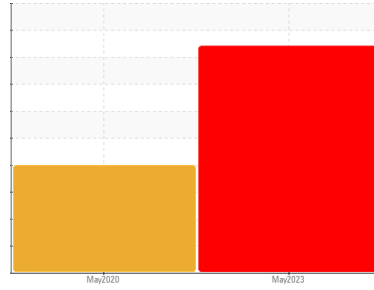




PROBLEM SUMMARY

Sample Rating Trend

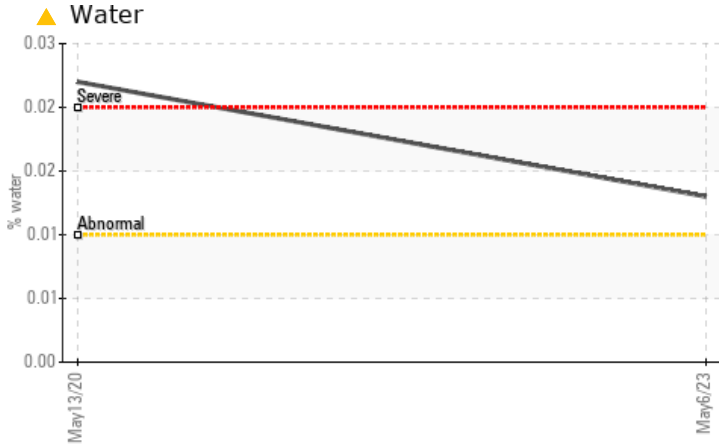


COMBUSTION



Machine Id
BDE UNIT 5 (S/N Bx00003-005)
 Component
Transformer Oil
 Fluid
TRANSFORMER NATURAL ESTER FLUID (--- GAL)

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	▲ 0.013	0.022	---
ppm Water	ppm	ASTM D6304*	>100	▲ 134.6	0	---
DGA - Ethane	ppm	ASTM D3612(e)*		● 437	---	---
Interfacial Tension	mN/m	ASTM D971(e)*		▲ 15.29	● 14.63	---

Customer Id: NEWMIL
 Sample No.: WC0645953
 Lab Number: 02560013
 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	---	---	?	We recommend that you drain the transformer oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	Please specify the brand, type, and viscosity of the oil on your next sample.
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.

HISTORICAL DIAGNOSIS

13 May 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.

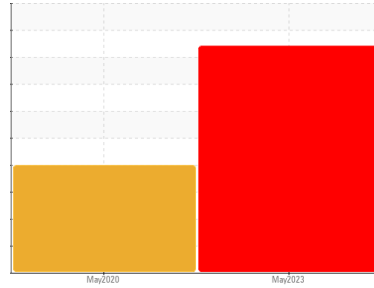
view report





OIL ANALYSIS REPORT

Sample Rating Trend



COMBUSTION



Machine Id
BDE UNIT 5 (S/N Bx00003-005)

Component
Transformer Oil

Fluid
TRANSFORMER NATURAL ESTER FLUID (--- GAL)

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

The ethane level is high indicating low energy arcing in a confined space. There is a moderate concentration of water present in the transformer oil.

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		WC0645953	WC0380007	---
Sample Date	Client Info		06 May 2023	13 May 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	0.013	0.022
ppm Water	ppm	ASTM D6304*	>100	134.6	0

DISSOLVED GAS ANALYSIS (DGA)

	method	limit/base	current	history1	history2
DGA - H2	ppm	ASTM D3612(e)*		11	---
DGA - O2	ppm	ASTM D3612(e)*		243	---
DGA - N2	ppm	ASTM D3612(e)*		57023	---
DGA - CO	ppm	ASTM D3612(e)*		44	---
DGA - CO2	ppm	ASTM D3612(e)*		815	---
DGA - Methane	ppm	ASTM D3612(e)*		4	---
DGA - Acetylene	ppm	ASTM D3612(e)*		0	---
DGA - Ethylene	ppm	ASTM D3612(e)*		4	---
DGA - Ethane	ppm	ASTM D3612(e)*		437	---
DGA - Total Gas Content	%	ASTM D3612(e)*		58581	---
DGA - Total Combustible Gas	ppm	ASTM D3612(e)*		500	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.02	0.06	0.05

VISUAL

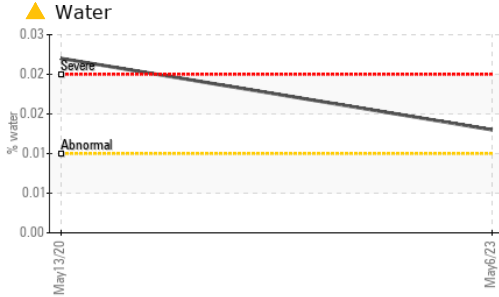
	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML

FLUID PROPERTIES

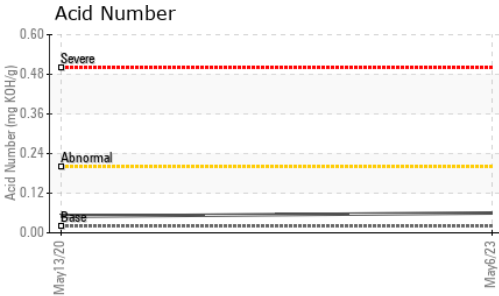
	method	limit/base	current	history1	history2
Specific Gravity		ASTM D4052(e)	0.920	0.921	0.919
Dielectric Breakdown	kV	ASTM D3612(e)*		49	49
Interfacial Tension	mN/m	ASTM D971(e)*		15.29	14.63
ASTM Color	scalar	ASTM D1500(e)	0.5	<0.5	>0.5



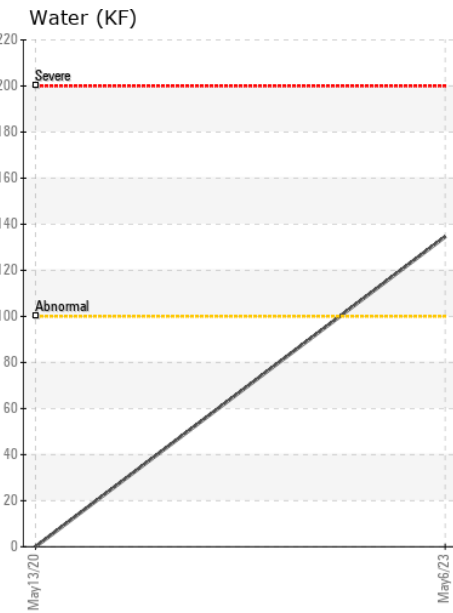
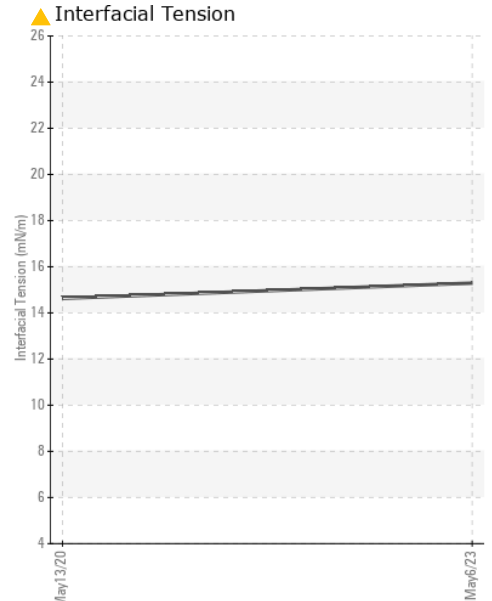
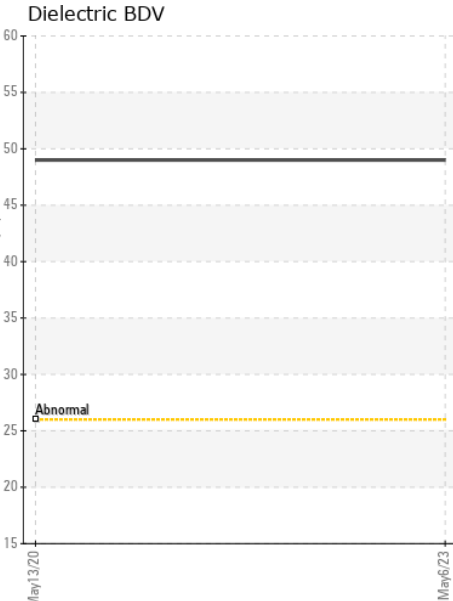
OIL ANALYSIS REPORT



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



GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 NEWFOUNDLAND & LABRADOR HYDRO
Sample No. : WC0645953 **Received** : 26 May 2023
Lab Number : 02560013 **Diagnosed** : 13 Jul 2023
Unique Number : 5581053 **Diagnostician** : Bill Quesnel
Test Package : TRF 2

BAY D'ESPOIR WHSE., 1 CAMP BOGGY RD., PO BOX 100
 MILLTOWN, BAY D'ESPOIR, NL
 CA A0H 1W0
 Contact: Matthew Lambert
 matthewlambert@nlh.nl.ca
 T: (709)882-3126
 F: (709)882-3161

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.