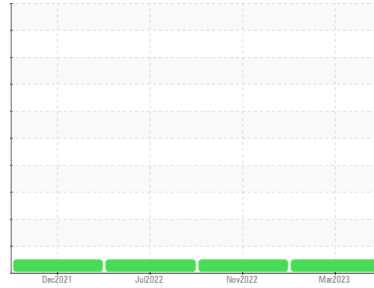


Area
Engine Room
Machine Id
Main Engine

Component
Main Engine
Fluid

PETRO CANADA CM MHP 153 (1000 LTR)



DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. Please contact your representative for information regarding the proper sampling kits for your service. NOTE: We recommend using MOB 3 test kits, this testkit includes Analytical Ferrography which provides a detailed morphological analysis of wear particles present in the fluid. this testkit includes BN to determine the suitability of the oil for continued use.

Wear

Component wear rates appear to be normal (unconfirmed).

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

The condition of the oil is acceptable for the time in service (unconfirmed).

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			PC0032197	PC0031766	PC0018612
Sample Date	Client Info			03 Mar 2023	08 Nov 2022	24 Jul 2022
Machine Age	kms	Client Info		188528	186400	184055
Oil Age	kms	Client Info		0	186400	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>4.0		<1.0	<1.0	<1.0
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>25	6	4	4
Chromium	ppm	ASTM D5185(m)	>5	0	0	0
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	<1
Titanium	ppm	ASTM D5185(m)	>3	<1	<1	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>10	2	1	1
Lead	ppm	ASTM D5185(m)	>5	<1	0	0
Copper	ppm	ASTM D5185(m)	>5	<1	<1	<1
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Antimony	ppm	ASTM D5185(m)		<1	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

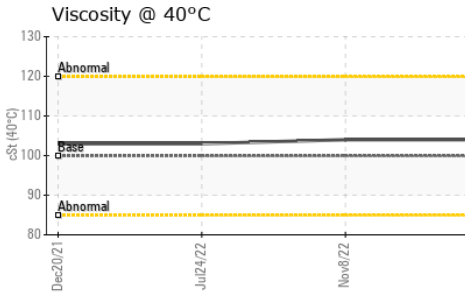
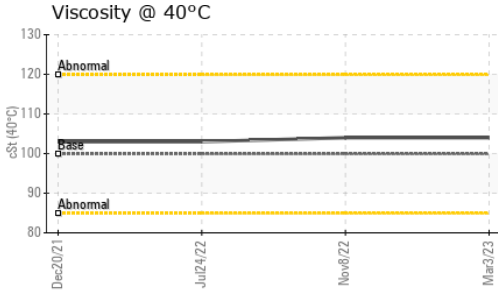
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)		2	3	3
Barium	ppm	ASTM D5185(m)		0	0	0
Molybdenum	ppm	ASTM D5185(m)		3	2	2
Manganese	ppm	ASTM D5185(m)		<1	<1	<1
Magnesium	ppm	ASTM D5185(m)		55	45	36
Calcium	ppm	ASTM D5185(m)		5438	5391	5684
Phosphorus	ppm	ASTM D5185(m)		959	952	912
Zinc	ppm	ASTM D5185(m)	1090	980	980	1027
Sulfur	ppm	ASTM D5185(m)		9314	8874	8820
Lithium	ppm	ASTM D5185(m)		<1	<1	<1

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m)	>20	6	6	5
Sodium	ppm	ASTM D5185(m)	>75	<1	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	1

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	ASTM D7844*	>2	0	0	0
Nitration	Abs/cm	ASTM D7624*	>20	7.3	8.7	8.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	16.7	14.3	13.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	ASTM D7414*	>25	7.2	7.5	7.4

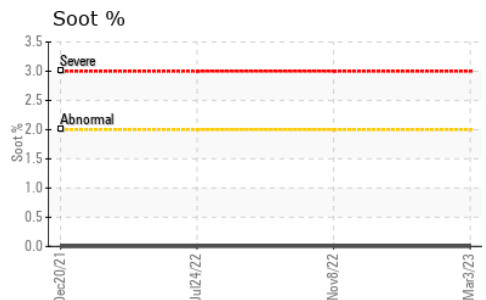
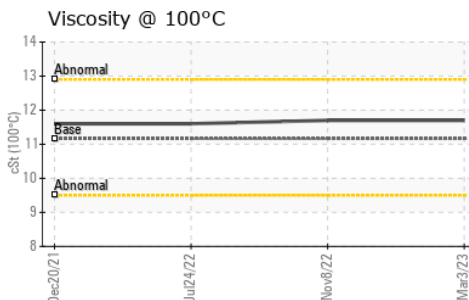
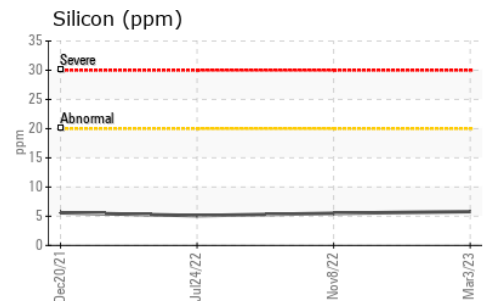
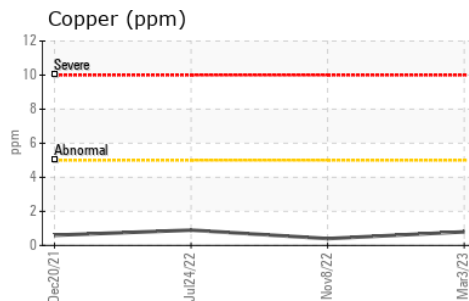
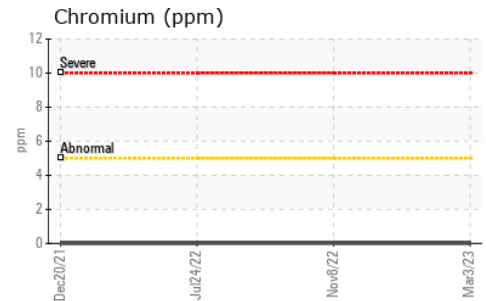
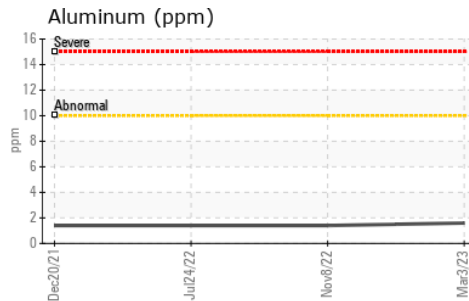
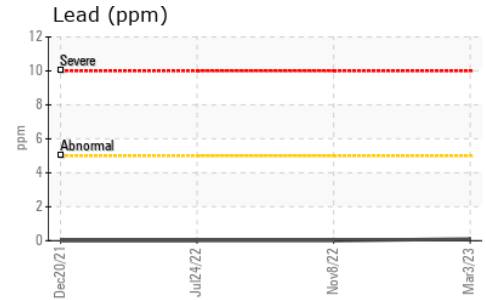
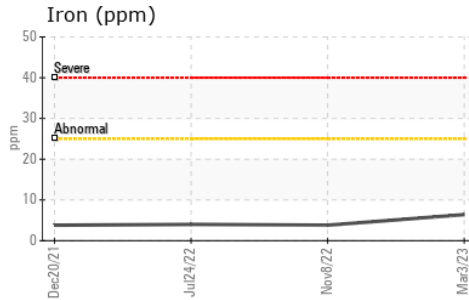
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
Emulsified Water	scalar	Visual*	>0.1	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	99.91	104	104
Visc @ 100°C	cSt	ASTM D7279(m)	11.16	11.7	11.7
Viscosity Index (VI)	Scale	ASTM D2270*	102	100	100

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9 Ocean Choice International - Katsheshuk II
Sample No. : PC0032197 **Received** : 10 Mar 2023
Lab Number : 02544282 **Diagnosed** : 10 Mar 2023
Unique Number : 5541287 **Diagnostician** : Wes Davis
Test Package : MOB 1 (Additional Tests: KV40, 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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 Contact: Chief Engineer
 katengine@oceanchoice.com