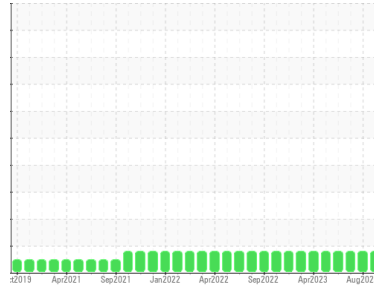




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
Patoka
 Machine Id
[Patoka] Oil - Port Reduction Gear
 Component
Port Reduction Gear
 Fluid
MARATHON SAE 40 (35 GAL)

DIAGNOSIS

▲ Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: J. Harvey)

▲ Wear

The copper level is abnormal. All other 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		WC0769567	WC0683527	WC0769594
Sample Date	Client Info		24 Sep 2023	27 Aug 2023	30 Jul 2023
Machine Age	hrs	Client Info	40350	39880	39333
Oil Age	hrs	Client Info	6637	6110	5619
Oil Changed	Client Info		N/A	Oil Added	N/A
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	12	12	8
Chromium	ppm	ASTM D5185m >10	0	<1	0
Nickel	ppm	ASTM D5185m >10	0	0	<1
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	<1
Aluminum	ppm	ASTM D5185m >25	<1	<1	<1
Lead	ppm	ASTM D5185m >100	1	0	<1
Copper	ppm	ASTM D5185m >50	▲ 283	▲ 257	▲ 264
Tin	ppm	ASTM D5185m >10	0	0	0
Vanadium	ppm	ASTM D5185m	0	0	0
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	16	20	18
Barium	ppm	ASTM D5185m	0	0	0
Molybdenum	ppm	ASTM D5185m	47	50	54
Manganese	ppm	ASTM D5185m	0	<1	0
Magnesium	ppm	ASTM D5185m	592	635	621
Calcium	ppm	ASTM D5185m	1147	1150	1243
Phosphorus	ppm	ASTM D5185m	807	848	884
Zinc	ppm	ASTM D5185m	912	994	1036
Sulfur	ppm	ASTM D5185m	2714	3480	3055

CONTAMINANTS

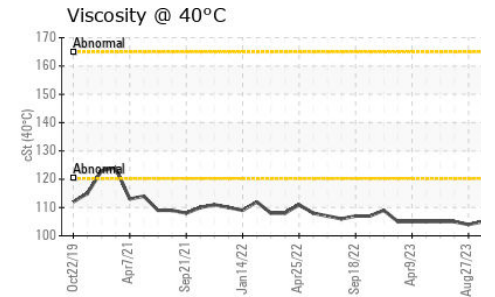
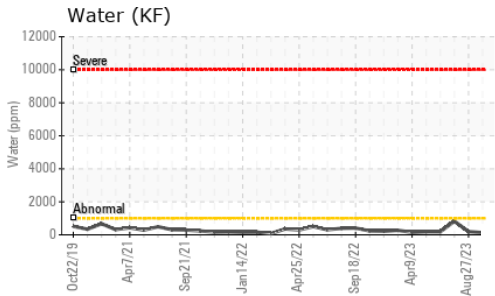
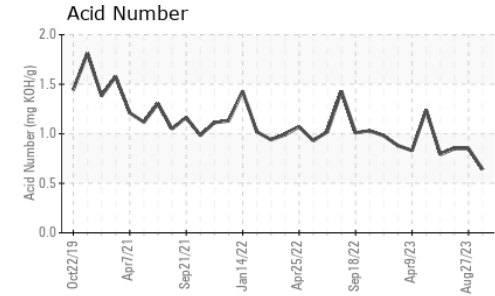
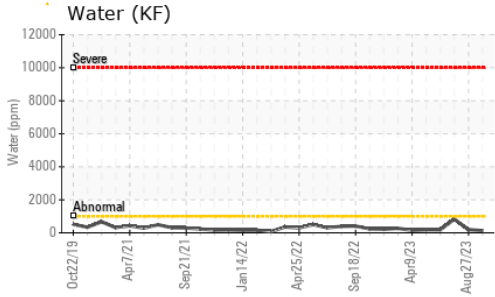
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	3	2	2
Sodium	ppm	ASTM D5185m	3	4	<1
Potassium	ppm	ASTM D5185m >20	0	<1	<1
Water	%	ASTM D6304 >0.1	0.012	0.019	0.082
ppm Water	ppm	ASTM D6304 >1000	130	197.7	822.7

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	0.64	0.85	0.85



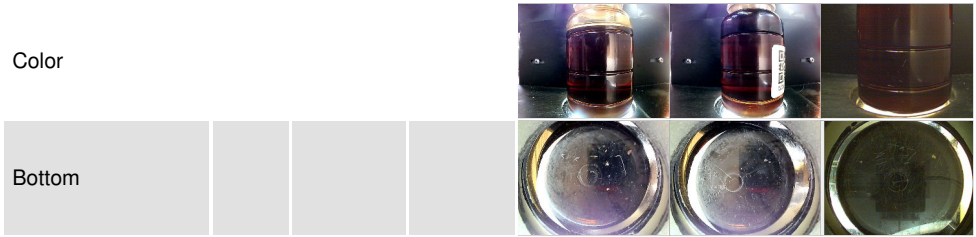
OIL ANALYSIS REPORT



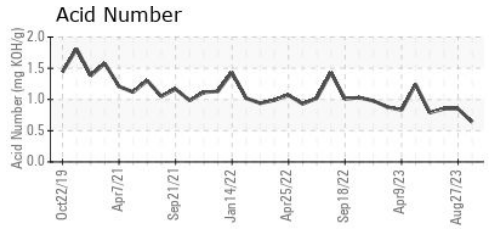
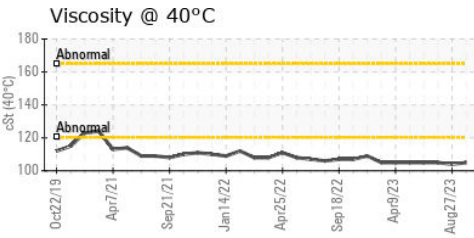
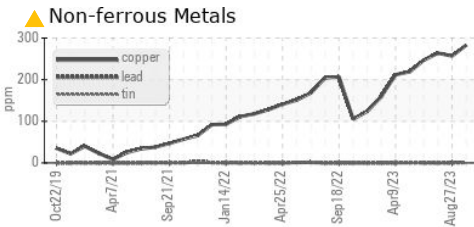
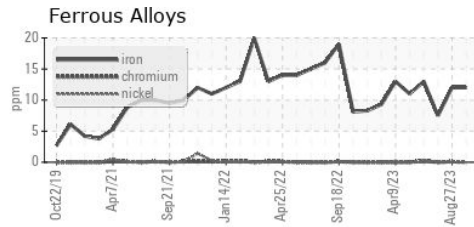
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	LIGHT
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	105	104	105

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769567 **Received** : 27 Feb 2024
Lab Number : 06101740 **Tested** : 28 Feb 2024
Unique Number : 10899970 **Diagnosed** : 29 Feb 2024 - 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:

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)