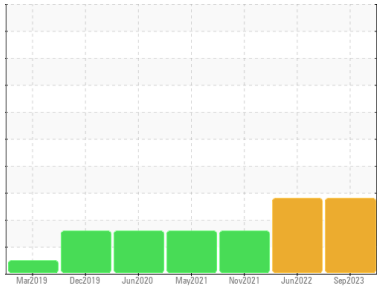
OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
METRO
Machine Id
METRO 20019
Component
Rear Differential
Fluid
GEAR OIL SAE 80 (--- GAL)

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
There is a high amount of silt (particulates < 14 microns in size) 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 condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0843123**	WC0728421	WC0642316
Sample Date		Client Info		**30 Sep 2023**	26 Jun 2022	05 Nov 2021
Machine Age	mls	Client Info		**435760**	292737	246652
Oil Age	mls	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>500	**416**	301	285
Chromium	ppm	ASTM D5185m	>10	**2**	2	2
Nickel	ppm	ASTM D5185m	>10	**1**	<1	<1
Titanium	ppm	ASTM D5185m		**0**	0	<1
Silver	ppm	ASTM D5185m		**0**	0	<1
Aluminum	ppm	ASTM D5185m	>25	**4**	3	4
Lead	ppm	ASTM D5185m	>25	**0**	0	0
Copper	ppm	ASTM D5185m	>100	**2**	2	2
Tin	ppm	ASTM D5185m	>10	**0**	0	0
Antimony	ppm	ASTM D5185m	>5	**---**	---	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	400	**264**	275	314
Barium	ppm	ASTM D5185m	200	**4**	<1	4
Molybdenum	ppm	ASTM D5185m	12	**0**	<1	0
Manganese	ppm	ASTM D5185m		**6**	5	4
Magnesium	ppm	ASTM D5185m	12	**<1**	2	2
Calcium	ppm	ASTM D5185m	150	**13**	10	12
Phosphorus	ppm	ASTM D5185m	1650	**1843**	1750	2047
Zinc	ppm	ASTM D5185m	125	**17**	11	13
Sulfur	ppm	ASTM D5185m	22500	**22556**	25056	34527

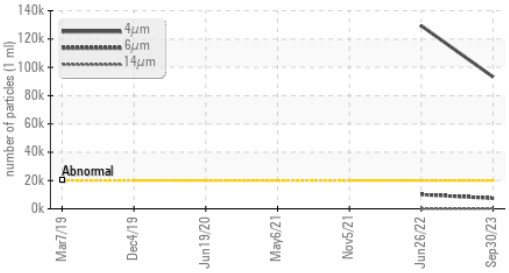
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>75	▲ **136**	▲ 100	▲ 104
Sodium	ppm	ASTM D5185m		**10**	10	10
Potassium	ppm	ASTM D5185m	>20	**3**	3	4
Water	%	ASTM D6304	>.2	**0.069**	0.068	0.054
ppm Water	ppm	ASTM D6304	>2000	**695.8**	687.0	545.8

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	▲ **93195**	▲ 129379	---
Particles >6µm		ASTM D7647	>5000	▲ **7417**	▲ 10053	---
Particles >14µm		ASTM D7647	>640	**155**	45	---
Particles >21µm		ASTM D7647	>160	**41**	8	---
Particles >38µm		ASTM D7647	>40	**2**	0	---
Particles >71µm		ASTM D7647	>10	**0**	0	---
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/20/14**	▲ 24/21/13	---

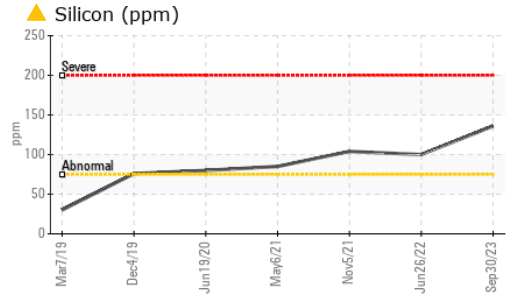
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	2.00	**2.72**	3.02	2.985

OIL ANALYSIS REPORT

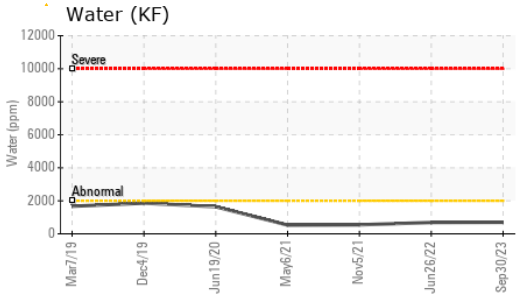
Particle Trend



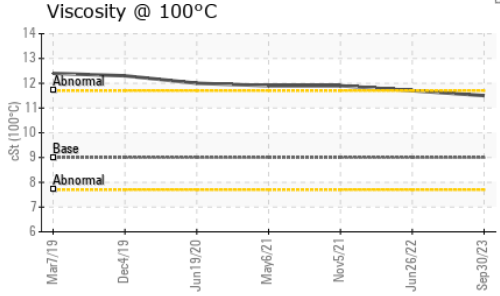
Silicon (ppm)



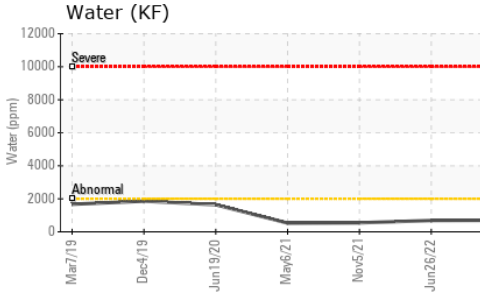
Water (KF)



Viscosity @ 100°C

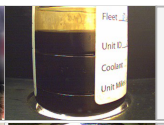
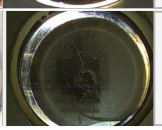


Water (KF)



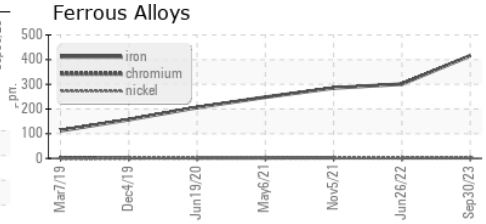
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Appearance	scalar	*Visual	NORML	**NORML**	NORML	NORML
Odor	scalar	*Visual	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	*Visual	>.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	74	**72.9**	73.5	74.3
Visc @ 100°C	cSt	ASTM D445	9.0	**11.5**	11.7	11.9
Viscosity Index (VI)	Scale	ASTM D2270	94	**151**	153	155

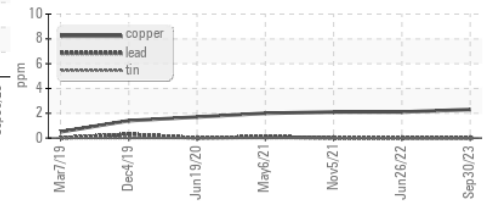
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					*no image*
Bottom					*no image*

GRAPHS

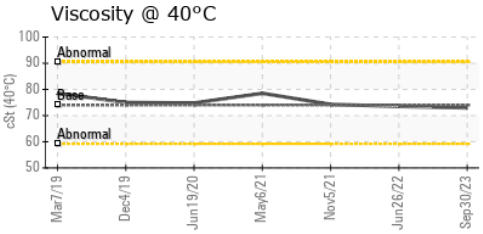
Ferrous Alloys



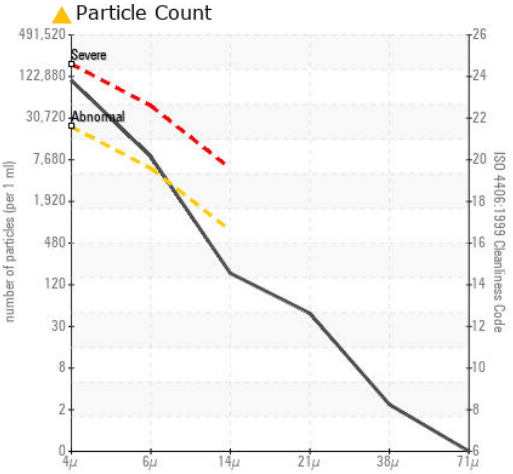
Non-ferrous Metals



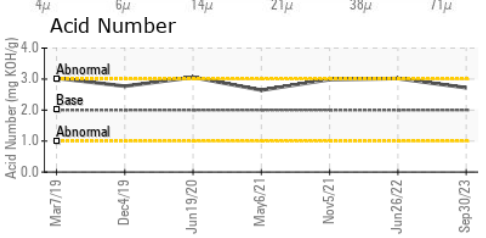
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0843123 **Received** : 14 Nov 2023
Lab Number : 06007679 **Diagnosed** : 16 Nov 2023
Unique Number : 10741441 **Diagnostician** : Don Baldridge
Test Package : MOB 2 (Additional Tests: KF, KV100, PrtCount, VI)

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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