



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
SAMUELRIS
Machine Id
S30-3112 Stbd.Ship Service CAT
Component
Starboard Diesel Engine
Fluid
PETRO CANADA DURON HP 15W40 (64 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0869811	WC0759139	WC0638086
Sample Date		Client Info		30 Jun 2024	12 May 2024	21 Mar 2024
Machine Age	hrs	Client Info		53004	52493	51968
Oil Age	hrs	Client Info		511	525	489
Filter Age	hrs	Client Info		511	525	489
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>100	7	7	8
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>2	0	0	<1
Titanium	ppm	ASTM D5185(m)	>2	0	0	0
Silver	ppm	ASTM D5185(m)	>2	0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	<1	<1	<1
Lead	ppm	ASTM D5185(m)	>40	1	1	1
Copper	ppm	ASTM D5185(m)	>330	12	12	11
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	VLITE	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

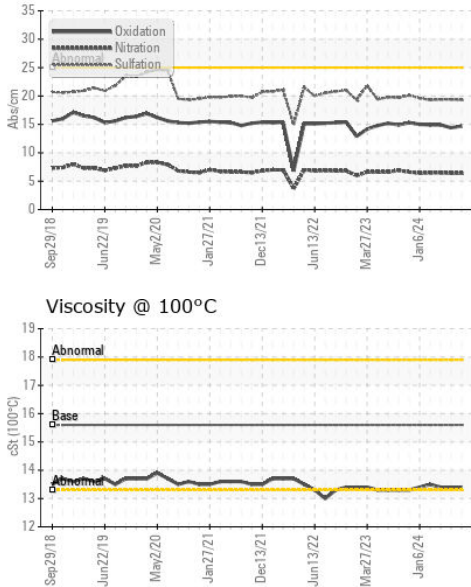
Silicon	ppm	ASTM D5185(m)	>25	2	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	0	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0.1	0.1	0.1
Nitration	Abs/cm	ASTM D7624*	>20	6.4	6.4	6.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	19.3	19.4	19.4
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

FLUID CONDITION

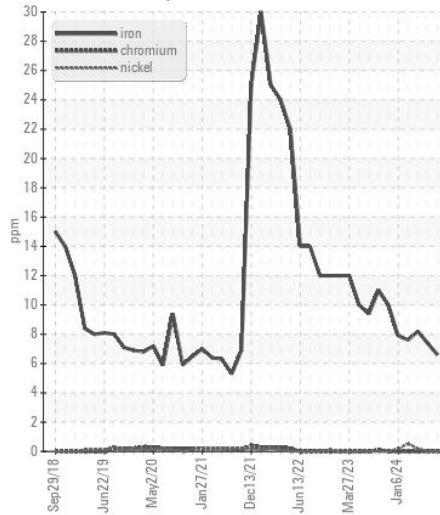
The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		1	1	2
Boron	ppm	ASTM D5185(m)	0	5	5	6
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	57	59	59
Manganese	ppm	ASTM D5185(m)	0	<1	0	0
Magnesium	ppm	ASTM D5185(m)	1010	954	990	983
Calcium	ppm	ASTM D5185(m)	1070	1015	1089	1075
Phosphorus	ppm	ASTM D5185(m)	1150	994	1037	1008
Zinc	ppm	ASTM D5185(m)	1270	1181	1221	1208
Sulfur	ppm	ASTM D5185(m)	2060	2622	2576	2493
Oxidation	Abs/.1mm	ASTM D7414*	>25	14.7	14.4	14.9
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	13.4	13.4	13.4

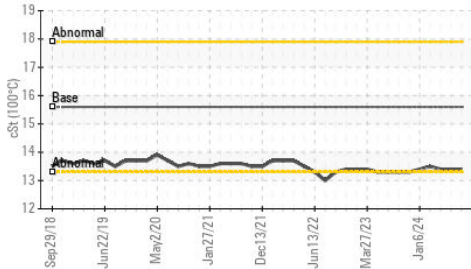
FT-IR (Direct Trend)



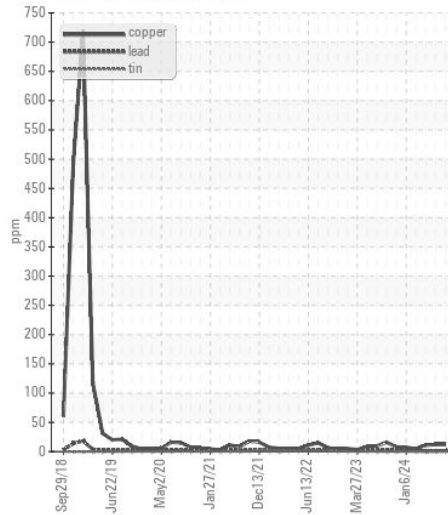
Ferrous Alloys



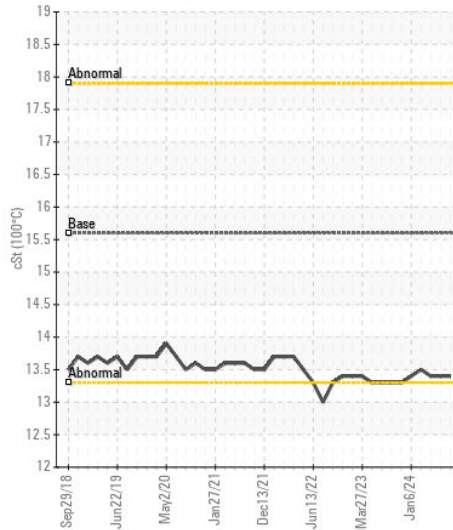
Viscosity @ 100°C



Non-ferrous Metals



Viscosity @ 100°C



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0869811
Lab Number : 02645371
Unique Number : 5802910
Test Package : MAR 1

Received : 04 Jul 2024
Tested : 05 Jul 2024
Diagnosed : 05 Jul 2024 - Wes Davis

CANADIAN COAST GUARD
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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.