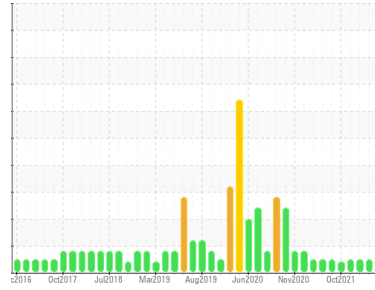


Area
Cranes
Machine Id
Crane - Fwd Hoisting Winch Gearbox (S/N Sample Tag MA-04003-S5)
Component
Gearbox
Fluid
PETRO CANADA GEARLUBE TOS 80W90 (26 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

An increase in the iron level is noted. All other 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		PC0040622	PC0052004	PC0040131
Sample Date	Client Info		05 Aug 2023	02 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	36	4	4
Chromium	ppm	ASTM D5185(m) >10	<1	0	0
Nickel	ppm	ASTM D5185(m) >10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	0	<1	0
Silver	ppm	ASTM D5185(m)	0	0	<1
Aluminum	ppm	ASTM D5185(m) >5	<1	<1	<1
Lead	ppm	ASTM D5185(m) >65	0	0	0
Copper	ppm	ASTM D5185(m) >80	<1	1	<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	222	221	232
Barium	ppm	ASTM D5185(m) 1	<1	0	0
Molybdenum	ppm	ASTM D5185(m) 0.0	0	0	0
Manganese	ppm	ASTM D5185(m)	1	<1	0
Magnesium	ppm	ASTM D5185(m) 2	2	1	<1
Calcium	ppm	ASTM D5185(m) 6	8	<1	3
Phosphorus	ppm	ASTM D5185(m) 1000	1022	981	966
Zinc	ppm	ASTM D5185(m) 3	89	39	11
Sulfur	ppm	ASTM D5185(m) 19400	17469	16853	16661
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

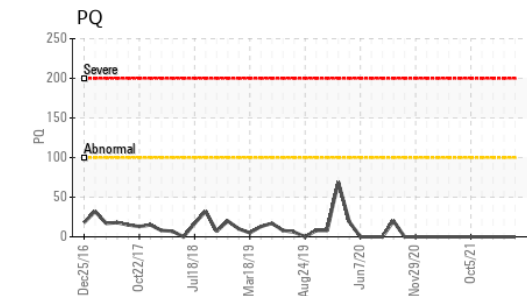
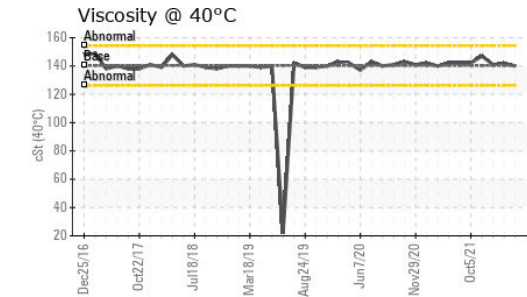
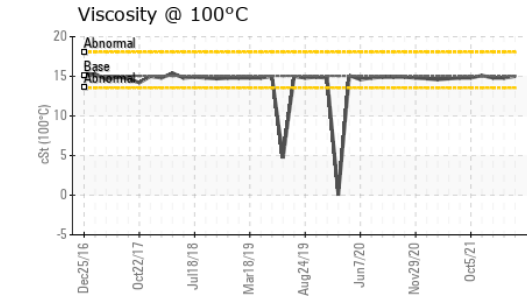
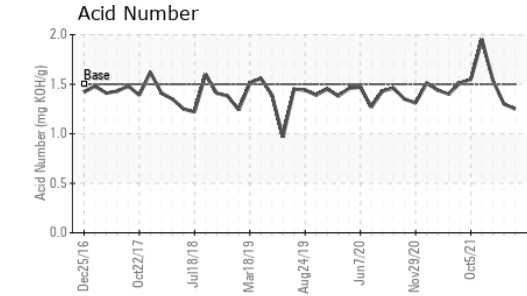
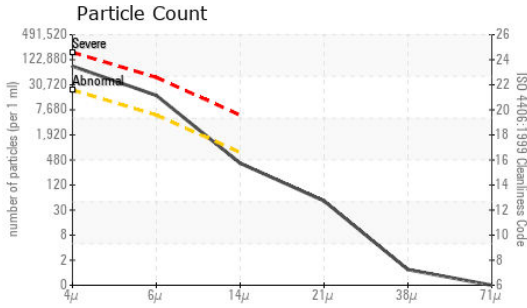
CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >20	4	4	2
Sodium	ppm	ASTM D5185(m)	1	<1	<1
Potassium	ppm	ASTM D5185(m) >20	<1	<1	<1

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>20000	74414	52100	38614
Particles >6µm	ASTM D7647	>5000	14849	9455	8305
Particles >14µm	ASTM D7647	>640	353	355	248
Particles >21µm	ASTM D7647	>160	44	100	40
Particles >38µm	ASTM D7647	>40	1	6	1
Particles >71µm	ASTM D7647	>10	0	0	0
Oil Cleanliness	ISO 4406 (c)	>21/19/16	23/21/16	23/20/16	22/20/15

OIL ANALYSIS REPORT

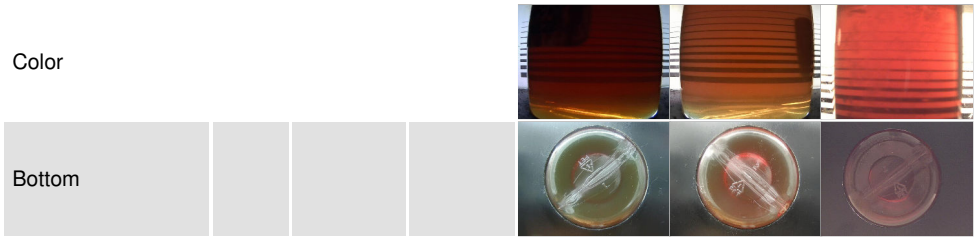


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	1.5	1.25	1.30	1.54

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	VLITE
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	140	142	141
Visc @ 100°C	cSt	ASTM D7279(m)	15.05	15.0	14.8	14.8
Viscosity Index (VI)	Scale	ASTM D2270*	109	108	104	104

SAMPLE IMAGES



Color

Bottom



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0040622 **Received** : 10 Aug 2023
Lab Number : **02575149** **Diagnosed** : 11 Aug 2023
Unique Number : 5620200 **Diagnostician** : Kevin Marson
Test Package : MAR 2 (Additional Tests: KV100, PQ, PrtCount, VI)

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 Scotia Centre, 235 Water Strret
 St. John's, NL
 CA A1C 1B6
 Contact: Josh Hynes
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 T: (709)778-3575
 F: (709)724-2835

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.