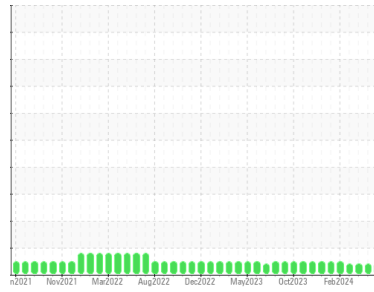




# OIL ANALYSIS REPORT

Sample Rating Trend



## VISCOSITY



Area

### Findlay

Machine Id

## [Findlay] Oil - Starboard Genset

Component

### Starboard Genset

Fluid

### MOBIL 15W40 (8 GAL)

#### DIAGNOSIS

##### ▲ Recommendation

No corrective action is recommended at this time. 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 oil viscosity is higher than normal. The BN result indicates that there is suitable alkalinity remaining in the oil.

#### SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0874642</b>	WC0874729	WC0874728
Sample Date	Client Info		<b>18 Jun 2024</b>	14 May 2024	23 Apr 2024
Machine Age	hrs	Client Info	<b>10991</b>	10832	10533
Oil Age	hrs	Client Info	<b>3110</b>	3008	3709
Oil Changed	Client Info		<b>Filtered</b>	Filtered	Not Changd
Sample Status			<b>ABNORMAL</b>	ABNORMAL	ABNORMAL

#### 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	>50	<b>23</b>	35	21
Chromium	ppm	ASTM D5185m	>4	<b>&lt;1</b>	2	1
Nickel	ppm	ASTM D5185m	>2	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>5	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m	>12	<b>2</b>	3	2
Lead	ppm	ASTM D5185m	>17	<b>0</b>	1	2
Copper	ppm	ASTM D5185m	>70	<b>4</b>	5	4
Tin	ppm	ASTM D5185m	>15	<b>0</b>	<1	2
Vanadium	ppm	ASTM D5185m		<b>0</b>	<1	<1
Cadmium	ppm	ASTM D5185m		<b>0</b>	<1	<1

#### ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m		<b>26</b>	41	28
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>55</b>	85	60
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>1374</b>	2034	1362
Calcium	ppm	ASTM D5185m		<b>1470</b>	2138	1507
Phosphorus	ppm	ASTM D5185m		<b>1146</b>	1598	1198
Zinc	ppm	ASTM D5185m		<b>1384</b>	1998	1373
Sulfur	ppm	ASTM D5185m		<b>3754</b>	4955	3312

#### CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>25	<b>4</b>	6	5
Sodium	ppm	ASTM D5185m	>118	<b>9</b>	11	5
Potassium	ppm	ASTM D5185m	>20	<b>3</b>	5	5
Water	%	ASTM D6304	>0.1	<b>NEG</b>	NEG	NEG

#### INFRA-RED

	method	limit/base	current	history1	history2	
Soot %	%	*ASTM D7844		<b>0.4</b>	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	<b>18.3</b>	17.9	16.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>29.8</b>	29.1	28.7

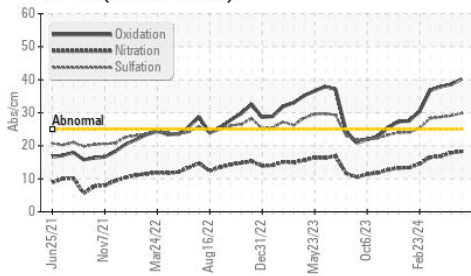
#### FLUID DEGRADATION

	method	limit/base	current	history1	history2	
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>40.2</b>	38.6	37.9
Base Number (BN)	mg KOH/g	ASTM D2896		<b>8.72</b>	8.29	7.85

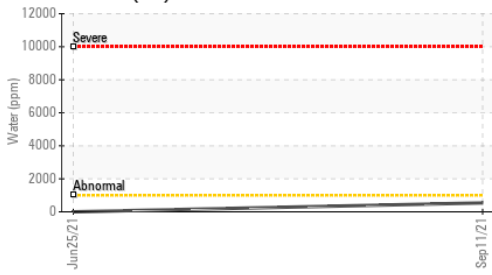


# OIL ANALYSIS REPORT

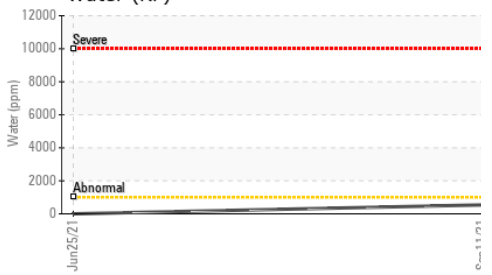
FT-IR (Direct Trend)



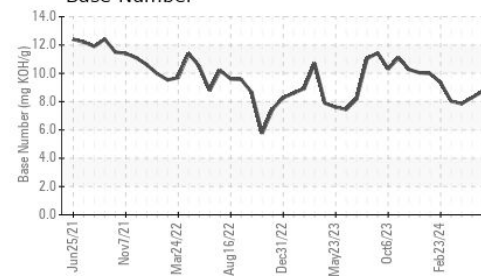
Water (KF)



Water (KF)



Base Number

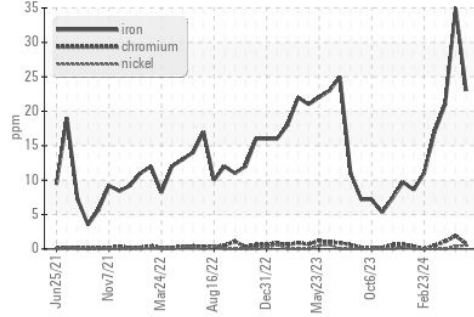


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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

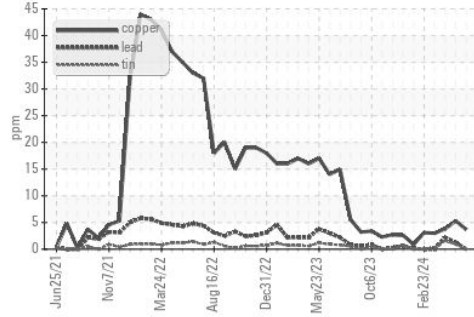
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	▲ 19.5	▲ 19.1	▲ 17.9

## GRAPHS

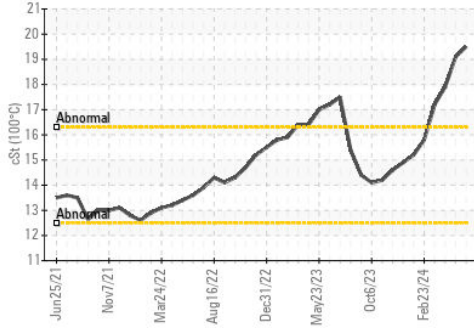
Ferrous Alloys



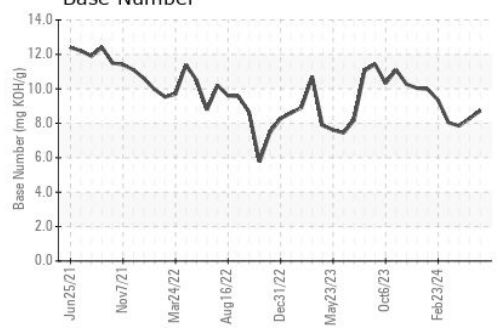
Non-ferrous Metals



▲ Viscosity @ 100°C



Base Number



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0874642 **Received** : 25 Jun 2024  
**Lab Number** : 06219917 **Tested** : 26 Jun 2024  
**Unique Number** : 11098114 **Diagnosed** : 26 Jun 2024 - Sean Felton  
**Test Package** : IND 2 ( Additional Tests: KF )

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 US 41169  
 Contact: SHAWN MCCLASKEY  
 stmccaskey@marathonpetroleum.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)