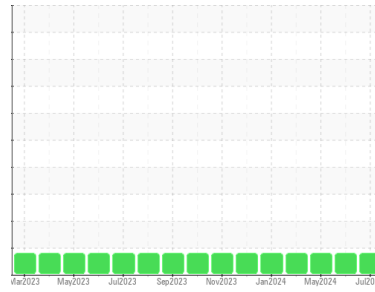




OIL ANALYSIS REPORT

Sample Rating Trend



Area
Huntington
 Machine Id
[Huntington] Oil - Starboard Reduction Gear
 Component
Starboard Reduction Gear
 Fluid
DISEL ENGINE OIL SAE 40 (24 GAL)

DIAGNOSIS

- Recommendation**
No corrective action is recommended at this time. Resample at the next service interval to monitor.
- Wear**
The copper level is abnormal. All other component wear rates are normal.
- Contamination**
The water content is negligible. 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		WC0898319	WC0898322	WC0874560
Sample Date	Client Info		02 Jul 2024	09 Jun 2024	08 May 2024
Machine Age	hrs	Client Info	23151	22666	22066
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		Not Changed	Not Changed	Not Changed
Sample Status			ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	5	6	4
Chromium	ppm	ASTM D5185m >10	0	0	<1
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	0	0	0
Silver	ppm	ASTM D5185m	0	0	0
Aluminum	ppm	ASTM D5185m >25	<1	2	<1
Lead	ppm	ASTM D5185m >100	0	<1	0
Copper	ppm	ASTM D5185m >50	▲ 238	▲ 230	▲ 212
Tin	ppm	ASTM D5185m >10	0	<1	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 250	8	9	7
Barium	ppm	ASTM D5185m 10	0	0	0
Molybdenum	ppm	ASTM D5185m 100	93	104	96
Manganese	ppm	ASTM D5185m	0	<1	<1
Magnesium	ppm	ASTM D5185m 450	177	208	208
Calcium	ppm	ASTM D5185m 3000	2123	2417	2261
Phosphorus	ppm	ASTM D5185m 1150	867	966	914
Zinc	ppm	ASTM D5185m 1350	919	1088	976
Sulfur	ppm	ASTM D5185m 4250	3106	3574	3267

CONTAMINANTS

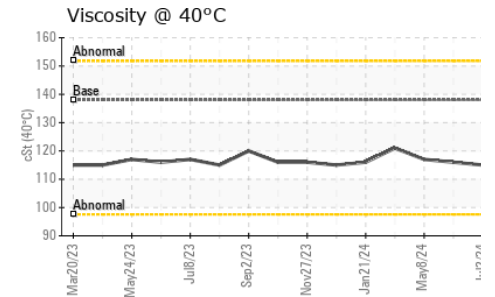
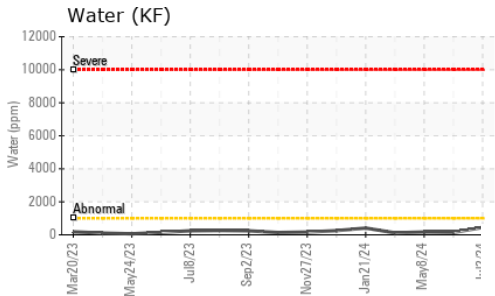
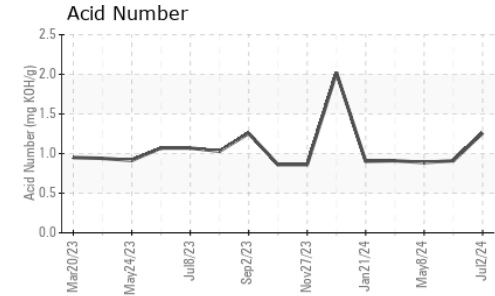
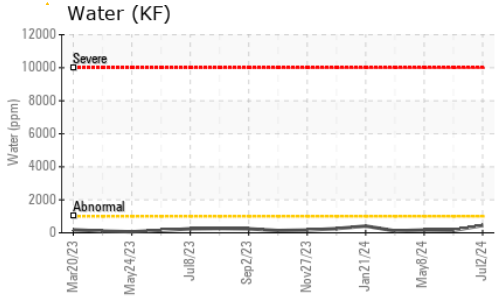
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	3	4	0
Sodium	ppm	ASTM D5185m >216	5	5	4
Potassium	ppm	ASTM D5185m >20	<1	3	0
Water	%	ASTM D6304 >0.1	0.044	0.014	0.017
ppm Water	ppm	ASTM D6304 >1000	449	145	171

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.26	0.91	0.887



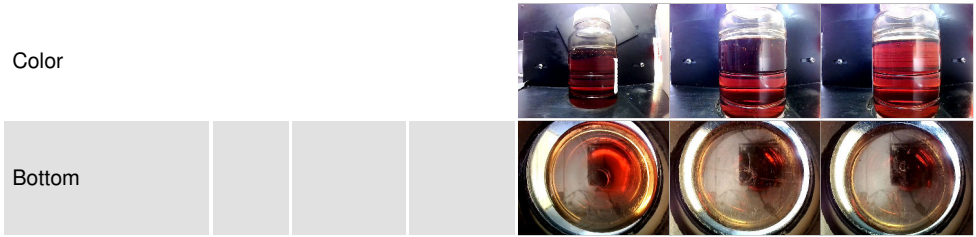
OIL ANALYSIS REPORT



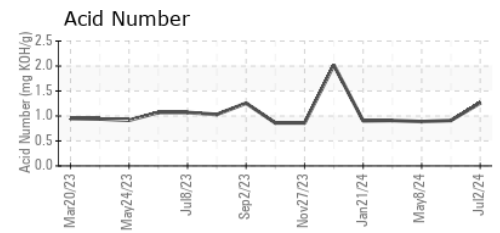
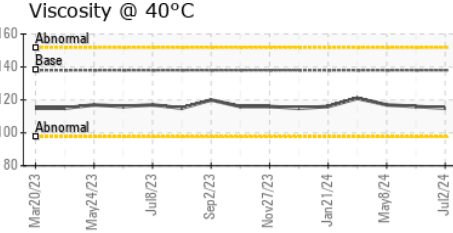
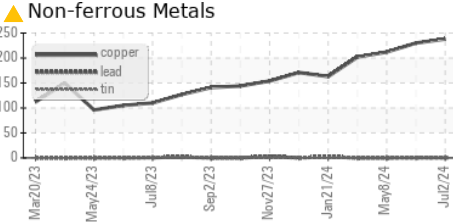
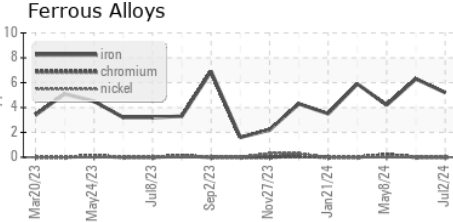
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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 138	115	116	117

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0898319 **Received** : 15 Jul 2024
Lab Number : 06236084 **Tested** : 16 Jul 2024
Unique Number : 11124918 **Diagnosed** : 17 Jul 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

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)

T: (606)585-3950

F: x: