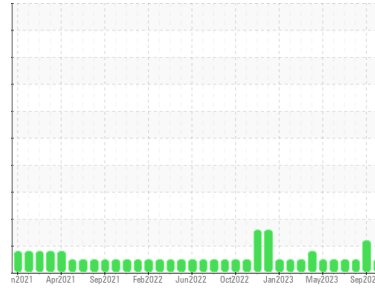




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area

Detroit

Machine Id

[Detroit] Oil - Starboard Reduction Gear

Component

Starboard Reduction Gear

Fluid

SAE 30W (35 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Chris wray)

Wear

All 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		WC0769343	WC0769301	WC0769394
Sample Date	Client Info		09 Oct 2023	11 Sep 2023	14 Aug 2023
Machine Age	hrs	Client Info	25344	24818	24295
Oil Age	hrs	Client Info	155	5017	4493
Oil Changed	Client Info		Changed	N/A	Not Changd
Sample Status			NORMAL	ABNORMAL	NORMAL

WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >150	7	34	32
Chromium	ppm	ASTM D5185m >10	0	<1	0
Nickel	ppm	ASTM D5185m >10	0	0	0
Titanium	ppm	ASTM D5185m	<1	0	0
Silver	ppm	ASTM D5185m	0	<1	0
Aluminum	ppm	ASTM D5185m >25	0	<1	<1
Lead	ppm	ASTM D5185m >100	0	0	<1
Copper	ppm	ASTM D5185m >50	9	63	57
Tin	ppm	ASTM D5185m >10	0	1	<1
Vanadium	ppm	ASTM D5185m	0	0	<1
Cadmium	ppm	ASTM D5185m	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	31	32	30
Barium	ppm	ASTM D5185m	1	0	0
Molybdenum	ppm	ASTM D5185m	15	14	13
Manganese	ppm	ASTM D5185m	<1	1	<1
Magnesium	ppm	ASTM D5185m	215	235	223
Calcium	ppm	ASTM D5185m	2812	3304	3051
Phosphorus	ppm	ASTM D5185m	881	995	888
Zinc	ppm	ASTM D5185m	979	1107	1047
Sulfur	ppm	ASTM D5185m	6165	8704	7795

CONTAMINANTS

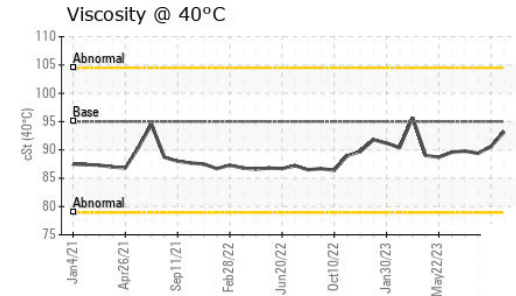
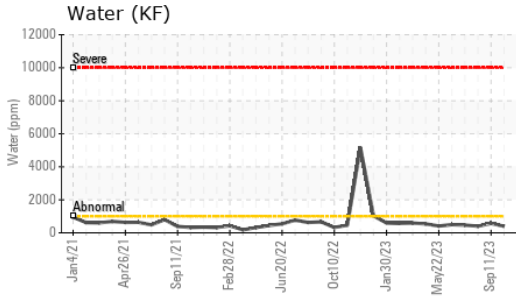
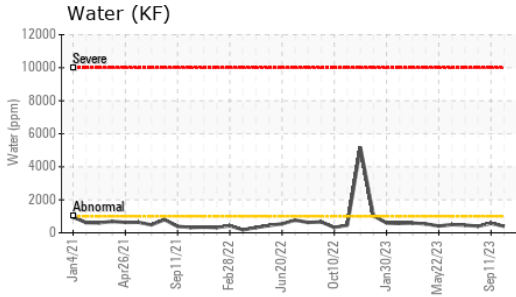
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >50	5	4	4
Sodium	ppm	ASTM D5185m	2	4	<1
Potassium	ppm	ASTM D5185m >20	0	1	0
Water	%	ASTM D6304 >0.1	0.039	0.057	0.040
ppm Water	ppm	ASTM D6304 >1000	396.8	571.7	402.2

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	1.42	▲ 1.985	0.89



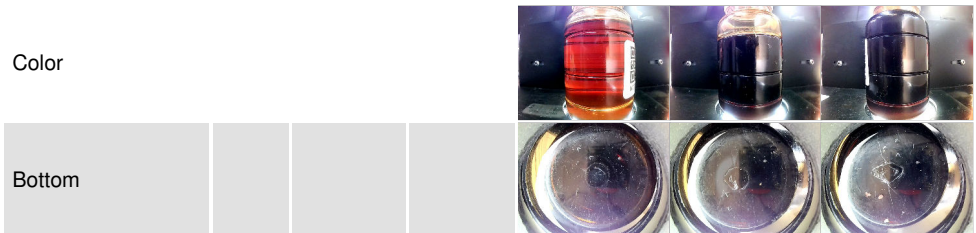
OIL ANALYSIS REPORT



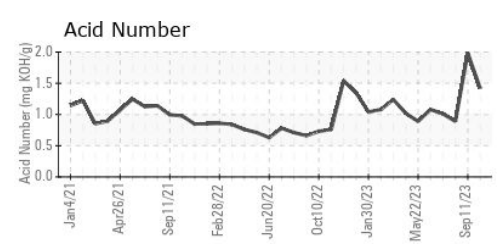
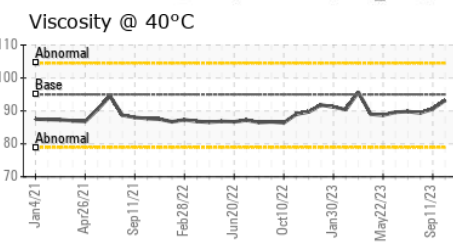
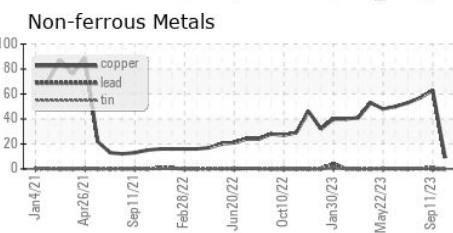
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	95.0	93.2	90.6	89.4

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0769343 **Received** : 13 Oct 2023
Lab Number : 05978348 **Diagnosed** : 16 Oct 2023
Unique Number : 10695643 **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:

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)