



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINANTS	NORMAL
OIL CONDITION	NORMAL

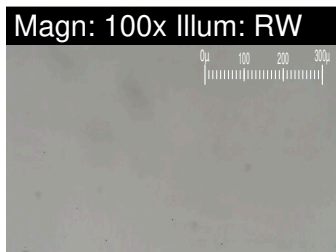
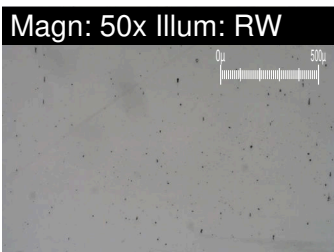
Area
Powerhouse
 Machine Id
SOLAR UNIT 2
 Component
Turbine
 Fluid
PETRO CANADA TURBOFLO XL32 (1800 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

WEAR

All component wear rates are normal. The ferrography results are normal indicating no abnormal wear in the system.



Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0872209	WC0872208	WC0755989
Sample Date		Client Info		05 Jun 2024	21 May 2024	08 Nov 2023
Machine Age	yrs	Client Info		0	0	0
Oil Age	yrs	Client Info		1	1	6
Filter Age	yrs	Client Info		0	0	0
Oil Changed		Client Info		Filtered	N/A	Changed
Filter Changed		Client Info		Changed	N/A	N/A
Sample Status				NORMAL	ABNORMAL	NORMAL
PQ		ASTM D8184*		0	0	0
Iron	ppm	ASTM D5185(m)	>15	0	0	0
Chromium	ppm	ASTM D5185(m)	>4	0	0	0
Nickel	ppm	ASTM D5185(m)	>2	0	0	0
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
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	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Large Particles		DR-Ferr*		0.5	2.5	3.6
Small Particles		DR-Ferr*		1.8	2.4	3.0
Total Particles		DR-Ferr*	>---	2.3	4.9	6.6
Large Particles Percentage	%	DR-Ferr*		0	2	9.1
Severity Index		DR-Ferr*		1	0	2
Ferrous Rubbing	Scale 0-10	ASTM D7684*		1	1	1
Ferrous Sliding	Scale 0-10	ASTM D7684*			1	
Ferrous Cutting	Scale 0-10	ASTM D7684*				
Ferrous Rolling	Scale 0-10	ASTM D7684*		1	1	1
Ferrous Break-in	Scale 0-10	ASTM D7684*				
Ferrous Spheres	Scale 0-10	ASTM D7684*				
Ferrous Black Oxides	Scale 0-10	ASTM D7684*				
Ferrous Red Oxides	Scale 0-10	ASTM D7684*				
Ferrous Corrosive	Scale 0-10	ASTM D7684*				
Ferrous Other	Scale 0-10	ASTM D7684*				
Nonferrous Rubbing	Scale 0-10	ASTM D7684*				
Nonferrous Sliding	Scale 0-10	ASTM D7684*				
Nonferrous Cutting	Scale 0-10	ASTM D7684*				
Nonferrous Rolling	Scale 0-10	ASTM D7684*				
Nonferrous Other	Scale 0-10	ASTM D7684*				

CONTAMINANTS

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

Silicon	ppm	ASTM D5185(m)	>15	0	4	0
Potassium	ppm	ASTM D5185(m)	>20	0	0	0
Water	%	ASTM D6304*	>0.03	0.002	0.001	0.001
ppm Water	ppm	ASTM D6304*	>300	23	4	8.3
MPC Varnish Potential	Scale	ASTM D7843(m)*	>15	11	9	---
Particles >4µm		ASTM D7647	>2500	708	▲ 8595	216
Particles >6µm		ASTM D7647	>640	198	▲ 2102	43
Particles >14µm		ASTM D7647	>80	8	▲ 195	4
Particles >21µm		ASTM D7647	>20	2	▲ 61	1
Particles >38µm		ASTM D7647	>4	0	● 8	0
Particles >71µm		ASTM D7647	>3	0	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	17/15/10	▲ 20/18/15	15/13/9
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
Carbonaceous Material	Scale 0-10	ASTM D7684*				
Sand/Dirt	Scale 0-10	ASTM D7684*		1	1	1
Fibres	Scale 0-10	ASTM D7684*				
Spheres	Scale 0-10	ASTM D7684*				
Other	Scale 0-10	ASTM D7684*		1	1	1

OIL CONDITION

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

Sodium	ppm	ASTM D5185(m)		0	0	0
Boron	ppm	ASTM D5185(m)	0	0	0	<1
Barium	ppm	ASTM D5185(m)	0	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	0	0	0
Calcium	ppm	ASTM D5185(m)	0	0	0	<1
Phosphorus	ppm	ASTM D5185(m)	5	10	9	6
Zinc	ppm	ASTM D5185(m)	0	<1	<1	<1
Sulfur	ppm	ASTM D5185(m)	750	590	566	623
Acid Number (AN)	mg KOH/g	ASTM D974*	0.04	0.05	0.06	0.07
Visc @ 40°C	cSt	ASTM D7279(m)	33.86	34.3	34.1	34.2
Lubricant Degradation	Scale 0-10	ASTM D7684*				

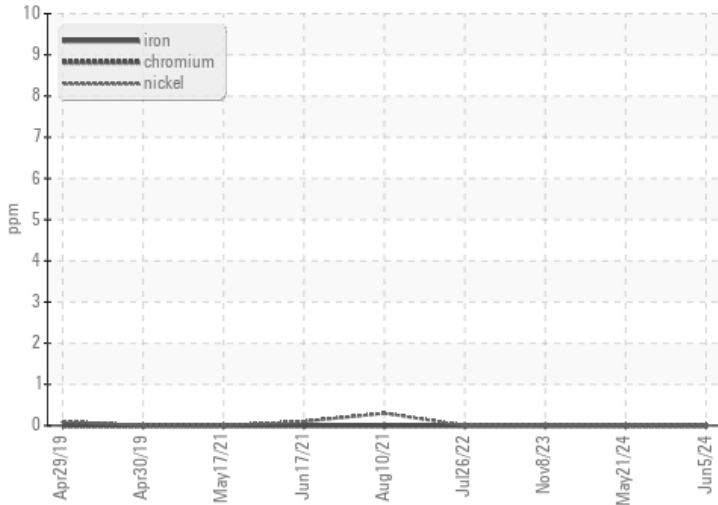
MPC (Varnish Test)



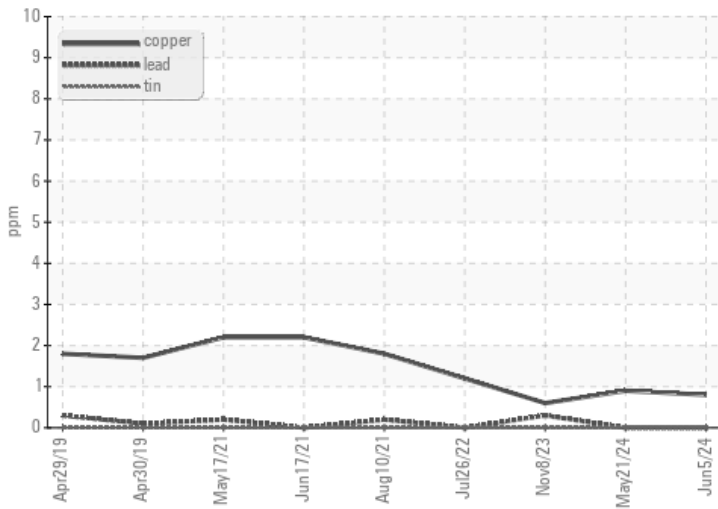
Sample Color & Clarity



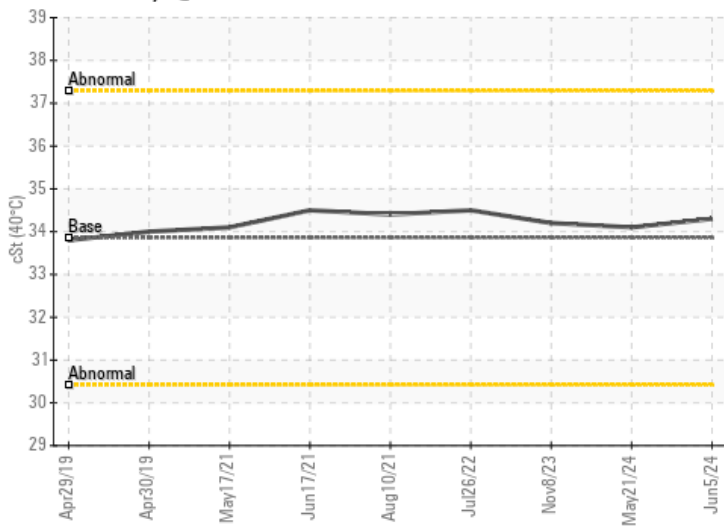
Ferrous Alloys



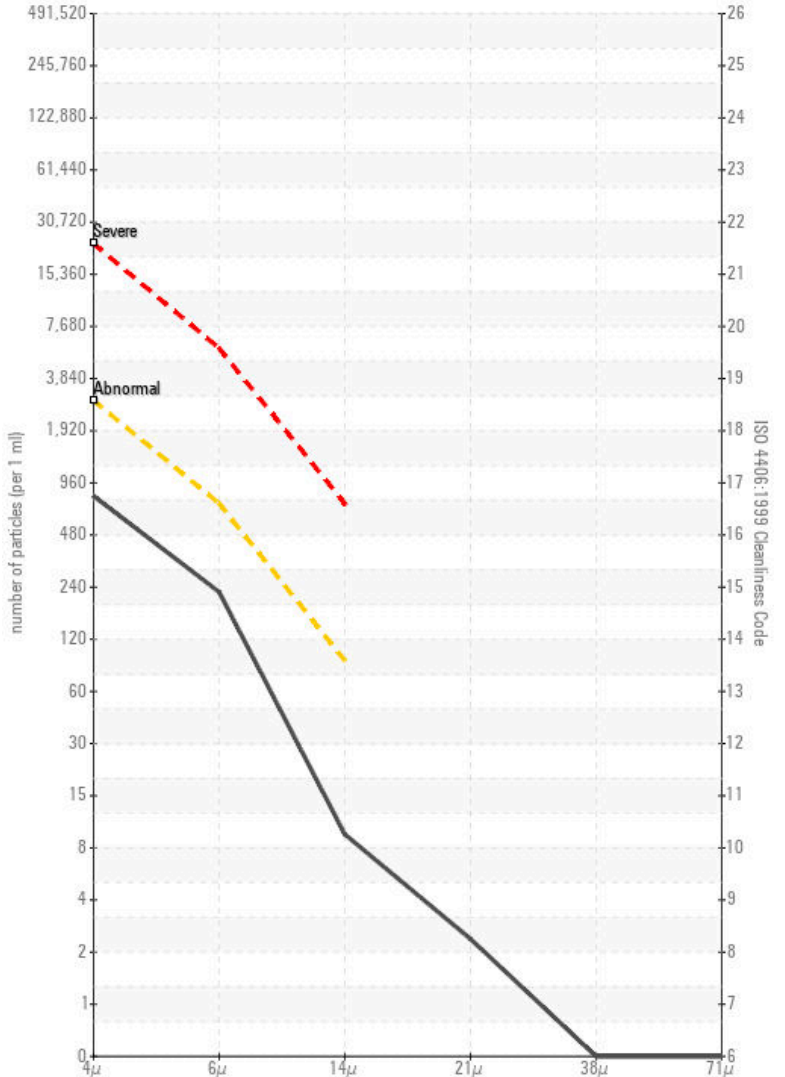
Non-ferrous Metals



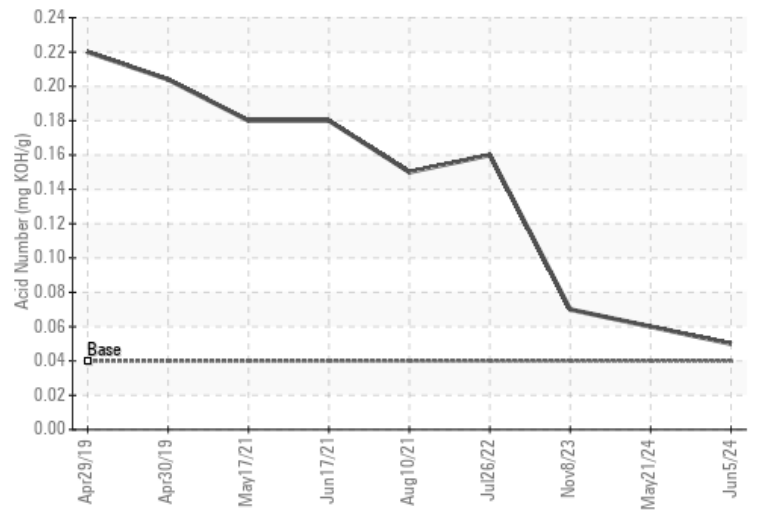
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0872209
Lab Number : 02641399
Unique Number : 5798938
Test Package : IND 3 (Additional Tests: MPC)
Received : 12 Jun 2024
Tested : 17 Jun 2024
Diagnosed : 17 Jun 2024 - Kevin Marson

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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.