



WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL



Area
BARGE TRANSPORTATION
Machine Id
BARRY GRIFFITH - SME
Component
Starboard Main Engine
Fluid
PETRO CANADA DURON HP 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KFS0002955	KFS0001265	KFS0002038
Sample Date		Client Info		22 Jan 2024	07 Mar 2023	03 Dec 2022
Machine Age	hrs	Client Info		0	11072	0
Oil Age	hrs	Client Info		500	500	0
Filter Age	hrs	Client Info		500	500	0
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	<1	2	2
Chromium	ppm	ASTM D5185m	>10	<1	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	2	<1
Titanium	ppm	ASTM D5185m		<1	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>20	0	1	0
Lead	ppm	ASTM D5185m	>40	<1	<1	<1
Copper	ppm	ASTM D5185m	>300	<1	2	4
Tin	ppm	ASTM D5185m	>10	<1	<1	<1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

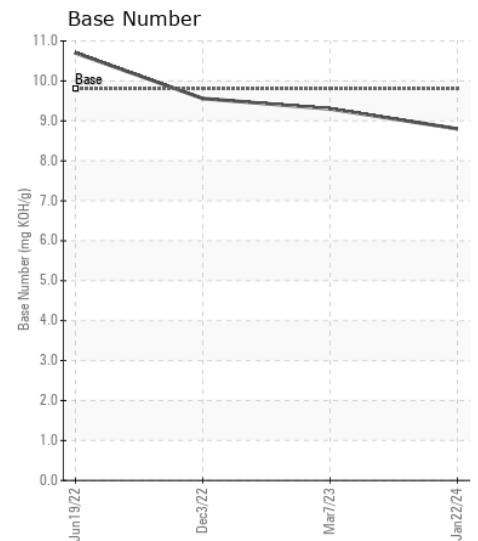
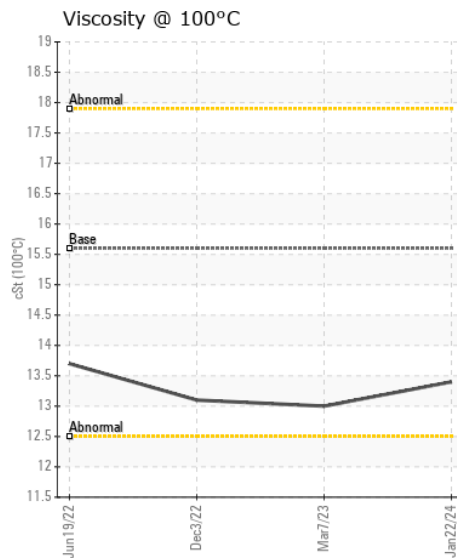
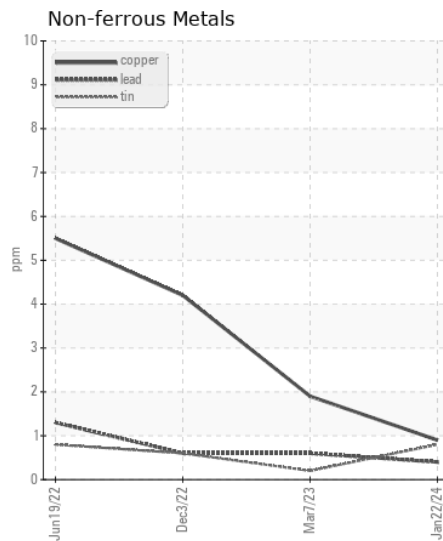
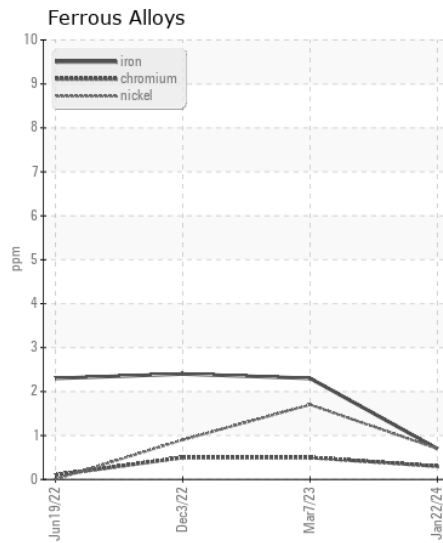
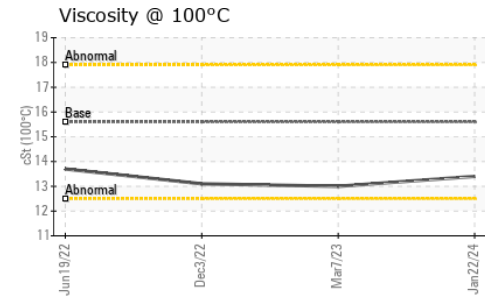
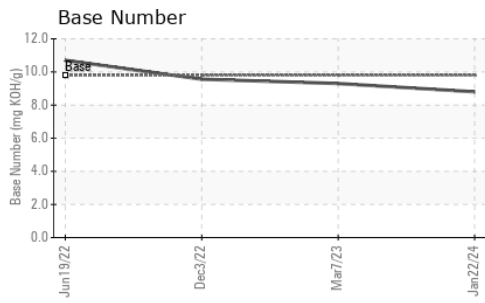
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	2	2	2
Potassium	ppm	ASTM D5185m	>20	0	1	<1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	6.8	6.5	6.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.1	18.4	19.8
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	<1	2
Boron	ppm	ASTM D5185m		0	1	3
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		56	56	56
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		918	847	843
Calcium	ppm	ASTM D5185m		979	1140	1067
Phosphorus	ppm	ASTM D5185m		982	992	965
Zinc	ppm	ASTM D5185m		1165	1195	1159
Sulfur	ppm	ASTM D5185m		2930	3258	3541
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	14.0	15.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.8	8.8	9.3	9.56
Visc @ 100°C	cSt	ASTM D445	15.6	13.4	13.0	13.1



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : KFS0002955

Lab Number : 06083280

Unique Number : 10870725

Test Package : FLEET

Received : 08 Feb 2024

Tested : 08 Feb 2024

Diagnosed : 08 Feb 2024 - Wes Davis

M/V BARRY GRIFFITH

3501 STARLITE DR

PADUCAH, KY

US 42003

Contact: BARRY GRIFFITH

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T:

F:

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)