



Area

Cranes [450335854]

Machine Id

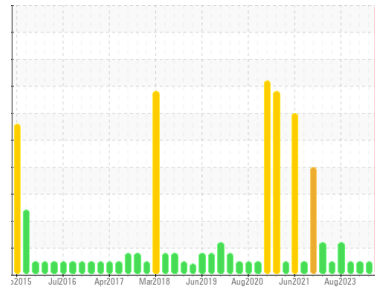
Crane - Mid Ship Luffing Winch Gearbox (S/N Sample Tag MA-04002-S6)

Component

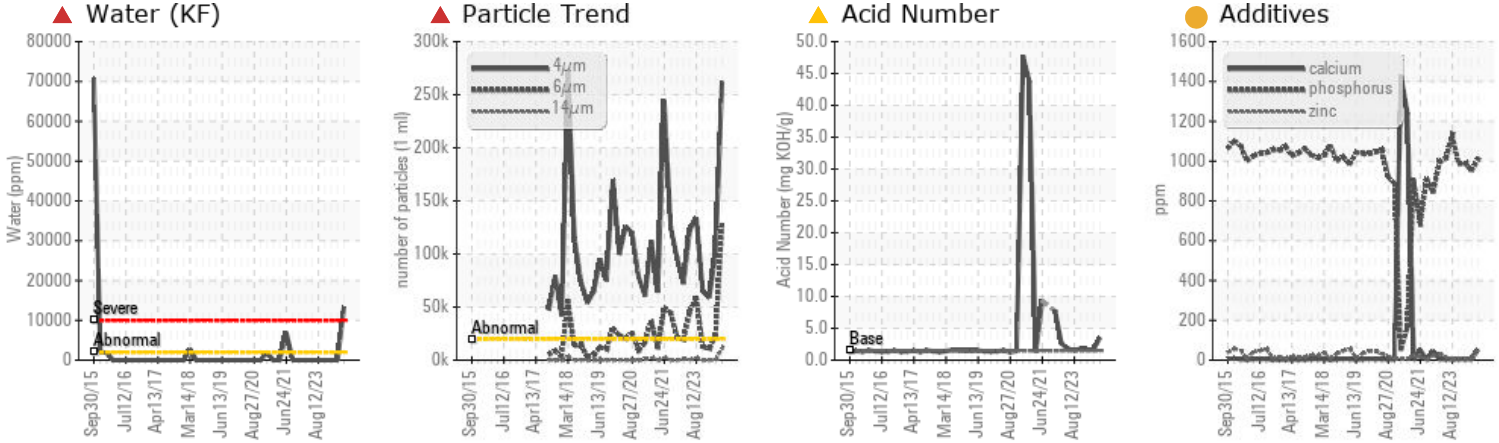
Gearbox

Fluid

PETRO CANADA GEARLUBE TOS 80W90 (40 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. 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation.

PROBLEMATIC TEST RESULTS

Sample Status				SEVERE	NORMAL	NORMAL
Water	%	ASTM D6304*	>0.2	▲ 1.335	---	---
ppm Water	ppm	ASTM D6304*	>2000	▲ 13354	---	---
Particles >14µm		ASTM D7647	>640	▲ 10766	612	272
Particles >21µm		ASTM D7647	>160	▲ 2755	97	47
Particles >38µm		ASTM D7647	>40	▲ 107	3	1
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 25/24/21	24/22/16	23/21/15
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	▲ 3.52	1.66	1.67
Appearance	scalar	Visual*	NORML	▲ MILKY	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	▲ .5%	NEG	NEG

Customer Id: TERHAM
Sample No.: PC0080708
Lab Number: 02638947
Test Package: MAR 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
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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.
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 Fluid Source	---	---	?	Confirm the source of the lubricant being utilized for top-up/fill.
Check Seals	---	---	?	Check seals and/or filters for points of contaminant entry.

HISTORICAL DIAGNOSIS

NORMAL



19 Mar 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



NORMAL



20 Jan 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



NORMAL



04 Oct 2023 Diag: Kevin Marson

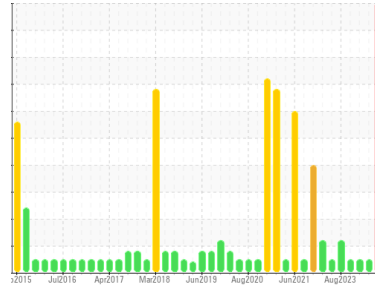
Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report





Area
Cranes [450335854]
Machine Id
Crane - Mid Ship Luffing Winch Gearbox (S/N Sample Tag MA-04002-S6)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (40 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. 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. Confirm the source of the lubricant being utilized for top-up/fill. Resample in 30-45 days to monitor this situation.

Wear
All component wear rates are normal.

▲ Contamination
There is a high concentration of water present in the oil. Elemental level of calcium (Ca) indicates contamination with brine (salt water). The system cleanliness is above the acceptable limit for the target ISO 4406 cleanliness code.

▲ Fluid Condition
The AN level is above the recommended limit. Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable.

SAMPLE INFORMATION

method	limit/base	current	history1	history2
Sample Number	Client Info	PC0080708	PC	PC
Sample Date	Client Info	29 May 2024	19 Mar 2024	20 Jan 2024
Machine Age	hrs	0	0	0
Oil Age	hrs	0	0	0
Oil Changed	Client Info	N/A	N/A	N/A
Sample Status		SEVERE	NORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2
PQ	ASTM D8184*	2	0	0
Iron	ppm	44	4	4
Chromium	ppm	0	0	0
Nickel	ppm	<1	0	<1
Titanium	ppm	0	0	0
Silver	ppm	0	0	0
Aluminum	ppm	0	0	<1
Lead	ppm	0	0	0
Copper	ppm	<1	0	<1
Tin	ppm	0	0	0
Antimony	ppm	0	0	0
Vanadium	ppm	0	0	0
Beryllium	ppm	0	0	0
Cadmium	ppm	0	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm	184	238	238
Barium	ppm	<1	0	0
Molybdenum	ppm	0	0	0
Manganese	ppm	<1	0	0
Magnesium	ppm	3	1	1
Calcium	ppm	53	4	5
Phosphorus	ppm	1006	951	989
Zinc	ppm	51	10	9
Sulfur	ppm	18055	16882	17804
Lithium	ppm	<1	<1	<1

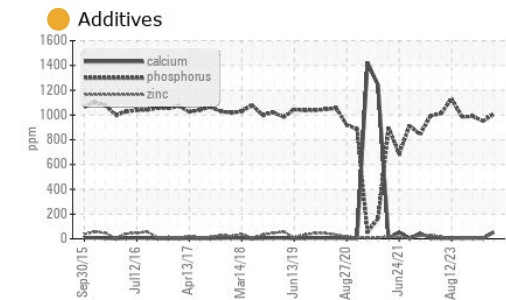
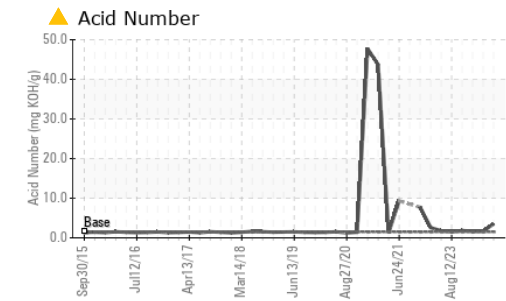
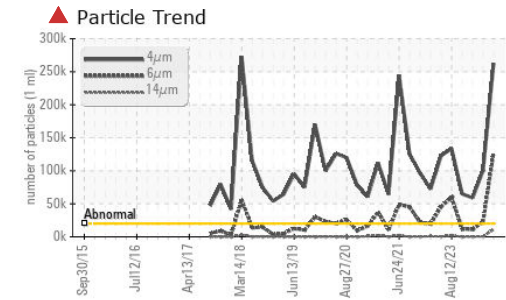
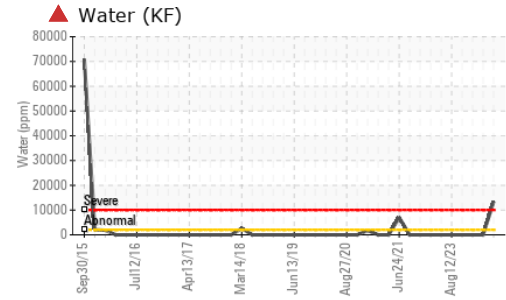
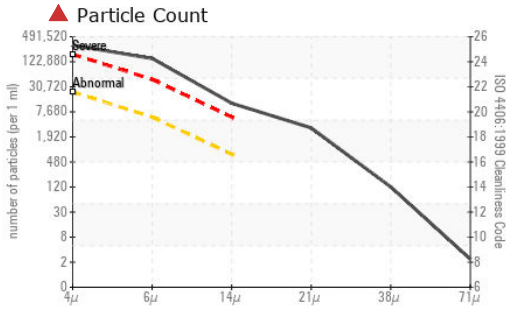
CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm	16	1	3
Sodium	ppm	4	<1	<1
Potassium	ppm	2	<1	<1
Water	%	▲ 1.335	---	---
ppm Water	ppm	▲ 13354	---	---

FLUID CLEANLINESS

method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	262026	100291	58867
Particles >6µm	ASTM D7647	127010	22698	11067
Particles >14µm	ASTM D7647	▲ 10766	612	272
Particles >21µm	ASTM D7647	▲ 2755	97	47
Particles >38µm	ASTM D7647	▲ 107	3	1
Particles >71µm	ASTM D7647	2	1	0
Oil Cleanliness	ISO 4406 (c)	▲ 25/24/21	24/22/16	23/21/15

OIL ANALYSIS REPORT



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0080708
Lab Number : 02638947
Unique Number : 5788109
Test Package : MAR 2 (Additional Tests: KF, KV100, PQ, PrtCount, TAN Man, VI)

Received : 30 May 2024
Tested : 03 Jun 2024
Diagnosed : 03 Jun 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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FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	▲ 3.52	1.66	1.67

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	VLITE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	VLITE
Sand/Dirt	scalar	Visual*	NONE	NONE	VLITE	NONE
Appearance	scalar	Visual*	NORML	▲ MILKY	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	▲ .5%	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	149	140	139
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	83.6	14.9	14.8
Viscosity Index (VI)	Scale	ASTM D2270*	109	510	106	106

SAMPLE IMAGES

