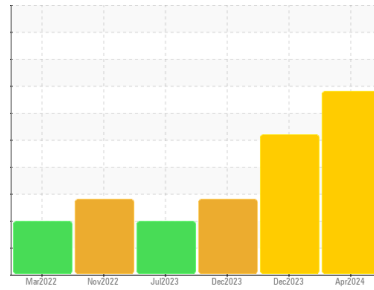




PROBLEM SUMMARY

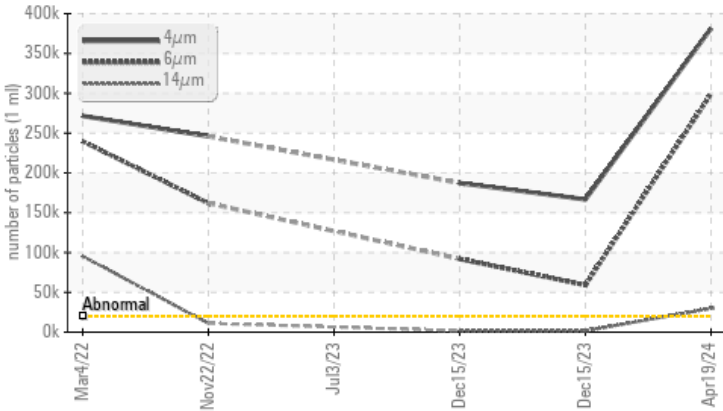
Area
CAST HOUSE/CRANES
 Machine Id
92 MAIN HOIST GEARBOX 1015-M92-4000
 Component
Gearbox
 Fluid
CITGO COMPOUND EP 320 (25 GAL)

Sample Rating Trend

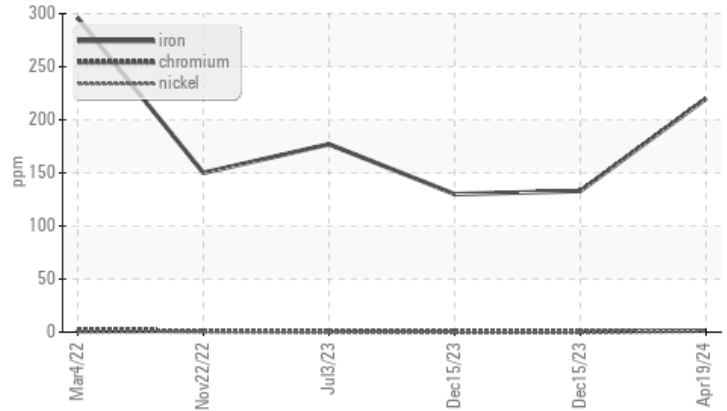


COMPONENT CONDITION SUMMARY

▲ Particle Trend



▲ Ferrous Alloys



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. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status			SEVERE	SEVERE	ABNORMAL
Iron	ppm	ASTM D5185m >200	▲ 220	130	133
Particles >4µm		ASTM D7647 >20000	▲ 381431	▲ 187226	▲ 166637
Particles >6µm		ASTM D7647 >5000	▲ 299179	▲ 91973	▲ 59045
Particles >14µm		ASTM D7647 >640	▲ 29794	▲ 1707	▲ 1587
Particles >21µm		ASTM D7647 >160	▲ 1022	● 240	▲ 265
Oil Cleanliness		ISO 4406 (c) >21/19/16	▲ 26/25/22	▲ 25/24/18	▲ 25/23/18

Customer Id: CONMUSAL
 Sample No.: KFS0004640
 Lab Number: 06179317
 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.
Resample	---	---	?	We recommend an early resample to monitor this condition.
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

ISO



15 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. The condition of the oil is suitable for further service.

[view report](#)



WEAR



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. 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. The condition of the oil is suitable for further service.

[view report](#)



VISUAL METAL



03 Jul 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. The aluminum level is abnormal. Moderate concentration of visible metal present. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

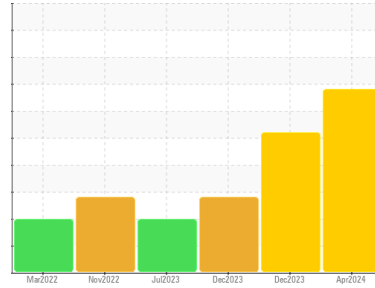
[view report](#)





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
CAST HOUSE/CRANES
 Machine Id
92 MAIN HOIST GEARBOX 1015-M92-4000
 Component
Gearbox
 Fluid
CITGO COMPOUND EP 320 (25 GAL)

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. We recommend an early resample to monitor this condition.

▲ Wear

The iron level is abnormal. All other 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		KFS0004640	KFS0004921	KFS0004921
Sample Date	Client Info		19 Apr 2024	15 Dec 2023	15 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			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	▲ 220	130	133
Chromium	ppm	ASTM D5185m >15	1	<1	<1
Nickel	ppm	ASTM D5185m >15	2	<1	0
Titanium	ppm	ASTM D5185m	1	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	21	▲ 46	▲ 35
Lead	ppm	ASTM D5185m >100	0	0	0
Copper	ppm	ASTM D5185m >200	8	2	7
Tin	ppm	ASTM D5185m >25	<1	0	0
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	21	5	8
Barium	ppm	ASTM D5185m	1	0	0
Molybdenum	ppm	ASTM D5185m	3	1	2
Manganese	ppm	ASTM D5185m	3	1	1
Magnesium	ppm	ASTM D5185m	10	1	2
Calcium	ppm	ASTM D5185m	67	8	22
Phosphorus	ppm	ASTM D5185m	270	290	403
Zinc	ppm	ASTM D5185m	50	64	108
Sulfur	ppm	ASTM D5185m	7119	8551	6070

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	35	2	7
Sodium	ppm	ASTM D5185m	3	0	2
Potassium	ppm	ASTM D5185m >20	12	<1	2

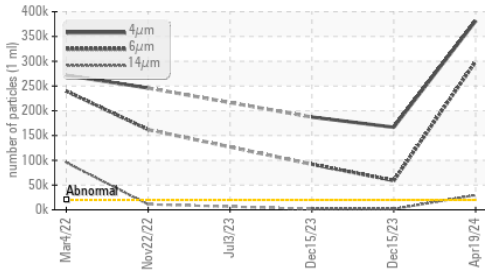
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 381431	▲ 187226	▲ 166637
Particles >6µm	ASTM D7647	>5000	▲ 299179	▲ 91973	▲ 59045
Particles >14µm	ASTM D7647	>640	▲ 29794	▲ 1707	▲ 1587
Particles >21µm	ASTM D7647	>160	▲ 1022	● 240	▲ 265
Particles >38µm	ASTM D7647	>40	2	2	2
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 26/25/22	▲ 25/24/18	▲ 25/23/18

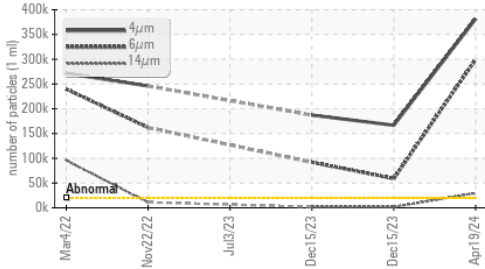
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.16	0.56	1.08

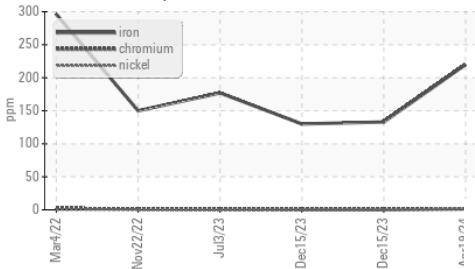
▲ Particle Trend



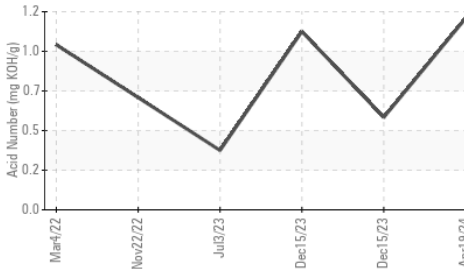
▲ Particle Trend



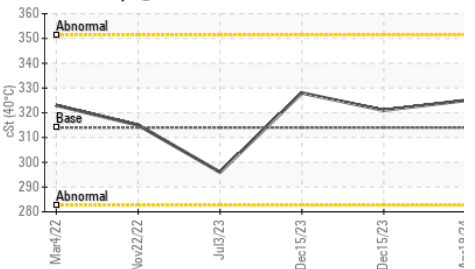
▲ Ferrous Alloys



Acid Number



Viscosity @ 40°C



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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 314	325	321	328

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

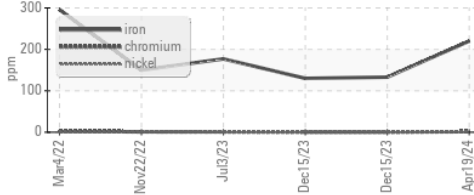


Bottom

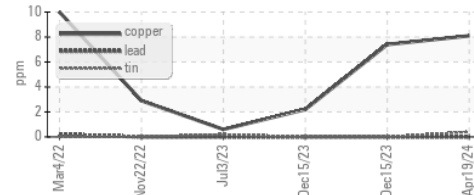


GRAPHS

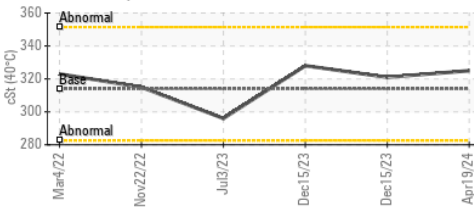
▲ Ferrous Alloys



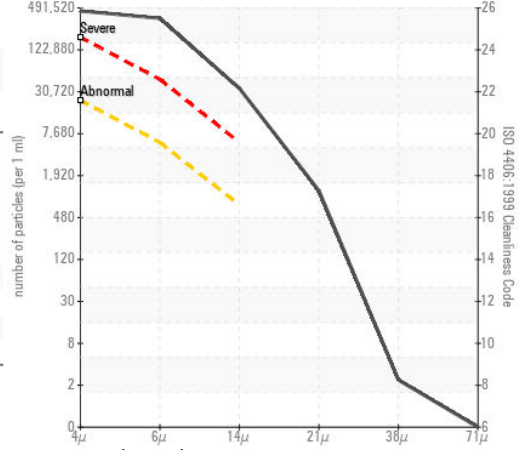
Non-ferrous Metals



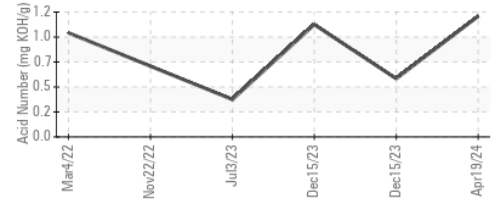
Viscosity @ 40°C



▲ Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : KFS0004640

Lab Number : 06179317

Unique Number : 11030643

Test Package : IND 2 (Additional Tests: PrtCount)

Received : 14 May 2024

Tested : 15 May 2024

Diagnosed : 16 May 2024 - Angela Borella

CONSTELLIUM

4805 SECOND STREET

MUSCLE SHOALS, AL

US 35661

Contact: Randy Nichols

randall.nichols@constellium.com

T: (256)386-6956

F:

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)