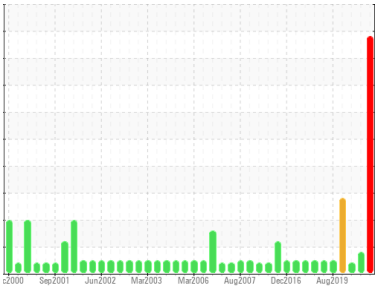
PROBLEM SUMMARY

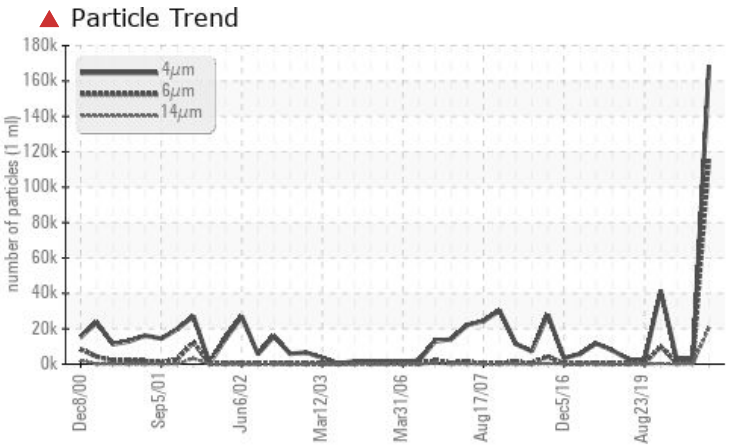
Sample Rating Trend



ISO

Area
11
Machine Id
11-0090-010-000 GRADE LINE HYD (11M90)
Component
11 Hydraulic System
Fluid
SHELL TELLUS S2 MX 68 (250 GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ATTENTION	ATTENTION
Particles >6µm		ASTM D7647	>640	▲ **116405**	960	721
Particles >14µm		ASTM D7647	>160	▲ **20666**	157	89
Particles >21µm		ASTM D7647	>40	▲ **4247**	53	33
Particles >38µm		ASTM D7647	>10	▲ **89**	1	1
Oil Cleanliness		ISO 4406 (c)	>--/16/14	▲ **25/24/22**	19/17/14	19/17/14

Customer Id: MACPEM
Sample No.: WC0857983
Lab Number: 02621982
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
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.
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

02 Dec 2022 Diag: Kevin Marson

ISO

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor.All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. Additive levels indicate the addition of a different brand, or type of oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

19 Feb 2020 Diag: Wes Davis

ISO

We recommend you service the filters on this component. Resample at the next service interval to monitor.All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

13 Dec 2019 Diag: Wes Davis

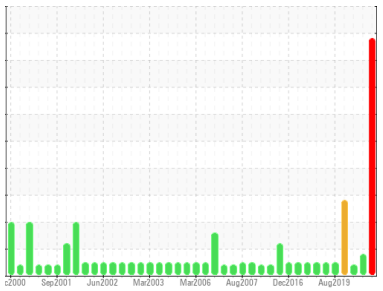
ISO

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 >6µm are severely high. Particles >14µm are abnormally high. Particles >21µm are abnormally high. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. 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
11
Machine Id
11-0090-010-000 GRADE LINE HYD (11M90)
Component
11 Hydraulic System
Fluid
SHELL TELLUS S2 MX 68 (250 GAL)

DIAGNOSIS

Recommendation

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.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**WC0857983**	WC0754082	WC0389204
Sample Date		Client Info		**06 Mar 2024**	02 Dec 2022	19 Feb 2020
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**	ATTENTION	ATTENTION

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**3**	<1	<1
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	<1
Aluminum	ppm	ASTM D5185(m)	>20	**1**	0	0
Lead	ppm	ASTM D5185(m)	>20	**1**	<1	0
Copper	ppm	ASTM D5185(m)	>20	**2**	<1	3
Tin	ppm	ASTM D5185(m)	>20	**0**	0	0
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

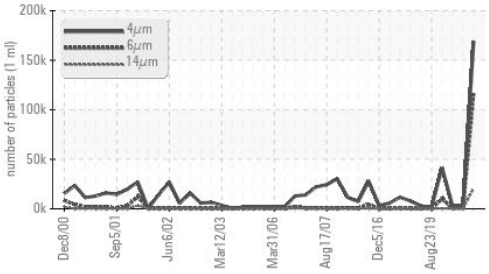
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		**0**	0	<1
Barium	ppm	ASTM D5185(m)		**0**	0	<1
Molybdenum	ppm	ASTM D5185(m)		**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)		**58**	57	<1
Calcium	ppm	ASTM D5185(m)		**15**	15	47
Phosphorus	ppm	ASTM D5185(m)		**296**	316	345
Zinc	ppm	ASTM D5185(m)		**341**	342	432
Sulfur	ppm	ASTM D5185(m)		**994**	1272	6570
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

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

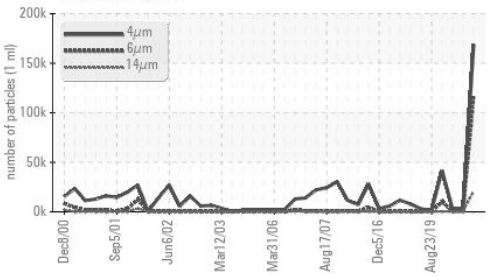
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**168665**	2793	2781
Particles >6µm		ASTM D7647	>640	▲ **116405**	960	721
Particles >14µm		ASTM D7647	>160	▲ **20666**	157	89
Particles >21µm		ASTM D7647	>40	▲ **4247**	53	33
Particles >38µm		ASTM D7647	>10	▲ **89**	1	1
Particles >71µm		ASTM D7647	>3	**2**	0	0
Oil Cleanliness		ISO 4406 (c)	>--/16/14	▲ **25/24/22**	19/17/14	19/17/14

OIL ANALYSIS REPORT

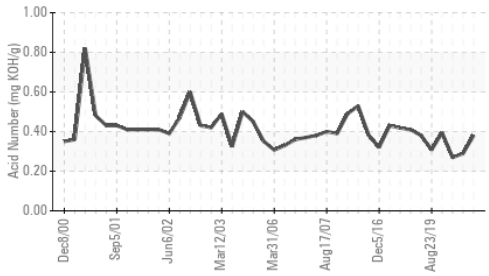
Particle Trend



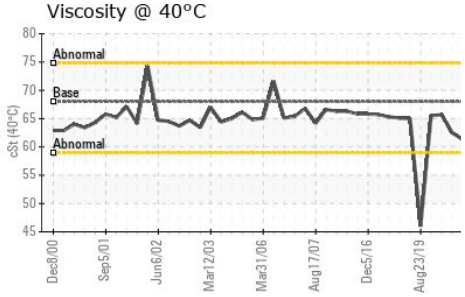
Particle Trend



Acid Number



Viscosity @ 40°C

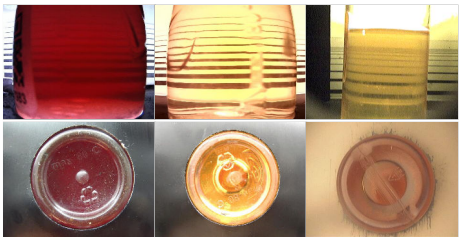


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		**0.38**	0.29	0.269

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	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

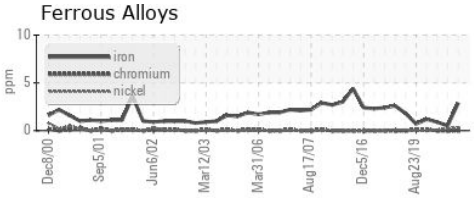
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	68.0	**61.3**	62.5	65.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

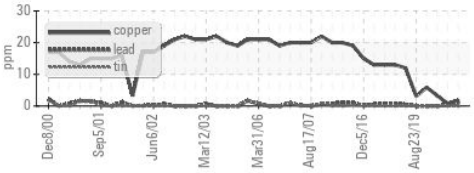


GRAPHS

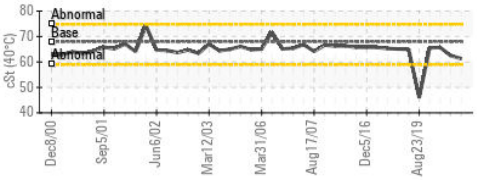
Ferrous Alloys



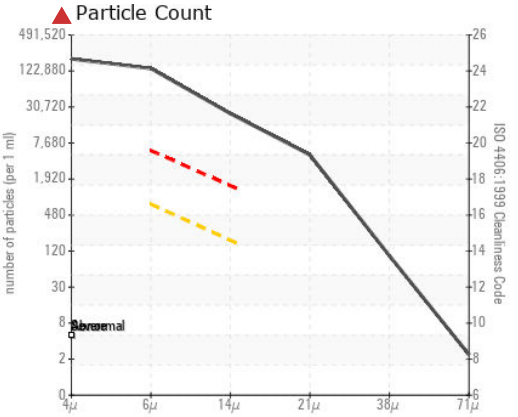
Non-ferrous Metals



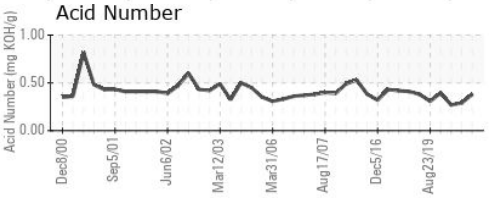
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0857983
Lab Number : 02621982
Unique Number : 5747101
Test Package : IND 2

Received : 14 Mar 2024
Tested : 15 Mar 2024
Diagnosed : 15 Mar 2024 - Kevin Marson

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.

Roseburg Pembroke MDF Inc.
777 Fibreboard Drive
Pembroke, ON
CA K8A 6W5
Contact: Dan Havis
danielh@rfpco.com
T: (613)732-3939
F: (613)732-2869