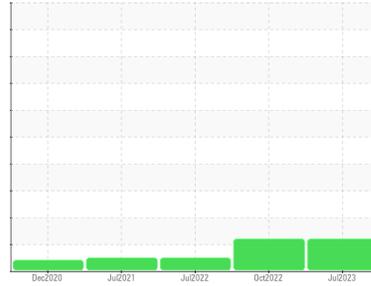




PROBLEM SUMMARY

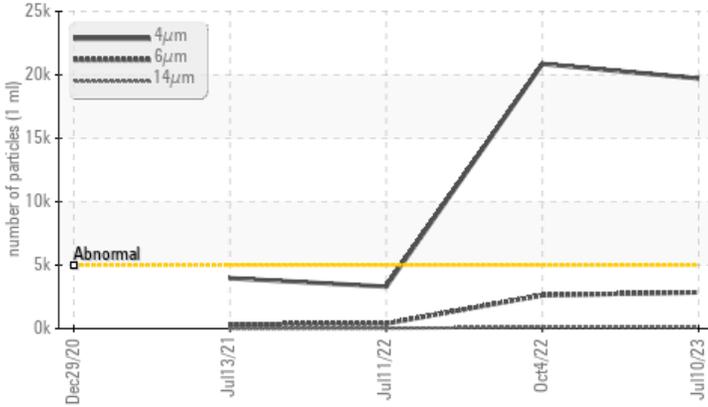
Sample Rating Trend



Area
Nashville
 Machine Id
[Nashville] Hydraulic - Flanking
 Component
Hydraulic System
 Fluid
AW HYDRAULIC OIL ISO 32 (35 GAL)

COMPONENT CONDITION SUMMARY

▲ Particle Trend



RECOMMENDATION

No corrective action is recommended at this time. The oil filtered at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: Dparnell)

PROBLEMATIC TEST RESULTS

Sample Status			ABNORMAL	ABNORMAL	NORMAL
Particles >4µm	ASTM D7647	>5000	▲ 19708	▲ 20864	3305
Particles >6µm	ASTM D7647	>1300	▲ 2860	▲ 2625	388
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 21/19/14	▲ 22/19/14	19/16/12

Customer Id: MARCAT
 Sample No.: WC0769191
 Lab Number: 05899895
 Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
 Don Baldrige +1
don.b505@comcast.net

To change component or sample information:
 Customer Service +1 1-800-237-1369
customerservice@wearcheck.com

RECOMMENDED ACTIONS

There are no recommended actions for this sample.

HISTORICAL DIAGNOSIS

04 Oct 2022 Diag: Don Baldrige

ISO



No corrective action is recommended at this time. The oil filtered at the time of sampling has been noted. Resample at the next service interval to monitor. All component wear rates are normal. There is a high amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



11 Jul 2022 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



13 Jul 2021 Diag: Doug Bogart

NORMAL



Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

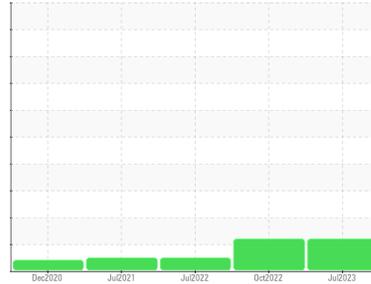
view report





OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area
Nashville
 Machine Id
[Nashville] Hydraulic - Flanking
 Component
Hydraulic System
 Fluid
AW HYDRAULIC OIL ISO 32 (35 GAL)

DIAGNOSIS

Recommendation

No corrective action is recommended at this time. The oil filtered at the time of sampling has been noted. Resample at the next service interval to monitor. (Customer Sample Comment: Dparnell)

Wear

All component wear rates are normal.

Contamination

There is a high amount of silt (particulates < 14 microns in size) present 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		WC0769191	WC0683326	RP0016018
Sample Date	Client Info		10 Jul 2023	04 Oct 2022	11 Jul 2022
Machine Age	hrs	Client Info	0	0	4062
Oil Age	hrs	Client Info	11272	1748	4719
Oil Changed	Client Info		Filtered	Filtered	N/A
Sample Status			ABNORMAL	ABNORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >20	11	12	12
Chromium	ppm	ASTM D5185m >20	<1	<1	<1
Nickel	ppm	ASTM D5185m >20	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >20	0	0	<1
Lead	ppm	ASTM D5185m >20	0	<1	<1
Copper	ppm	ASTM D5185m >20	4	4	5
Tin	ppm	ASTM D5185m >20	0	<1	1
Antimony	ppm	ASTM D5185m	---	---	---
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	<1	<1	<1

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 5	3	2	4
Barium	ppm	ASTM D5185m 5	0	0	0
Molybdenum	ppm	ASTM D5185m 5	2	1	1
Manganese	ppm	ASTM D5185m	<1	<1	<1
Magnesium	ppm	ASTM D5185m 25	4	3	4
Calcium	ppm	ASTM D5185m 200	118	94	90
Phosphorus	ppm	ASTM D5185m 300	275	240	236
Zinc	ppm	ASTM D5185m 370	328	295	293
Sulfur	ppm	ASTM D5185m 2500	1340	1302	1280

CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >15	0	2	<1
Sodium	ppm	ASTM D5185m	<1	0	<1
Potassium	ppm	ASTM D5185m >20	0	0	0
Water	%	ASTM D6304 >0.05	0.005	0.003	0.008
ppm Water	ppm	ASTM D6304 >500	56.0	32.1	84.5

FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	▲ 19708	▲ 20864	3305
Particles >6µm	ASTM D7647	>1300	▲ 2860	▲ 2625	388
Particles >14µm	ASTM D7647	>160	102	103	26
Particles >21µm	ASTM D7647	>40	21	16	8
Particles >38µm	ASTM D7647	>10	0	0	1
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	▲ 21/19/14	▲ 22/19/14	19/16/12

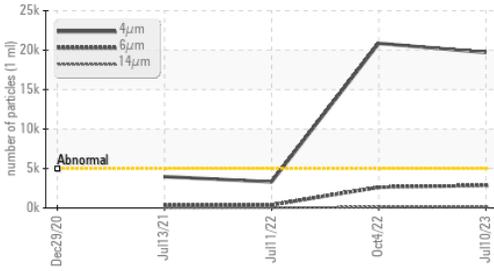
FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045 0.57	0.25	0.23	0.24

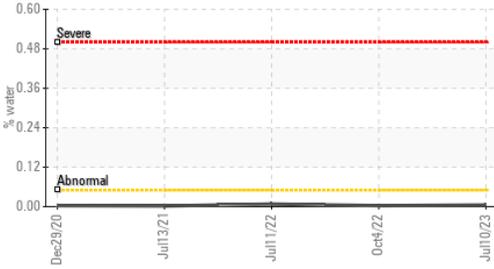


OIL ANALYSIS REPORT

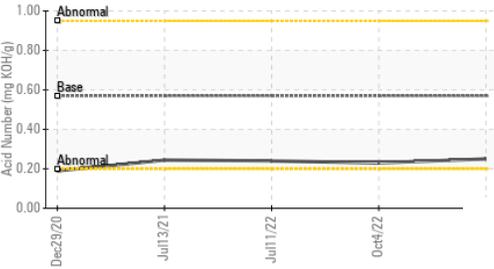
Particle Trend



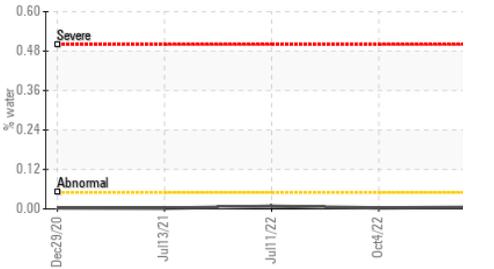
Water



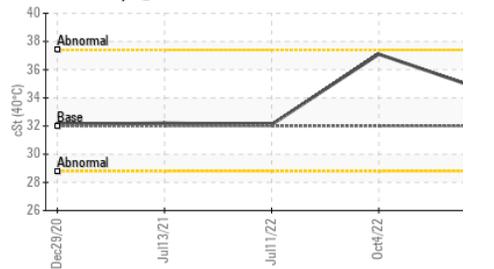
Acid Number



Water



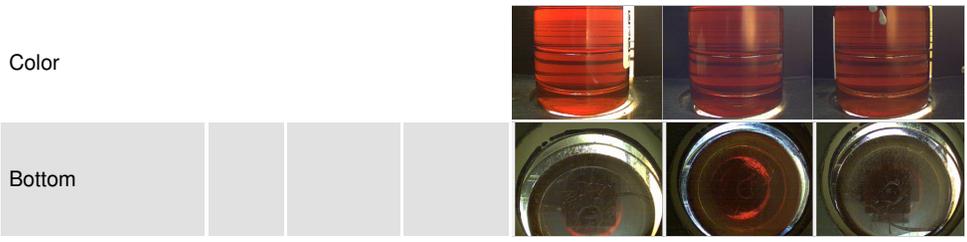
Viscosity @ 40°C



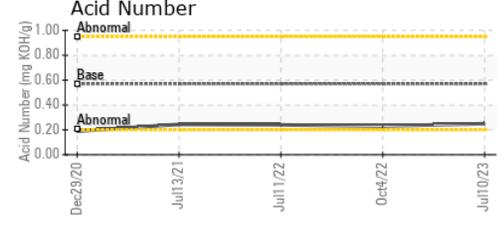
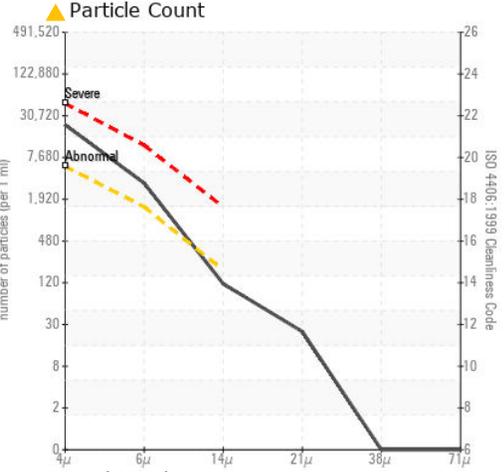
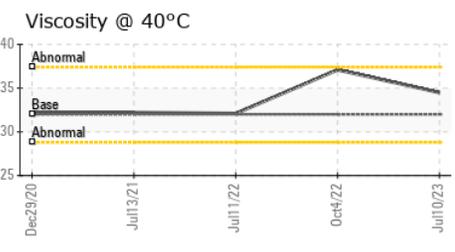
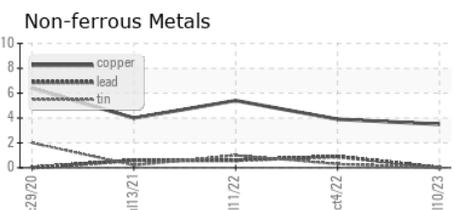
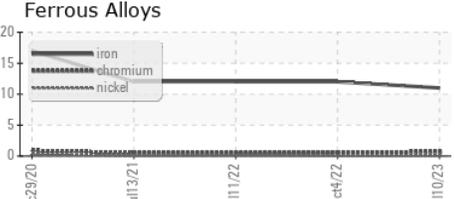
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445 32	34.5	37.1	32.1

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769191 **Received** : 17 Jul 2023
Lab Number : 05899895 **Diagnosed** : 18 Jul 2023
Unique Number : 10561251 **Diagnostician** : Don Baldrige
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
 F: x:

Certificate L2367
 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)