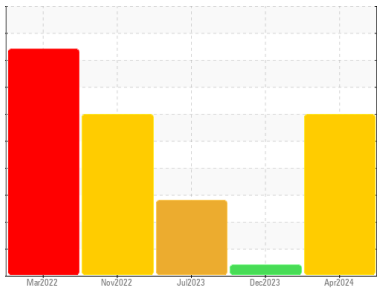
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
CAST HOUSE/CRANES
Machine Id
92 CENTER BRIDGE GEARBOX 1015-M92-2000
Component
Gearbox
Fluid
CITGO COMPOUND EP 320 (15 GAL)

DIAGNOSIS

Recommendation
We advise that you check all areas where dirt can enter the system. We recommend you service the filters on this component if applicable. We recommend an early resample to monitor this condition.

Wear
An increase in the iron level is noted. Gear wear is indicated.

Contamination
There is a high amount of particulates present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress.

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**KFS0004613**	KFS0004920	KFS0003316
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				**ABNORMAL**	ABNORMAL	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	▲ **345**	82	169
Chromium	ppm	ASTM D5185m	>15	**2**	<1	<1
Nickel	ppm	ASTM D5185m	>15	**<1**	<1	<1
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m		**0**	0	0
Aluminum	ppm	ASTM D5185m	>25	● **75**	23	43
Lead	ppm	ASTM D5185m	>100	**0**	0	0
Copper	ppm	ASTM D5185m	>200	**3**	0	3
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		**16**	<1	4
Barium	ppm	ASTM D5185m		**<1**	0	0
Molybdenum	ppm	ASTM D5185m		**2**	0	1
Manganese	ppm	ASTM D5185m		**6**	2	2
Magnesium	ppm	ASTM D5185m		**7**	4	1
Calcium	ppm	ASTM D5185m		**39**	12	9
Phosphorus	ppm	ASTM D5185m		**248**	110	259
Zinc	ppm	ASTM D5185m		**63**	10	69
Sulfur	ppm	ASTM D5185m		**7498**	5469	8725

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>50	▲ **57**	7	6
Sodium	ppm	ASTM D5185m		**3**	0	0
Potassium	ppm	ASTM D5185m	>20	**5**	5	0

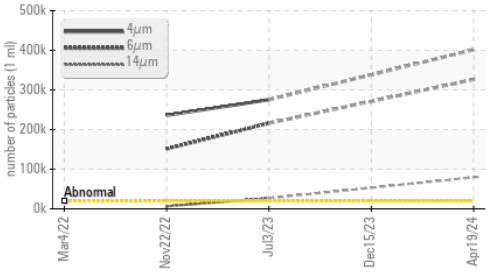
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ **401433**	---	▲ 275440
Particles >6µm	ASTM D7647	>5000	▲ **326472**	---	▲ 215977
Particles >14µm	ASTM D7647	>640	▲ **79249**	---	▲ 26785
Particles >21µm	ASTM D7647	>160	▲ **23126**	---	▲ 3619
Particles >38µm	ASTM D7647	>40	▲ **941**	---	▲ 51
Particles >71µm	ASTM D7647	>10	▲ **30**	---	1
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ **26/26/23**	---	▲ 25/25/22

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.71**	0.46	0.62

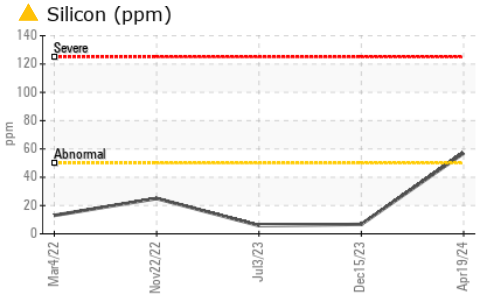
OIL ANALYSIS REPORT

KIMBRO FLUID SOLUTIONS

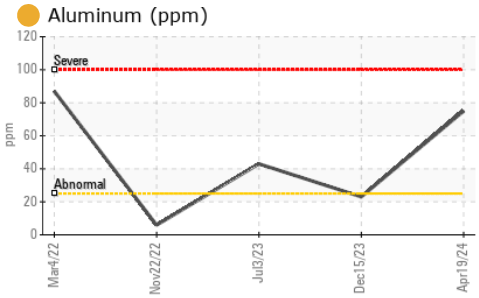
Particle Trend



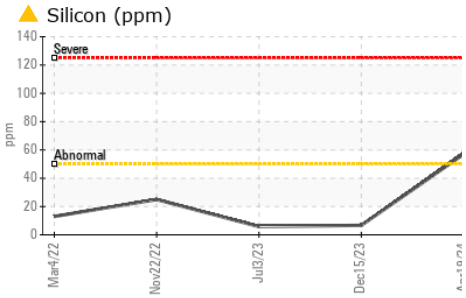
Silicon (ppm)



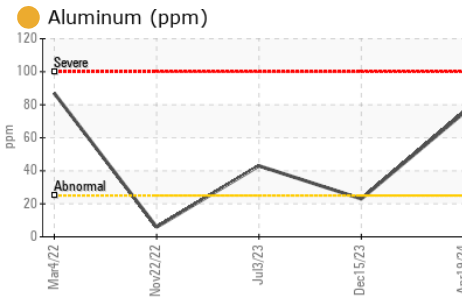
Aluminum (ppm)



Silicon (ppm)



Aluminum (ppm)



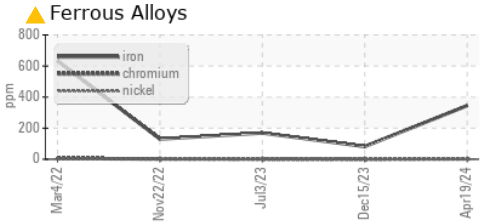
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**MODER**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	▲ HEAVY	NONE
Sand/Dirt	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	**287**	289	● 230

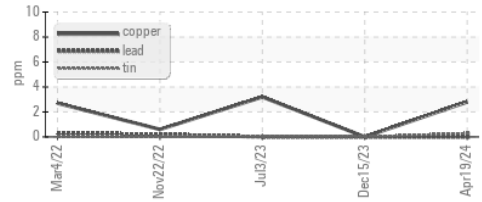
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS

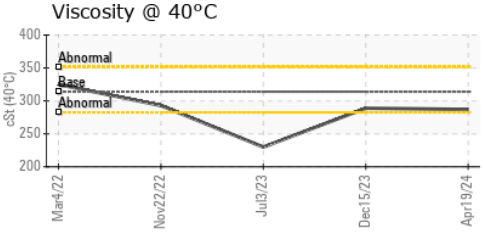
Ferrous Alloys



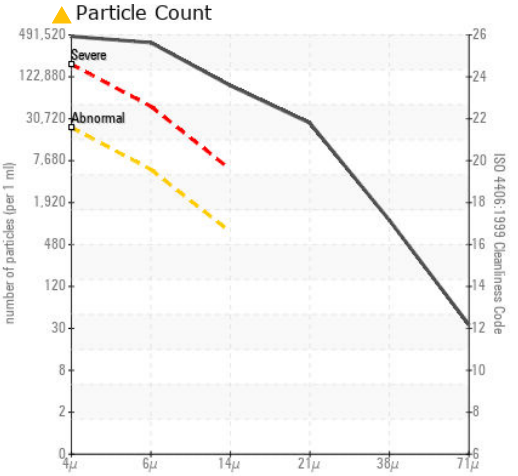
Non-ferrous Metals



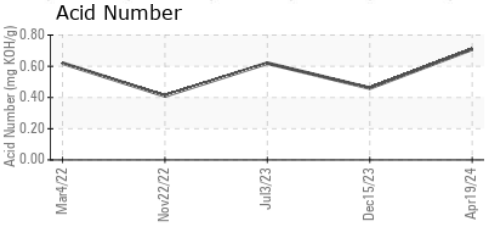
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KFS0004613 **Received** : 14 May 2024
Lab Number : 06179314 **Tested** : 15 May 2024
Unique Number : 11030640 **Diagnosed** : 16 May 2024 - Don Baldridge
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
F: