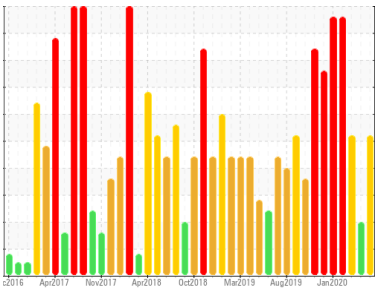
PROBLEM SUMMARY

Sample Rating Trend

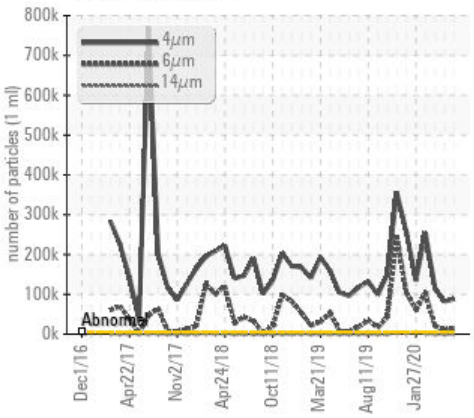


ISO

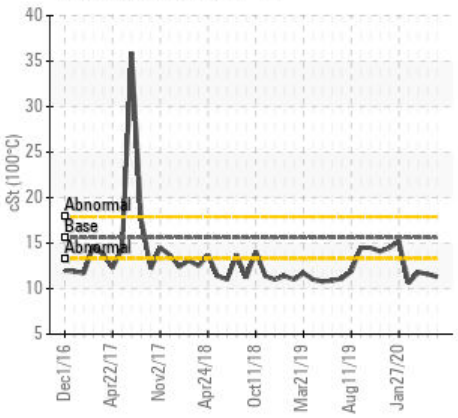
Area
Water Injection [450360387]
Machine Id
Pump - Glycol Circulation (B) (S/N Sample Tag PA-38002B)
Component
Reciprocating Pump - Bearings/Crossheads
Fluid
PETRO CANADA DURON HP 15W40 (15 LTR)

COMPONENT CONDITION SUMMARY

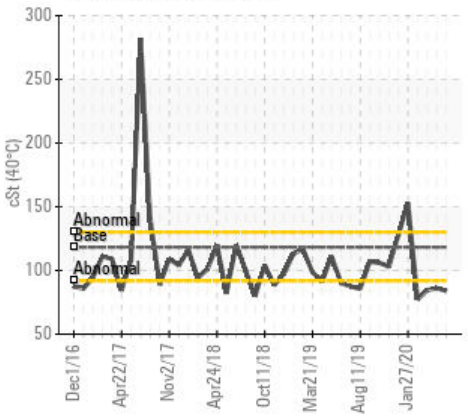
▲ Particle Trend



▲ Viscosity @ 100°C



▲ Viscosity @ 40°C



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	ABNORMAL	SEVERE
Particles >4µm		ASTM D7647	>5000	▲ **88147**	82194	▲ 114109
Particles >6µm		ASTM D7647	>1300	▲ **14246**	11411	▲ 20164
Particles >14µm		ASTM D7647	>40	▲ **154**	▲ 126	▲ 163
Oil Cleanliness		ISO 4406 (c)	>19/17/12	▲ **24/21/14**	▲ 24/21/14	▲ 24/22/15
Visc @ 40°C	cSt	ASTM D7279(m)	118.2	▲ **84.0**	▲ 86.1	▲ 84.5
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ **11.3**	▲ 11.6	▲ 11.8

Customer Id: TERHAM
Sample No.: PC
Lab Number: 02648138
Test Package: MAR 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

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	---	---	?	Resample in 30-45 days to monitor this situation.
Check Breathers	---	---	?	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.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.

HISTORICAL DIAGNOSIS

VISCOSITY

03 May 2024 Diag: Kevin Marson

We recommend you service the filters on this component. 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. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. Viscosity of sample indicates oil is within SAE 10W30 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

ISO

07 Apr 2024 Diag: Kevin Marson

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. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. Viscosity of sample indicates oil is within SAE 10W30 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

ISO

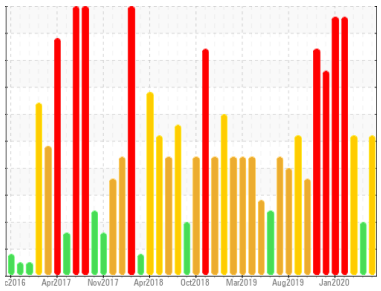
13 Mar 2024 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. 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. Resample in 30-45 days to monitor this situation.Copper ppm levels are abnormal. There is a high amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. Viscosity of sample indicates oil is within SAE 10W30 range, advise investigate. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Water Injection [450360387]
Machine Id
Pump - Glycol Circulation (B) (S/N Sample Tag PA-38002B)
Component
Reciprocating Pump - Bearings/Crossheads
Fluid
PETRO CANADA DURON HP 15W40 (15 LTR)

DIAGNOSIS

▲ Recommendation

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.

Wear

All component wear rates are normal.

▲ Contamination

There is a high amount of silt (particulates < 14 microns in size) present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

▲ Fluid Condition

Viscosity of sample indicates oil is within SAE 10W30 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC**	PC	PC
Sample Date		Client Info		**26 Jun 2024**	03 May 2024	07 Apr 2024
Machine Age	hrs	Client Info		**0**	0	0
Oil Age	hrs	Client Info		**0**	0	0
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**SEVERE**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>.1	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**5**	4	6
Chromium	ppm	ASTM D5185(m)	>20	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**0**	0	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>20	**0**	0	0
Copper	ppm	ASTM D5185(m)	>20	**3**	2	4
Tin	ppm	ASTM D5185(m)	>20	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	0
Vanadium	ppm	ASTM D5185(m)		**0**	0	0
Beryllium	ppm	ASTM D5185(m)		**0**	0	0
Cadmium	ppm	ASTM D5185(m)		**0**	0	0

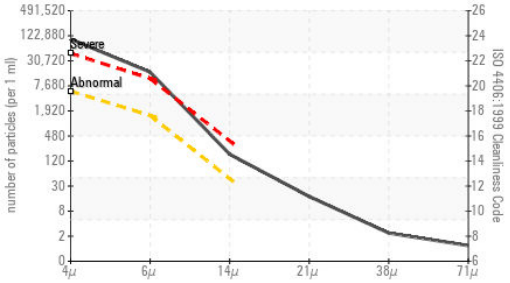
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**2**	2	1
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	60	**62**	59	62
Manganese	ppm	ASTM D5185(m)	0	**<1**	0	0
Magnesium	ppm	ASTM D5185(m)	1010	**1009**	955	973
Calcium	ppm	ASTM D5185(m)	1070	**1114**	1043	1043
Phosphorus	ppm	ASTM D5185(m)	1150	**1020**	1044	1034
Zinc	ppm	ASTM D5185(m)	1270	**1250**	1161	1175
Sulfur	ppm	ASTM D5185(m)	2060	**2843**	2644	2657
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**4**	3	3
Sodium	ppm	ASTM D5185(m)		**1**	<1	2
Potassium	ppm	ASTM D5185(m)	>20	**0**	<1	<1

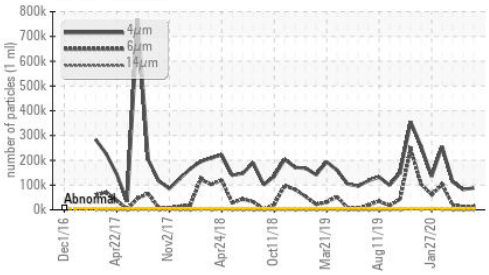
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ **88147**	82194	▲ 114109
Particles >6µm		ASTM D7647	>1300	▲ **14246**	11411	▲ 20164
Particles >14µm		ASTM D7647	>40	▲ **154**	▲ 126	▲ 163
Particles >21µm		ASTM D7647	>10	● **15**	● 17	● 19
Particles >38µm		ASTM D7647	>3	**2**	1	2
Particles >71µm		ASTM D7647	>3	**1**	0	1
Oil Cleanliness		ISO 4406 (c)	>19/17/12	▲ **24/21/14**	▲ 24/21/14	▲ 24/22/15

OIL ANALYSIS REPORT

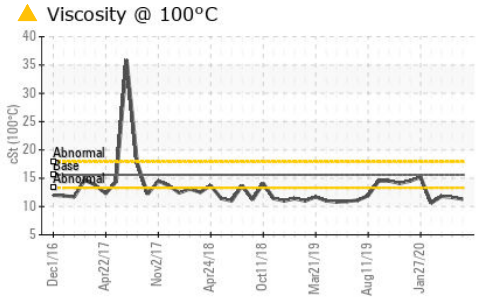
Particle Count



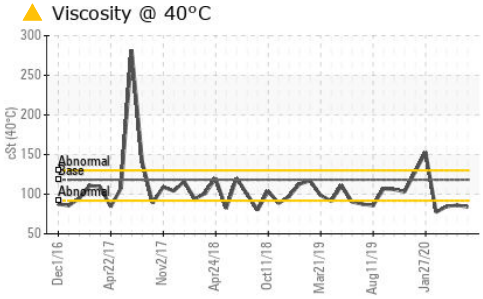
Particle Trend



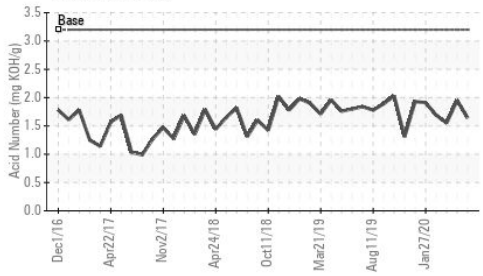
Viscosity @ 100°C



Viscosity @ 40°C



Acid Number



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	3.2	**1.64**	1.95	1.55

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*	>.1	**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)	118.2	▲ **84.0**	▲ 86.1	▲ 84.5
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	▲ **11.3**	▲ 11.6	▲ 11.8
Viscosity Index (VI)	Scale	ASTM D2270*	139	**123**	125	132

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02648138
Unique Number : 5813690
Test Package : MAR 2 (Additional Tests: KV100, PrtCount, TAN MAN, VI)

Received : 16 Jul 2024
Tested : 18 Jul 2024
Diagnosed : 18 Jul 2024 - Kevin Marson

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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