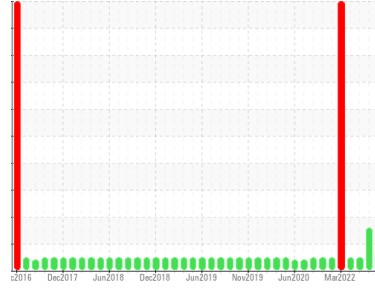


Area
Main Power Generation [450104988]
Machine Id
Generator - MPG (Port) Lube Oil System (S/N Sample Tag XX-80201-S1)
Component
Turbine
Fluid
PETRO CANADA TURBOFLO 32 (8300 LTR)



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 PETRO CANADA TURBOFLO 32, however, a fluid match indicates that this fluid is ISO 32 Gas / Steam Turbine Oil. Please confirm the oil type and grade on your next sample. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MAR 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear
Component wear rates appear to be normal (unconfirmed).

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	PC0052260	PC	PC
Sample Date	Client Info	13 Mar 2023	26 Feb 2023	26 Feb 2023
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		ATTENTION	ABNORMAL	NORMAL

CONTAMINATION method limit/base current history1 history2

Water	WC Method	>0.03	NEG	NEG	NEG
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WEAR METALS method limit/base current history1 history2

PQ	ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m) >15	<1	<1	<1
Chromium	ppm	ASTM D5185(m) >4	0	0	0
Nickel	ppm	ASTM D5185(m) >2	0	0	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	0
Aluminum	ppm	ASTM D5185(m) >10	0	0	0
Lead	ppm	ASTM D5185(m)	0	0	<1
Copper	ppm	ASTM D5185(m) >5	<1	<1	<1
Tin	ppm	ASTM D5185(m) >5	<1	<1	<1
Antimony	ppm	ASTM D5185(m)	0	<1	<1
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

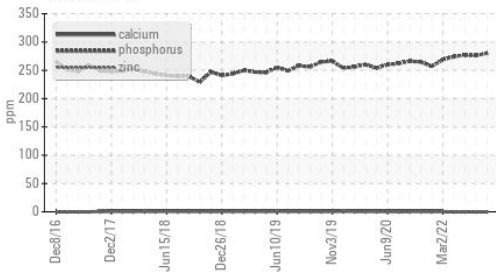
Boron	ppm	ASTM D5185(m) 0	<1	<1	<1
Barium	ppm	ASTM D5185(m) 0	0	0	0
Molybdenum	ppm	ASTM D5185(m) 0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m) 0	0	0	0
Calcium	ppm	ASTM D5185(m) 0	0	0	0
Phosphorus	ppm	ASTM D5185(m) 120	▲ 280	276	277
Zinc	ppm	ASTM D5185(m) 0.0	<1	<1	<1
Sulfur	ppm	ASTM D5185(m) 0	▲ 510	520	517
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS method limit/base current history1 history2

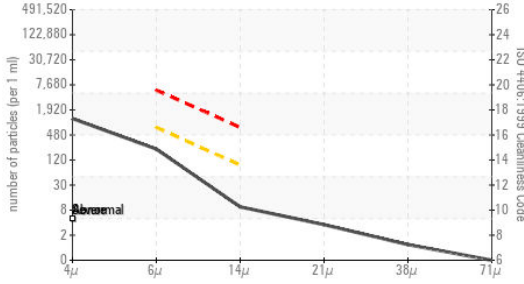
Silicon	ppm	ASTM D5185(m) >15	<1	<1	<1
Sodium	ppm	ASTM D5185(m)	0	0	0
Potassium	ppm	ASTM D5185(m) >20	0	0	0

OIL ANALYSIS REPORT

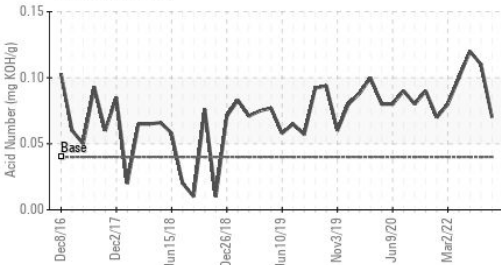
Additives



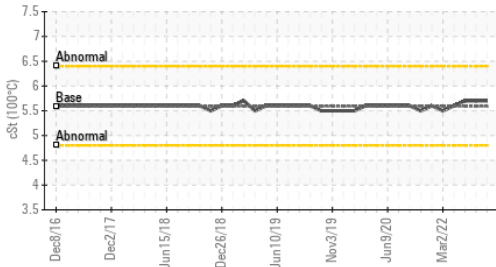
Particle Count



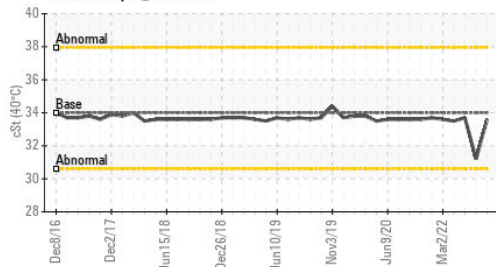
Acid Number



Viscosity @ 100°C



Viscosity @ 40°C



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		1046	8105	287
Particles >6µm		ASTM D7647	>640	194	▲ 2006	64
Particles >14µm		ASTM D7647	>80	8	▲ 211	7
Particles >21µm		ASTM D7647	>20	3	▲ 81	3
Particles >38µm		ASTM D7647	>4	1	3	1
Particles >71µm		ASTM D7647	>3	0	1	1
Oil Cleanliness		ISO 4406 (c)	>--/16/13	17/15/10	▲ 20/18/15	15/13/10

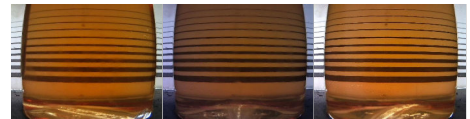
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.04	0.07	0.11	0.12

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*	>0.03	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)	34.0	33.6	31.2	33.7
Visc @ 100°C	cSt	ASTM D7279(m)	5.59	5.7	5.7	5.7
Viscosity Index (VI)	Scale	ASTM D2270*	110	109	124	108

SAMPLE IMAGES

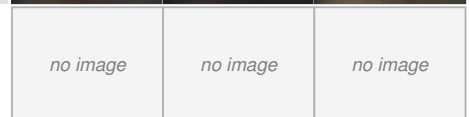
Color



Bottom



MPC



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0052260
Lab Number : **02545062**
Unique Number : 5542067
Test Package : MAR 2 (Additional Tests: KV100, PQ, VI)

Received : 14 Mar 2023
Diagnosed : 16 Mar 2023
Diagnostician : Kevin Marson

Suncor - Terra Nova Projects
Scotia Centre, 235 Water Street
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.