



WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**MARK KNOY - US5555859-001 (S/N 09-D1-1010)**

Component  
**Port Main Engine**

Fluid  
**MOBIL MOBILGARD 410 NC (350 GAL)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>MW0069388</b>	MW0050475	MW0018889
Sample Date		Client Info		<b>17 Jun 2024</b>	28 Apr 2023	01 Apr 2022
Machine Age	hrs	Client Info		<b>10145</b>	4474	30750
Oil Age	hrs	Client Info		<b>10145</b>	4474	30501
Filter Age	hrs	Client Info		<b>0</b>	0	30750
Oil Changed		Client Info		<b>N/A</b>	N/A	Not Changd
Filter Changed		Client Info		<b>N/A</b>	None	None
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

**WEAR**

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	<b>16</b>	18	28
Chromium	ppm	ASTM D5185m	>8	<b>&lt;1</b>	<1	2
Nickel	ppm	ASTM D5185m	>2	<b>0</b>	<1	1
Titanium	ppm	ASTM D5185m	>3	<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>2	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>2</b>	4	4
Lead	ppm	ASTM D5185m	>18	<b>4</b>	5	27
Copper	ppm	ASTM D5185m	>80	<b>13</b>	28	70
Tin	ppm	ASTM D5185m	>14	<b>4</b>	8	12
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

**CONTAMINATION**

There is no indication of any contamination in the oil.

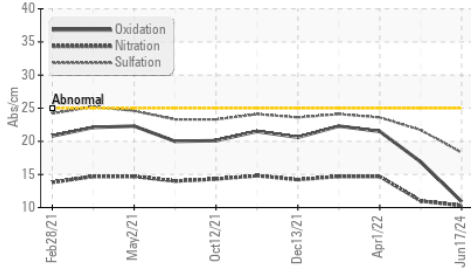
Silicon	ppm	ASTM D5185m	>20	<b>4</b>	5	5
Potassium	ppm	ASTM D5185m	>20	<b>&lt;1</b>	1	0
Fuel		WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.1	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844		<b>0.6</b>	0.5	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.3</b>	11.0	14.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>18.3</b>	21.7	23.6
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	<b>NEG</b>	NEG	NEG

**FLUID CONDITION**

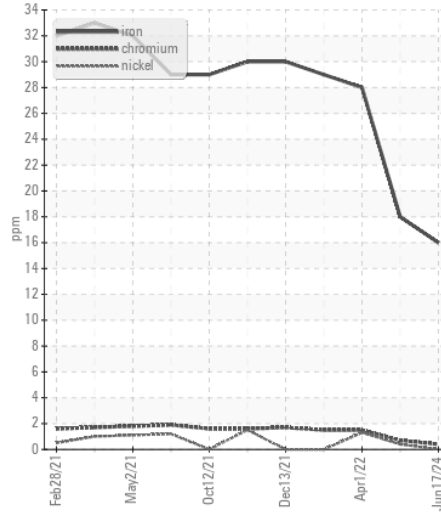
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m	>75	<b>2</b>	1	5
Boron	ppm	ASTM D5185m		<b>37</b>	0	4
Barium	ppm	ASTM D5185m		<b>0</b>	2	0
Molybdenum	ppm	ASTM D5185m		<b>39</b>	2	3
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>34</b>	10	20
Calcium	ppm	ASTM D5185m		<b>3728</b>	3354	3510
Phosphorus	ppm	ASTM D5185m		<b>17</b>	4	21
Zinc	ppm	ASTM D5185m	10	<b>12</b>	3	5
Sulfur	ppm	ASTM D5185m		<b>5501</b>	5596	3670
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>10.9</b>	16.9	21.5
Base Number (BN)	mg KOH/g	ASTM D2896	10.0	<b>8.5</b>	11.1	10.9
Visc @ 100°C	cSt	ASTM D445	14.4	<b>15.6</b>	15.5	16.1

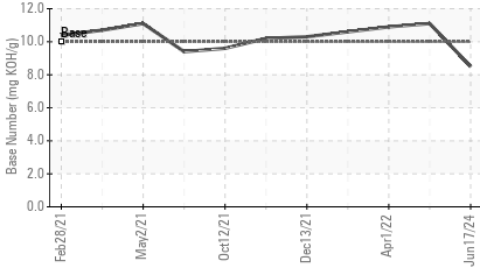
**FT-IR (Direct Trend)**



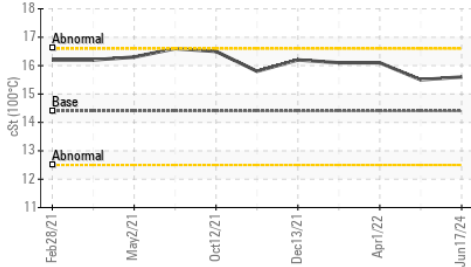
**Ferrous Alloys**



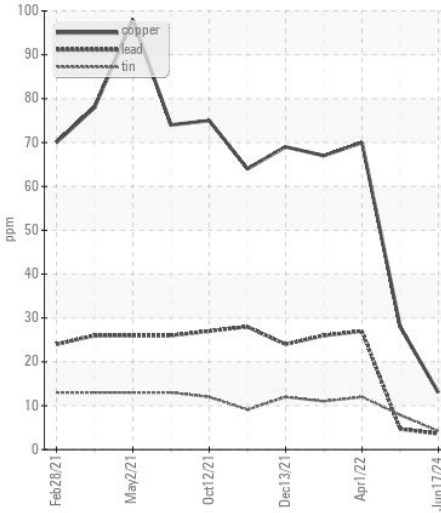
**Base Number**



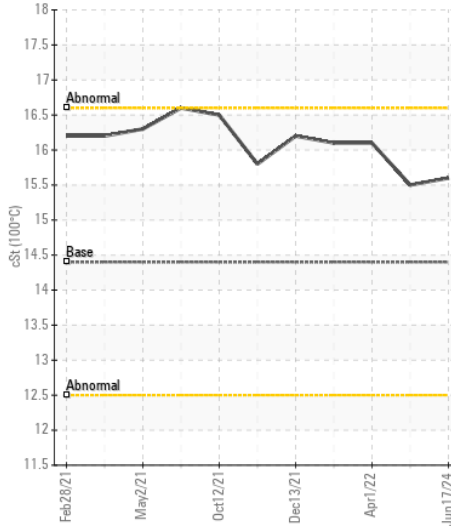
**Viscosity @ 100°C**



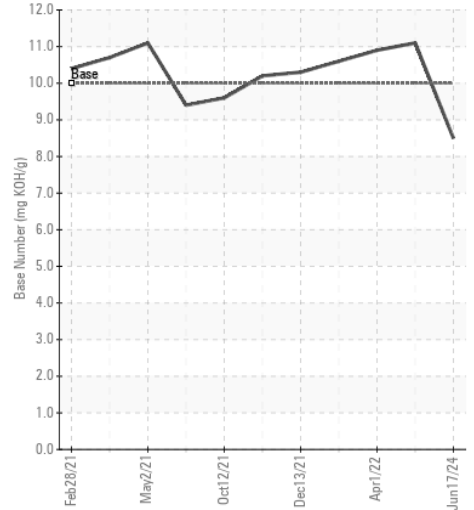
**Non-ferrous Metals**



**Viscosity @ 100°C**



**Base Number**



Certificate L2367

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

**Sample No.** : MW0069388

**Lab Number** : 06227150

**Unique Number** : 11110643

**Test Package** : MAR 2

**Received** : 03 Jul 2024

**Tested** : 05 Jul 2024

**Diagnosed** : 05 Jul 2024 - Don Baldridge

**AMERICAN COMMERCIAL LINES**

PO BOX 610, 1701 E. MARKET STREET

JEFFERSONVILLE, IN

US 47130

Contact: RONALD SCHNEIDER

ronald.schneider@bargeacbl.com

T:

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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