



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
M/V COHO FERRY
 Component
Port Main Engine
 Fluid
SHELL CAPRINUS XR 20W40 (200 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0001582	PE0001453	PE0001460
Sample Date		Client Info		13 Jun 2024	16 Mar 2024	16 Dec 2023
Machine Age	hrs	Client Info		56194	55477	55078
Oil Age	hrs	Client Info		4100	3384	2966
Filter Age	hrs	Client Info		967	250	2966
Oil Changed		Client Info		Filtered	Filtered	Oil Added
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	27	31	30
Chromium	ppm	ASTM D5185m	>8	1	2	1
Nickel	ppm	ASTM D5185m	>2	0	1	0
Titanium	ppm	ASTM D5185m	>3	<1	<1	0
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>15	3	2	1
Lead	ppm	ASTM D5185m	>18	32	33	32
Copper	ppm	ASTM D5185m	>80	62	64	59
Tin	ppm	ASTM D5185m	>14	18	19	18
Vanadium	ppm	ASTM D5185m		<1	<1	<1
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.

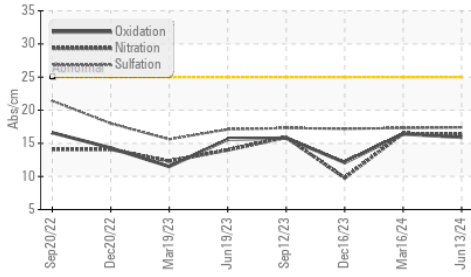
Silicon	ppm	ASTM D5185m	>20	5	8	7
Potassium	ppm	ASTM D5185m	>20	<1	4	0
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.2	0.2	0.6
Nitration	Abs/cm	*ASTM D7624	>20	16.3	16.5	9.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	17.4	17.3	17.2
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

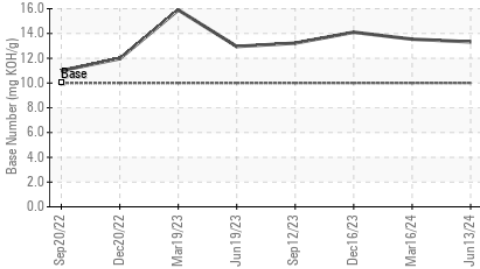
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	5	<1	2
Boron	ppm	ASTM D5185m		1	<1	<1
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		<1	1	0
Manganese	ppm	ASTM D5185m		<1	1	<1
Magnesium	ppm	ASTM D5185m		21	21	16
Calcium	ppm	ASTM D5185m		5014	4792	4879
Phosphorus	ppm	ASTM D5185m		7	16	<1
Zinc	ppm	ASTM D5185m		7	9	0
Sulfur	ppm	ASTM D5185m		3556	3488	3350
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	16.4	12.1
Base Number (BN)	mg KOH/g	ASTM D2896	10	13.32	13.54	14.10
Visc @ 100°C	cSt	ASTM D445	14.5	15.5	15.5	15.6

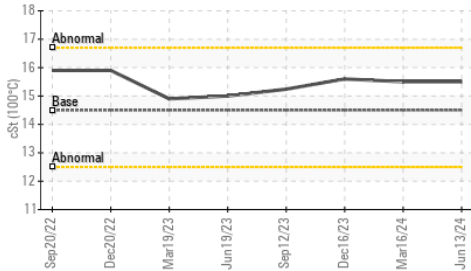
FT-IR (Direct Trend)



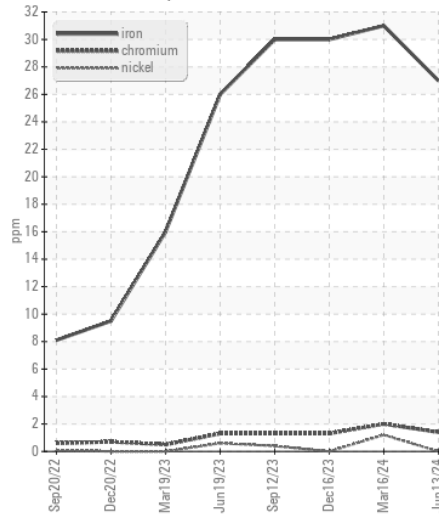
Base Number



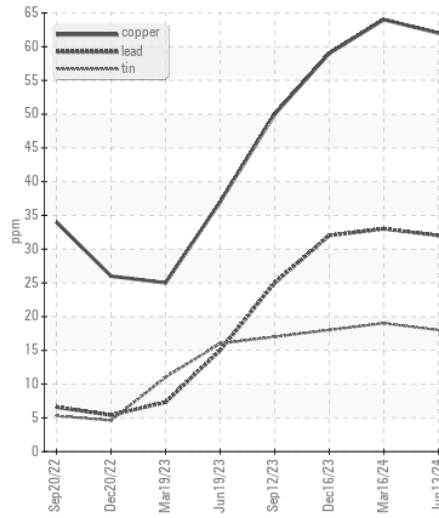
Viscosity @ 100°C



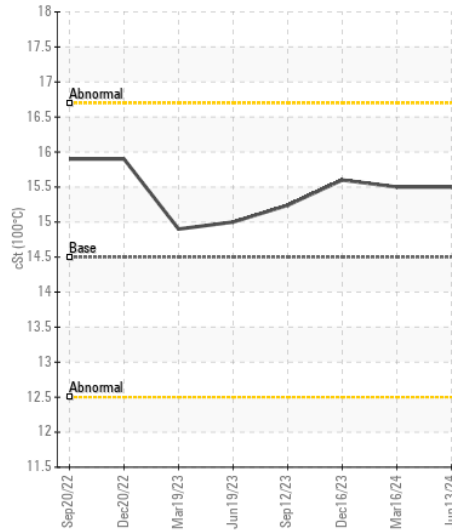
Ferrous Alloys



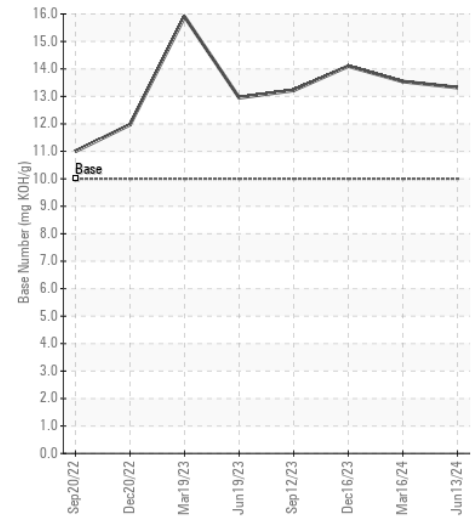
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0001582
Lab Number : 06222891
Unique Number : 11101088
Test Package : PLANT (Additional Tests: FT-IR, ICP, KV100, SCREEN, TBN)

Received : 27 Jun 2024
Tested : 28 Jun 2024
Diagnosed : 30 Jun 2024 - Don Baldrige

BLACK BALL TRANSPORT INC
 4209 21ST AVE W, SUITE 307
 SEATTLE, WA
 US 98199
 Contact: REBECCA CHERRIER
 RCHERRIER@COHOFERRY.COM

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)

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F: