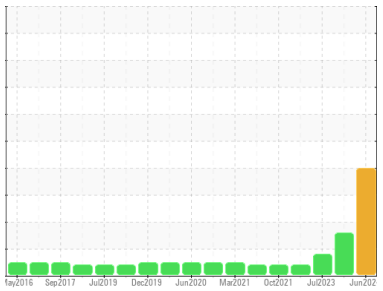
OIL ANALYSIS REPORT

Sample Rating Trend



WEAR

Machine Id
IMM #28 (S/N 6259460)
Component
Hydraulic System
Fluid
PETRO CANADA HYDREX AW 46 (1000 LTR)

DIAGNOSIS

Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using IND 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid.

Wear

Lead and copper ppm levels are abnormal. A sharp increase in the lead level is noted. A sharp increase in the copper level is noted. Bearing wear is indicated. Oil cooler core leaching or motor piston wear is indicated.

Contamination

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

Fluid Condition

Viscosity of sample indicates oil is within SAE 5W20 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The AN level is acceptable for this fluid.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**PC0087475**	PC0080866	PC0076976
Sample Date		Client Info		**20 Jun 2024**	15 Jan 2024	11 Jul 2023
Machine Age	mths	Client Info		**0**	0	0
Oil Age	mths	Client Info		**0**	0	0
Oil Changed		Client Info		**Not Changd**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	SEVERE

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.05	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>40	**<1**	<1	<1
Chromium	ppm	ASTM D5185(m)	>4	**0**	0	0
Nickel	ppm	ASTM D5185(m)	>20	**0**	<1	<1
Titanium	ppm	ASTM D5185(m)		**0**	0	0
Silver	ppm	ASTM D5185(m)		**0**	0	0
Aluminum	ppm	ASTM D5185(m)	>4	**1**	<1	0
Lead	ppm	ASTM D5185(m)	>10	▲ **6**	0	0
Copper	ppm	ASTM D5185(m)	>60	▲ **38**	<1	1
Tin	ppm	ASTM D5185(m)	>4	**0**	0	0
Antimony	ppm	ASTM D5185(m)		**0**	0	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

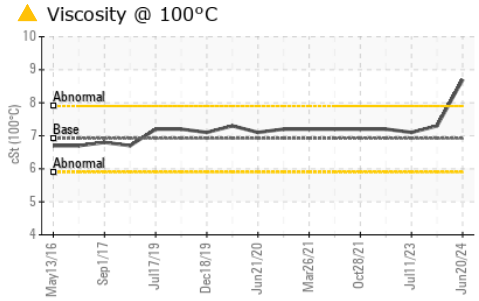
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	0	**<1**	0	0
Barium	ppm	ASTM D5185(m)	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185(m)	0	● **240**	0	0
Manganese	ppm	ASTM D5185(m)	0	**0**	0	0
Magnesium	ppm	ASTM D5185(m)	0	**<1**	0	<1
Calcium	ppm	ASTM D5185(m)	50	**35**	32	15
Phosphorus	ppm	ASTM D5185(m)	330	● **593**	326	314
Zinc	ppm	ASTM D5185(m)	430	● **619**	327	232
Sulfur	ppm	ASTM D5185(m)	760	● **1413**	707	573
Lithium	ppm	ASTM D5185(m)		**<1**	<1	<1

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

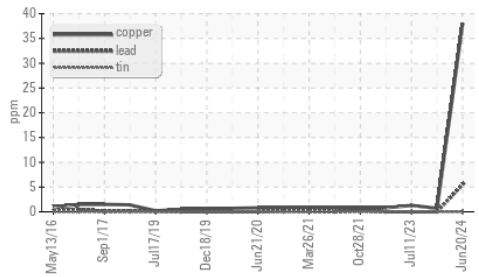
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	**351**	▲ 16970	1144
Particles >6µm		ASTM D7647	>1300	**94**	▲ 3890	334
Particles >14µm		ASTM D7647	>160	**10**	115	17
Particles >21µm		ASTM D7647	>40	**4**	16	4
Particles >38µm		ASTM D7647	>10	**1**	1	0
Particles >71µm		ASTM D7647	>3	**1**	0	0
Oil Cleanliness		ISO 4406 (c)	>19/17/14	**16/14/10**	▲ 21/19/14	17/16/11

OIL ANALYSIS REPORT

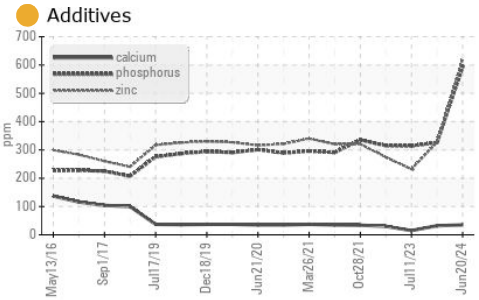
Viscosity @ 100°C



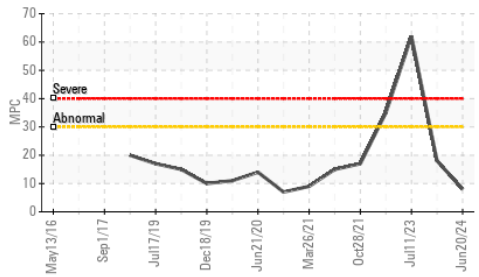
Non-ferrous Metals



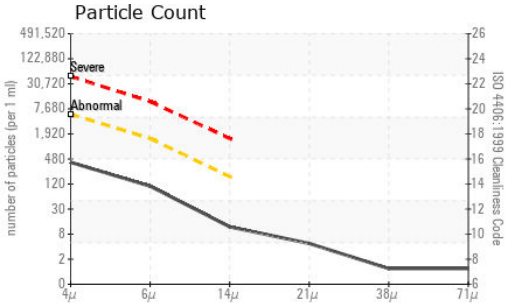
Additives



Varnish Potential



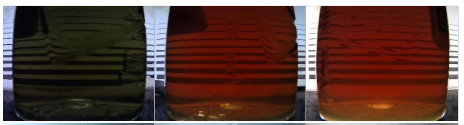
Particle Count



FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	0.70	**1.08**	0.44	0.34
MPC Varnish Potential	Scale	ASTM D7843(m)*	>15	**8**	▲ 18	▲ 62

VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	**VLITE**	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	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*	>0.05	**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)	46.4	**47.9**	44.8	45.3
Visc @ 100°C	cSt	ASTM D7279(m)	6.92	▲ **8.7**	7.3	7.1
Viscosity Index (VI)	Scale	ASTM D2270*	104	▲ **162**	125	115

SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					
MPC					

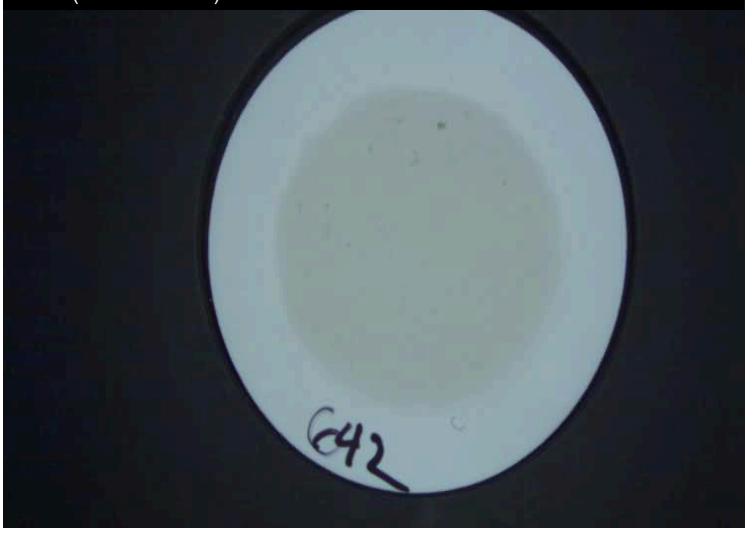
ISO 17025:2017 Accredited Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : PC0087475
Lab Number : 02647642
Unique Number : 5813194
Test Package : IND 2 (Additional Tests: Bottom, KV100, MPC, TAN Man, VI)
Received : 12 Jul 2024
Tested : 15 Jul 2024
Diagnosed : 16 Jul 2024 - Kevin Marson

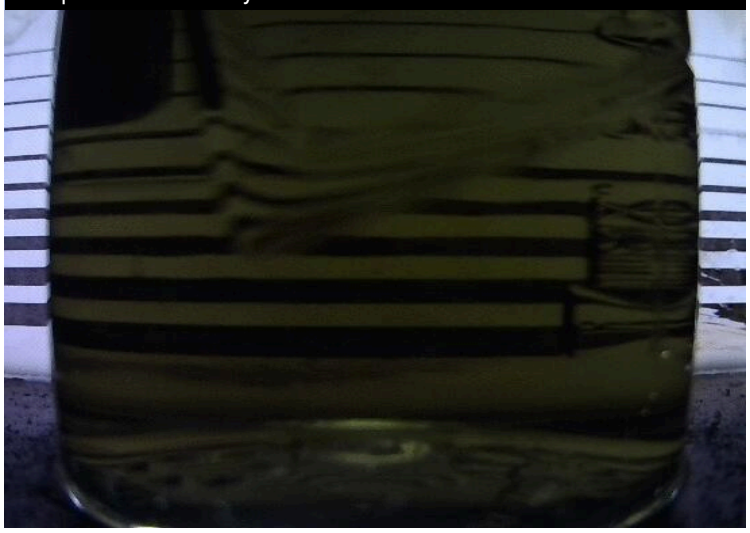
To discuss this sample report, contact Customer Service at 1-800-268-2131.
Test denoted (*) outside scope of accreditation, (m) method modified, (e) tested at external lab.
Validity of results and interpretation are based on the sample and information as supplied.

ROPAK PACKAGING CANADA
2240 WYECROFT RD
OAKVILLE, ON
CA L6L 6M1
Contact: Frank Maio
Frank.Maio@mauserpackaging.com
T: (905)465-9019
F:

MPC (Varnish Test)



Sample Color & Clarity



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