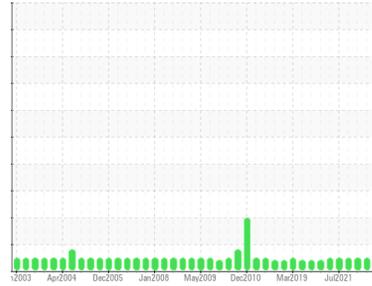




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
#3 Boiler Feed Pump Variable Speed Drive (S/N 43200-P -3)
 Component
Speed Reducer
 Fluid
ESSO NUTO H ISO 46 (650 LTR)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

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		WC0831842	WC0774132	WC0714818
Sample Date	Client Info		10 Jul 2023	24 Jan 2023	06 Sep 2022
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			NORMAL	NORMAL	NORMAL

CONTAMINATION

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

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >150	2	2	1
Chromium	ppm	ASTM D5185(m) >10	0	0	0
Nickel	ppm	ASTM D5185(m) >10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	0	<1	<1
Silver	ppm	ASTM D5185(m)	<1	0	0
Aluminum	ppm	ASTM D5185(m) >25	0	0	0
Lead	ppm	ASTM D5185(m) >100	<1	<1	<1
Copper	ppm	ASTM D5185(m) >50	2	2	2
Tin	ppm	ASTM D5185(m) >10	0	0	0
Antimony	ppm	ASTM D5185(m) >5	0	<1	0
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	<1	<1	<1
Barium	ppm	ASTM D5185(m) 0	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m) 5	<1	<1	0
Calcium	ppm	ASTM D5185(m) 50	48	53	49
Phosphorus	ppm	ASTM D5185(m) 330	332	359	369
Zinc	ppm	ASTM D5185(m) 410	447	437	444
Sulfur	ppm	ASTM D5185(m) 2700	2358	2471	2577
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >50	1	<1	<1
Sodium	ppm	ASTM D5185(m)	<1	<1	<1
Potassium	ppm	ASTM D5185(m) >20	0	0	0

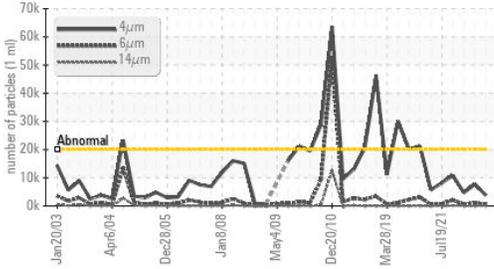
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	3804	7660	4718
Particles >6µm	ASTM D7647	>5000	693	1045	590
Particles >14µm	ASTM D7647	>640	56	60	39
Particles >21µm	ASTM D7647	>160	13	15	9
Particles >38µm	ASTM D7647	>40	0	1	0
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	19/17/13	20/17/13	19/16/12

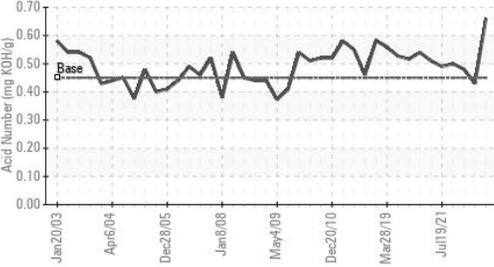


OIL ANALYSIS REPORT

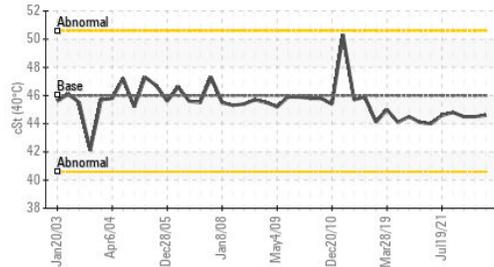
Particle Trend



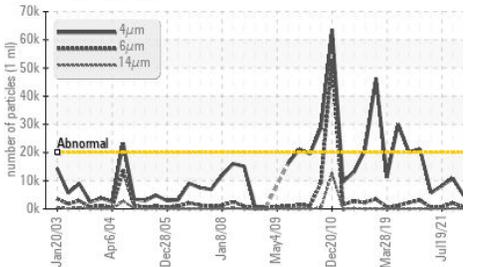
Acid Number



Viscosity @ 40°C



Particle Trend



FLUID DEGRADATION method limit/base current history1 history2

Acid Number (AN) mg KOH/g ASTM D974* 0.45 **0.66** 0.43 0.48

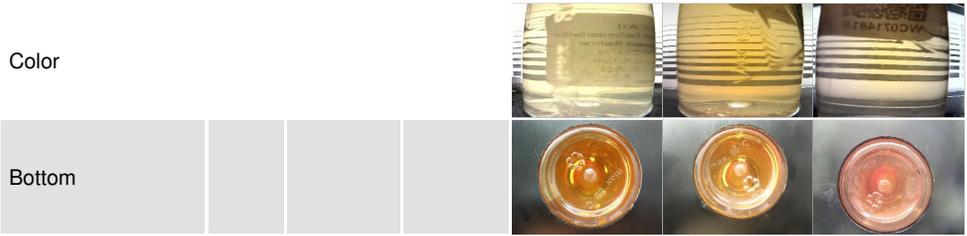
VISUAL method limit/base current history1 history2

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*	>0.1	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES method limit/base current history1 history2

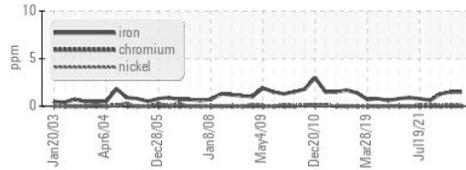
Visc @ 40°C cSt ASTM D7279(m) 46 **44.6** 44.5 44.5

SAMPLE IMAGES method limit/base current history1 history2

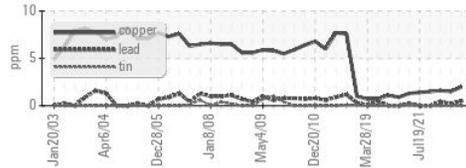


GRAPHS

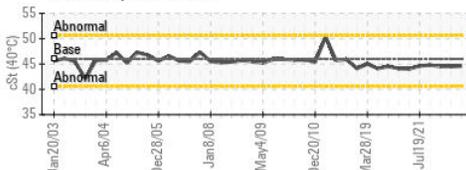
Ferrous Alloys



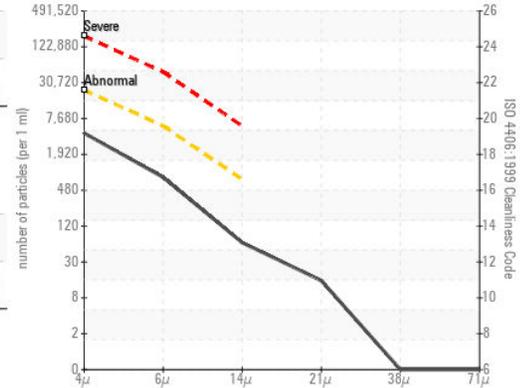
Non-ferrous Metals



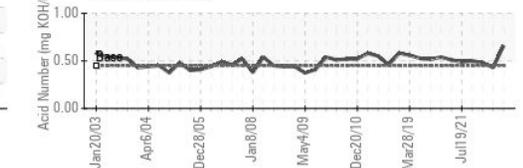
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
 Sample No. : WC0831842 Received : 19 Dec 2023
 Lab Number : 02604171 Diagnosed : 20 Dec 2023
 Unique Number : 5697256 Diagnostician : Wes Davis
 Test Package : IND 2 (Additional Tests: TAN Man)

Ontario Power Generation
 ATIKOKAN T.G.S., BOX 1900
 ATIKOKAN, ON
 CA P0T 1C0
 Contact: Dale Anthony
 dale.anthony@opg.com
 T:
 F: (807)597-1198

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.