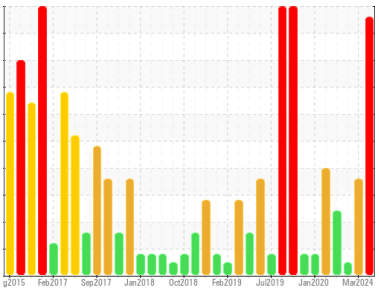
PROBLEM SUMMARY

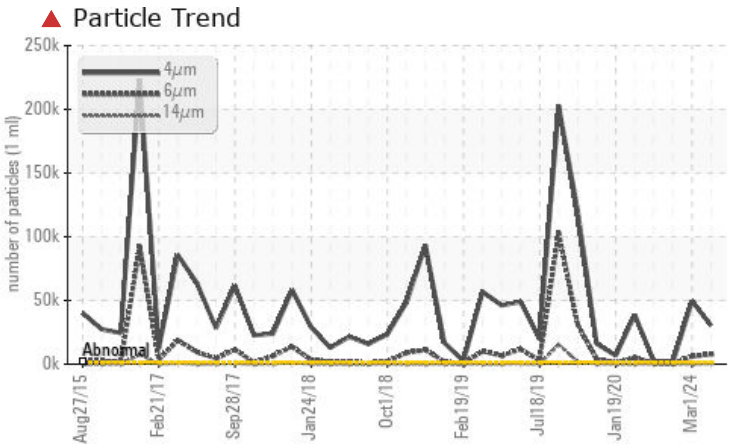
Sample Rating Trend



ISO

Area
Fwd Machinery Space
Machine Id
Hose Reel - Calcium Nitrate Hyd. System (S/N Sample Tag XX-42161)
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX MV ARCTIC 15 (100 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 advise that you follow the water drain-off procedure for this component. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	NORMAL
Particles >4µm		ASTM D7647	>1300	▲ **30368**	▲ 49547	1294
Particles >6µm		ASTM D7647	>320	▲ **7820**	▲ 6075	293
Particles >14µm		ASTM D7647	>40	▲ **354**	34	18
Particles >21µm		ASTM D7647	>10	▲ **74**	5	5
Oil Cleanliness		ISO 4406 (c)	>17/15/12	▲ **22/20/16**	▲ 23/20/12	17/15/11
Precipitate	scalar	Visual*	NONE	▲ **LIGHT**	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	NORML	NORML
Free Water	scalar	Visual*		▲ **>10%**	NEG	NEG

Customer Id: TERHAM
Sample No.: PC0080193
Lab Number: 02634781
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 advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid.
Water Drain-off	---	---	?	We advise that you follow the water drain-off procedure for 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 Dirt Access	---	---	?	We advise that you check all areas where contaminants can enter the system.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.
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

ISO

01 Mar 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. 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

NORMAL

01 Feb 2024 Diag: Kevin Marson
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

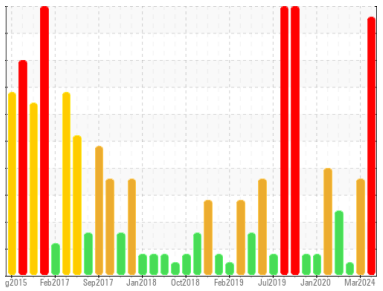
ISO

08 Oct 2023 Diag: Kevin Marson
We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. We recommend an early resample to monitor this condition.All component wear rates are normal. There is a moderate amount of particulates (2 to 100 microns in size) present in the oil. The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code. 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

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Fwd Machinery Space
Machine Id
Hose Reel - Calcium Nitrate Hyd. System (S/N Sample Tag XX-42161)
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX MV ARCTIC 15 (100 LTR)

DIAGNOSIS

Recommendation

Check seals and/or filters for points of contaminant entry. We advise that you check all areas where contaminants can enter the system. 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 advise that you follow the water drain-off procedure for this component. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. Resample in 30-45 days to monitor this situation.

Wear

All component wear rates are normal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. Excessive free water present. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code.

Fluid Condition

The white residue present in the sample is oil additive precipitate. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0080193**	PC	PC0076671
Sample Date		Client Info		**23 Apr 2024**	01 Mar 2024	01 Feb 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**	SEVERE	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	**0**	<1	0
Chromium	ppm	ASTM D5185(m)	>10	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>10	**0**	<1	0
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>10	**0**	<1	<1
Lead	ppm	ASTM D5185(m)	>20	**0**	0	<1
Copper	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Tin	ppm	ASTM D5185(m)	>10	**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

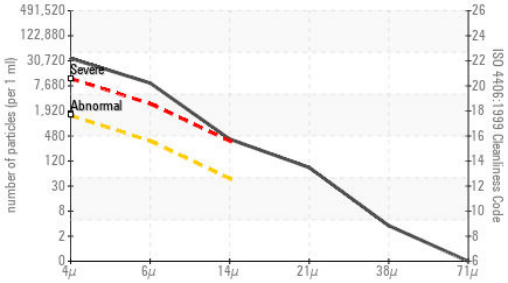
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**1**	<1	0
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)	0	**0**	0	0
Magnesium	ppm	ASTM D5185(m)	0	**<1**	0	<1
Calcium	ppm	ASTM D5185(m)	50	**28**	53	50
Phosphorus	ppm	ASTM D5185(m)	330	**161**	323	321
Zinc	ppm	ASTM D5185(m)	430	**193**	399	406
Sulfur	ppm	ASTM D5185(m)	760	**606**	784	781
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>15	**0**	<1	<1
Sodium	ppm	ASTM D5185(m)		**0**	<1	0
Potassium	ppm	ASTM D5185(m)	>20	**9**	<1	0

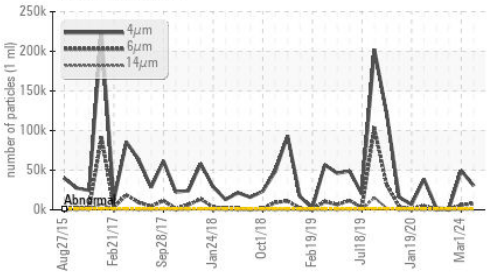
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>1300	▲ **30368**	▲ 49547	1294
Particles >6µm		ASTM D7647	>320	▲ **7820**	▲ 6075	293
Particles >14µm		ASTM D7647	>40	▲ **354**	34	18
Particles >21µm		ASTM D7647	>10	▲ **74**	5	5
Particles >38µm		ASTM D7647	>3	**3**	1	1
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>17/15/12	▲ **22/20/16**	▲ 23/20/12	17/15/11

OIL ANALYSIS REPORT

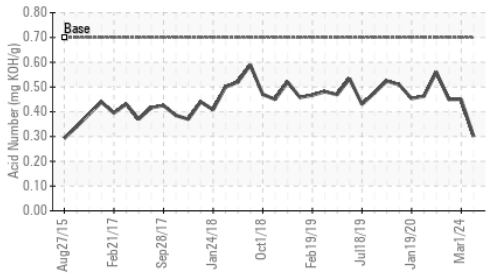
Particle Count



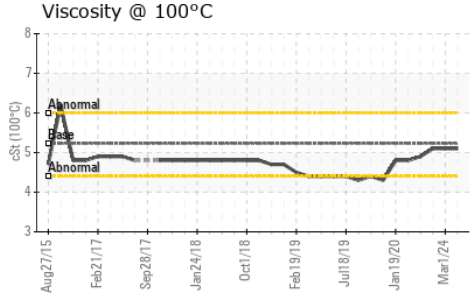
Particle Trend



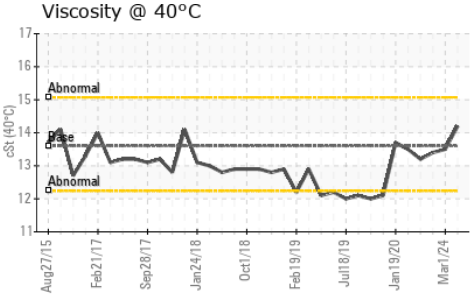
Acid Number



Viscosity @ 100°C



Viscosity @ 40°C



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	**0.30**	0.45	0.45

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	▲ **LIGHT**	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	▲ **WGOIL**	NORML	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	**NEG**	NEG	NEG
Free Water	scalar	Visual*		▲ **>10%**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	13.6	**14.2**	13.5	13.4
Visc @ 100°C	cSt	ASTM D7279(m)	5.23	**5.1**	5.1	5.1
Viscosity Index (VI)	Scale	ASTM D2270*	394	**352**	381	385

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. : PC0080193 **Received** : 10 May 2024
Lab Number : 02634781 **Tested** : 13 May 2024
Unique Number : 5775934 **Diagnosed** : 13 May 2024 - Kevin Marson
Test Package : MAR 2 (Additional Tests: Bottom, KV100, 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.

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