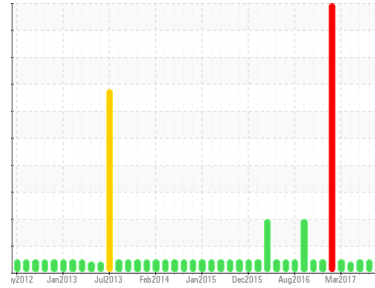


Area  
**Main Power Generation [71114023]**  
Machine Id  
**Generator - MPG (Port) Lube Oil System (S/N Sample Tag XX-80201-S1)**  
Component  
**Turbine**  
Fluid  
**PETRO CANADA TURBOFLO 32 (8300 LTR)**



**DIAGNOSIS**

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

**Wear**  
All component wear rates are normal.

**Contamination**  
MPC (Membrane Patch Calorimetry) test indicates acceptable levels of varnish present. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

**Fluid Condition**  
Linear Sweep Voltammetry (RULER – ASTM D6971) testing indicates normal levels of anti-oxidants present in the 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	<b>PC</b>	PC408607	PC
Sample Date	Client Info	<b>02 Dec 2017</b>	29 Oct 2017	19 Jul 2017
Machine Age	hrs	Client Info	<b>0</b>	0
Oil Age	hrs	Client Info	<b>0</b>	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>NORMAL</b>	NORMAL	NORMAL

**WEAR METALS**

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	5	---
Iron	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	<1
Chromium	ppm	ASTM D5185(m) >4	<b>0</b>	0
Nickel	ppm	ASTM D5185(m) >2	<b>0</b>	0
Titanium	ppm	ASTM D5185(m)	<b>0</b>	0
Silver	ppm	ASTM D5185(m)	<b>0</b>	0
Aluminum	ppm	ASTM D5185(m) >10	<b>0</b>	<1
Lead	ppm	ASTM D5185(m)	<b>&lt;1</b>	0
Copper	ppm	ASTM D5185(m) >5	<b>&lt;1</b>	<1
Tin	ppm	ASTM D5185(m) >5	<b>0</b>	0
Antimony	ppm	ASTM D5185(m)	<b>0</b>	0
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	0
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	0
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	0

**ADDITIVES**

method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m) 0	<b>0</b>	<1
Barium	ppm	ASTM D5185(m) 0	<b>0</b>	0
Molybdenum	ppm	ASTM D5185(m) 0	<b>0</b>	0
Manganese	ppm	ASTM D5185(m)	<b>0</b>	0
Magnesium	ppm	ASTM D5185(m) 0	<b>0</b>	0
Calcium	ppm	ASTM D5185(m) 0	<b>&lt;1</b>	<1
Phosphorus	ppm	ASTM D5185(m) 120	<b>248</b>	249
Zinc	ppm	ASTM D5185(m) 0.0	<b>&lt;1</b>	1
Sulfur	ppm	ASTM D5185(m) 0	<b>497</b>	507
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1

**CONTAMINANTS**

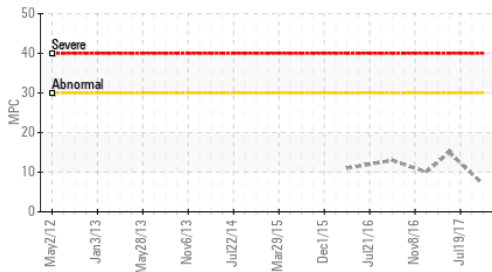
method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	<1
Sodium	ppm	ASTM D5185(m)	<b>&lt;1</b>	<1
Potassium	ppm	ASTM D5185(m) >20	<b>0</b>	0
Water	%	ASTM D6304* >0.03	<b>0.001</b>	---
ppm Water	ppm	ASTM D6304* >300	<b>10.3</b>	---

**FLUID CLEANLINESS**

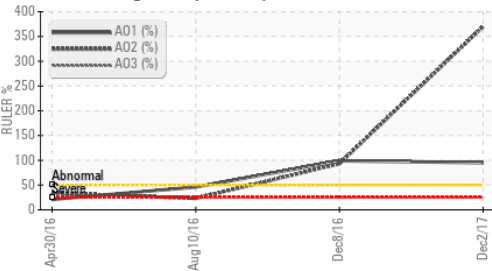
method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	<b>252</b>	118	624
Particles >6µm	ASTM D7647 >640	<b>71</b>	40	140
Particles >14µm	ASTM D7647 >80	<b>10</b>	6	16
Particles >21µm	ASTM D7647 >20	<b>3</b>	2	6
Particles >38µm	ASTM D7647 >4	<b>0</b>	0	1
Particles >71µm	ASTM D7647 >3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c) >--/16/13	<b>15/13/10</b>	14/12/10	16/14/11

# OIL ANALYSIS REPORT

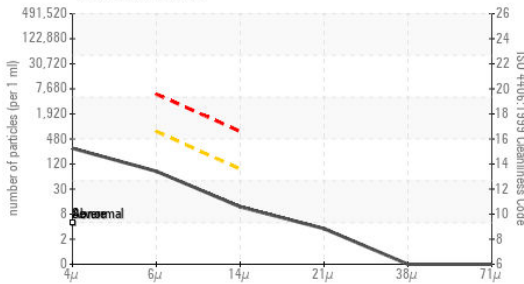
Varnish Potential



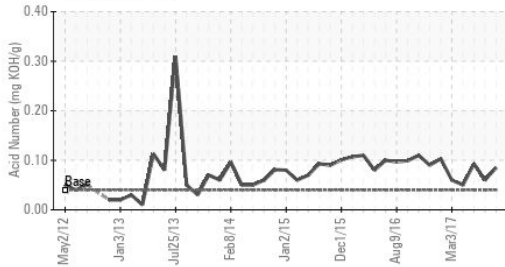
Remaining Life (RULER)



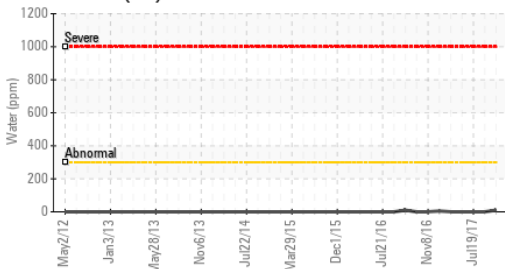
Particle Count



Acid Number



Water (KF)



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.04	<b>0.085</b>	0.06	0.093
Anti-Oxidant 1	%	ASTM D6971*	<25	<b>95</b>	---	---
Anti-Oxidant 2	%	ASTM D6971*	<25	<b>370</b>	---	---
Anti-Oxidant 3	%	ASTM D6971*	<25	<b>74</b>	---	---
MPC Varnish Potential	Scale	ASTM D7843(m)*	>15	<b>7</b>	---	---

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*	>0.03	<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)	34.0	<b>33.9</b>	33.6	33.8
Visc @ 100°C	cSt	ASTM D7279(m)	5.59	<b>5.6</b>	5.6	5.6
Viscosity Index (VI)	Scale	ASTM D2270*	110	<b>102</b>	103	102

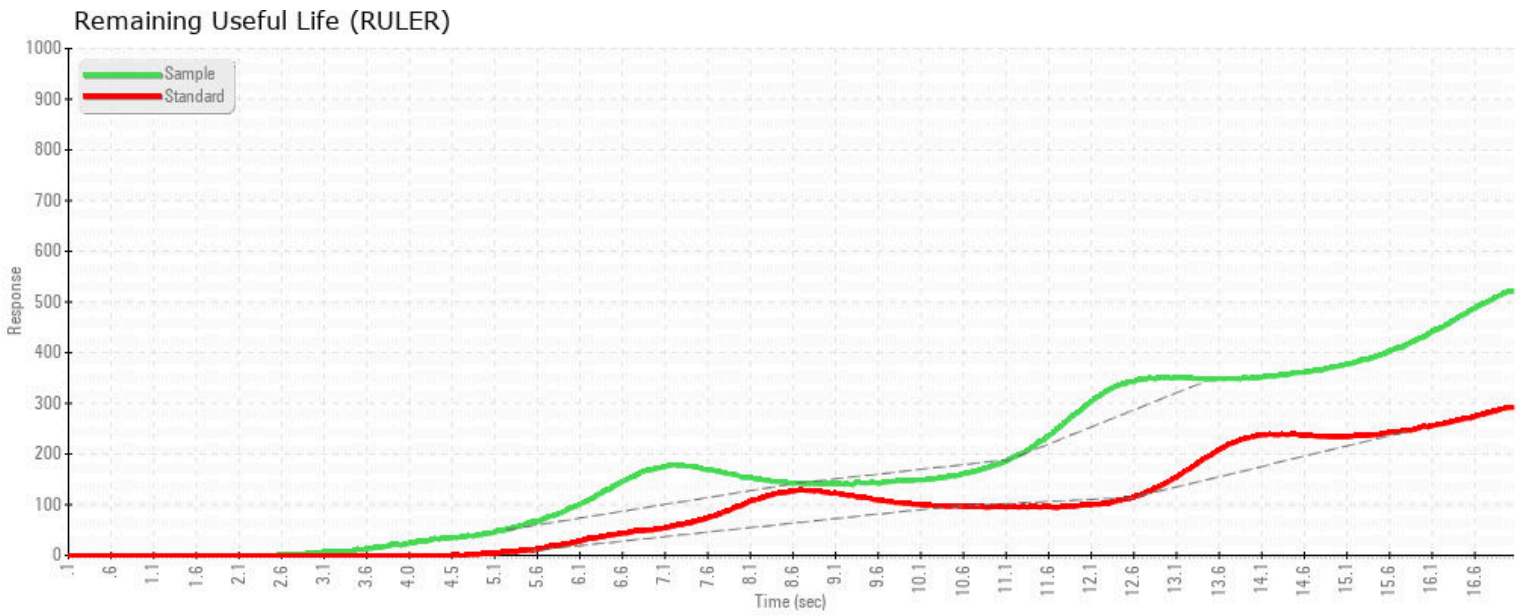
SAMPLE IMAGES		method	limit/base	current	history1	history2
Color						
Bottom						
MPC					no image	no image



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC  
**Lab Number** : **02186496**  
**Unique Number** : 4613605  
**Test Package** : AOM 1

**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.



MPC (Varnish Test)



Sample Color & Clarity



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