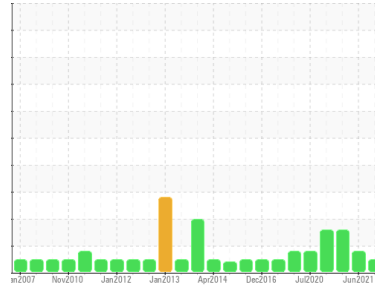


Area
1460
Machine Id
1460-5652-4018 - COPPER CONCENTRATE TANK AGITATOR
Component
Gearbox
Fluid
PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

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

SAMPLE INFORMATION

method	limit/base	current	history 1	history 2
Sample Number	Client Info	PC0057973	PC0030073	PC0040201
Sample Date	Client Info	25 Jun 2023	24 Jun 2021	20 Jun 2021
Machine Age	yrs Client Info	0	0	0
Oil Age	yrs Client Info	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		NORMAL	ABNORMAL	ABNORMAL

WEAR METALS

method	limit/base	current	history 1	history 2
PQ	ASTM D8184*	0	0	0
Iron	ppm ASTM D5185(m) >200	14	18	30
Chromium	ppm ASTM D5185(m) >15	0	<1	<1
Nickel	ppm ASTM D5185(m) >15	<1	0	<1
Titanium	ppm ASTM D5185(m)	0	0	0
Silver	ppm ASTM D5185(m)	0	<1	0
Aluminum	ppm ASTM D5185(m) >25	<1	<1	<1
Lead	ppm ASTM D5185(m) >100	0	<1	<1
Copper	ppm ASTM D5185(m) >200	<1	<1	<1
Tin	ppm ASTM D5185(m) >25	0	0	0
Antimony	ppm ASTM D5185(m) >5	0	0	<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	history 1	history 2
Boron	ppm ASTM D5185(m) 33	20	22	18
Barium	ppm ASTM D5185(m) 5	0	0	0
Molybdenum	ppm ASTM D5185(m)	0	<1	<1
Manganese	ppm ASTM D5185(m)	<1	<1	<1
Magnesium	ppm ASTM D5185(m) 5	<1	<1	<1
Calcium	ppm ASTM D5185(m) 5	2	2	2
Phosphorus	ppm ASTM D5185(m) 437	321	327	301
Zinc	ppm ASTM D5185(m) 5	8	7	7
Sulfur	ppm ASTM D5185(m) 5000	4856	4990	5022
Lithium	ppm ASTM D5185(m)	3	4	5

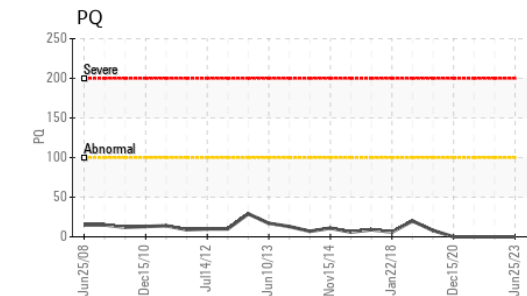
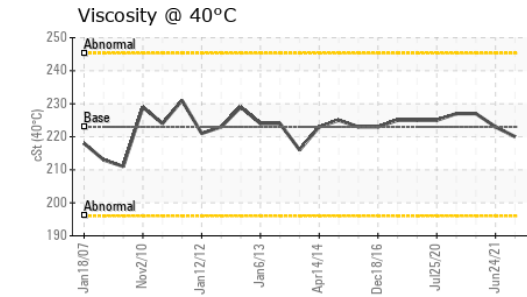
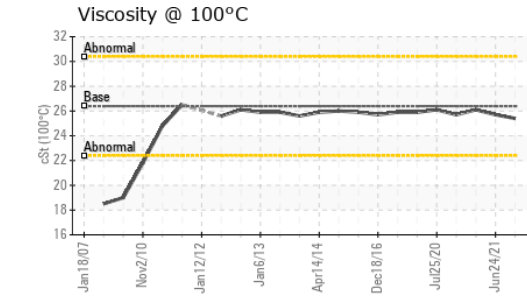
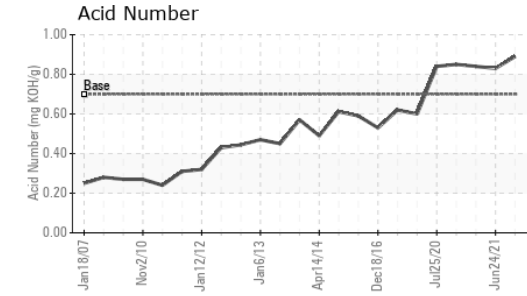
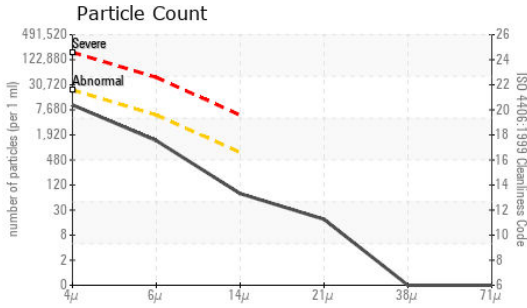
CONTAMINANTS

method	limit/base	current	history 1	history 2
Silicon	ppm ASTM D5185(m) >50	9	8	9
Sodium	ppm ASTM D5185(m)	0	<1	<1
Potassium	ppm ASTM D5185(m) >20	0	0	<1

FLUID CLEANLINESS

method	limit/base	current	history 1	history 2
Particles >4µm	ASTM D7647 >20000	8778	▲ 42979	▲ 97967
Particles >6µm	ASTM D7647 >5000	1226	▲ 8324	▲ 18409
Particles >14µm	ASTM D7647 >640	66	247	▲ 1120
Particles >21µm	ASTM D7647 >160	16	29	▲ 301
Particles >38µm	ASTM D7647 >40	0	0	14
Particles >71µm	ASTM D7647 >10	0	0	0
Oil Cleanliness	ISO 4406 (c) >21/19/16	20/17/13	▲ 23/20/15	▲ 24/21/17

OIL ANALYSIS REPORT

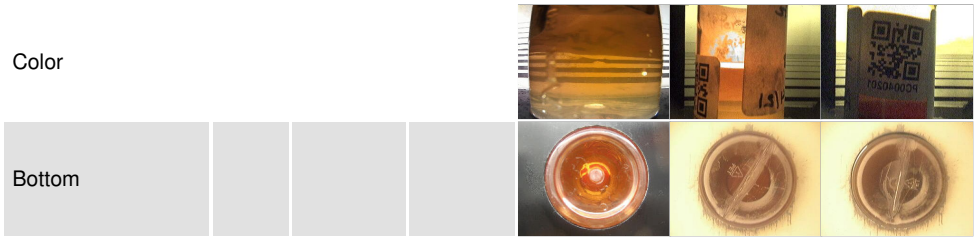


FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.7	0.89	0.83	0.84

VISUAL		method	limit/base	current	history 1	history 2
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	VLITE	LTMOD
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
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history 1	history 2
Visc @ 40°C	cSt	ASTM D7279(m)	223	220	223	227
Visc @ 100°C	cSt	ASTM D7279(m)	26.39	25.4	25.7	26.1
Viscosity Index (VI)	Scale	ASTM D2270*	151	146	146	147

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0057973
Lab Number : **02568907**
Unique Number : 5605953
Test Package : IND 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

Vale - Voisey's Bay
 Voisey's Bay Mine Site, P.O. Box 7001, Str. C Happy Valley
 Goose Bay, NL
 CA A0P 1C0
 Contact: Robert Feltham
 robert.feltham@vale.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.