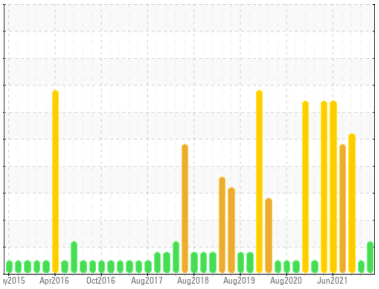
PROBLEM SUMMARY

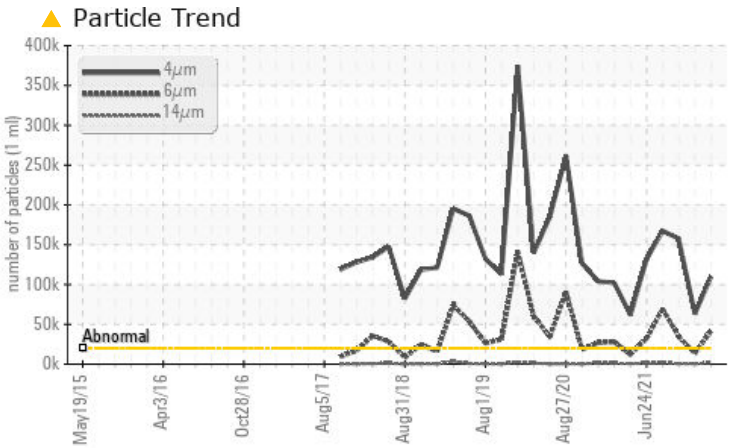
Sample Rating Trend



ISO

Area
Cranes
Machine Id
Crane - Mid - Hoisting Winch (S/N Sample Tag MA-04002-S5)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (26 LTR)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

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.

PROBLEMATIC TEST RESULTS

Sample Status				ABNORMAL	NORMAL	SEVERE
Particles >14µm		ASTM D7647	>640	▲ **1891**	367	569
Particles >21µm		ASTM D7647	>160	▲ **439**	53	71
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/23/18**	23/21/16	▲ 24/22/16

Customer Id: TERHAM
Sample No.: PC0040135
Lab Number: 02575150
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
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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.
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

02 May 2023 Diag: Kevin Marson

NORMAL

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

05 Oct 2021 Diag: Kevin Marson

DEGRADATION

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. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >4µm are abnormally high. Particles >6µm are abnormally high. Additive levels indicate the addition of a different brand, or type of oil. The high AN level of the oil indicates the presence of oxi-polymerized products. The AN level is much higher than the recommended limit. The oil is no longer serviceable.

view report

02 Aug 2021 Diag: Kevin Marson

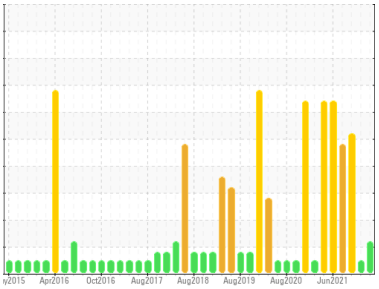
DEGRADATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition.All component wear rates are normal. Particles >14µm are abnormally high. Particles >21µm are notably high. Additive levels indicate the addition of a different brand, or type of oil. The high AN level of the oil indicates the presence of oxi-polymerized products. The AN level is much higher than the recommended limit. The oil is no longer serviceable.

view report

OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
Cranes
Machine Id
Crane - Mid - Hoisting Winch (S/N Sample Tag MA-04002-S5)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (26 LTR)

DIAGNOSIS

Recommendation

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.

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. The water content is negligible.

Fluid Condition

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		**PC0040135**	PC0051997	PC416832
Sample Date		Client Info		**05 Aug 2023**	02 May 2023	05 Oct 2021
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				**ABNORMAL**	NORMAL	SEVERE

WEAR METALS		method	limit/base	current	history1	history2
PQ		ASTM D8184*		**0**	0	0
Iron	ppm	ASTM D5185(m)	>150	**4**	2	2
Chromium	ppm	ASTM D5185(m)	>10	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>10	**<1**	<1	<1
Titanium	ppm	ASTM D5185(m)		**<1**	<1	0
Silver	ppm	ASTM D5185(m)		**0**	<1	<1
Aluminum	ppm	ASTM D5185(m)	>5	**<1**	<1	<1
Lead	ppm	ASTM D5185(m)	>65	**0**	<1	<1
Copper	ppm	ASTM D5185(m)	>80	**<1**	0	<1
Tin	ppm	ASTM D5185(m)	>8	**0**	0	0
Antimony	ppm	ASTM D5185(m)	>5	**0**	<1	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

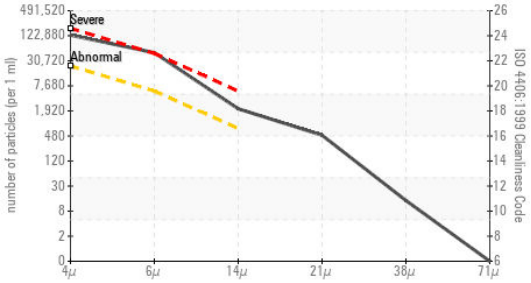
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	240	**236**	245	149
Barium	ppm	ASTM D5185(m)	1	**0**	0	<1
Molybdenum	ppm	ASTM D5185(m)	0.0	**0**	0	0
Manganese	ppm	ASTM D5185(m)		**0**	0	0
Magnesium	ppm	ASTM D5185(m)	2	**2**	1	3
Calcium	ppm	ASTM D5185(m)	6	**8**	5	▲ 144
Phosphorus	ppm	ASTM D5185(m)	1000	**1068**	1090	▲ 622
Zinc	ppm	ASTM D5185(m)	3	**35**	20	15
Sulfur	ppm	ASTM D5185(m)	19400	**21916**	24329	▲ 11297
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	**5**	4	2
Sodium	ppm	ASTM D5185(m)		**<1**	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	**<1**	<1	<1
Water	%	ASTM D6304*	>0.2	**0.160**	---	---
ppm Water	ppm	ASTM D6304*	>2000	**1606.9**	---	---

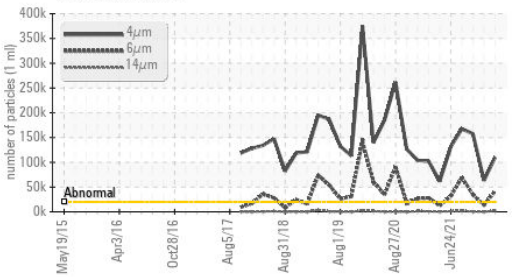
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>20000	**109767**	63266	▲ 157548
Particles >6µm		ASTM D7647	>5000	**41608**	13600	▲ 34568
Particles >14µm		ASTM D7647	>640	▲ **1891**	367	569
Particles >21µm		ASTM D7647	>160	▲ **439**	53	71
Particles >38µm		ASTM D7647	>40	**12**	1	0
Particles >71µm		ASTM D7647	>10	**0**	1	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ **24/23/18**	23/21/16	▲ 24/22/16

OIL ANALYSIS REPORT

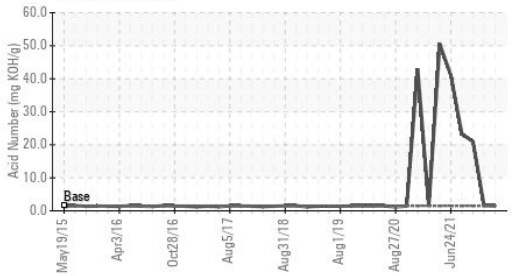
Particle Count



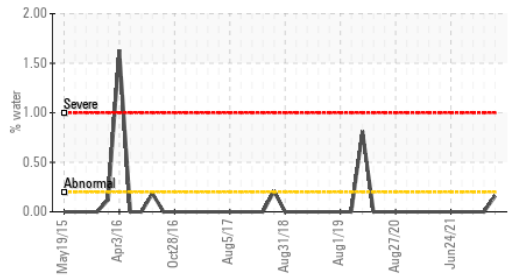
Particle Trend



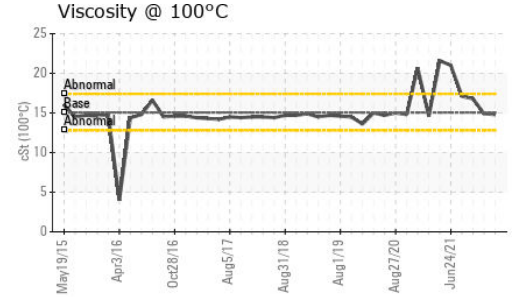
Acid Number



Water



Viscosity @ 100°C

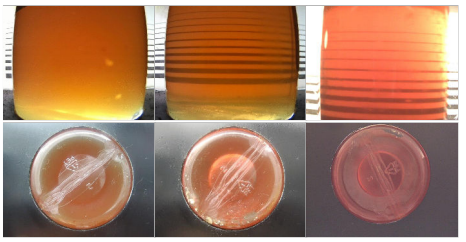


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	**1.45**	1.64	21.0

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	**VLITE**	VLITE	VLITE
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	**.2%**	NEG	NEG
Free Water	scalar	Visual*		**NEG**	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	140.3	**142**	141	197
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	**14.8**	14.9	16.8
Viscosity Index (VI)	Scale	ASTM D2270*	109	**104**	106	89

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. : PC0040135 **Received** : 10 Aug 2023
Lab Number : 02575150 **Diagnosed** : 11 Aug 2023
Unique Number : 5620201 **Diagnostician** : Kevin Marson
Test Package : IND 2 (Additional Tests: KF, KV100, PQ, PrtCount, 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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