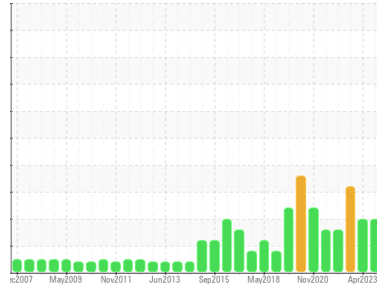


# PROBLEM SUMMARY

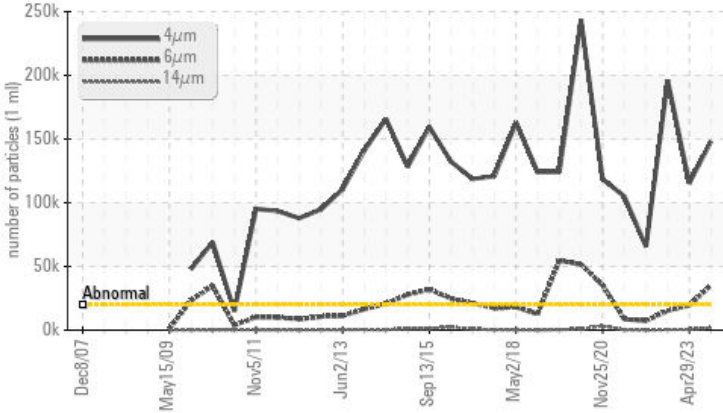
Area  
**1312**  
Machine Id  
**1312-5522-3002 - STOCKPILE FEED CONVEYOR**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)**

Sample Rating Trend

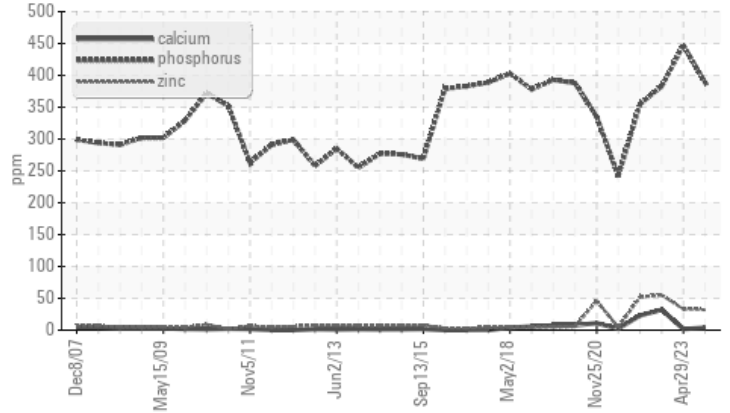


## COMPONENT CONDITION SUMMARY

▲ Particle Trend



Additives



## RECOMMENDATION

We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

## PROBLEMATIC TEST RESULTS

Sample Status		ASTM D7647	>	ABNORMAL	ABNORMAL	SEVERE
Particles >4µm			>20000	▲ 148151	▲ 115416	● 196158
Particles >6µm			>5000	▲ 35240	▲ 19429	▲ 15179
Particles >14µm			>640	▲ 1840	553	516
Particles >21µm			>160	▲ 266	45	69
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 24/22/18	▲ 24/21/16	● 25/21/16

Customer Id: INCVOS  
Sample No.: PC0058535  
Lab Number: 02601054  
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:  
Kevin Marson +1 (289)291-4644 x4644  
[Kevin.Marson@wearcheck.com](mailto:Kevin.Marson@wearcheck.com)

To change component or sample information:  
Gloria Gonzalez +1 (289)291-4643 x4643  
[gloria.gonzalez@wearcheck.com](mailto: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.
Check Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.

## HISTORICAL DIAGNOSIS

### 29 Apr 2023 Diag: Kevin Marson

#### VISCOSITY



We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. All component wear rates are normal. There is a moderate amount of silt (particulates < 14 microns in size) present in the oil. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. 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 oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

view report



#### ISO



### 01 Nov 2021 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. 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 that you drain the oil from the component if this has not already been done. We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Particles >4µm are severely high. Particles >6µm are abnormally high. Lithium (Li) level abnormal at 35ppm., indicates possible grease contamination. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. 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 oil is no longer serviceable due to the presence of contaminants.

view report



### 11 Apr 2021 Diag: Kevin Marson

#### VISCOSITY

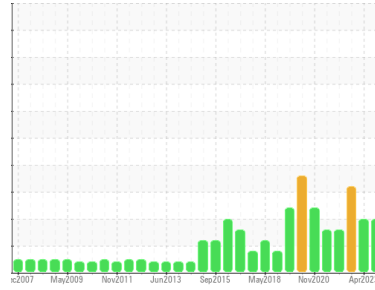


We recommend you service the filters on this component. We recommend an early resample to monitor this condition. All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are notably high. Viscosity of sample indicates oil is within ISO 150 range, advise investigate. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



Area  
**1312**  
Machine Id  
**1312-5522-3002 - STOCKPILE FEED CONVEYOR**  
Component  
**Gearbox**  
Fluid  
**PETRO CANADA ENDURATEX SYNTHETIC EP 220 (100 LTR)**



**DIAGNOSIS**

**Recommendation**  
We recommend you service the filters on this component. Confirm the source of the lubricant being utilized for top-up/fill. 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**  
Additive levels indicate the addition of a different brand, or type of oil. 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	history1	history2
Sample Number	Client Info	<b>PC0058535</b>	PC0057687	PC0040244
Sample Date	Client Info	<b>06 Nov 2023</b>	29 Apr 2023	01 Nov 2021
Machine Age	yrs Client Info	<b>0</b>	0	0
Oil Age	yrs Client Info	<b>0</b>	0	0
Oil Changed	Client Info	<b>N/A</b>	N/A	N/A
Sample Status		<b>ABNORMAL</b>	ABNORMAL	SEVERE

**CONTAMINATION**

method	limit/base	current	history1	history2
Water	WC Method >0.2	<b>NEG</b>	NEG	NEG

**WEAR METALS**

method	limit/base	current	history1	history2
PQ	ASTM D8184*	<b>0</b>	0	3
Iron	ppm ASTM D5185(m) >200	<b>51</b>	45	65
Chromium	ppm ASTM D5185(m) >15	<b>&lt;1</b>	0	<1
Nickel	ppm ASTM D5185(m) >15	<b>&lt;1</b>	<1	<1
Titanium	ppm ASTM D5185(m)	<b>0</b>	0	0
Silver	ppm ASTM D5185(m)	<b>&lt;1</b>	0	0
Aluminum	ppm ASTM D5185(m) >25	<b>&lt;1</b>	<1	<1
Lead	ppm ASTM D5185(m) >100	<b>&lt;1</b>	0	<1
Copper	ppm ASTM D5185(m) >200	<b>&lt;1</b>	1	<1
Tin	ppm ASTM D5185(m) >25	<b>0</b>	0	0
Antimony	ppm ASTM D5185(m) >5	<b>0</b>	<1	<1
Vanadium	ppm ASTM D5185(m)	<b>0</b>	0	0
Beryllium	ppm ASTM D5185(m)	<b>0</b>	0	0
Cadmium	ppm ASTM D5185(m)	<b>0</b>	0	0

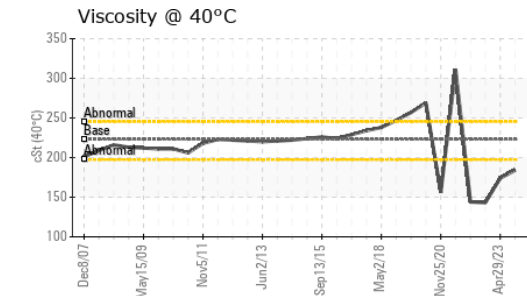
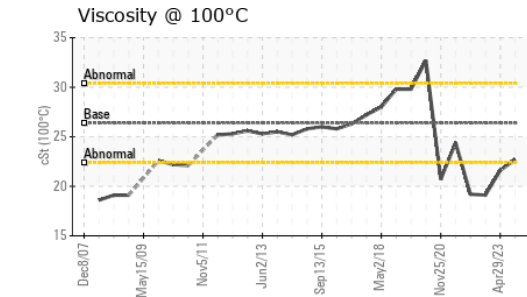
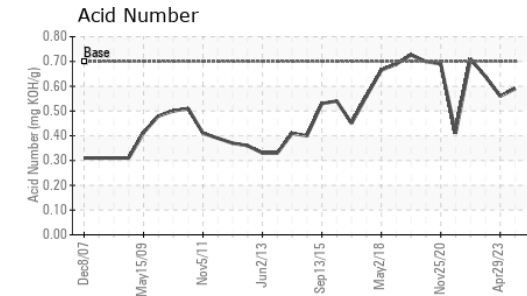
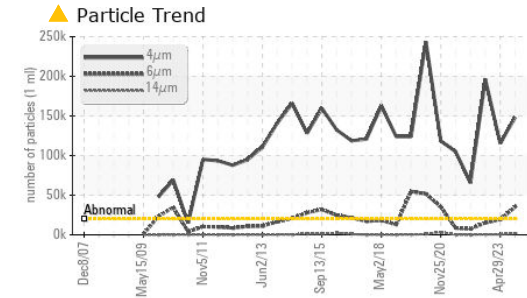
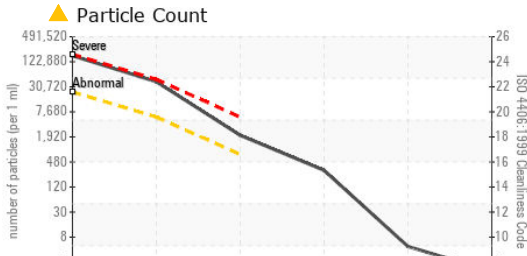
**ADDITIVES**

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185(m) 33	<b>10</b>	10	25
Barium	ppm ASTM D5185(m) 5	<b>&lt;1</b>	0	<1
Molybdenum	ppm ASTM D5185(m)	<b>0</b>	<1	2
Manganese	ppm ASTM D5185(m)	<b>0</b>	<1	<1
Magnesium	ppm ASTM D5185(m) 5	<b>&lt;1</b>	<1	<1
Calcium	ppm ASTM D5185(m) 5	<b>4</b>	2	▲ 32
Phosphorus	ppm ASTM D5185(m) 437	<b>389</b>	447	383
Zinc	ppm ASTM D5185(m) 5	<b>32</b>	33	▲ 55
Sulfur	ppm ASTM D5185(m) 5000	<b>2699</b>	3245	5114
Lithium	ppm ASTM D5185(m)	<b>9</b>	8	▲ 35

**CONTAMINANTS**

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >50	<b>5</b>	5	5
Sodium	ppm ASTM D5185(m)	<b>&lt;1</b>	<1	<1
Potassium	ppm ASTM D5185(m) >20	<b>&lt;1</b>	2	2

# OIL ANALYSIS REPORT



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : PC0058535 **Received** : 05 Dec 2023  
**Lab Number** : 02601054 **Diagnosed** : 07 Dec 2023  
**Unique Number** : 5694139 **Diagnostician** : Kevin Marson  
**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.

FLUID CLEANLINESS	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	▲ 148151	▲ 115416	● 196158
Particles >6µm	ASTM D7647	>5000	▲ 35240	▲ 19429	▲ 15179
Particles >14µm	ASTM D7647	>640	▲ 1840	553	516
Particles >21µm	ASTM D7647	>160	▲ 266	45	69
Particles >38µm	ASTM D7647	>40	4	1	0
Particles >71µm	ASTM D7647	>10	1	1	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	▲ 24/22/18	▲ 24/21/16	● 25/21/16

FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974*	0.7	0.59	0.56	0.64

VISUAL	method	limit/base	current	history1	history2
White Metal	scalar Visual*	NONE	NONE	NONE	VLITE
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	history1	history2
Visc @ 40°C	cSt ASTM D7279(m)	223	184	▲ 174	▲ 143
Visc @ 100°C	cSt ASTM D7279(m)	26.39	22.7	▲ 21.6	▲ 19.1
Viscosity Index (VI)	Scale ASTM D2270*	151	149	147	151

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					