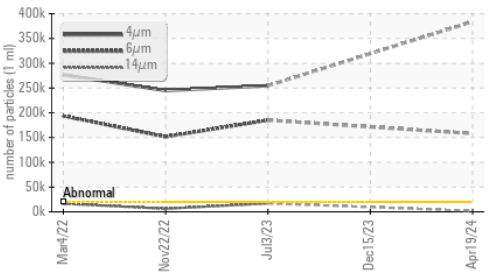
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.58**	0.51	0.10

OIL ANALYSIS REPORT

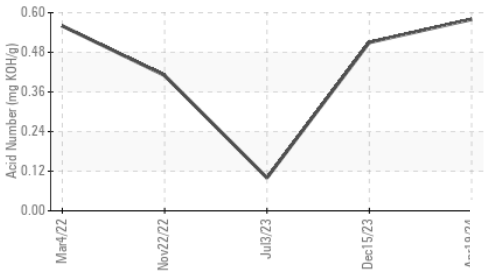
Particle Trend



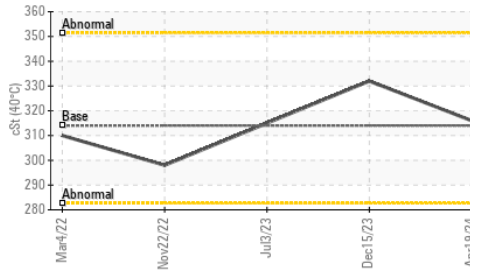
Particle Trend



Acid Number



Viscosity @ 40°C



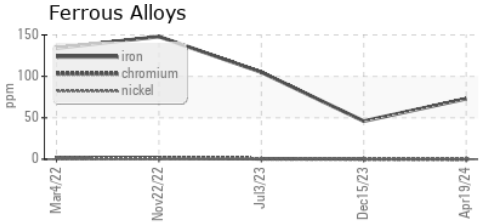
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	▲ HEAVY	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	▲ MODER	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
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	**316**	332	315

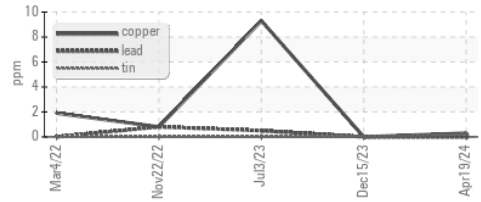
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

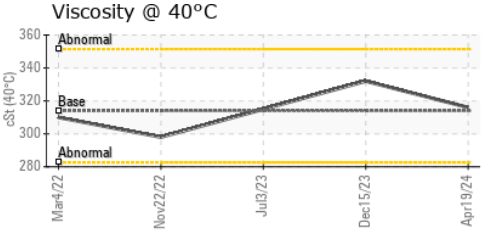
Ferrous Alloys



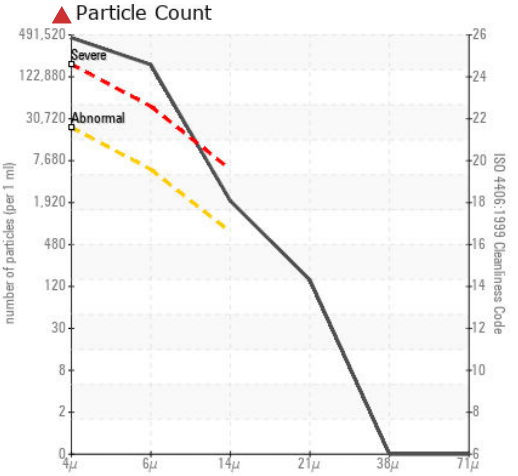
Non-ferrous Metals



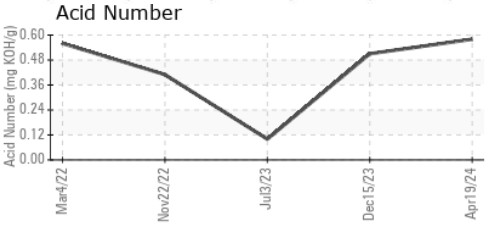
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KFS0004638 **Received** : 14 May 2024
Lab Number : 06179318 **Tested** : 15 May 2024
Unique Number : 11030644 **Diagnosed** : 16 May 2024 - Angela Borella
Test Package : IND 2 (Additional Tests: 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)

CONSTELLIUM
4805 SECOND STREET
MUSCLE SHOALS, AL
US 35661
Contact: Randy Nichols
randall.nichols@constellium.com
T: (256)386-6956
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Report Id: CONMUSAL [WUSCAR] 06179318 (Generated: 05/16/2024 18:52:05) Rev: 1

Submitted By: COLD MILL - Josh Edwards