

OIL ANALYSIS REPORT

NORMAL

Area Detroit [Detroit] Oil - Port Genset Port Genset Fluid

MOBIL 15W40 (7 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Completed by Jeff Baldwin)

Wear

All component wear rates are normal.

Contamination

There is no indication of any contamination in the oil.

Fluid Condition

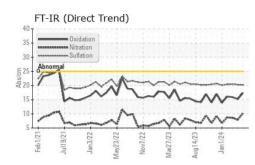
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

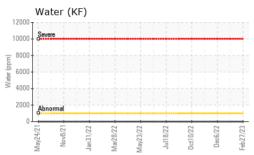
4021 Jud21 Jud22 Nav222 Nav2022 Nav2023 Jud24

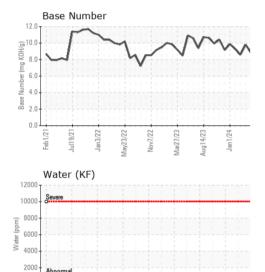
SAMPLE INFORM	IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0804767	WC0804788	WC0804783
Sample Date		Client Info		20 May 2024	22 Apr 2024	25 Mar 2024
Machine Age	hrs	Client Info		22962	22599	22305
Oil Age	hrs	Client Info		535	172	311
Oil Changed		Client Info		Not Changd	N/A	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATION	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Glycol		WC Method	- 110	NEG	NEG	NEG
,			11 1. 0			
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	8	4	5
Chromium	ppm	ASTM D5185m	>4	<1	<1	0
Nickel	ppm	ASTM D5185m	>2	<1	<1	<1
Titanium	ppm	ASTM D5185m	_	0	<1	0
Silver	ppm	ASTM D5185m	>5	0	<1	0
Aluminum	ppm	ASTM D5185m		3	4	3
Lead	ppm	ASTM D5185m	>17	<1	2	0
Copper	ppm	ASTM D5185m		4	6	3
Tin	ppm	ASTM D5185m	>15	0	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
Cadmium	ppm	ASTM D5185m		0	<1	0
ADDITIVES		method	limit/base	current	history1	history2
ADDITIVES Boron	ppm	method ASTM D5185m	limit/base	current 78	history1 93	history2 81
	ppm ppm		limit/base			
Boron		ASTM D5185m	limit/base	78	93	81
Boron Barium	ppm	ASTM D5185m ASTM D5185m	limit/base	78 0	93 0	81 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24	93 0 27	81 0 22
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1	93 0 27 0	81 0 22 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1 291	93 0 27 0 318	81 0 22 <1 270
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1 291 2414	93 0 27 0 318 2546	81 0 22 <1 270 2342
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1 291 2414 443	93 0 27 0 318 2546 530	81 0 22 <1 270 2342 440
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1 291 2414 443 557	93 0 27 0 318 2546 530 602	81 0 22 <1 270 2342 440 533
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1 291 2414 443 557 4386	93 0 27 0 318 2546 530 602 4186	81 0 22 <1 270 2342 440 533 4569
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	limit/base	78 0 24 <1 291 2414 443 557 4386	93 0 27 0 318 2546 530 602 4186 history1	81 0 22 <1 270 2342 440 533 4569 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25 >118	78 0 24 <1 291 2414 443 557 4386 current 4	93 0 27 0 318 2546 530 602 4186 history1 7	81 0 22 <1 270 2342 440 533 4569 history2 7
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m method ASTM D5185m	limit/base >25 >118 >20	78 0 24 <1 291 2414 443 557 4386 current 4 2	93 0 27 0 318 2546 530 602 4186 history1 7 0	81 0 22 <1 270 2342 440 533 4569 history2 7 2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20	78 0 24 <1 291 2414 443 557 4386 <u>current</u> 4 2 2 <1	93 0 27 0 318 2546 530 602 4186 history1 7 0 4	81 0 22 <1 270 2342 440 533 4569 history2 7 2 2 <1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 >0.1	78 0 24 <1 291 2414 443 557 4386 <u>current</u> 4 2 2 <1 NEG	93 0 27 0 318 2546 530 602 4186 history1 7 0 4 NEG	81 0 22 <1 270 2342 440 533 4569 history2 7 2 2 <1 NEG
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 >0.1 limit/base	78 0 24 <1 291 2414 443 557 4386 <u>current</u> 4 2 <1 NEG	93 0 27 0 318 2546 530 602 4186 history1 7 0 4 NEG NEG history1	81 0 22 <1 270 2342 440 533 4569 history2 7 2 7 2 <1 NEG history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 >0.1 limit/base	78 0 24 <1 291 2414 443 557 4386 <u>current</u> 4 2 2 <1 NEG <u>current</u> 0.3	93 0 27 0 318 2546 530 602 4186 history1 7 0 4 NEG history1 0.1	81 0 22 <1 270 2342 440 533 4569 history2 7 2 2 <1 NEG history2 0.1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Vater INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 >0.1 limit/base	78 0 24 <1 291 2414 443 557 4386 <u>current</u> 4 2 <1 NEG 0.3 10.2	93 0 27 0 318 2546 530 602 4186 history1 7 0 4 NEG NEG history1 0.1 7.9	81 0 22 <1 270 2342 440 533 4569 history2 7 2 2 <1 NEG history2 0.1 8.6
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Vater INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 >0.1 limit/base >20 >30	78 0 24 <1 291 2414 443 557 4386 <u>current</u> 4 2 <1 NEG 0.3 10.2 20.2	93 0 27 0 318 2546 530 602 4186 history1 7 0 4 NEG history1 0.1 7.9 20.3	81 0 22 <1 270 2342 440 533 4569 history2 7 2 <1 NEG history2 0.1 8.6 20.5
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m	limit/base >25 >118 >20 >0.1 limit/base >20 >30	78 0 24 <1 291 2414 443 557 4386 <i>current</i> 4 2 <1 NEG 0.3 10.2 20.2 <i>current</i>	93 0 27 0 318 2546 530 602 4186 history1 7 0 4 NEG NEG history1 0.1 7.9 20.3 history1	81 0 22 <1 270 2342 440 533 4569 history2 7 2 7 2 <1 NEG NEG 0.1 8.6 20.5 history2



OIL ANALYSIS REPORT







Mar28/22

/av23/22

Jec6/22

lct10/22

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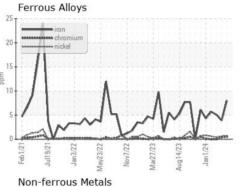
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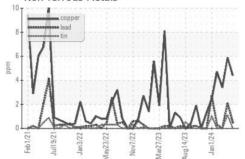
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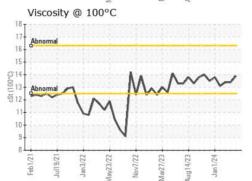
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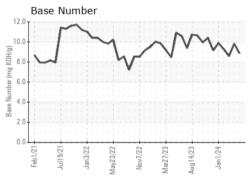
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG
FLUID PROPERT	IES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445		13.9	13.4	13.4

GRAPHS









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 MARATHON PETROLEUM CO. : WC0804767 Sample No. Received : 07 Jun 2024 101 12TH ST Lab Number : 06202977 Tested : 11 Jun 2024 CATLETTSBURG, KY Unique Number : 11070438 Diagnosed : 11 Jun 2024 - Sean Felton US 41169 Test Package : IND 2 (Additional Tests: KF) Contact: CORY GUMBERT Certificate 12367 cagumbert@marathonpetroleum.com To discuss this sample report, contact Customer Service at 1-800-237-1369. T: (606)585-3950 * - Denotes test methods that are outside of the ISO 17025 scope of accreditation. F: x:

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

Report Id: MARCAT [WUSCAR] 06202977 (Generated: 06/11/2024 16:19:26) Rev: 1

Submitted By: M/V DETROIT

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