



OIL ANALYSIS REPORT

Sample Rating Trend

NORMAL



Area
Huntington
 Machine Id
[Huntington] Hydraulic - Steering
 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	WC0769352	---	---
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	0	---	---
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	0	---	---
Manganese ppm ASTM D5185m		0	---	---
Magnesium ppm ASTM D5185m	25	0	---	---
Calcium ppm ASTM D5185m	200	40	---	---
Phosphorus ppm ASTM D5185m	300	303	---	---
Zinc ppm ASTM D5185m	370	378	---	---
Sulfur ppm ASTM D5185m	2500	991	---	---

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	0.005	---	---
ppm Water ppm ASTM D6304	>500	56.7	---	---

FLUID CLEANLINESS

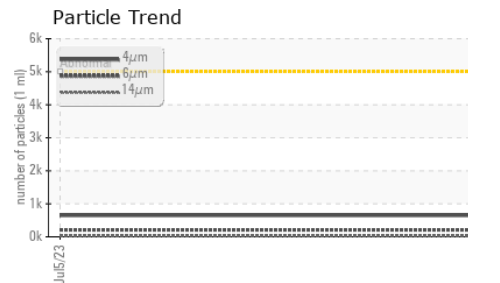
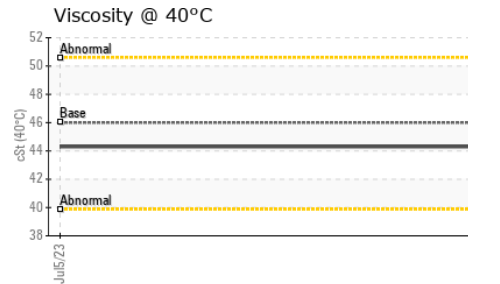
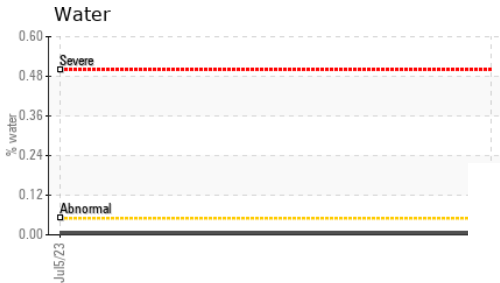
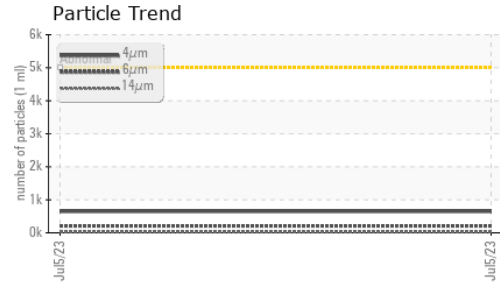
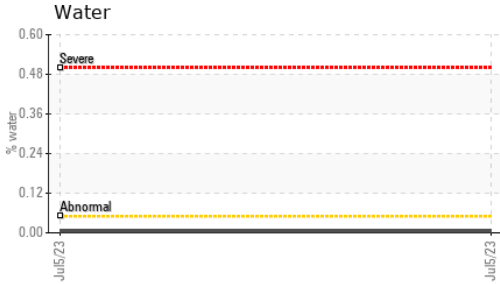
method	limit/base	current	history1	history2
Particles >4µm ASTM D7647	>5000	649	---	---
Particles >6µm ASTM D7647	>1300	209	---	---
Particles >14µm ASTM D7647	>160	21	---	---
Particles >21µm ASTM D7647	>40	6	---	---
Particles >38µm ASTM D7647	>10	1	---	---
Particles >71µm ASTM D7647	>3	0	---	---
Oil Cleanliness ISO 4406 (c)	>19/17/14	17/15/12	---	---

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045	0.57	0.42	---	---



OIL ANALYSIS REPORT



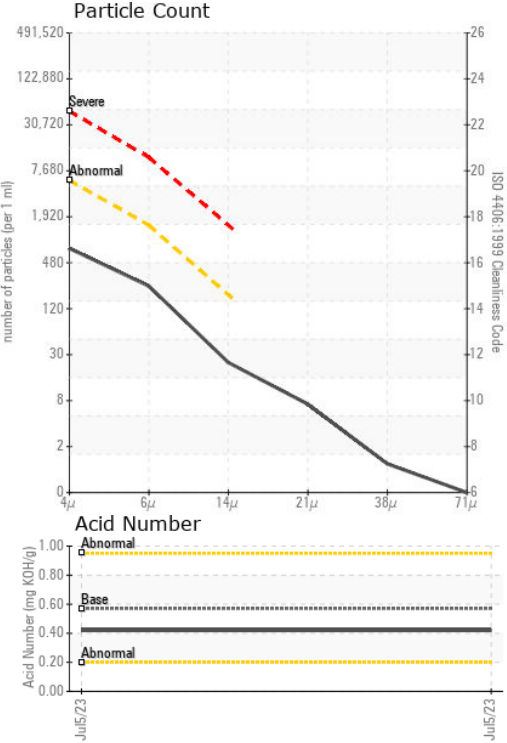
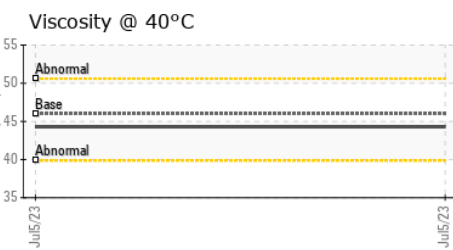
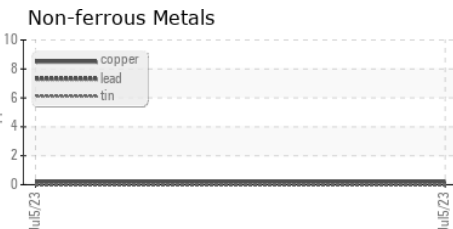
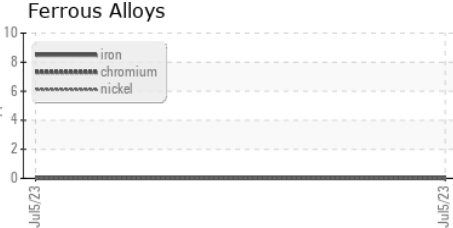
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar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

Color		no image	no image
Bottom		no image	no image

GRAPHS



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769352 **Received** : 17 Jul 2023
Lab Number : 05899902 **Diagnosed** : 18 Jul 2023
Unique Number : 10561258 **Diagnostician** : Wes Davis
Test Package : IND 2 (Additional Tests: KF)

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)

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

Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com

T: (606)585-3950

F: x: