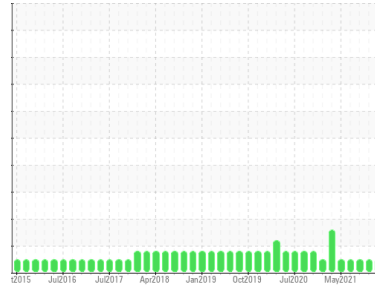


Area
Cranes
Machine Id
Crane - Aft - Slewing Gearbox N°1 (S/N Sample Tag MA-04001-S7)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (8 LTR)



DIAGNOSIS

Recommendation
Resample at the next service interval to monitor.

Wear
All component wear rates are normal.

Contamination
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Fluid Condition
The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION method limit/base current history1 history2

Sample Number	Client Info	PC0039816	PC0039827	PC0039833
Sample Date	Client Info	16 Aug 2023	16 May 2023	29 Nov 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		NORMAL	NORMAL	NORMAL

WEAR METALS method limit/base current history1 history2

PQ	ASTM D8184*		0	0	0
Iron	ppm ASTM D5185(m)	>150	10	7	7
Chromium	ppm ASTM D5185(m)	>10	0	0	0
Nickel	ppm ASTM D5185(m)	>10	<1	2	1
Titanium	ppm ASTM D5185(m)		0	0	0
Silver	ppm ASTM D5185(m)		<1	0	<1
Aluminum	ppm ASTM D5185(m)	>5	<1	<1	0
Lead	ppm ASTM D5185(m)	>65	0	0	<1
Copper	ppm ASTM D5185(m)	>80	3	1	2
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	238	207	206
Barium	ppm ASTM D5185(m)	1	2	1	2
Molybdenum	ppm ASTM D5185(m)	0.0	0	0	0
Manganese	ppm ASTM D5185(m)		<1	<1	<1
Magnesium	ppm ASTM D5185(m)	2	<1	0	<1
Calcium	ppm ASTM D5185(m)	6	28	22	24
Phosphorus	ppm ASTM D5185(m)	1000	1048	1050	985
Zinc	ppm ASTM D5185(m)	3	249	217	162
Sulfur	ppm ASTM D5185(m)	19400	22311	22646	21562
Lithium	ppm ASTM D5185(m)		<1	<1	<1

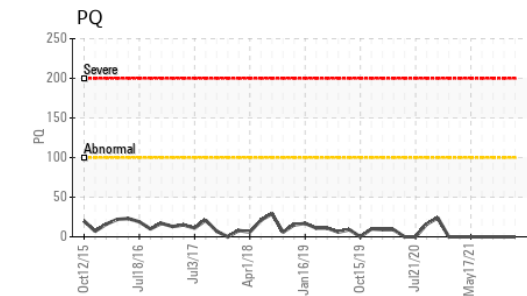
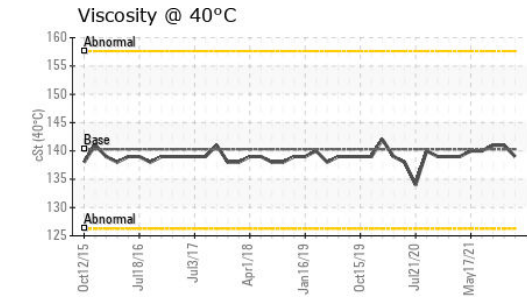
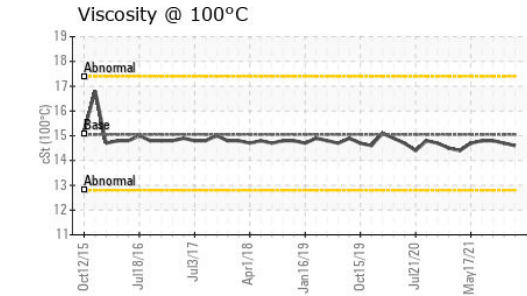
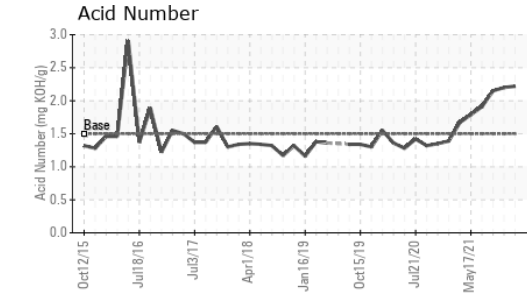
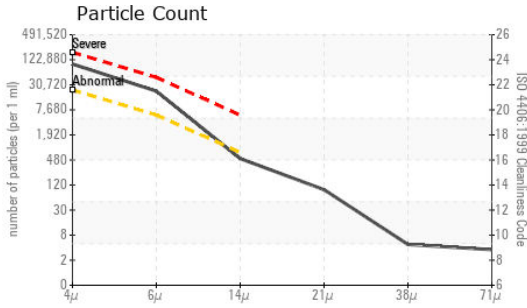
CONTAMINANTS method limit/base current history1 history2

Silicon	ppm ASTM D5185(m)	>20	3	3	3
Sodium	ppm ASTM D5185(m)		<1	<1	<1
Potassium	ppm ASTM D5185(m)	>20	<1	0	10

FLUID CLEANLINESS method limit/base current history1 history2

Particles >4µm	ASTM D7647	>20000	83780	102029	70300
Particles >6µm	ASTM D7647	>5000	18792	29865	8901
Particles >14µm	ASTM D7647	>640	456	514	116
Particles >21µm	ASTM D7647	>160	82	67	15
Particles >38µm	ASTM D7647	>40	4	2	0
Particles >71µm	ASTM D7647	>10	3	1	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	24/21/16	24/22/16	23/20/14

OIL ANALYSIS REPORT

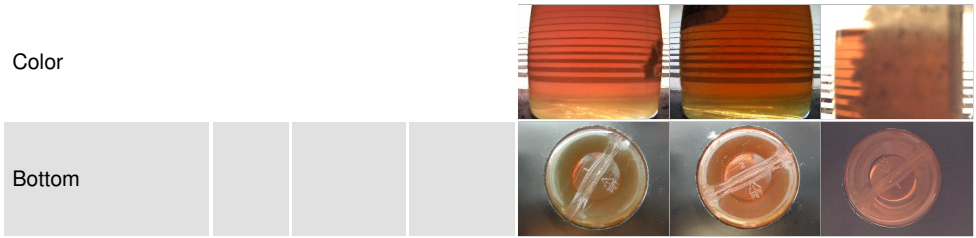


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	2.22	2.20	2.15

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*	>0.2	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)	140.3	139	141	141
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	14.6	14.7	14.8
Viscosity Index (VI)	Scale	ASTM D2270*	109	104	103	104

SAMPLE IMAGES



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0039816 **Received** : 17 Aug 2023
Lab Number : **02576419** **Diagnosed** : 23 Aug 2023
Unique Number : 5629479 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, 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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