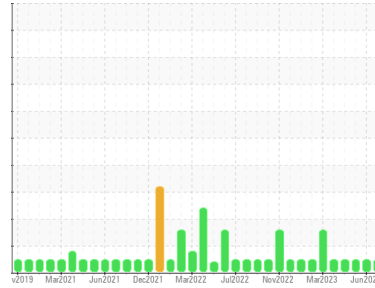




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Louisville**  
 Machine Id  
**[Louisville] Oil - Starboard Genset**  
 Component  
**Starboard Genset**  
 Fluid  
**MOBIL 15W40 (35 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### 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.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			<b>WC0769311</b>	WC0769122	WC0735449
Sample Date	Client Info			<b>05 Jul 2023</b>	05 Jun 2023	20 May 2023
Machine Age	hrs	Client Info		<b>0</b>	10179	0
Oil Age	hrs	Client Info		<b>0</b>	4516	0
Oil Changed	Client Info			<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method		>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method			<b>NEG</b>	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>25	<b>22</b>	39	41
Chromium	ppm	ASTM D5185m	>5	<b>&lt;1</b>	2	2
Nickel	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Silver	ppm	ASTM D5185m	>5	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	2
Lead	ppm	ASTM D5185m	>10	<b>2</b>	2	5
Copper	ppm	ASTM D5185m	>20	<b>3</b>	7	9
Tin	ppm	ASTM D5185m	>5	<b>0</b>	<1	<1
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	0	<1

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>20</b>	19	21
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>56</b>	66	63
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	1
Magnesium	ppm	ASTM D5185m		<b>1459</b>	1587	1535
Calcium	ppm	ASTM D5185m		<b>1177</b>	1278	1221
Phosphorus	ppm	ASTM D5185m		<b>952</b>	1073	977
Zinc	ppm	ASTM D5185m		<b>1266</b>	1348	1235
Sulfur	ppm	ASTM D5185m		<b>3730</b>	3830	3217

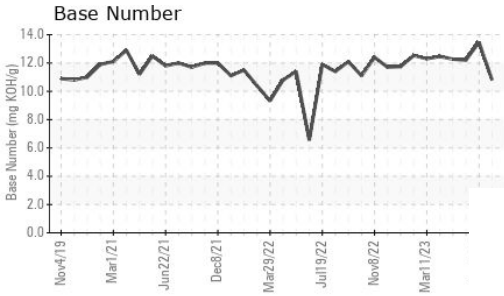
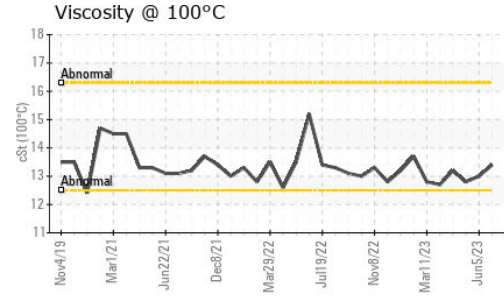
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	<b>20</b>	22	6
Sodium	ppm	ASTM D5185m	>118	<b>&lt;1</b>	2	3
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	<1	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		<b>0.3</b>	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	<b>10.9</b>	11.8	12.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>21.3</b>	22.5	22.5

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>19.0</b>	22.0	21.8
Base Number (BN)	mg KOH/g	ASTM D2896		<b>10.81</b>	13.47	12.20



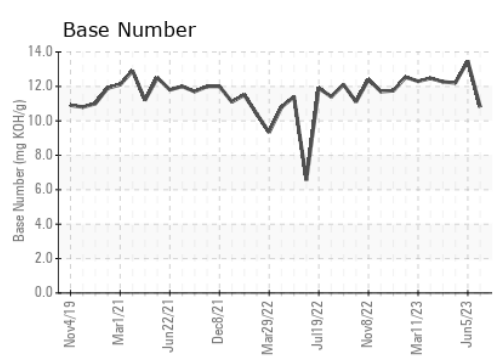
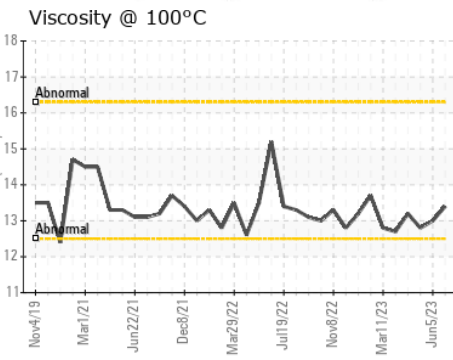
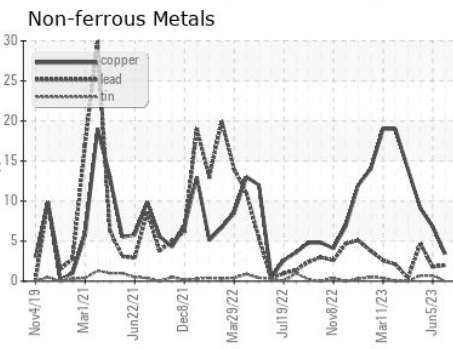
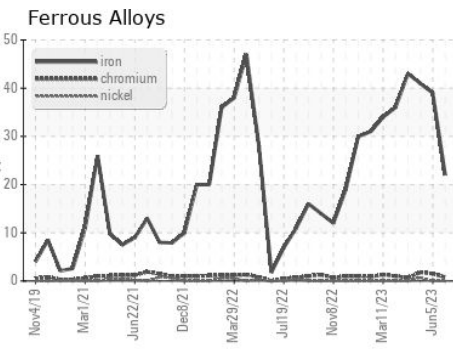
# OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	<b>13.4</b>	13.0	12.8

## GRAPHS



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0769311 **Received** : 17 Jul 2023  
**Lab Number** : **05900172** **Diagnosed** : 19 Jul 2023  
**Unique Number** : 10561528 **Diagnostician** : Angela Borella  
**Test Package** : IND 2

**MARATHON PETROLEUM CO.**  
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 US 41169  
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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)