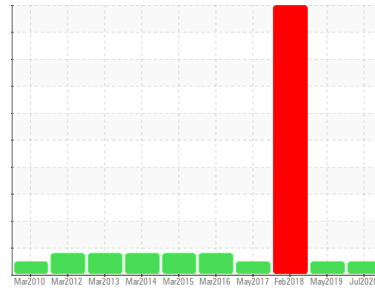




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Lac Seul GS
 Machine Id
FP5-G1 HP Bearing Lube System
 Component
Bearing Lube
 Fluid
ESSO NUTO H ISO 68 (--- GAL)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as ESSO NUTO H ISO 68, however, a fluid match indicates that this fluid is ISO 68 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample. 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

Additive levels indicate the addition of a different brand, or type of oil. 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	WC0481703	WC0335057	WC944478
Sample Date	Client Info	13 Jul 2020	08 May 2019	12 Feb 2018
Machine Age	hrs	Client Info	0	0
Oil Age	hrs	Client Info	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	NORMAL	SEVERE

CONTAMINATION

method	limit/base	current	history1	history2
Water	WC Method >2	NEG	NEG	NEG

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	0	7	0
Iron	ppm ASTM D5185(m) >120	<1	0	0
Chromium	ppm ASTM D5185(m) >5	0	0	0
Nickel	ppm ASTM D5185(m)	<1	0	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	0	0	0
Aluminum	ppm ASTM D5185(m) >4	<1	<1	<1
Lead	ppm ASTM D5185(m) >30	<1	<1	<1
Copper	ppm ASTM D5185(m) >17	8	15	18
Tin	ppm ASTM D5185(m) >10	0	0	0
Antimony	ppm ASTM D5185(m)	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	<1	0

ADDITIVES

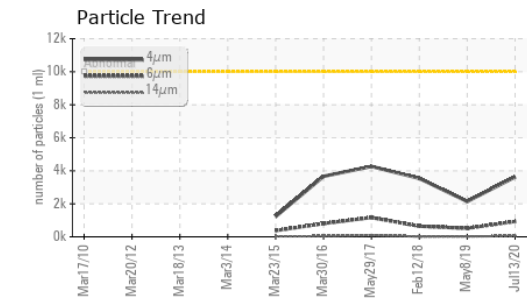
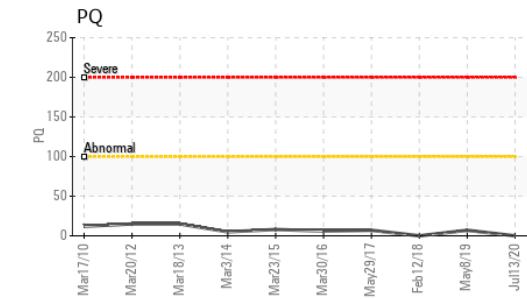
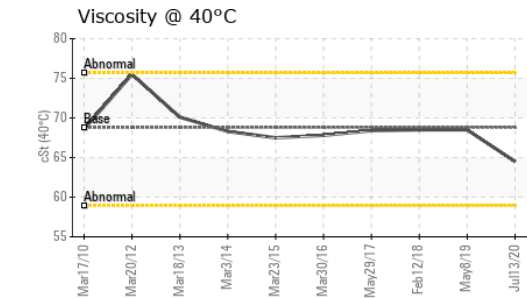
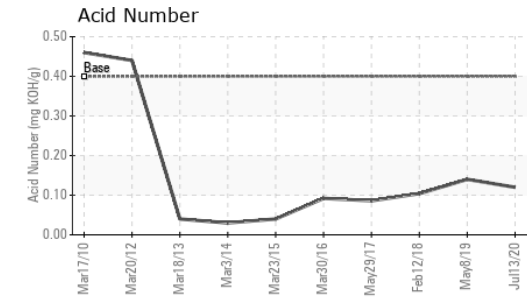
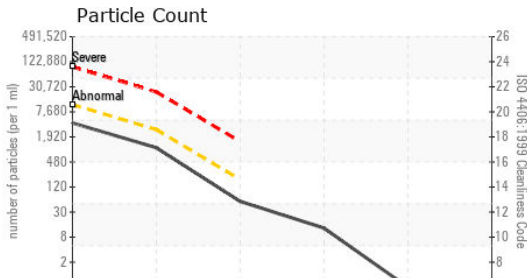
method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 0	<1	<1	0
Barium	ppm ASTM D5185(m) 0	0	0	0
Molybdenum	ppm ASTM D5185(m) 0	0	<1	0
Manganese	ppm ASTM D5185(m)	0	<1	0
Magnesium	ppm ASTM D5185(m) 5	<1	<1	<1
Calcium	ppm ASTM D5185(m) 50	8	9	8
Phosphorus	ppm ASTM D5185(m) 330	62	65	67
Zinc	ppm ASTM D5185(m) 420	50	48	51
Sulfur	ppm ASTM D5185(m) 3100	2415	2492	2430
Lithium	ppm ASTM D5185(m)	<1	0	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >25	<1	<1	<1
Sodium	ppm ASTM D5185(m)	3	4	4
Potassium	ppm ASTM D5185(m) >20	3	2	2



OIL ANALYSIS REPORT



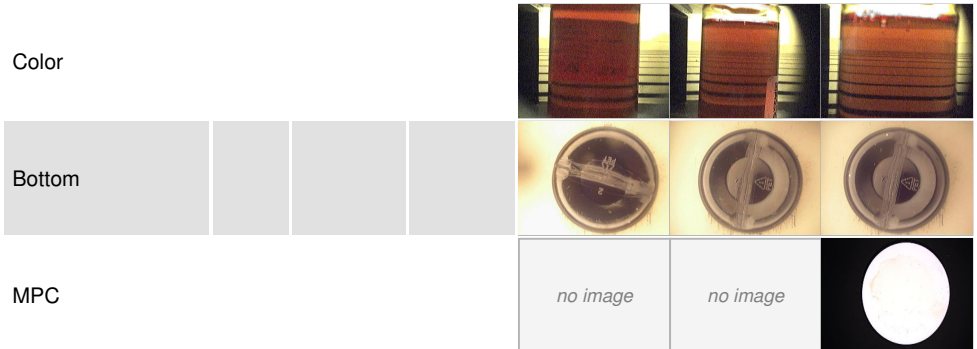
FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>10000	3625	2140	3539
Particles >6µm	ASTM D7647	>2500	926	513	644
Particles >14µm	ASTM D7647	>160	48	23	16
Particles >21µm	ASTM D7647	>40	11	4	5
Particles >38µm	ASTM D7647	>10	0	0	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>20/18/14	19/17/13	18/16/12	19/17/11

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	.40	0.12	0.140	0.104

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*	>2	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)	68.8	64.5	68.5	68.5

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0481703
Lab Number : **02365431**
Unique Number : 5072875
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

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.