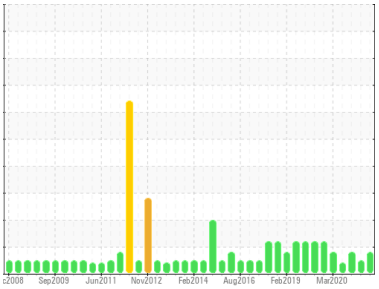
PROBLEM SUMMARY

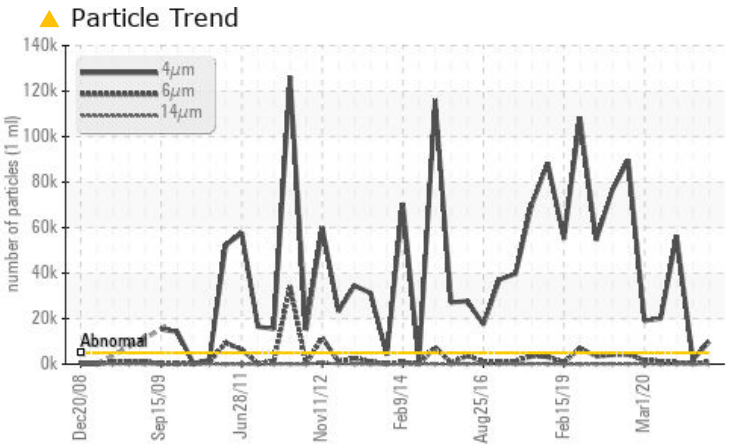
Sample Rating Trend



ISO

Area
1420
Machine Id
1420-5671-4005 - BALL MILL TRUNNION/PINION LUBE
Component
Bulk Fluid Tank
Fluid
PETRO CANADA ENDURATEX EP 320 (1000 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend you service the filters on this component. Resample at the next service interval to monitor.

PROBLEMATIC TEST RESULTS

				ATTENTION	NORMAL	SEVERE
Sample Status						
Particles >4µm		ASTM D7647	>5000	**9799**	1932	56278
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**20/17/13**	18/16/12	23/17/7

Customer Id: INCVOS
Sample No.: PC0070130
Lab Number: 02582965
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.

HISTORICAL DIAGNOSIS

21 Nov 2022 Diag: Wes Davis

NORMAL

Resample at the next service interval to monitor.All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report

11 Apr 2021 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 >4µm are severely 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

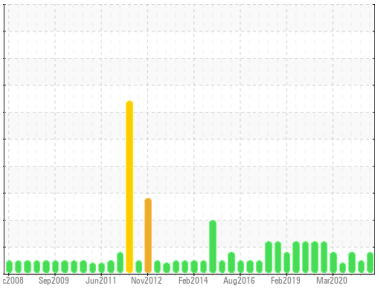
ISO

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. 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
1420
Machine Id
1420-5671-4005 - BALL MILL TRUNNION/PINION LUBE
Component
Bulk Fluid Tank
Fluid
PETRO CANADA ENDURATEX EP 320 (1000 LTR)

DIAGNOSIS

Recommendation
We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

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

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	history1	history2
Sample Number		Client Info		**PC0070130**	PC0057449	PC0030091
Sample Date		Client Info		**02 Sep 2023**	21 Nov 2022	11 Apr 2021
Machine Age	mths	Client Info		**0**	0	0
Oil Age	mths	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ATTENTION**	NORMAL	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)		**<1**	<1	17
Chromium	ppm	ASTM D5185(m)		**0**	0	0
Nickel	ppm	ASTM D5185(m)		**0**	<1	2
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	<1
Aluminum	ppm	ASTM D5185(m)		**<1**	0	1
Lead	ppm	ASTM D5185(m)		**0**	0	<1
Copper	ppm	ASTM D5185(m)		**2**	2	1
Tin	ppm	ASTM D5185(m)		**0**	0	0
Antimony	ppm	ASTM D5185(m)		**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	history1	history2
Boron	ppm	ASTM D5185(m)	55	**49**	53	31
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**<1**	0	<1
Manganese	ppm	ASTM D5185(m)	0	**0**	0	<1
Magnesium	ppm	ASTM D5185(m)	0	**<1**	0	3
Calcium	ppm	ASTM D5185(m)	0	**1**	0	3
Phosphorus	ppm	ASTM D5185(m)	240	**258**	275	206
Zinc	ppm	ASTM D5185(m)	1	**6**	4	3
Sulfur	ppm	ASTM D5185(m)	13700	**6259**	7187	6554
Lithium	ppm	ASTM D5185(m)		**4**	5	22

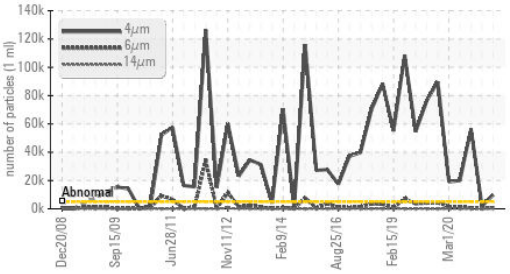
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)		**1**	1	4
Sodium	ppm	ASTM D5185(m)		**2**	1	2
Potassium	ppm	ASTM D5185(m)	>20	**<1**	1	2

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **9799**	1932	⬢ 56278
Particles >6µm		ASTM D7647	>1300	**769**	505	690
Particles >14µm		ASTM D7647	>160	**60**	31	1
Particles >21µm		ASTM D7647	>40	**19**	8	0
Particles >38µm		ASTM D7647	>10	**2**	0	0
Particles >71µm		ASTM D7647	>3	**1**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ **20/17/13**	18/16/12	⬢ 23/17/7

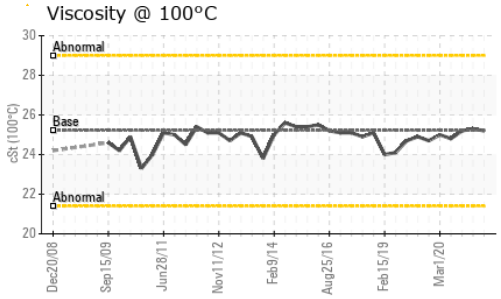
FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.4	**0.32**	0.43	0.68

OIL ANALYSIS REPORT

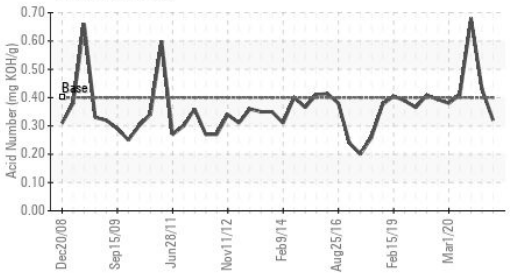
Particle Trend



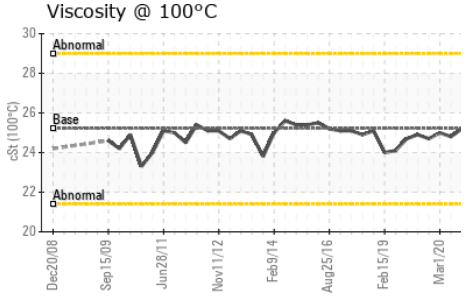
Viscosity @ 100°C



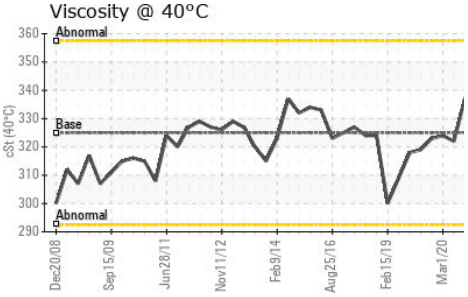
Acid Number



Viscosity @ 100°C



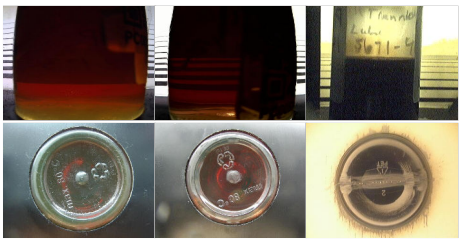
Viscosity @ 40°C



VISUAL		method	limit/base	current	history1	history2
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*		**NEG**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

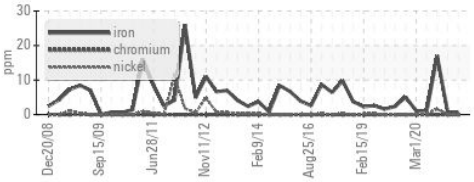
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	325	**328**	331	337
Visc @ 100°C	cSt	ASTM D7279(m)	25.22	**25.2**	25.3	25.2
Viscosity Index (VI)	Scale	ASTM D2270*	100	**99**	99	97

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

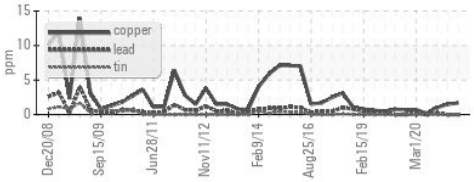


GRAPHS

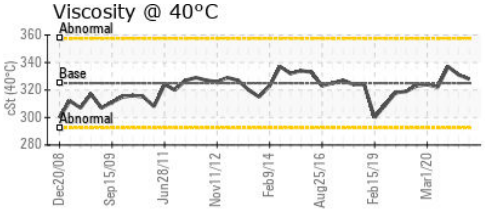
Ferrous Alloys



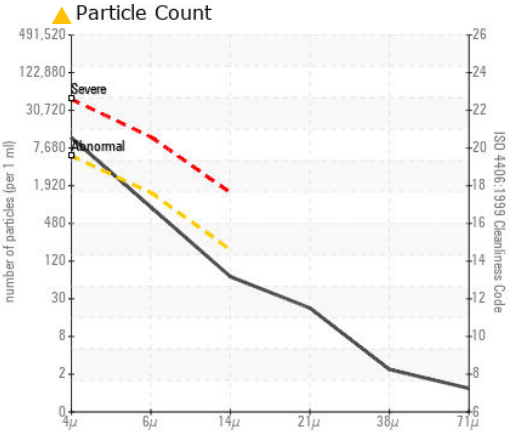
Non-ferrous Metals



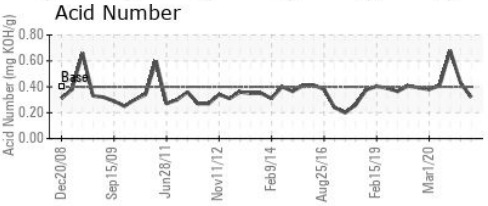
Viscosity @ 40°C



Particle Count



Acid Number



ISO 17025:2017 Accredited Laboratory

Laboratory	: WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9		
Sample No.	: PC0070130	**Received**	: 15 Sep 2023
Lab Number	: 02582965	**Diagnosed**	: 18 Sep 2023
Unique Number	: 5644030	**Diagnostician**	: Wes Davis
Test Package	: IND 2 (Additional Tests: KV100, 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
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Goose Bay, NL
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