



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-E 15W40 (64 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0759139	WC0638086	WC0638087
Sample Date		Client Info		12 May 2024	21 Mar 2024	17 Feb 2024
Machine Age	hrs	Client Info		52493	51968	51479
Oil Age	hrs	Client Info		525	489	500
Filter Age	hrs	Client Info		525	489	500
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	8	8
Chromium	ppm	ASTM D5185(m)	>20	0	0	0
Nickel	ppm	ASTM D5185(m)	>2	0	<1	<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	2
Copper	ppm	ASTM D5185(m)	>330	12	11	5
Tin	ppm	ASTM D5185(m)	>15	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	VLITE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

There is no indication of any contamination in the oil.

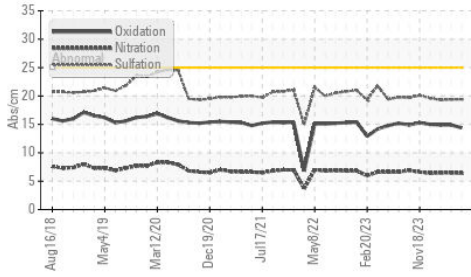
Silicon	ppm	ASTM D5185(m)	>25	<1	<1	2
Potassium	ppm	ASTM D5185(m)	>20	0	0	<1
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	ASTM D7844*	>3	0.1	0.1	0.1
Nitration	Abs/cm	ASTM D7624*	>20	6.4	6.5	6.5
Sulfation	Abs/.1mm	ASTM D7415*	>30	19.4	19.4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

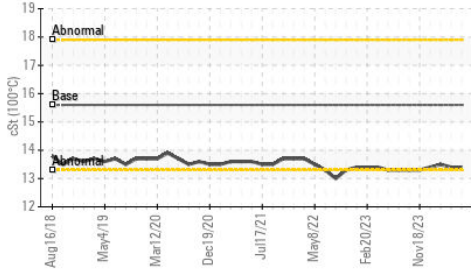
The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		1	2	1
Boron	ppm	ASTM D5185(m)	1	5	6	6
Barium	ppm	ASTM D5185(m)	0	0	0	0
Molybdenum	ppm	ASTM D5185(m)	60	59	59	59
Manganese	ppm	ASTM D5185(m)	0	0	0	0
Magnesium	ppm	ASTM D5185(m)	1010	990	983	984
Calcium	ppm	ASTM D5185(m)	1070	1089	1075	1069
Phosphorus	ppm	ASTM D5185(m)	1150	1037	1008	1048
Zinc	ppm	ASTM D5185(m)	1270	1221	1208	1195
Sulfur	ppm	ASTM D5185(m)	2060	2576	2493	2726
Oxidation	Abs/.1mm	ASTM D7414*	>25	14.4	14.9	14.9
Visc @ 100°C	cSt	ASTM D7279(m)	15.6	13.4	13.4	13.5

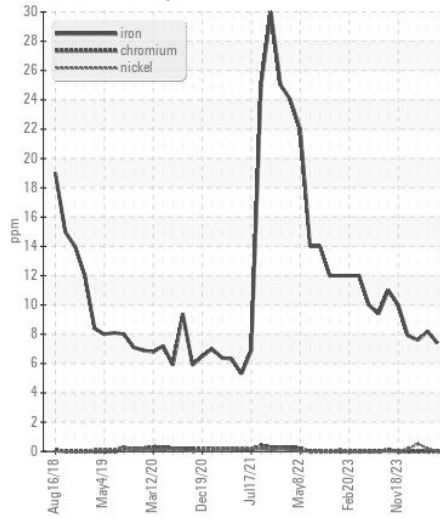
FT-IR (Direct Trend)



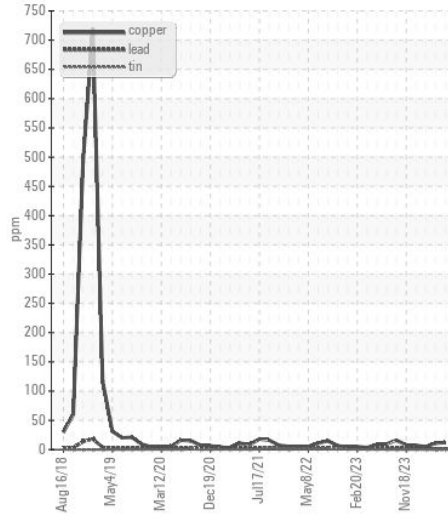
Viscosity @ 100°C



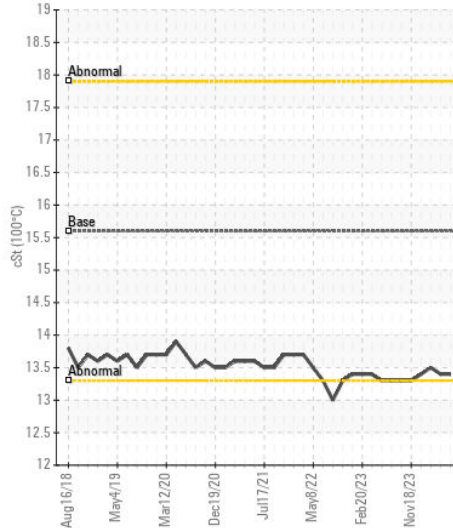
Ferrous Alloys



Non-ferrous Metals



Viscosity @ 100°C



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0759139
Lab Number : 02637813
Unique Number : 5786975
Test Package : MAR 1

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.