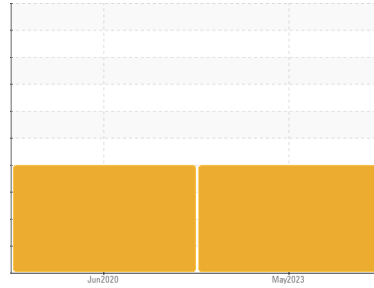




PROBLEM SUMMARY

Sample Rating Trend

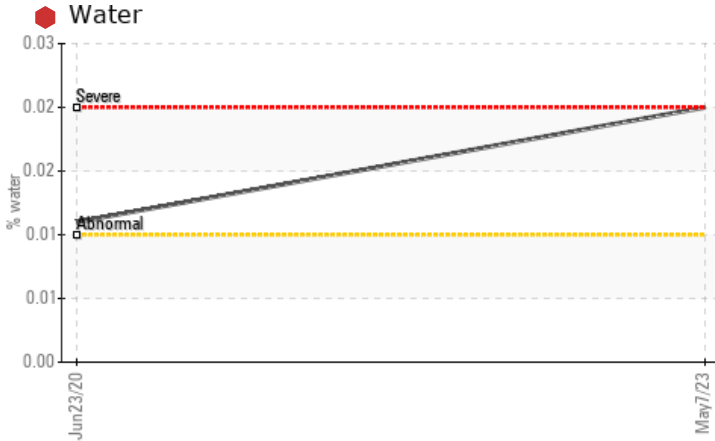


WATER



Machine Id
BDE UNIT 2 (S/N Bx00003-002)
 Component
Transformer Oil
 Fluid
TRANSFORMER NATURAL ESTER FLUID (1620 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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	---
Water	%	ASTM D6304*	>0.01	🔴 0.020	0.011	---
ppm Water	ppm	ASTM D6304*	>100	🔴 209.0	0	---
Interfacial Tension	mN/m	ASTM D971(e)*		🟡 12.95	🔴 12.55	---

Customer Id: NEWMIL
 Sample No.: WC0645956
 Lab Number: 02560012
 Test Package: TRF 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Bill Quesnel CLS,OMA II,MLA-III,LLA-I +1
 (289)291-4641 x4641
Bill.Quesnel@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 Fluid	MISSED	Jun 29 2023	?	We recommend that you drain the transformer oil from the component if this has not already been done.
Resample	MISSED	Jun 29 2023	?	We recommend an early resample to monitor this condition.
Information Required	MISSED	Jun 29 2023	?	Please specify the brand, type, and viscosity of the oil on your next sample.
Check Breathers	MISSED	Jun 29 2023	?	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.

HISTORICAL DIAGNOSIS

23 Jun 2020 Diag: Bill Quesnel

DEGRADATION



We recommend that you drain the transformer oil from the component if this has not already been done. We recommend an early resample to monitor this condition. All component wear rates are normal. The water content is negligible. There is no indication of any contamination in the transformer oil. The AN level is acceptable for this fluid. The interfacial tension (IFT) for this fluid is very low. The transformer oil is no longer serviceable.

view report





OIL ANALYSIS REPORT

Sample Rating Trend

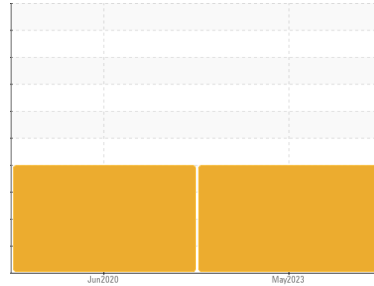
WATER



Machine Id
BDE UNIT 2 (S/N Bx00003-002)

Component
Transformer Oil

Fluid
TRANSFORMER NATURAL ESTER FLUID (1620 LTR)



DIAGNOSIS

Recommendation

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

{not applicable}

Contamination

There is a high concentration of water present in the transformer oil. The system cleanliness is acceptable for your target ISO 4406 cleanliness code.

Fluid Condition

The Interfacial Tension (IFT) of the fluid is low. The AN level is acceptable for this fluid. The transformer oil is no longer serviceable.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0645956	WC0380019	---
Sample Date	Client Info		07 May 2023	23 Jun 2020	---
Machine Age	hrs	Client Info	0	0	---
Oil Age	hrs	Client Info	0	0	---
Oil Changed	Client Info		N/A	N/A	---
Sample Status			SEVERE	SEVERE	---

CONTAMINANTS

	method	limit/base	current	history1	history2	
Water	%	ASTM D6304*	>0.01	0.020	0.011	---
ppm Water	ppm	ASTM D6304*	>100	209.0	0	---

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	3787	7560	---
Particles >6µm	ASTM D7647	>1300	1096	3337	---
Particles >14µm	ASTM D7647	>160	120	724	---
Particles >21µm	ASTM D7647	>40	47	393	---
Particles >38µm	ASTM D7647	>10	6	41	---
Particles >71µm	ASTM D7647	>3	2	2	---
Oil Cleanliness	ISO 4406 (c)	>19/17/14	19/17/14	20/19/17	---

DISSOLVED GAS ANALYSIS (DGA)

	method	limit/base	current	history1	history2
DGA - H2	ppm	ASTM D3612(e)*	0	---	---
DGA - O2	ppm	ASTM D3612(e)*	6653	---	---
DGA - N2	ppm	ASTM D3612(e)*	52375	---	---
DGA - CO	ppm	ASTM D3612(e)*	40	---	---
DGA - CO2	ppm	ASTM D3612(e)*	568	---	---
DGA - Methane	ppm	ASTM D3612(e)*	2	---	---
DGA - Acetylene	ppm	ASTM D3612(e)*	0	---	---
DGA - Ethylene	ppm	ASTM D3612(e)*	3	---	---
DGA - Ethane	ppm	ASTM D3612(e)*	103	---	---
DGA - Total Gas Content	%	ASTM D3612(e)*	59744	---	---
DGA - Total Combustible Gas	ppm	ASTM D3612(e)*	148	---	---

FLUID DEGRADATION

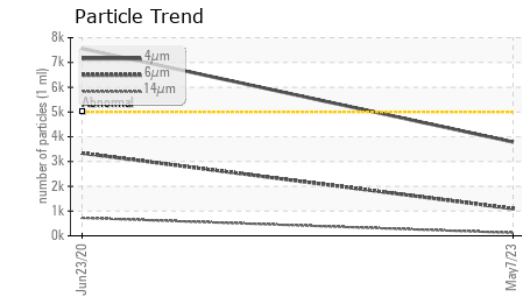
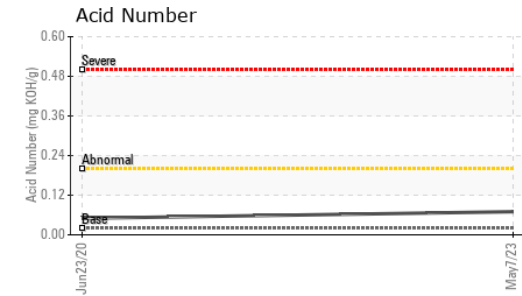
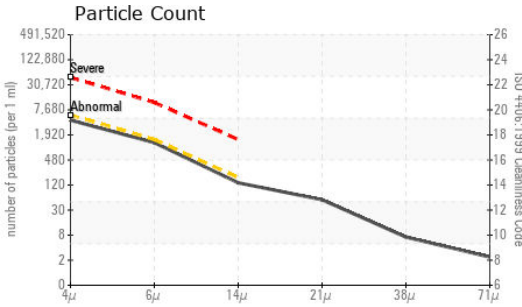
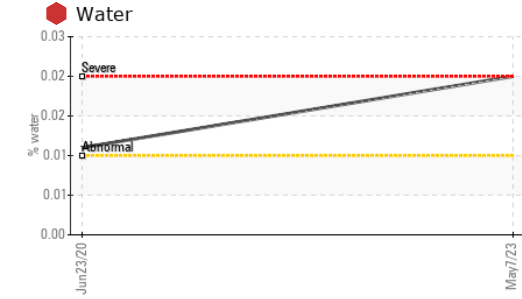
	method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	0.07	0.05	---

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	---



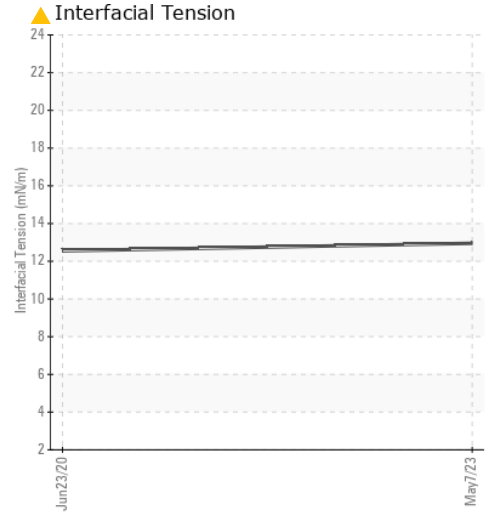
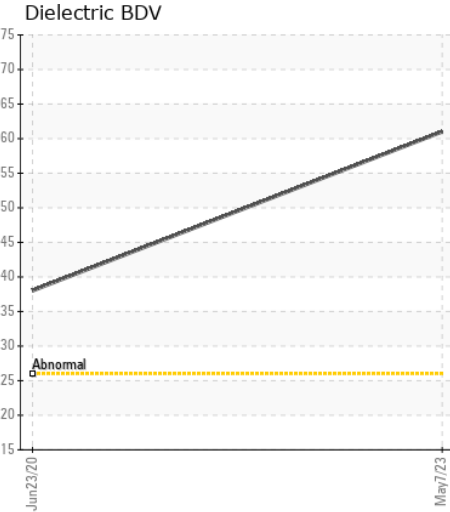
OIL ANALYSIS REPORT



FLUID PROPERTIES	method	limit/base	current	history1	history2
Specific Gravity	ASTM D4052(e)	0.920	0.921	0.922	---
Dielectric Breakdown	kV ASTM D3612(e)*		61	38	---
Interfacial Tension	mN/m ASTM D971(e)*		▲ 12.95	12.55	---
ASTM Color	scalar ASTM D1500(e)	0.5	<0.5	>0.5	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 NEWFOUNDLAND & LABRADOR HYDRO
Sample No. : WC0645956 **Received** : 26 May 2023
Lab Number : 02560012 **Diagnosed** : 13 Jul 2023
Unique Number : 5581052 **Diagnostician** : Bill Quesnel
Test Package : TRF 2 (Additional Tests: PrtCount)
 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.