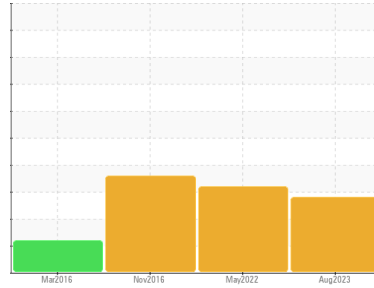


PROBLEM SUMMARY



Machine Id
CATERPILLAR 826H 0426 (S/N CAT0826HKAWF00226)
Component
Hydraulic System
Fluid
PETRO CANADA PRODURO TO-4 SAE 10W (80 GAL)

Sample Rating Trend

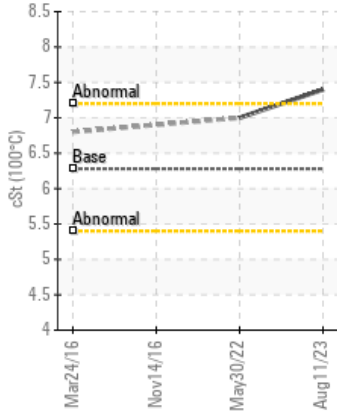


VISCOSITY

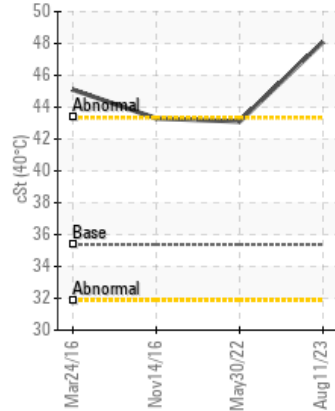


COMPONENT CONDITION SUMMARY

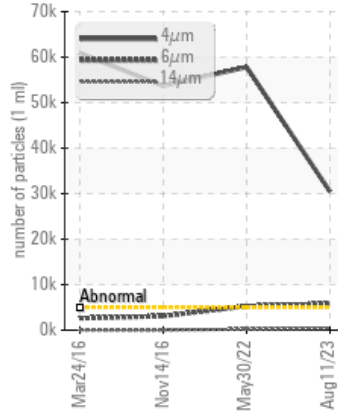
▲ Viscosity @ 100°C



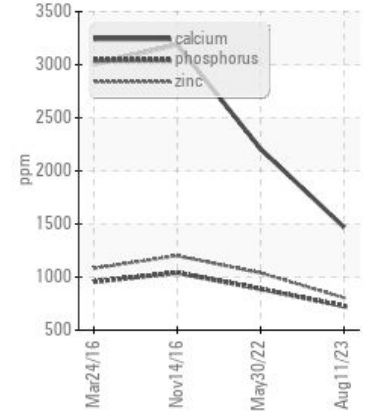
▲ Viscosity @ 40°C



▲ Particle Trend



Additives



RECOMMENDATION

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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				ABNORMAL	SEVERE	SEVERE
Particles >4µm	ASTM D7647	>5000	▲ 30471	▲ 57823	▲ 53683	
Particles >6µm	ASTM D7647	>1300	▲ 5819	▲ 5255	▲ 3087	
Particles >14µm	ASTM D7647	>160	▲ 442	▲ 203	22	
Particles >21µm	ASTM D7647	>40	▲ 128	43	3	
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 22/20/16	▲ 23/20/15	▲ 23/19/12	
Visc @ 40°C	cSt ASTM D7279(m)	35.38	▲ 48.1	▲ 43.1	43.3	
Visc @ 100°C	cSt ASTM D7279(m)	6.28	▲ 7.4	▲ 7	---	

Customer Id: EQU MID
Sample No.: PC0061427
Lab Number: 02576440
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
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Kevin.Marson@wearcheck.com

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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
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.
Filter Fluid	---	---	?	We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.

HISTORICAL DIAGNOSIS

30 May 2022 Diag: Kevin Marson

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. The filter change at the time of sampling has been noted. Resample in 30-45 days to monitor this situation. All component wear rates are normal. Oil Cleanliness are severely high. Particles >4µm are severely high. Particles >6µm are abnormally high. Particles >14µm are notably high. Viscosity of sample indicates oil is within SAE 75W80 range, advise investigate. 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



14 Nov 2016 Diag: Bill Quesnel

VISUAL METAL



Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. We advise that you check for visible metal particles in the oil. 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. The filter change at the time of sampling has been noted. Resample in 30-45 days to monitor this situation. We suspect that the abnormal contaminant(s) is the result of incorrect sampling technique. DISCLAIMER: Interpretation of laboratory tests is based on sample, as received from client. Source of sample and sampling technique cannot be verified. Light concentration of visible metal present. Particles >4µm are severely high. Oil Cleanliness is severe. Particles >6µm are abnormally high. Light concentration of visible dirt/debris present in the 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.

view report



24 Mar 2016 Diag: Wes Davis

ISO



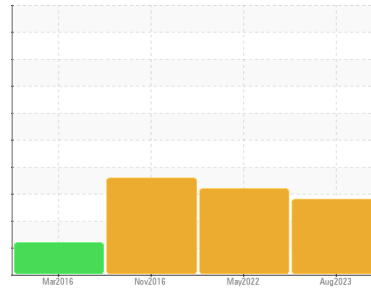
Check seals and/or filters for points of contaminant entry. The air breather requires service. If unrated, we recommend that you replace with a suitable micron rated and/or desiccant air breather. If rated, we recommend that you service/replace the breather. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. Particles >4µm are severely high. Particles >6µm 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



VISCOSITY



Machine Id
CATERPILLAR 826H 0426 (S/N CAT0826HKAWF00226)
Component
Hydraulic System
Fluid
PETRO CANADA PRODURO TO-4 SAE 10W (80 GAL)

DIAGNOSIS

Recommendation

We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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 particulates (2 to 100 microns in size) present in the oil.

Fluid Condition

Viscosity of sample indicates oil is within SAE 75W80 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.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0061427	PC0022919	WC383107
Sample Date	Client Info	11 Aug 2023	30 May 2022	14 Nov 2016
Machine Age	hrs	14257	13726	10835
Oil Age	hrs	500	0	0
Oil Changed	Client Info	Not Chngd	Changed	Not Chngd
Sample Status		ABNORMAL	SEVERE	SEVERE

WEAR METALS

method	limit/base	current	history1	history2
Iron	ppm ASTM D5185(m) >20	3	9	7
Chromium	ppm ASTM D5185(m) >10	0	<1	<1
Nickel	ppm ASTM D5185(m) >10	<1	<1	<1
Titanium	ppm ASTM D5185(m)	0	<1	<1
Silver	ppm ASTM D5185(m)	<1	0	0
Aluminum	ppm ASTM D5185(m) >10	<1	1	1
Lead	ppm ASTM D5185(m) >10	<1	1	<1
Copper	ppm ASTM D5185(m) >75	2	4	2
Tin	ppm ASTM D5185(m) >10	0	0	0
Antimony	ppm ASTM D5185(m)	0	0	2
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) 1	8	16	7
Barium	ppm ASTM D5185(m) 0	0	0	<1
Molybdenum	ppm ASTM D5185(m) 1	2	6	3
Manganese	ppm ASTM D5185(m) 1	0	<1	<1
Magnesium	ppm ASTM D5185(m) 1	21	70	25
Calcium	ppm ASTM D5185(m) 2864	1470	2207	3190
Phosphorus	ppm ASTM D5185(m) 987	726	889	1041
Zinc	ppm ASTM D5185(m) 1162	804	1039	1201
Sulfur	ppm ASTM D5185(m) 3713	2333	3376	4664
Lithium	ppm ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185(m) >20	2	4	3
Sodium	ppm ASTM D5185(m)	6	1	3
Potassium	ppm ASTM D5185(m) >20	24	2	0

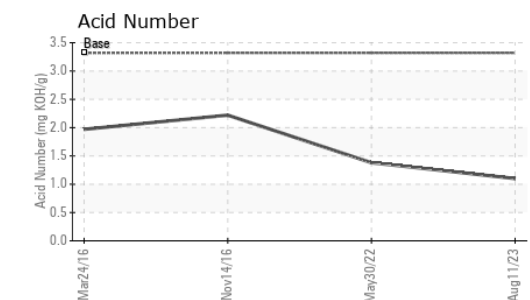
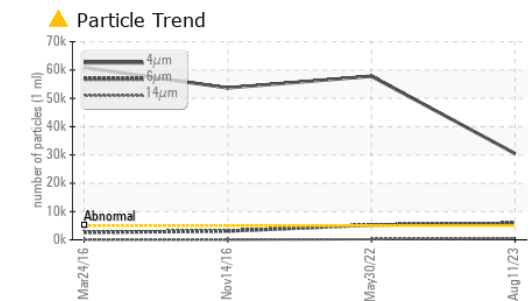
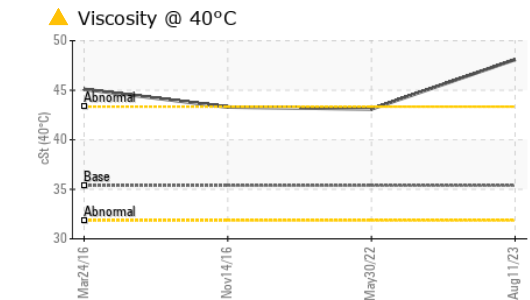
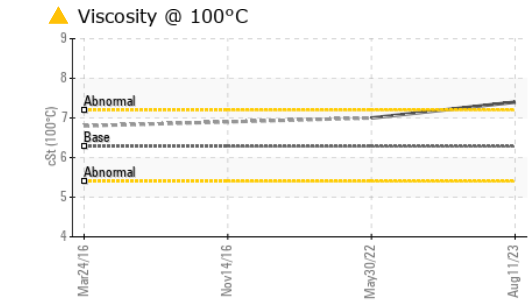
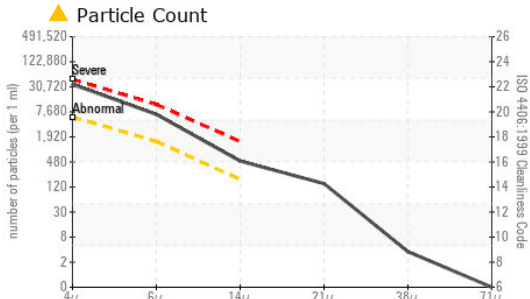
FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647 >5000	▲ 30471	● 57823	● 53683
Particles >6µm	ASTM D7647 >1300	▲ 5819	▲ 5255	▲ 3087
Particles >14µm	ASTM D7647 >160	▲ 442	▲ 203	22
Particles >21µm	ASTM D7647 >40	▲ 128	43	3
Particles >38µm	ASTM D7647 >10	3	2	0
Particles >71µm	ASTM D7647 >3	0	1	0
Oil Cleanliness	ISO 4406 (c) >19/17/14	▲ 22/20/16	● 23/20/15	● 23/19/12

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g ASTM D974* 3.32	1.10	1.38	2.22

OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	NONE	▲ LIGHT
Yellow Metal	scalar	Visual*	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	VLITE	NONE
Debris	scalar	Visual*	NONE	VLITE	▲ LIGHT
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	35.38 ▲ 48.1	▲ 43.1	43.3
Visc @ 100°C	cSt	ASTM D7279(m)	6.28 ▲ 7.4	▲ 7	---
Viscosity Index (VI)	Scale	ASTM D2270*	128	116	121

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
PrtFilter				no image	no image



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 **TRUCK AND EQUIPMENT SOLUTION**
Sample No. : PC0061427 **Received** : 17 Aug 2023 **2 BERTRAM INDUSTRIAL PKWY.**
Lab Number : 02576440 **Diagnosed** : 21 Aug 2023 **MIDHURST, ON**
Unique Number : 5629500 **Diagnostician** : Kevin Marson **CA L9X 1L2**
Test Package : IND 2 (Additional Tests: KV100, VI) **Contact: Julie Holden**

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.

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