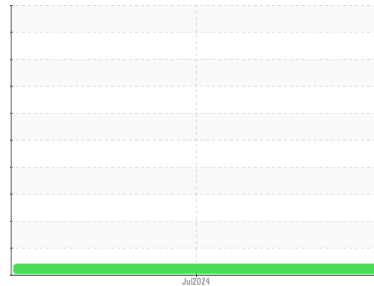




OIL ANALYSIS REPORT

Sample Rating Trend



VISCOSITY



Area

Robinson

Machine Id

[Robinson] Oil- Starboard Reduction Gear

Component

Starboard Reduction Gear

Fluid

GEAR OIL SAE 85W140 (--- 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 oil viscosity is lower than normal. Confirm oil type. The AN level is acceptable for this fluid.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0859944	---	---
Sample Date	Client Info		01 Jul 2024	---	---
Machine Age	hrs	Client Info	29792	---	---
Oil Age	hrs	Client Info	604	---	---
Oil Changed		Client Info	N/A	---	---
Sample Status			ATTENTION	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >200	6	---	---
Chromium	ppm	ASTM D5185m >10	0	---	---
Nickel	ppm	ASTM D5185m >10	0	---	---
Titanium	ppm	ASTM D5185m	<1	---	---
Silver	ppm	ASTM D5185m	0	---	---
Aluminum	ppm	ASTM D5185m	2	---	---
Lead	ppm	ASTM D5185m	0	---	---
Copper	ppm	ASTM D5185m	12	---	---
Tin	ppm	ASTM D5185m	0	---	---
Vanadium	ppm	ASTM D5185m	0	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 400	448	---	---
Barium	ppm	ASTM D5185m 200	0	---	---
Molybdenum	ppm	ASTM D5185m 12	77	---	---
Manganese	ppm	ASTM D5185m	0	---	---
Magnesium	ppm	ASTM D5185m 12	321	---	---
Calcium	ppm	ASTM D5185m 150	2112	---	---
Phosphorus	ppm	ASTM D5185m 1650	1074	---	---
Zinc	ppm	ASTM D5185m 125	1184	---	---
Sulfur	ppm	ASTM D5185m 22500	4193	---	---

CONTAMINANTS

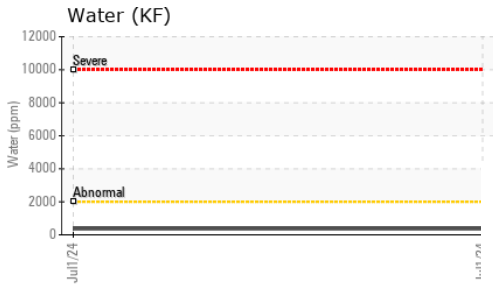
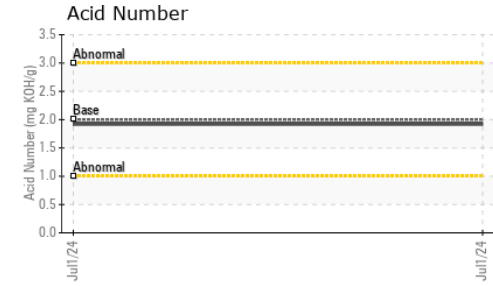
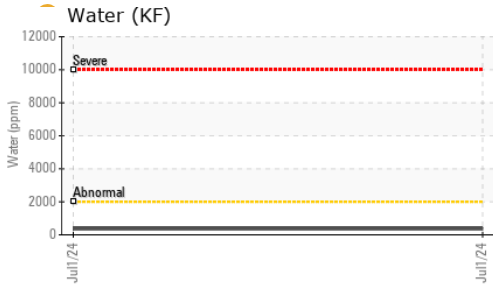
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	4	---	---
Sodium	ppm	ASTM D5185m	4	---	---
Potassium	ppm	ASTM D5185m >20	<1	---	---
Water	%	ASTM D6304 >0.2	0.036	---	---
ppm Water	ppm	ASTM D6304 >2000	366	---	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 2.00	1.92	---	---



OIL ANALYSIS REPORT



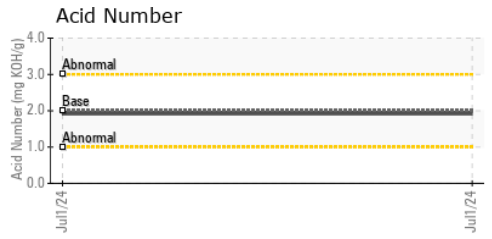
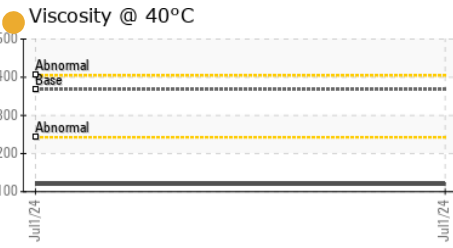
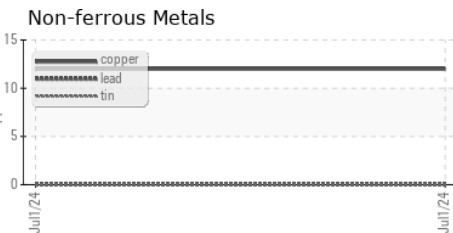
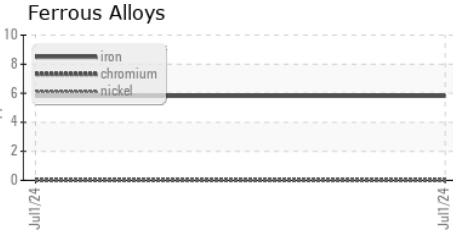
VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	LIGHT	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 368	● 120	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
---------------	--------	------------	---------	----------	----------

Color		no image	no image
Bottom		no image	no image

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0859944 **Received** : 15 Jul 2024
Lab Number : 06236080 **Tested** : 16 Jul 2024
Unique Number : 11124914 **Diagnosed** : 17 Jul 2024 - Don Baldrige
Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: COREY GUMBERT
 cagumbert@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)