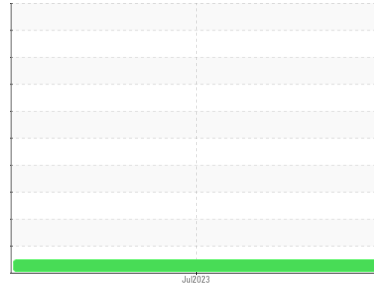




OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
Huntington
 Machine Id
[Huntington] Hydraulic - Flanking
 Component
Hydraulic System
 Fluid
AW HYDRAULIC OIL ISO 46 (--- GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.
 NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. Please specify the brand, type, and viscosity of the oil on your next sample.

Wear

All component wear rates are normal.

Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is acceptable.

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		WC0769298	---	---
Sample Date	Client Info		05 Jul 2023	---	---
Machine Age	hrs	Client Info	0	---	---
Oil Age	hrs	Client Info	0	---	---
Oil Changed	Client Info		N/A	---	---
Sample Status			NORMAL	---	---

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	<1	---	---
Chromium	ppm	ASTM D5185m >20	0	---	---
Nickel	ppm	ASTM D5185m >20	0	---	---
Titanium	ppm	ASTM D5185m	0	---	---
Silver	ppm	ASTM D5185m	0	---	---
Aluminum	ppm	ASTM D5185m >20	0	---	---
Lead	ppm	ASTM D5185m >20	0	---	---
Copper	ppm	ASTM D5185m >20	<1	---	---
Tin	ppm	ASTM D5185m >20	0	---	---
Vanadium	ppm	ASTM D5185m	0	---	---
Cadmium	ppm	ASTM D5185m	0	---	---

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 5	0	---	---
Barium	ppm	ASTM D5185m 5	0	---	---
Molybdenum	ppm	ASTM D5185m 5	<1	---	---
Manganese	ppm	ASTM D5185m	0	---	---
Magnesium	ppm	ASTM D5185m 25	0	---	---
Calcium	ppm	ASTM D5185m 200	40	---	---
Phosphorus	ppm	ASTM D5185m 300	301	---	---
Zinc	ppm	ASTM D5185m 370	376	---	---
Sulfur	ppm	ASTM D5185m 2500	992	---	---

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	0	---	---
Sodium	ppm	ASTM D5185m	<1	---	---
Potassium	ppm	ASTM D5185m >20	0	---	---
Water	%	ASTM D6304 >0.05	0.008	---	---
ppm Water	ppm	ASTM D6304 >500	85.1	---	---

FLUID CLEANLINESS

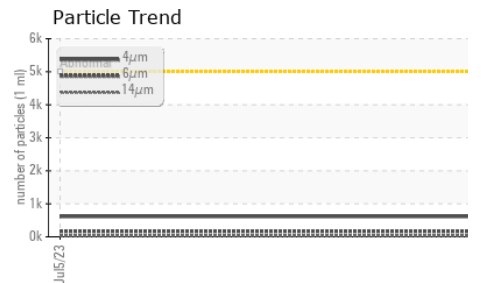
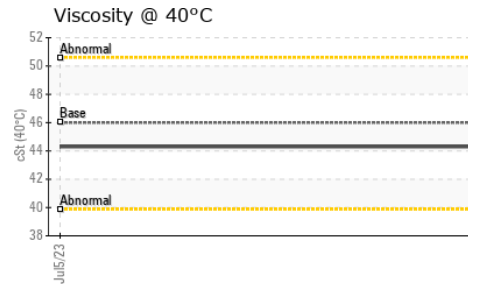
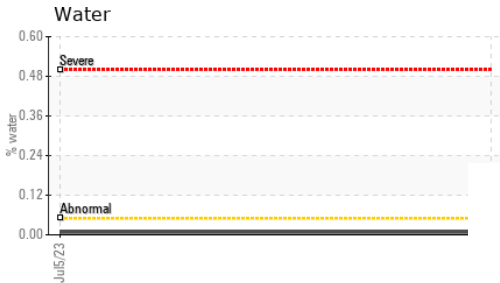
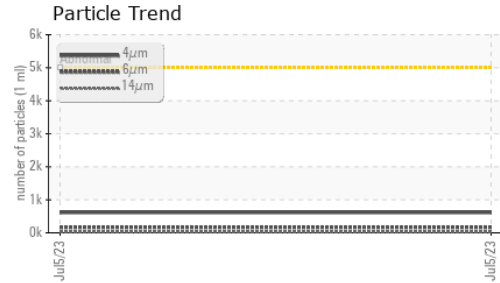
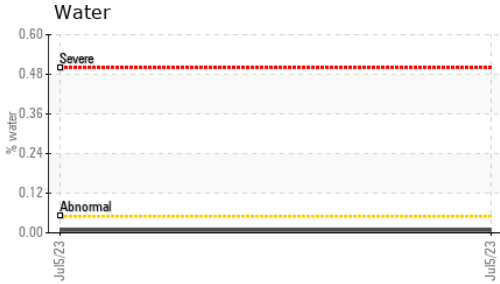
	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	616	---	---
Particles >6µm	ASTM D7647	>1300	166	---	---
Particles >14µm	ASTM D7647	>160	23	---	---
Particles >21µm	ASTM D7647	>40	6	---	---
Particles >38µm	ASTM D7647	>10	0	---	---
Particles >71µm	ASTM D7647	>3	0	---	---
Oil Cleanliness	ISO 4406 (c)	>19/17/14	16/15/12	---	---

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.57	0.41	---	---



OIL ANALYSIS REPORT



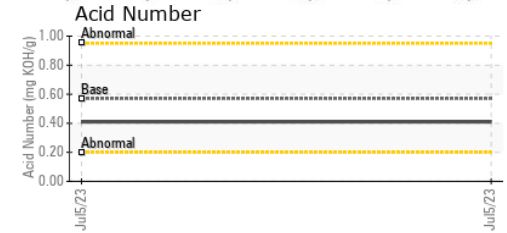
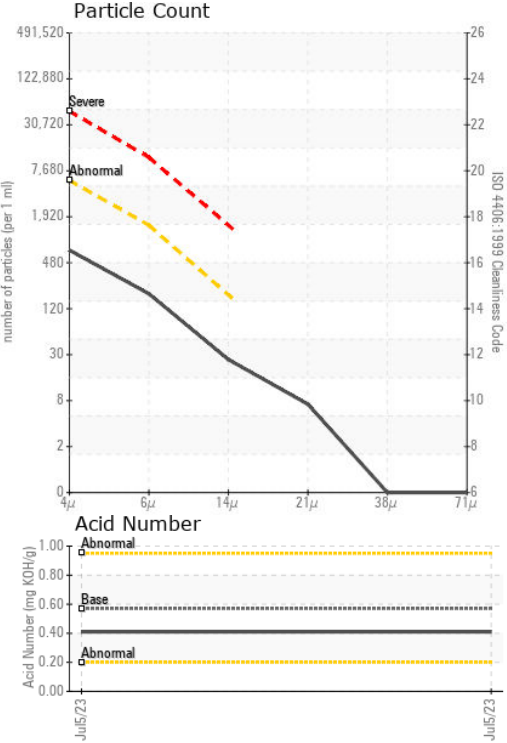
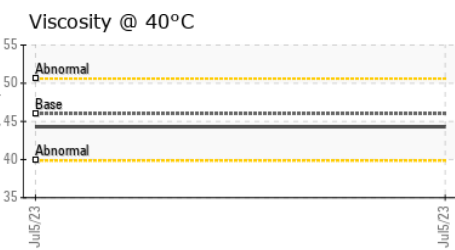
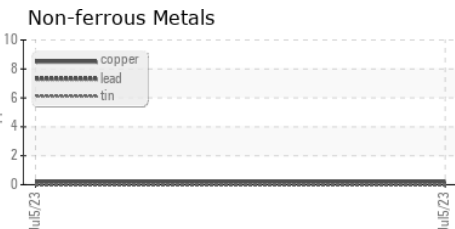
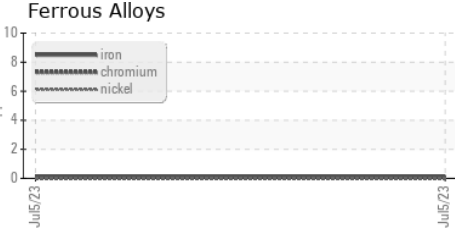
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.05	NEG	---
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	46	44.3	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color		no image	no image
Bottom		no image	no image

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769298 **Received** : 17 Jul 2023
Lab Number : 05899901 **Diagnosed** : 18 Jul 2023
Unique Number : 10561257 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: KF)

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169

Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com

T: (606)585-3950

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)

F: x: