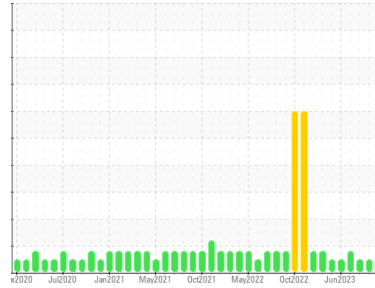




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Map Runner
 Machine Id
[Map Runner] Oil - Port Reduction Gear
 Component
Port Reduction Gear
 Fluid
SAE 30W (10 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.

Wear

All 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	WC0845986	WC0719207	WC0769061
Sample Date	Client Info	24 Oct 2023	27 Sep 2023	30 Aug 2023
Machine Age	hrs Client Info	0	0	8551
Oil Age	hrs Client Info	1888	1312	713
Oil Changed	Client Info	Changed	Not Changd	Not Changd
Sample Status		NORMAL	NORMAL	NORMAL

WEAR METALS

method	limit/base	current	history1	history2
Iron ppm ASTM D5185m	>150	6	4	3
Chromium ppm ASTM D5185m	>10	<1	0	0
Nickel ppm ASTM D5185m	>10	<1	0	0
Titanium ppm ASTM D5185m		<1	<1	0
Silver ppm ASTM D5185m		0	0	0
Aluminum ppm ASTM D5185m	>25	2	<1	<1
Lead ppm ASTM D5185m	>100	<1	<1	0
Copper ppm ASTM D5185m	>50	42	32	22
Tin ppm ASTM D5185m	>10	1	1	<1
Vanadium ppm ASTM D5185m		0	0	0
Cadmium ppm ASTM D5185m		<1	0	0

ADDITIVES

method	limit/base	current	history1	history2
Boron ppm ASTM D5185m		1	0	2
Barium ppm ASTM D5185m		5	0	0
Molybdenum ppm ASTM D5185m		42	44	42
Manganese ppm ASTM D5185m		<1	<1	<1
Magnesium ppm ASTM D5185m		665	734	724
Calcium ppm ASTM D5185m		724	770	803
Phosphorus ppm ASTM D5185m		794	751	770
Zinc ppm ASTM D5185m		823	893	913
Sulfur ppm ASTM D5185m		2412	2363	2795

CONTAMINANTS

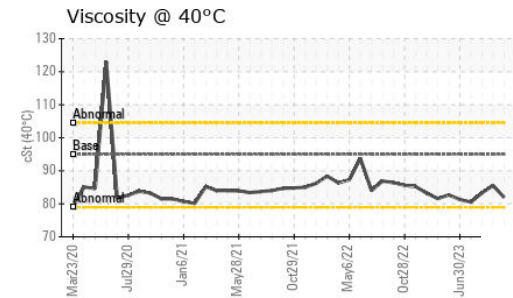
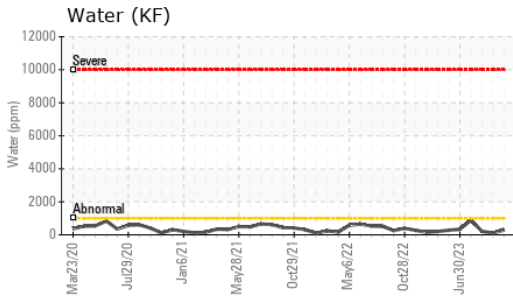
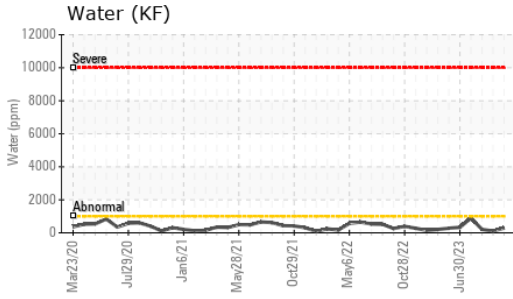
method	limit/base	current	history1	history2
Silicon ppm ASTM D5185m	>50	2	2	2
Sodium ppm ASTM D5185m		0	1	3
Potassium ppm ASTM D5185m	>20	1	0	0
Water % ASTM D6304	>0.1	0.029	0.010	0.020
ppm Water ppm ASTM D6304	>1000	290.7	107.7	208.2

FLUID DEGRADATION

method	limit/base	current	history1	history2
Acid Number (AN) mg KOH/g ASTM D8045		0.84	1.19	1.32



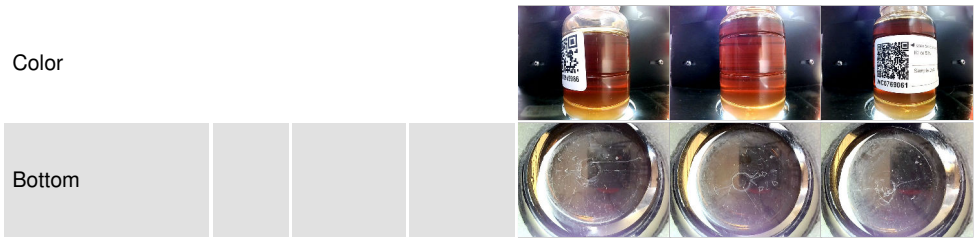
OIL ANALYSIS REPORT



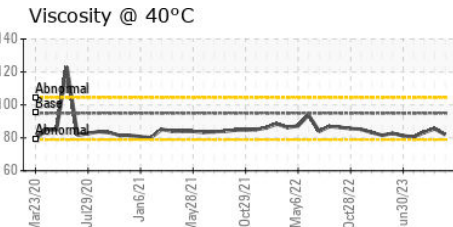
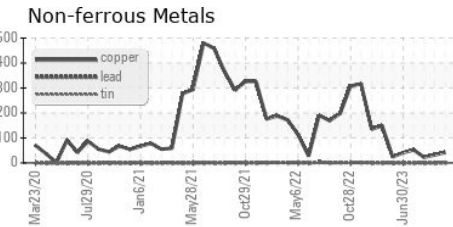
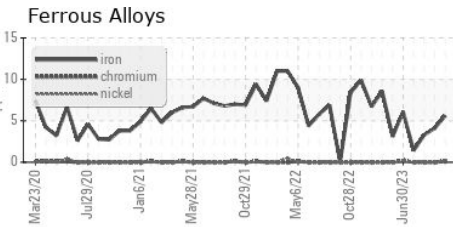
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	81.94	85.5

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0845986 **Received** : 01 Nov 2023
Lab Number : 05995691 **Diagnosed** : 07 Nov 2023
Unique Number : 10724051 **Diagnostician** : Jonathan Hester
Test Package : IND 2 (Additional Tests: KF)

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 CATLETTSBURG, KY
 US 41169
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 cagumbert@marathonpetroleum.com
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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)