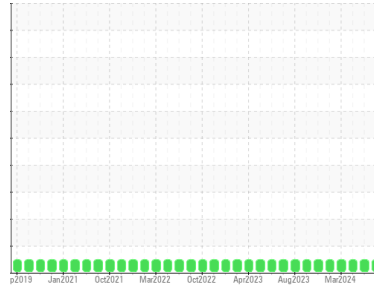




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**Twin Disc Oil - Starboard Reduction Gear**  
 Component  
**Starboard Reduction Gear**  
 Fluid  
**SAE 40W (40 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0874574</b>	WC0874845	WC0874838
Sample Date	Client Info		<b>18 Jun 2024</b>	22 May 2024	22 Apr 2024
Machine Age	hrs	Client Info	<b>14250</b>	14250	13105
Oil Age	hrs	Client Info	<b>14250</b>	14250	13105
Oil Changed		Client Info	<b>N/A</b>	N/A	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	<b>21</b>	21	20
Chromium	ppm	ASTM D5185m >10	<b>0</b>	0	<1
Nickel	ppm	ASTM D5185m >10	<b>&lt;1</b>	<1	0
Titanium	ppm	ASTM D5185m	<b>0</b>	0	0
Silver	ppm	ASTM D5185m	<b>0</b>	0	<1
Aluminum	ppm	ASTM D5185m >25	<b>1</b>	1	0
Lead	ppm	ASTM D5185m >100	<b>0</b>	0	0
Copper	ppm	ASTM D5185m >50	<b>7</b>	6	6
Tin	ppm	ASTM D5185m >10	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185m	<b>0</b>	0	0
Cadmium	ppm	ASTM D5185m	<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	<b>5</b>	5	3
Barium	ppm	ASTM D5185m	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m	<b>45</b>	43	43
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Magnesium	ppm	ASTM D5185m	<b>743</b>	716	692
Calcium	ppm	ASTM D5185m	<b>845</b>	839	785
Phosphorus	ppm	ASTM D5185m	<b>905</b>	868	842
Zinc	ppm	ASTM D5185m	<b>1029</b>	983	939
Sulfur	ppm	ASTM D5185m	<b>3168</b>	3051	2899

## CONTAMINANTS

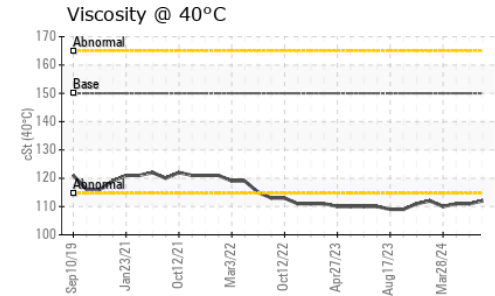
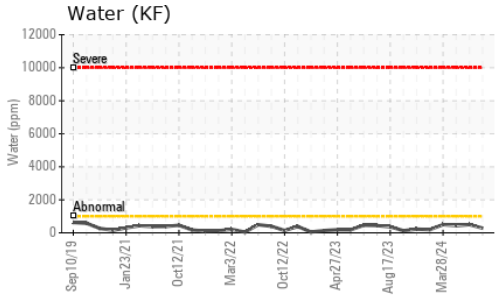
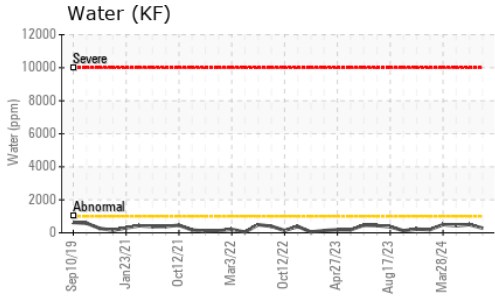
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	<b>2</b>	2	0
Sodium	ppm	ASTM D5185m	<b>8</b>	8	6
Potassium	ppm	ASTM D5185m >20	<b>2</b>	2	0
Water	%	ASTM D6304 >0.1	<b>0.028</b>	0.049	0.043
ppm Water	ppm	ASTM D6304 >1000	<b>281</b>	499	431

## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.74</b>	0.82	0.709



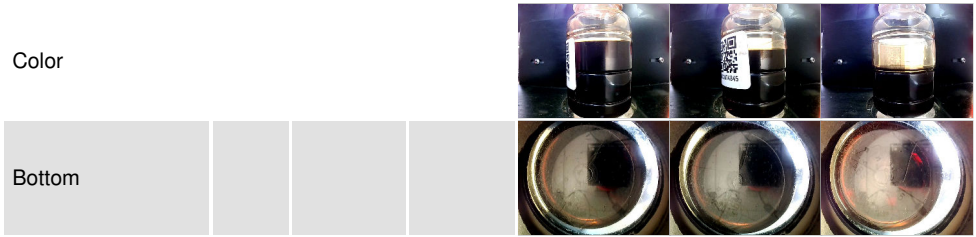
# OIL ANALYSIS REPORT



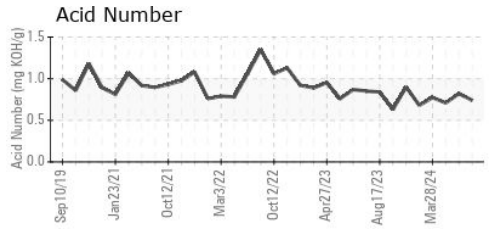
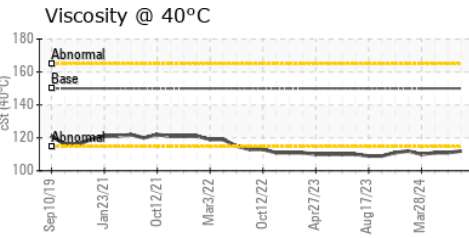
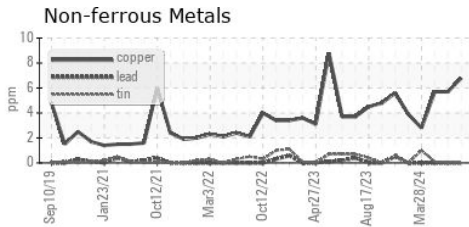
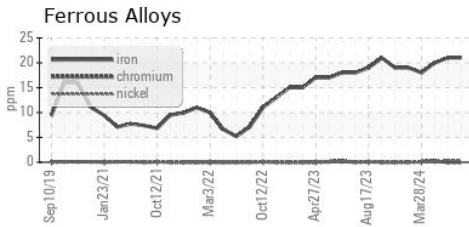
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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 @ 40°C	cSt	ASTM D445	150	112	111

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0874574      **Received** : 25 Jun 2024  
**Lab Number** : 06219793      **Tested** : 26 Jun 2024  
**Unique Number** : 11097990      **Diagnosed** : 27 Jun 2024 - Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: KF )

**MARATHON PETROLEUM CO.**  
 101 12TH ST  
 CATLETTSBURG, KY  
 US 41169  
 Contact: M/V CANTON  
 mvcanton@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)