



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
SAMUEL RIS
Machine Id
Component
BARGE ENG
Diesel Engine
Fluid
PETRO CANADA DURON MARINE SAE 40 (20 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0759140	WC0638109	WC0367399
Sample Date		Client Info		24 May 2024	15 May 2023	21 Sep 2020
Machine Age	hrs	Client Info		4280	4126	3815
Oil Age	hrs	Client Info		154	311	492
Filter Age	hrs	Client Info		154	311	492
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>200	31	31	▲ 108
Chromium	ppm	ASTM D5185(m)	>20	<1	<1	2
Nickel	ppm	ASTM D5185(m)	>2	0	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	<1	<1
Silver	ppm	ASTM D5185(m)	>2	0	0	<1
Aluminum	ppm	ASTM D5185(m)	>30	<1	<1	1
Lead	ppm	ASTM D5185(m)	>30	0	<1	2
Copper	ppm	ASTM D5185(m)	>30	1	1	4
Tin	ppm	ASTM D5185(m)	>15	2	2	7
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	---	LIGHT
Yellow Metal	scalar	Visual*	NONE	NONE	---	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

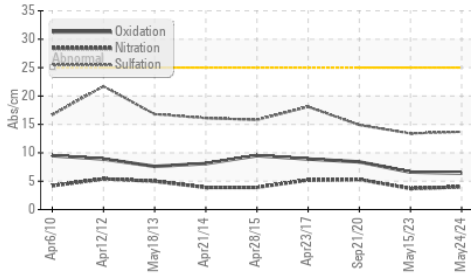
Silicon	ppm	ASTM D5185(m)	>30	2	3	7
Potassium	ppm	ASTM D5185(m)	>20	<1	0	<1
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0.2	0.2	0.6
Nitration	Abs/cm	ASTM D7624*	>20	4.0	3.7	5.3
Sulfation	Abs/.1mm	ASTM D7415*	>30	13.7	13.4	14.9
Silt	scalar	Visual*	NONE	NONE	---	NONE
Debris	scalar	Visual*	NONE	VLITE	---	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	---	NONE
Appearance	scalar	Visual*	NORML	NORML	---	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG

FLUID CONDITION

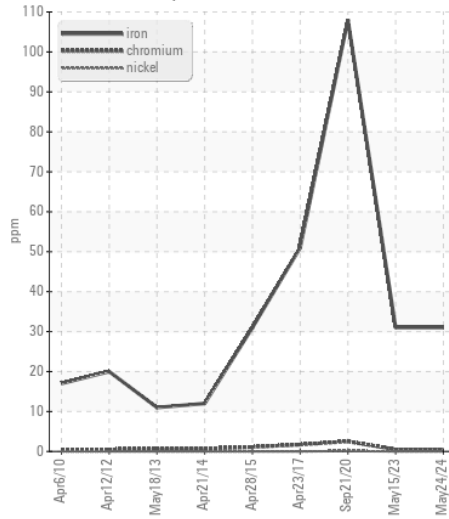
The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		<1	<1	2
Boron	ppm	ASTM D5185(m)	1.0	4	10	51
Barium	ppm	ASTM D5185(m)	1.0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	1.0	0	<1	2
Manganese	ppm	ASTM D5185(m)	1	<1	<1	1
Magnesium	ppm	ASTM D5185(m)	15	914	767	901
Calcium	ppm	ASTM D5185(m)	2540	1040	1340	1006
Phosphorus	ppm	ASTM D5185(m)	1000	1057	1102	986
Zinc	ppm	ASTM D5185(m)	1110	1198	1195	1244
Sulfur	ppm	ASTM D5185(m)	3700	2539	2856	2555
Oxidation	Abs/.1mm	ASTM D7414*	>25	6.4	6.6	8.4
Visc @ 100°C	cSt	ASTM D7279(m)	14.6	14.3	14.3	14.1

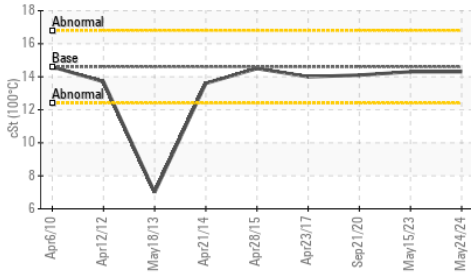
FT-IR (Direct Trend)



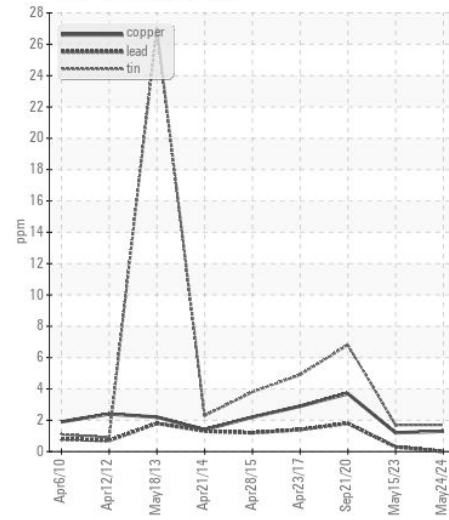
Ferrous Alloys



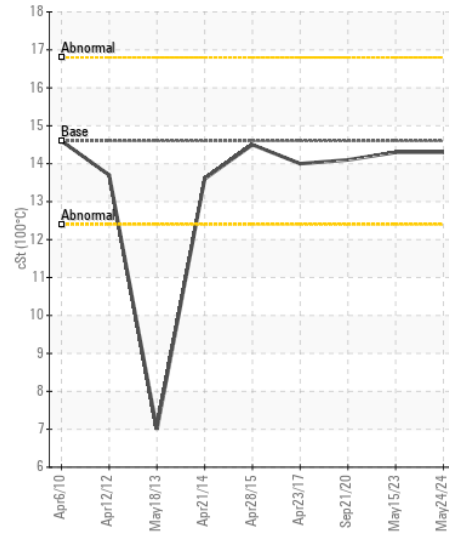
Viscosity @ 100°C



Non-ferrous Metals



Viscosity @ 100°C



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9

Sample No. : WC0759140

Lab Number : 02637811

Unique Number : 5786973

Test Package : MAR 1

Received : 28 May 2024

Tested : 28 May 2024

Diagnosed : 28 May 2024 - Wes Davis

CANADIAN COAST GUARD

CCGS SAMUEL RISLEY, 28 WAUBEK STREET

PARRY SOUND, ON

CA P2A 1B9

Contact: Samuel Risley

SamuelRisleySE@ccgs-ngcc.gc.ca

T: (705)746-1993

F: (705)746-1993

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.