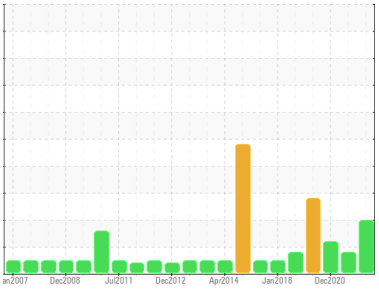
PROBLEM SUMMARY

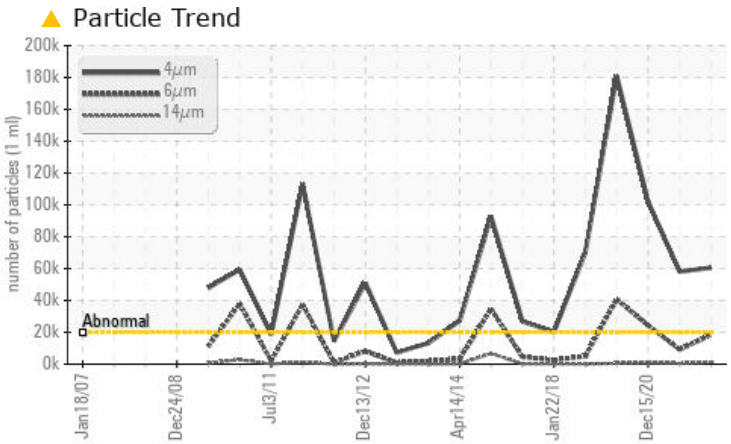
Sample Rating Trend



ISO

Area
1460
Machine Id
1460-5652-4016 - MIDDLINGS CONCENTRATE TANK AGITATOR
Component
Gearbox
Fluid
PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
Particles >4µm		ASTM D7647	>20000	▲ **60512**	▲ 58078	▲ 101984
Particles >6µm		ASTM D7647	>5000	▲ **18410**	▲ 9246	▲ 24317
Particles >14µm		ASTM D7647	>640	▲ **1362**	443	▲ 899
Particles >21µm		ASTM D7647	>160	▲ **316**	96	200
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/21/18**	▲ 23/20/16	▲ 24/22/17

Customer Id: INCVOS
Sample No.: PC0057977
Lab Number: 02568905
Test Package: IND 2

To manage this report scan the QR code

To discuss the diagnosis or test data:
Wes Davis +1 905-569-8600 x223
wesd@wearcheck.ca

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Filter	---	---	?	We recommend you service the filters on this component.
Resample	---	---	?	We recommend an early resample to monitor this condition.

HISTORICAL DIAGNOSIS

24 Jun 2021 Diag: Wes Davis

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

15 Dec 2020 Diag: Wes Davis

ISO

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Particles >14µm are notably high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

25 Jul 2020 Diag: Wes Davis

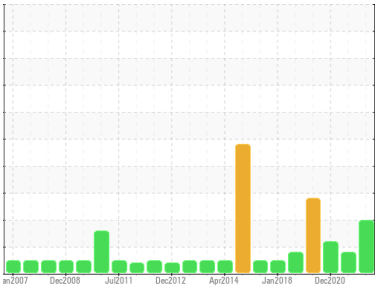
ISO

Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.All component wear rates are normal. Particles >6µm are severely high. Particles >4µm are severely high. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
1460
Machine Id
1460-5652-4016 - MIDDLINGS CONCENTRATE TANK AGITATOR
Component
Gearbox
Fluid
PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Wear
All component wear rates are normal.

Contamination
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
The AN level is acceptable for this fluid. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

SAMPLE INFORMATION		method	limit/base	current	history 1	history 2
Sample Number		Client Info		**PC0057977**	PC0030080	PC0006131
Sample Date		Client Info		**25 Jun 2023**	24 Jun 2021	15 Dec 2020
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				**ABNORMAL**	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history 1	history 2
PQ		ASTM D8184*		**0**	0	0
Iron	ppm	ASTM D5185(m)	>200	**4**	3	6
Chromium	ppm	ASTM D5185(m)	>15	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>15	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>25	**0**	<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**	<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

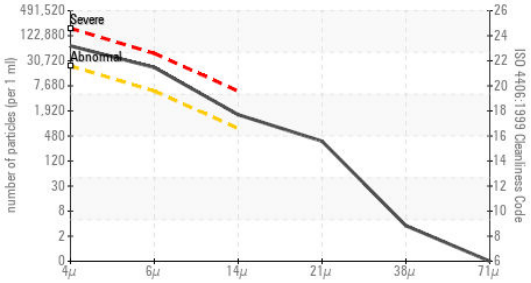
ADDITIVES		method	limit/base	current	history 1	history 2
Boron	ppm	ASTM D5185(m)	33	**22**	22	21
Barium	ppm	ASTM D5185(m)	5	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)		**0**	<1	0
Manganese	ppm	ASTM D5185(m)		**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	5	**<1**	<1	<1
Calcium	ppm	ASTM D5185(m)	5	**2**	2	2
Phosphorus	ppm	ASTM D5185(m)	437	**355**	346	345
Zinc	ppm	ASTM D5185(m)	5	**6**	5	4
Sulfur	ppm	ASTM D5185(m)	5000	**4655**	4905	5103
Lithium	ppm	ASTM D5185(m)		**6**	3	3

CONTAMINANTS		method	limit/base	current	history 1	history 2
Silicon	ppm	ASTM D5185(m)	>50	**10**	8	8
Sodium	ppm	ASTM D5185(m)		**<1**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	**<1**	0	<1

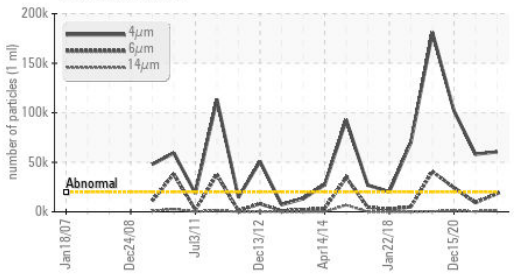
FLUID CLEANLINESS		method	limit/base	current	history 1	history 2
Particles >4µm		ASTM D7647	>20000	▲ **60512**	▲ 58078	▲ 101984
Particles >6µm		ASTM D7647	>5000	▲ **18410**	▲ 9246	▲ 24317
Particles >14µm		ASTM D7647	>640	▲ **1362**	443	▲ 899
Particles >21µm		ASTM D7647	>160	▲ **316**	96	200
Particles >38µm		ASTM D7647	>40	**3**	0	10
Particles >71µm		ASTM D7647	>10	**0**	0	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **23/21/18**	▲ 23/20/16	▲ 24/22/17

OIL ANALYSIS REPORT

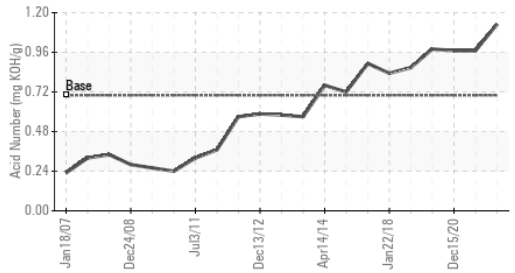
Particle Count



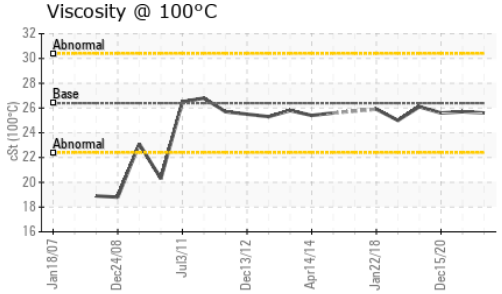
Particle Trend



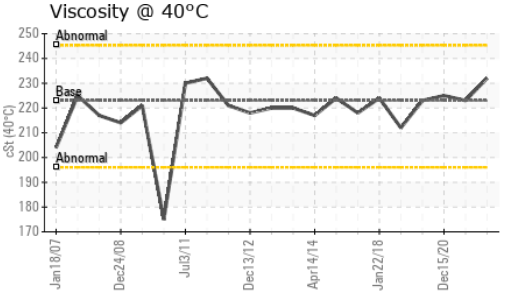
Acid Number



Viscosity @ 100°C



Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history 1	history 2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.7	**1.13**	0.97	0.97

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**	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*	>0.2	**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	**232**	223	225
Visc @ 100°C	cSt	ASTM D7279(m)	26.39	**25.6**	25.7	25.6
Viscosity Index (VI)	Scale	ASTM D2270*	151	**140**	146	144

SAMPLE IMAGES	method	limit/base	current	history 1	history 2
Color					
Bottom					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0057977 **Received** : 10 Jul 2023
Lab Number : 02568905 **Diagnosed** : 11 Jul 2023
Unique Number : 5605951 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: KV100, PQ, PrtCount, TAN Man, VI)

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.

Vale - Voisey`s Bay
Voisey's Bay Mine Site, P.O. Box 7001, Stn. C Happy Valley
Goose Bay, NL
CA A0P 1C0
Contact: Robert Feltham
robert.feltham@vale.com
T:
F: x: