



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	ABNORMAL

Area  
**TEAM 15**  
Machine Id  
**156125 (S/N STEAMING VESSEL)**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX EP 220 (7 GAL)**

**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 ENDURATEX EP 220, however, a fluid match indicates that this fluid is ISO 220 Synthetic (PAO) Gear Oil. Please confirm the oil type and grade on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PC0078841	PC0077093	PC0074789
Sample Date		Client Info		05 Jun 2024	14 Jan 2024	25 Oct 2023
Machine Age	mths	Client Info		0	0	0
Oil Age	mths	Client Info		0	0	0
Filter Age	mths	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	NORMAL

**WEAR**

An increase in the iron level is noted. An increase in the aluminum level is noted.

Iron	ppm	ASTM D5185(m)	>200	14	7	<1
Chromium	ppm	ASTM D5185(m)	>15	0	0	0
Nickel	ppm	ASTM D5185(m)	>15	0	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	0	<1
Aluminum	ppm	ASTM D5185(m)	>25	8	<1	0
Lead	ppm	ASTM D5185(m)	>100	0	0	<1
Copper	ppm	ASTM D5185(m)	>200	<1	<1	6
Tin	ppm	ASTM D5185(m)	>25	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

**CONTAMINATION**

There is no indication of any contamination in the oil.

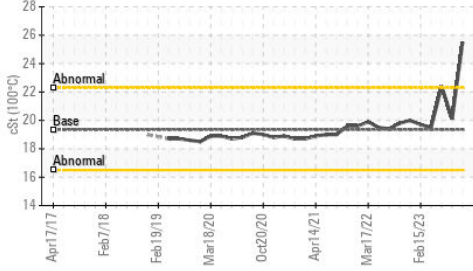
Silicon	ppm	ASTM D5185(m)	>50	<1	3	2
Potassium	ppm	ASTM D5185(m)	>20	2	<1	0
Water		WC Method	>0.2	NEG	NEG	NEG
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

**FLUID CONDITION**

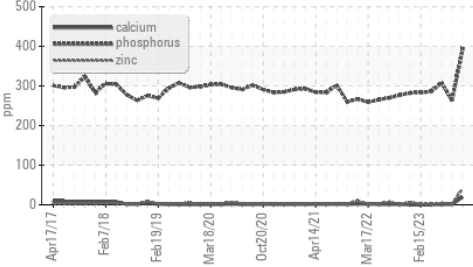
The viscosity of the oil is higher than normal, possibly indicating the addition of a heavier grade of oil. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185(m)		3	3	2
Boron	ppm	ASTM D5185(m)	60	21	57	38
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	<1	<1	0
Calcium	ppm	ASTM D5185(m)	0	20	<1	<1
Phosphorus	ppm	ASTM D5185(m)	270	392	264	308
Zinc	ppm	ASTM D5185(m)	0	40	2	4
Sulfur	ppm	ASTM D5185(m)	11200	4678	5689	4661
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	0.71	0.63	---
Visc @ 40°C	cSt	ASTM D7279(m)	220	215	221	211
Visc @ 100°C	cSt	ASTM D7279(m)	19.35	25.5	20.1	22.4
Viscosity Index (VI)	Scale	ASTM D2270*	99	150	104	129

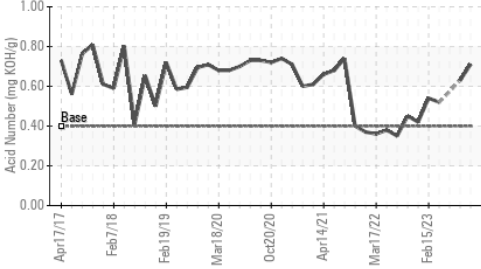
▲ Viscosity @ 100°C



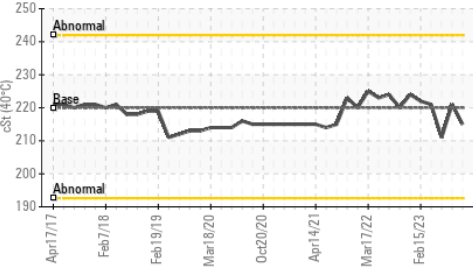
● Additives



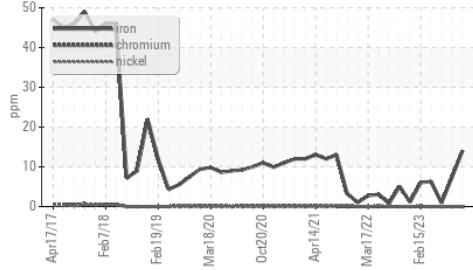
Acid Number



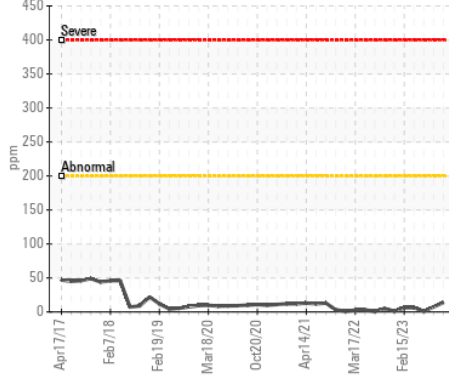
Viscosity @ 40°C



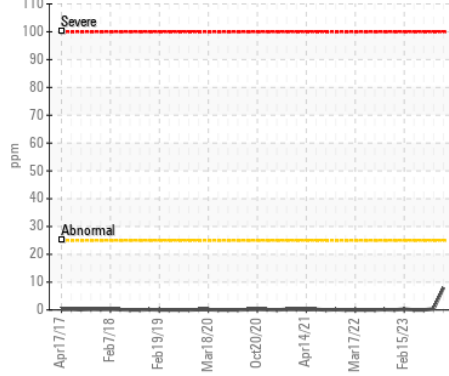
Ferrous Alloys



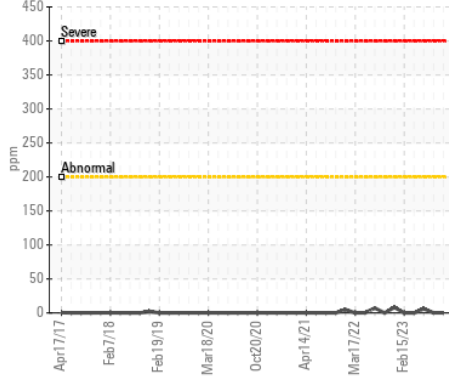
Iron (ppm)



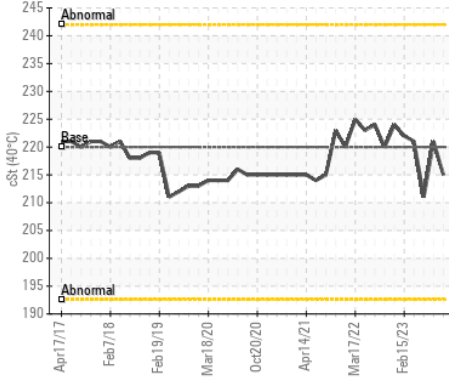
Aluminum (ppm)



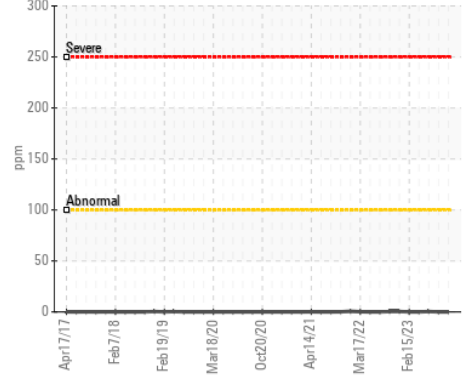
Copper (ppm)



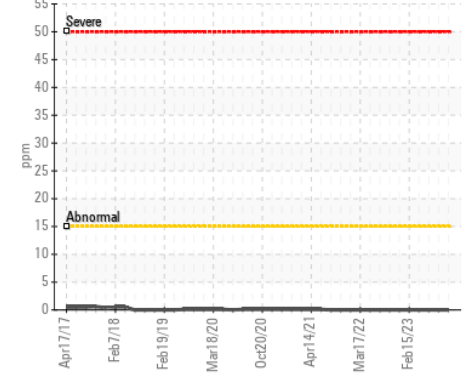
Viscosity @ 40°C



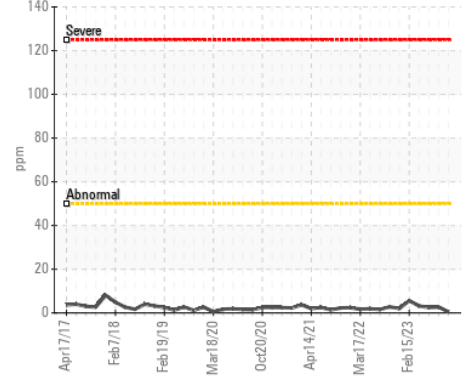
Lead (ppm)



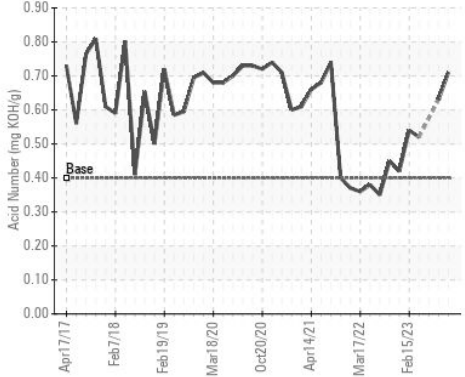
Chromium (ppm)



Silicon (ppm)



Acid Number



ISO 17025:2017  
Accredited  
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Sample No. : PC0078841

Lab Number : 02641818

Unique Number : 5799357

Test Package : MOB 2 ( Additional Tests: KV100, TAN Man, VI )

Received : 13 Jun 2024

Tested : 13 Jun 2024

Diagnosed : 13 Jun 2024 - Kevin Marson

Dryden Fibre

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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.