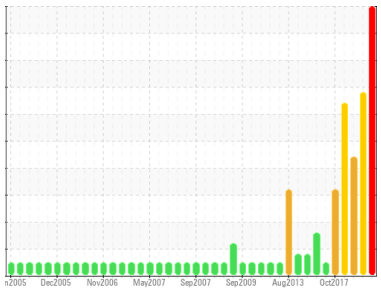
PROBLEM SUMMARY

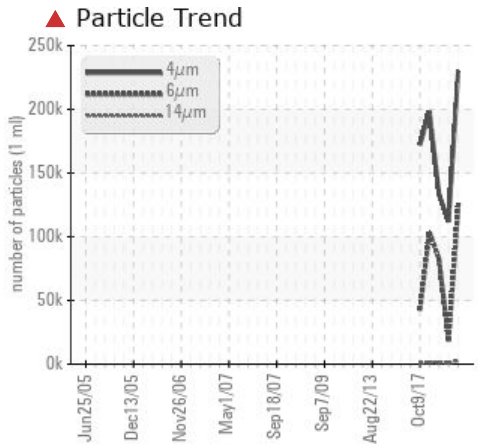
Sample Rating Trend

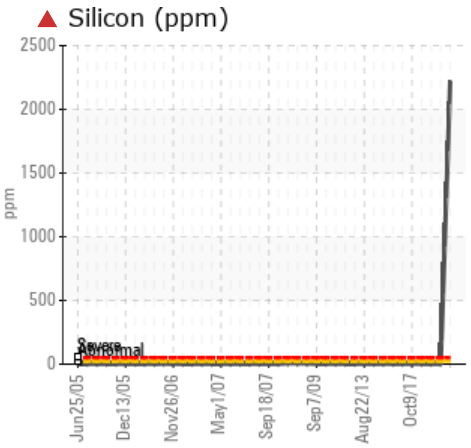


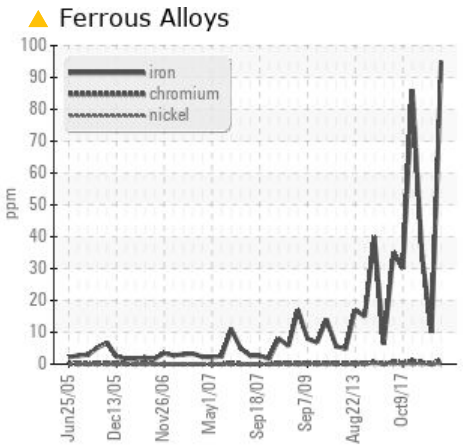
DIRT

Area
Gas Compression
Machine Id
Pump Crude Oil (B) - Lube System (S/N Sample Tag PA-21001B-S1)
Component
Pump
Fluid
PETRO CANADA HYDREX MV 36 (10 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 recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

Sample Status				**SEVERE**	SEVERE	SEVERE
Iron	ppm	ASTM D5185(m)	>75	▲ **95**	▲ 10	▲ 34
Silicon	ppm	ASTM D5185(m)	>20	▲ **2219**	<1	<1
Particles >6µm		ASTM D7647	>1300	▲ **123568**	▲ 18961	▲ 82303
Particles >14µm		ASTM D7647	>160	▲ **2699**	▲ 638	▲ 1301
Particles >21µm		ASTM D7647	>40	▲ **379**	▲ 114	▲ 139
Oil Cleanliness		ISO 4406 (c)	>--/17/14	▲ **25/24/19**	▲ 24/21/16	▲ 24/24/18
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	▲ WGOIL	NORML
Emulsified Water	scalar	Visual*	>.1	▲ **.2%**	.2%	NEG
Free Water	scalar	Visual*		▲ **1%**	▲ >10%	NEG

Customer Id: TERHAM
Sample No.: PC
Lab Number: 02634589
Test Package: MAR 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 Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Flush System	---	---	?	We advise that you flush the component thoroughly before re-filling with oil.
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 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.

HISTORICAL DIAGNOSIS

ISO

03 Jan 2024 Diag: Kevin Marson

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. Resample in 30-45 days to monitor this situation.Copper ppm levels are noted. All other component wear rates are normal. 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. 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

18 Dec 2019 Diag: Kevin Marson

We advise that you check all areas where contaminants can enter the system. We advise that you perform a filter service, and use off-line filtration to improve the cleanliness of the system fluid. 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. Resample in 30-45 days to monitor this situation.All component wear rates are normal. Particles >14µm are severely high. Particles >6µm are severely high. Particles >21µm are abnormally high. 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 condition of the oil is suitable for further service.

view report

ISO

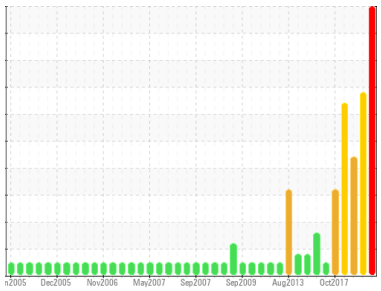
04 Sep 2018 Diag: Kevin Marson

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. We recommend that you drain the oil from the component if this has not already been done. 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. Resample in 30-45 days to monitor this situation.Iron ppm levels are abnormal. Light concentration of visible metal present. Particles >14µm are severely high. Particles >6µm are severely high. Particles >21µm are abnormally high. 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 no longer serviceable as a result of the abnormal and/or severe wear.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



DIRT

Area
Gas Compression
Machine Id
Pump Crude Oil (B) - Lube System (S/N Sample Tag PA-21001B-S1)
Component
Pump
Fluid
PETRO CANADA HYDREX MV 36 (10 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 recommend that you drain the oil from the component if this has not already been done. We advise that you flush the component thoroughly before re-filling with oil. We recommend you service the filters on this component. Resample in 30-45 days to monitor this situation.

Wear

Iron ppm levels are abnormal.

Contamination

There is a high amount of particulates (2 to 100 microns in size) present in the oil. There is a moderate concentration of water present in the oil. Free water present. High concentration of dirt present in the oil. The system cleanliness code is much higher than the acceptable limit for the target ISO 4406 cleanliness code. High amount of ingressed dirt has caused abrasive wear to the component.

Fluid Condition

The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC**	PC0076405	PC
Sample Date		Client Info		**16 Apr 2024**	03 Jan 2024	18 Dec 2019
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	SEVERE

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

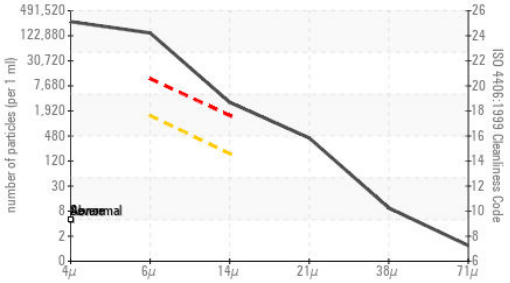
WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**36**	0	25
Iron	ppm	ASTM D5185(m)	>75	▲ **95**	10	34
Chromium	ppm	ASTM D5185(m)	>5	**1**	0	<1
Nickel	ppm	ASTM D5185(m)		**<1**	0	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	<1
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>5	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>10	**0**	<1	0
Copper	ppm	ASTM D5185(m)	>15	**7**	15	5
Tin	ppm	ASTM D5185(m)		**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	<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)	0	**<1**	<1	<1
Barium	ppm	ASTM D5185(m)	0	**0**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	**0**	0	0
Manganese	ppm	ASTM D5185(m)	1	**<1**	0	<1
Magnesium	ppm	ASTM D5185(m)	0	**1**	<1	<1
Calcium	ppm	ASTM D5185(m)	135	**65**	29	53
Phosphorus	ppm	ASTM D5185(m)	236	**286**	299	327
Zinc	ppm	ASTM D5185(m)	317	**383**	361	416
Sulfur	ppm	ASTM D5185(m)	561	**664**	712	738
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

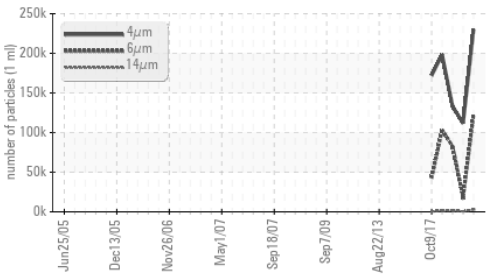
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	▲ **2219**	<1	<1
Sodium	ppm	ASTM D5185(m)		**2**	0	0
Potassium	ppm	ASTM D5185(m)	>20	**0**	1	<1

OIL ANALYSIS REPORT

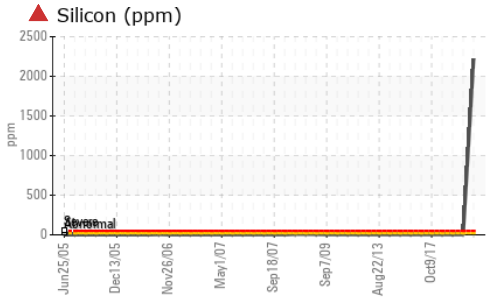
Particle Count



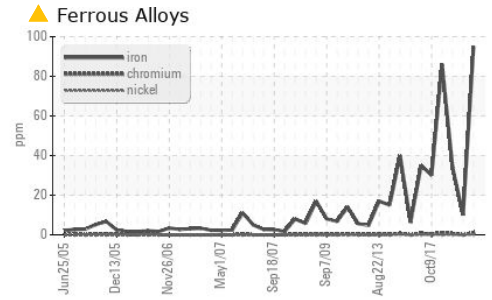
Particle Trend



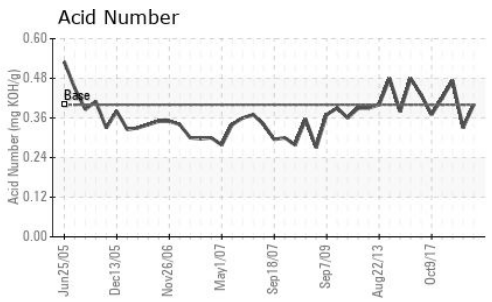
Silicon (ppm)



Ferrous Alloys



Acid Number



FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647		**229947**	111838	133116
Particles >6µm		ASTM D7647	>1300	▲ **123568**	▲ 18961	▲ 82303
Particles >14µm		ASTM D7647	>160	▲ **2699**	▲ 638	▲ 1301
Particles >21µm		ASTM D7647	>40	▲ **379**	▲ 114	▲ 139
Particles >38µm		ASTM D7647	>10	**8**	1	2
Particles >71µm		ASTM D7647	>3	**1**	1	0
Oil Cleanliness		ISO 4406 (c)	>--/17/14	▲ **25/24/19**	▲ 24/21/16	▲ 24/24/18

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.40	**0.40**	0.33	0.473

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	VLITE
Debris	scalar	Visual*	NONE	**NONE**	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	**VLITE**	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ **WGOIL**	▲ WGOIL	NORML
Odor	scalar	Visual*	NORML	**NORML**	NORML	NORML
Emulsified Water	scalar	Visual*	>.1	▲ **.2%**	.2%	NEG
Free Water	scalar	Visual*		▲ **1%**	▲ >10%	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	32.25	**32.2**	31.5	31.7
Visc @ 100°C	cSt	ASTM D7279(m)	6.3	**6.3**	6.1	6.0
Viscosity Index (VI)	Scale	ASTM D2270*	148	**150**	144	137

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

ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC
Lab Number : 02634589
Unique Number : 5775742
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, VI)
Received : 10 May 2024
Tested : 13 May 2024
Diagnosed : 13 May 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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