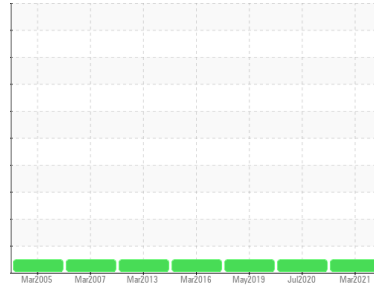




# OIL ANALYSIS REPORT

Sample Rating Trend

**NORMAL**



Area  
**MANITOU FALLS GS**  
 Machine Id  
**FP2G4**  
 Component  
**Governor System**  
 Fluid  
**R&O OIL ISO 46 (--- GAL)**

## DIAGNOSIS

### Recommendation

Little or no information is provided as to the component and lubricant being tested. Recommendations are therefore generic in nature and may not apply to the current application. Please forward information as to equipment type, reservoir capacity, lubricant type and any pertinent information to allow for a more accurate assessment. Resample at the next service interval to monitor. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) R&O OIL ISO 46. Please confirm.

NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal.

### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

### Fluid Condition

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

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>WC0560625</b>	WC0481717	WC0335071
Sample Date	Client Info			<b>29 Mar 2021</b>	08 Jul 2020	09 May 2019
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	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>0.1	<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>50	<b>2</b>	2	2
Chromium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Nickel	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>3	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185(m)	>75	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	0	0
Tin	ppm	ASTM D5185(m)	>55	<b>0</b>	0	0
Antimony	ppm	ASTM D5185(m)		<b>0</b>	<1	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	<1

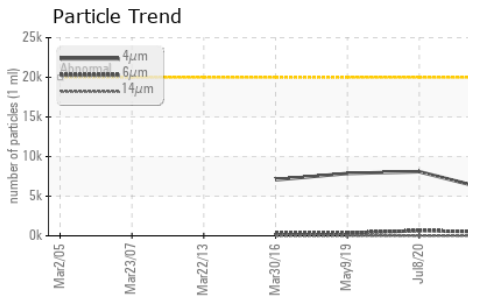
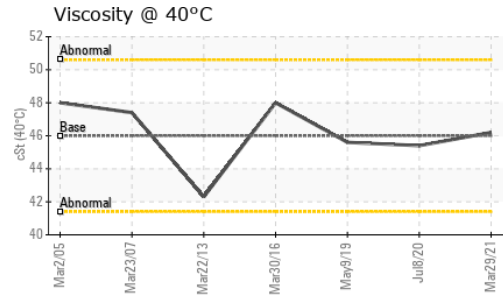
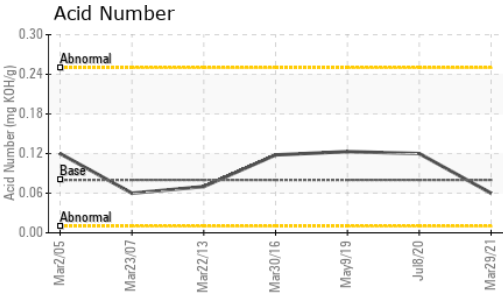
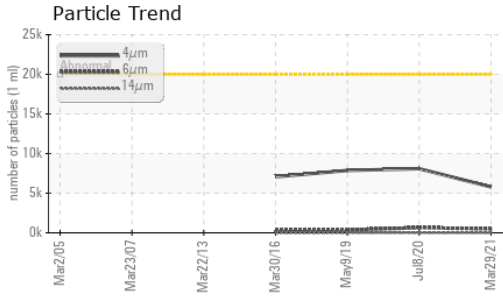
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	5	<b>&lt;1</b>	<1	0
Barium	ppm	ASTM D5185(m)	5	<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)	5	<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	<1
Magnesium	ppm	ASTM D5185(m)	5	<b>0</b>	<1	<1
Calcium	ppm	ASTM D5185(m)	5	<b>&lt;1</b>	<1	<1
Phosphorus	ppm	ASTM D5185(m)	100	<b>2</b>	4	4
Zinc	ppm	ASTM D5185(m)	25	<b>1</b>	1	2
Sulfur	ppm	ASTM D5185(m)	1500	<b>1918</b>	1907	1898
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>8	<b>&lt;1</b>	1	<1
Sodium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	0
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	<b>5789</b>	8091	7871
Particles >6µm		ASTM D7647	>5000	<b>479</b>	646	366
Particles >14µm		ASTM D7647	>640	<b>6</b>	9	12
Particles >21µm		ASTM D7647	>160	<b>1</b>	0	3
Particles >38µm		ASTM D7647	>40	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>10	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	<b>20/16/10</b>	20/17/10	20/16/11



# OIL ANALYSIS REPORT

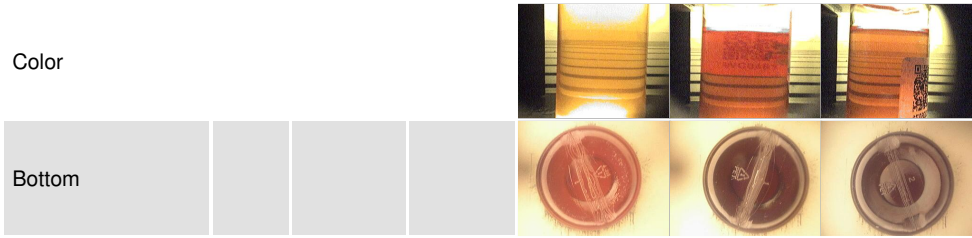


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.08	<b>0.06</b>	0.12	0.123

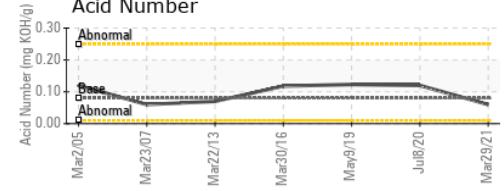
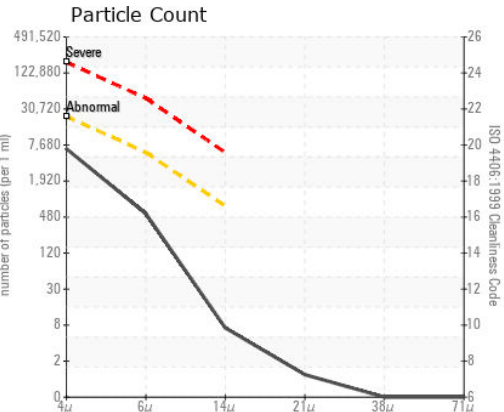
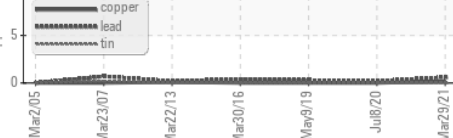
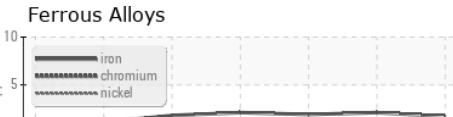
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	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*	>0.1	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46	<b>46.2</b>	45.4	45.6

### SAMPLE IMAGES



### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0560625  
**Lab Number** : 02423551  
**Unique Number** : 5227051  
**Test Package** : IND 2 ( Additional Tests: PrtCount )

**Ontario Power Generation**  
 KENORA PRODUCTION CENTRE, 200-60 FOURTEENTH ST. N.  
 KENORA, ON  
 CA P9N 4M9  
 Contact: Josh Robinson  
 josh.robinson@opg.com

Received : 26 May 2021  
 Diagnosed : 27 May 2021  
 Diagnostician : Wes Davis  
 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.