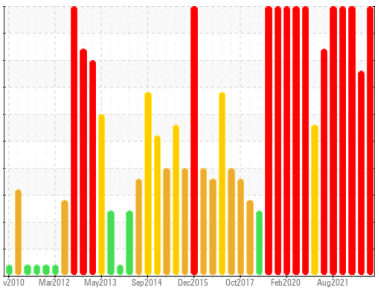
PROBLEM SUMMARY

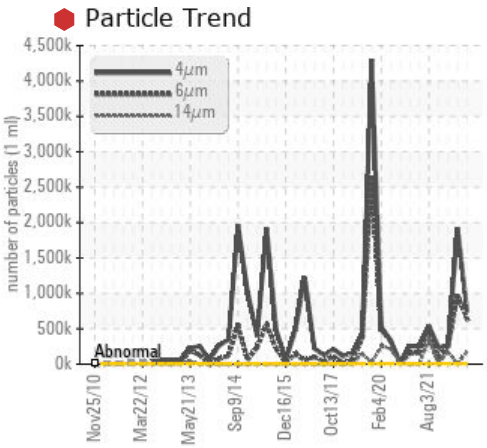
Area
Banbury 2
Machine Id
BB02 Racine
Component
Hydraulic System
Fluid
SHELL TELLUS S 68 (80 GAL)

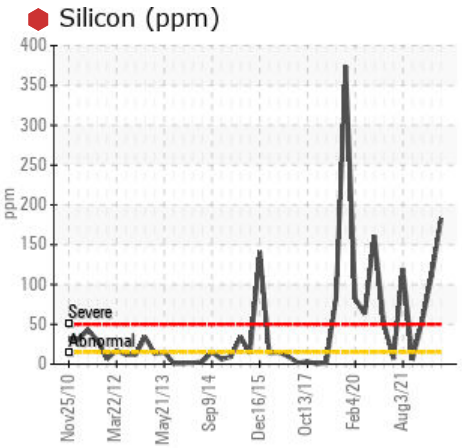
Sample Rating Trend

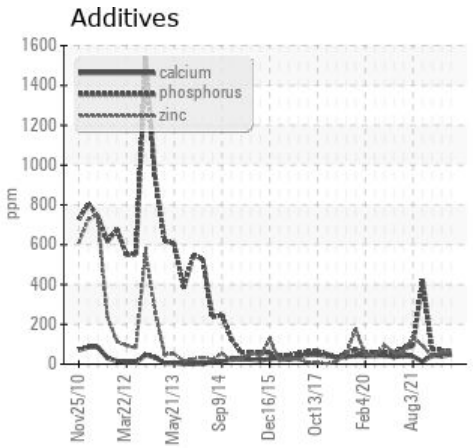


DIRT

COMPONENT CONDITION SUMMARY



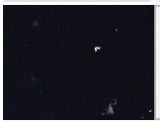




RECOMMENDATION

We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Silicon	ppm	ASTM D5185(m)	>15	**183**	111	53
Particles >4µm		ASTM D7647	>5000	**739166**	1920991	265843
Particles >6µm		ASTM D7647	>1300	**638522**	972432	252357
Particles >14µm		ASTM D7647	>160	**178350**	2211	172915
Particles >21µm		ASTM D7647	>40	**16935**	257	109191
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**27/26/25**	28/27/18	25/25/25
White Metal	scalar	Visual*	NONE	**VLITE**	NONE	NONE
PrtFilter					*no image*	*no image*

Customer Id: GOONAP
Sample No.: WC0841271
Lab Number: 02579682
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@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	---	---	?	Resample in 30-45 days to monitor this situation.
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.
Check Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
Check For Visual Metal	---	---	?	We advise that you check for visible metal particles in the oil.
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

05 Feb 2023 Diag: Kevin Marson

Check seals and/or filters for points of contaminant entry. 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.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. Silicon ppm levels are abnormally high. Particles >21µm are abnormally high. Elemental level of silicon (Si) above normal indicating ingress of seal material. Additive levels indicate the addition of a different brand, or type of 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

27 Oct 2022 Diag: Kevin Marson

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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.Lead ppm levels are marginal. All other component wear rates are normal. Particles >14µm are severely high. Particles >21µm are severely high. Particles >38µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. Oil Cleanliness are severely high. Silicon ppm levels are abnormally high. There is a moderate concentration of dirt present in the oil. Additive levels indicate the addition of a different brand, or type of oil. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report

WEAR

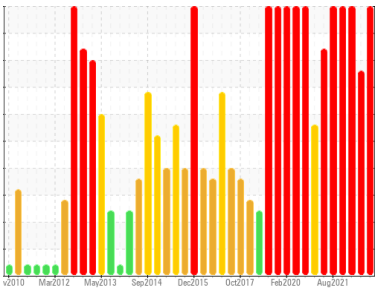
03 Nov 2021 Diag: Kevin Marson

We advise an early resample to confirm this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. NOTE: The current sample results do not match this units historical trend, indicating the sample may not be from this component/unit.Iron ppm levels are severe. Moderate concentration of visible metal present. Cylinder wear is indicated. The low ferrous density (PQ) index indicates the wear metal levels are due to corrosion. Particles >14µm are severely high. Particles >21µm are severely high. Particles >6µm are severely high. Particles >4µm are severely high. The AN level is above the recommended limit. Viscosity of sample indicates oil is within SAE 80W140 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
Banbury 2
Machine Id
BB02 Racine
Component
Hydraulic System
Fluid
SHELL TELLUS S 68 (80 GAL)

DIAGNOSIS

Recommendation

We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation.

Wear

Light concentration of visible metal present.

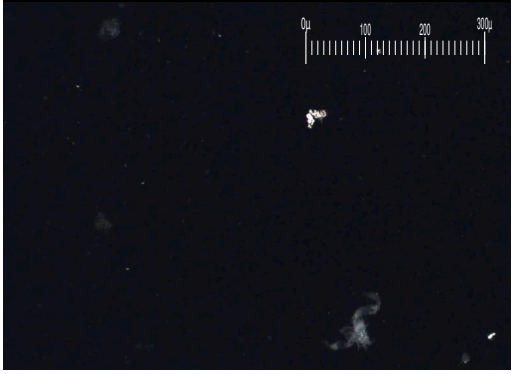
Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. High concentration of dirt present in the oil. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid.

Particle Filter (Magn: 100 x)



SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0841271**	WC0754396	WC0664085
Sample Date		Client Info		**25 Aug 2023**	05 Feb 2023	27 Oct 2022
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	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**6**	7	5
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**0**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**1**	<1	<1
Lead	ppm	ASTM D5185(m)	>20	**3**	17	▲ 19
Copper	ppm	ASTM D5185(m)	>20	**3**	9	14
Tin	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Antimony	ppm	ASTM D5185(m)		**0**	0	<1
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**3**	3	<1
Barium	ppm	ASTM D5185(m)		**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**2**	5	10
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**<1**	<1	<1
Calcium	ppm	ASTM D5185(m)		**49**	40	45
Phosphorus	ppm	ASTM D5185(m)		**65**	69	74
Zinc	ppm	ASTM D5185(m)	0	**58**	58	36
Sulfur	ppm	ASTM D5185(m)		**261**	304	374
Lithium	ppm	ASTM D5185(m)		**5**	7	4

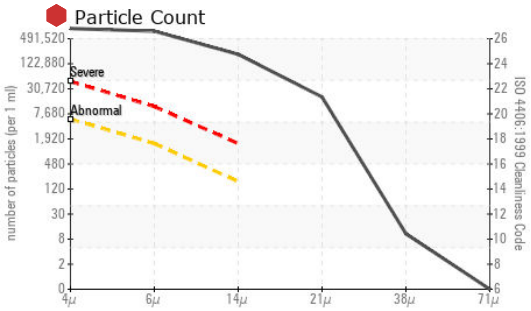
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	● **183**	▲ 111	▲ 53
Sodium	ppm	ASTM D5185(m)		**4**	3	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	<1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	● **739166**	● 1920991	● 265843
Particles >6µm		ASTM D7647	>1300	● **638522**	● 972432	● 252357
Particles >14µm		ASTM D7647	>160	● **178350**	● 2211	● 172915
Particles >21µm		ASTM D7647	>40	● **16935**	▲ 257	● 109191
Particles >38µm		ASTM D7647	>10	**9**	10	● 1544
Particles >71µm		ASTM D7647	>3	**0**	4	3
Oil Cleanliness		ISO 4406 (c)	>19/17/14	● **27/26/25**	● 28/27/18	● 25/25/25

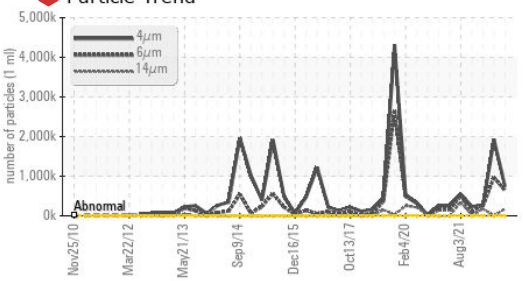
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.12**	0.16	0.08

OIL ANALYSIS REPORT

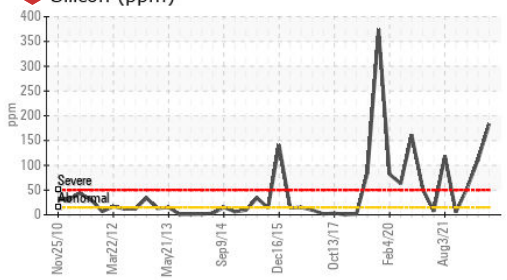
Particle Count



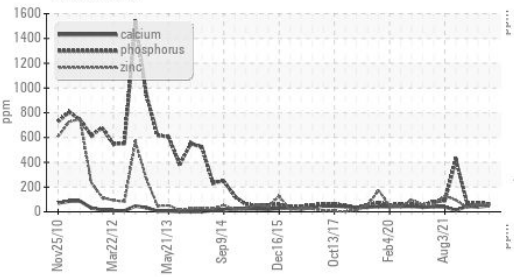
Particle Trend



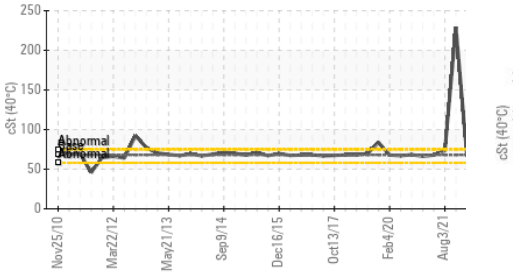
Silicon (ppm)



Additives

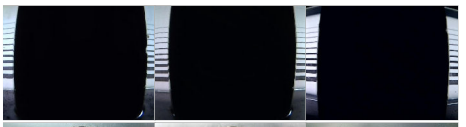
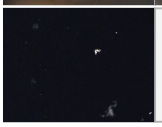


Viscosity @ 40°C



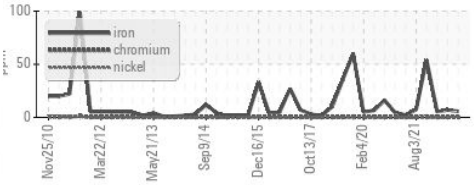
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	▲ **VLITE**	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	**NONE**	NONE	NONE
Precipitate	scalar	Visual*	NONE	**NONE**	NONE	NONE
Silt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**NONE**	NONE	NONE
Appearance	scalar	Visual*	NORML	**NORML**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.0	**68.3**	66.8	66.1

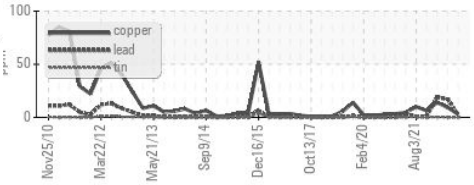
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter				*no image*	*no image*

GRAPHS

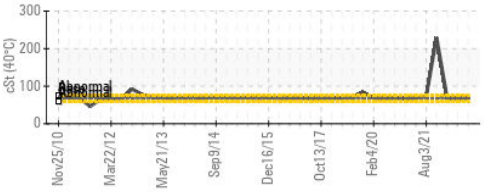
Ferrous Alloys



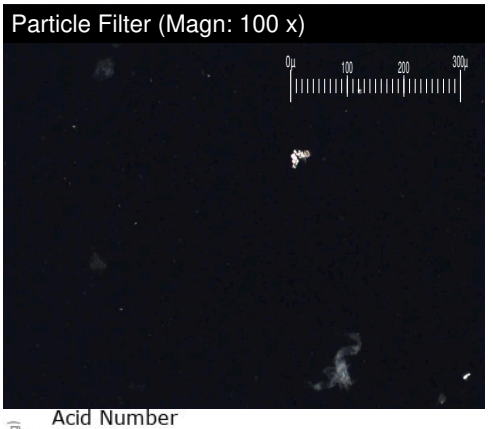
Non-ferrous Metals



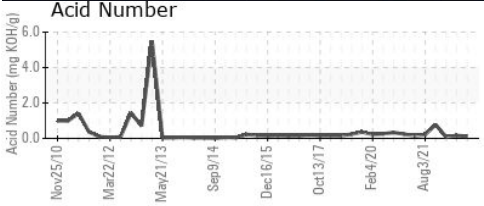
Viscosity @ 40°C



Particle Filter (Magn: 100 x)



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0841271 **Received** : 31 Aug 2023
Lab Number : 02579682 **Diagnosed** : 06 Sep 2023
Unique Number : 5632742 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: Bottom, BottomAnalysis, FilterPatch, PrtFilter)

To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

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