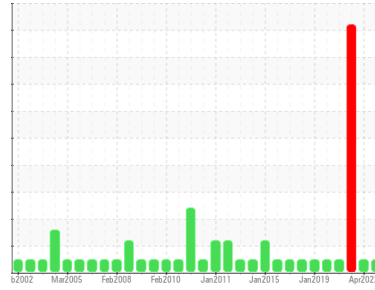


Area  
**Fwd Machinery Space [450143432]**  
Machine Id  
**Transformer 8 MVA - Dielectric Fluid (S/N Sample Tag ET-81001A-S1)**  
Component  
**Transformer Oil**  
Fluid  
**MIDEL 7131 (2852 LTR)**



**DIAGNOSIS**

**Recommendation**  
Resample at the next service interval to monitor.

**Wear**  
{not applicable}

**Contamination**  
The water content is negligible. There is no indication of any contamination in the transformer oil.

**Fluid Condition**  
The AN level is acceptable for this fluid. The condition of the transformer oil is suitable for further service.

**SAMPLE INFORMATION** method limit/base current history1 history2

Sample Number	Client Info	PC	PC	PC
Sample Date	Client Info	<b>12 Nov 2023</b>	25 Apr 2022	25 Nov 2021
Machine Age	hrs Client Info	<b>0</b>	0	0
Oil Age	hrs Client Info	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	SEVERE

**WEAR METALS** method limit/base current history1 history2

PQ	ASTM D8184*	>65	<b>0</b>	0	0
Iron	ppm ASTM D5185(m)	>125	<b>0</b>	---	---
Chromium	ppm ASTM D5185(m)		<b>0</b>	---	---
Nickel	ppm ASTM D5185(m)		<b>0</b>	---	---
Titanium	ppm ASTM D5185(m)		<b>0</b>	---	---
Silver	ppm ASTM D5185(m)	>2	<b>&lt;1</b>	---	---
Aluminum	ppm ASTM D5185(m)	>5	<b>0</b>	---	---
Lead	ppm ASTM D5185(m)	>30	<b>&lt;1</b>	---	---
Copper	ppm ASTM D5185(m)	>10	<b>&lt;1</b>	---	---
Tin	ppm ASTM D5185(m)	>2	<b>0</b>	---	---
Antimony	ppm ASTM D5185(m)		<b>0</b>	---	---
Vanadium	ppm ASTM D5185(m)		<b>0</b>	---	---
Beryllium	ppm ASTM D5185(m)		<b>0</b>	---	---
Cadmium	ppm ASTM D5185(m)		<b>0</b>	---	---

**ADDITIVES** method limit/base current history1 history2

Boron	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Barium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Molybdenum	ppm ASTM D5185(m)		<b>0</b>	---	---
Manganese	ppm ASTM D5185(m)		<b>0</b>	---	---
Magnesium	ppm ASTM D5185(m)		<b>0</b>	---	---
Calcium	ppm ASTM D5185(m)		<b>0</b>	---	---
Phosphorus	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Zinc	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Sulfur	ppm ASTM D5185(m)		<b>4</b>	---	---
Lithium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---

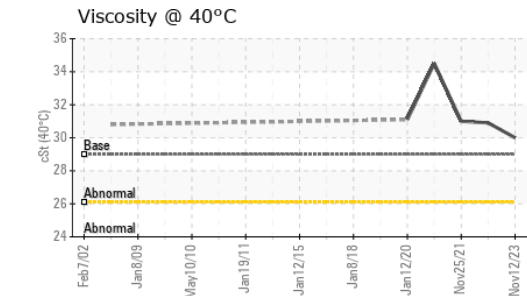
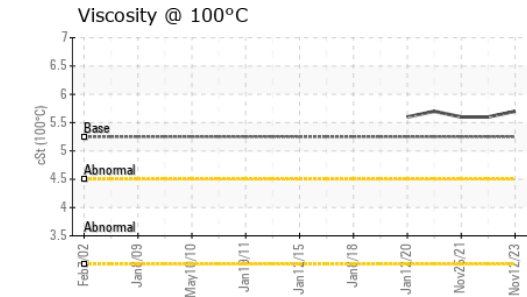
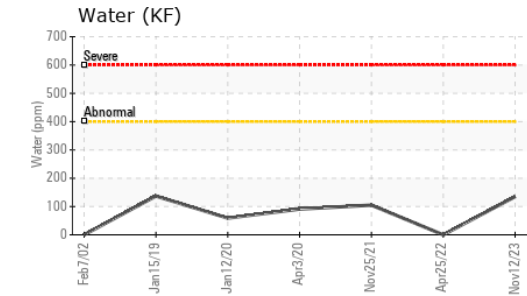
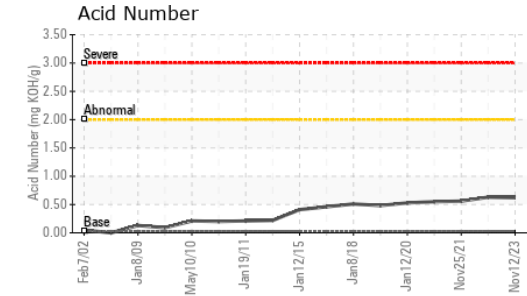
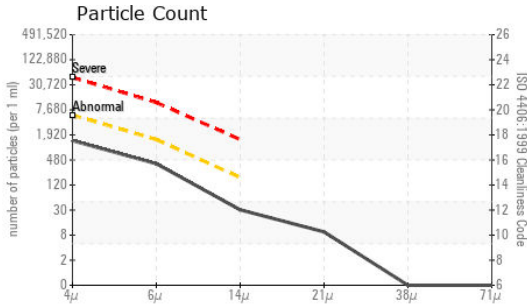
**CONTAMINANTS** method limit/base current history1 history2

Silicon	ppm ASTM D5185(m)	>25	<b>&lt;1</b>	---	---
Sodium	ppm ASTM D5185(m)		<b>&lt;1</b>	---	---
Potassium	ppm ASTM D5185(m)	>20	<b>0</b>	---	---
Water	% ASTM D6304*	>0.04	<b>0.013</b>	0.013	0.010
ppm Water	ppm ASTM D6304*	>400	<b>135</b>	0	105

**FLUID CLEANLINESS** method limit/base current history1 history2

Particles >4µm	ASTM D7647	>5000	<b>1229</b>	2435	254
Particles >6µm	ASTM D7647	>1300	<b>343</b>	372	60
Particles >14µm	ASTM D7647	>160	<b>27</b>	25	5
Particles >21µm	ASTM D7647	>40	<b>8</b>	9	1
Particles >38µm	ASTM D7647	>10	<b>0</b>	1	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>17/16/12</b>	18/16/12	15/13/10

# OIL ANALYSIS REPORT



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.03	<b>0.62</b>	0.63	0.56

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.04	<b>NEG</b>	---	---
Free Water	scalar	Visual*		<b>NEG</b>	---	---

FLUID PROPERTIES		method	limit/base	current	history1	history2
Specific Gravity		ASTM D4052(e)	0.970	<b>0.971</b>	0.971	0.974
Visc @ 40°C	cSt	ASTM D7279(m)	29.0	<b>30.0</b>	30.9	31.0
Visc @ 100°C	cSt	ASTM D7279(m)	5.25	<b>5.7</b>	5.6	5.6
Viscosity Index (VI)	Scale	ASTM D2270*	112	<b>133</b>	121	120
Dielectric Breakdown	kV	ASTM D3612(e)*		<b>49</b>	44	32
Interfacial Tension	mN/m	ASTM D971(e)*		<b>26.09</b>	25.67	▲ 18.13
ASTM Color	scalar	ASTM D1500(e)		<b>&lt;0.5</b>	<0.5	<0.5

SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : **02599009** **Received** : 27 Nov 2023  
**Unique Number** : 5684089 **Diagnosed** : 07 Dec 2023  
**Test Package** : TRF 1 ( Additional Tests: ICP, KV100, KV40, PQ, PrtCount, Spat, VI ) **Diagnostician** : Bill Quesnel

**Suncor - Terra Nova Projects**  
 Scotia Centre, 235 Water Strret  
 St. John's, NL  
 CA A1C 1B6  
 Contact: Josh Hynes  
 joshhynes@suncor.com  
 T: (709)778-3575  
 F: (709)724-2835

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.