

# **OIL ANALYSIS REPORT**

# Area Marathon [Marathon] Oil - Port Genset

Port Genset Fluid DIESEL ENGINE OIL SAE 15W40 (35 GAL)

#### DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor. ( Customer Sample Comment: Chris comuzie )  $% \label{eq:compared}$ 

## 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.

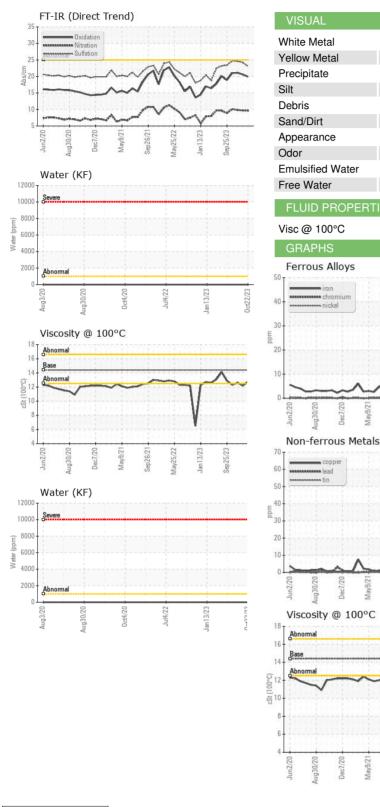


Sample Rating Trend

SAMPLE INFORM	<b>/</b> IATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0846113	WC0846102	WC0846104
Sample Date		Client Info		31 Mar 2024	12 Feb 2024	13 Dec 2023
Machine Age	hrs	Client Info		18075	17473	17011
Oil Age	hrs	Client Info		4831	4229	3768
Oil Changed		Client Info		Filtered	Filtered	Filtered
Sample Status				NORMAL	NORMAL	NORMAL
CONTAMINATIO	N	method	limit/base	current	history1	history2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Glycol		WC Method		NEG	NEG	NEG
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	26	32	34
Chromium	ppm	ASTM D5185m	>4	<1	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	4	3	3
Lead	ppm	ASTM D5185m	>17	0	5	6
Copper	ppm	ASTM D5185m	>70	7	4	4
Tin	ppm	ASTM D5185m	>15	<1	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
Cadmium	ppm	ASTM D5185m		0	0	0
ADDITIVES		method	limit/base	ourropt	In the American	history?
ADDITIVES		methou	iiiiii/base	current	history1	history2
Boron	ppm	ASTM D5185m	250	198	232	208
	ppm ppm					
Boron		ASTM D5185m	250	198	232	208
Boron Barium	ppm	ASTM D5185m ASTM D5185m	250 10	198 0	232 0	208 0
Boron Barium Molybdenum	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m	250 10	198 0 129	232 0 130	208 0 120
Boron Barium Molybdenum Manganese	ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100	198 0 129 <1	232 0 130 <1	208 0 120 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450	198 0 129 <1 712	232 0 130 <1 714	208 0 120 <1 706
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	250 10 100 450 3000	198 0 129 <1 712 1512	232 0 130 <1 714 1643	208 0 120 <1 706 1569
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	250 10 100 450 3000 1150	198 0 129 <1 712 1512 713	232 0 130 <1 714 1643 754	208 0 120 <1 706 1569 720
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	250 10 100 450 3000 1150 1350	198 0 129 <1 712 1512 713 867	232 0 130 <1 714 1643 754 896	208 0 120 <1 706 1569 720 891
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	250 10 100 450 3000 1150 1350 4250	198 0 129 <1 712 1512 713 867 2910	232 0 130 <1 714 1643 754 896 2583	208 0 120 <1 706 1569 720 891 2431
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	250 10 100 450 3000 1150 1350 4250	198 0 129 <1 712 1512 713 867 2910 current	232 0 130 <1 714 1643 754 896 2583 history1	208 0 120 <1 706 1569 720 891 2431 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 <b>method</b> ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25	198 0 129 <1 712 1512 713 867 2910 current 5	232 0 130 <1 714 1643 754 896 2583 history1 5	208 0 120 <1 706 1569 720 891 2431 2431 history2 5
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 <b>method</b> ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 kimit/base >25 >158	198 0 129 <1 712 1512 713 867 2910 current 5 3	232 0 130 <1 714 1643 754 896 2583 <b>history1</b> 5 4	208 0 120 <1 706 1569 720 891 2431 2431 history2 5 6
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	250 10 100 450 3000 1150 1350 4250 <b>linit/base</b> >25 >158 >20	198 0 129 <1 712 1512 713 867 2910 Current 5 3 1	232 0 130 <1 714 1643 754 896 2583 <b>bistory1</b> 5 4 0	208 0 120 <1 706 1569 720 891 2431 <b>history2</b> 5 6 6 <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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20 >0.1	198 0 129 <1 712 1512 713 867 2910 current 5 3 1 NEG	232 0 130 <1 714 1643 754 896 2583 history1 5 4 0 NEG	208 0 120 <1 706 1569 720 891 2431 <b>history2</b> 5 6 <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	ASTM D5185m ASTM D5185m	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20 >0.1	198 0 129 <1 712 1512 713 867 2910 current 5 3 1 NEG current	232 0 130 <1 714 1643 754 896 2583 history1 5 4 0 NEG history1	208 0 120 <1 706 1569 720 891 2431 history2 5 6 <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	250 10 100 450 3000 1150 1350 4250 <b>limit/base</b> >25 >158 >20 >0.1	198 0 129 <1 712 1512 713 867 2910 current 5 3 1 NEG current 0.2	232 0 130 <1 714 1643 754 896 2583 history1 5 4 0 NEG history1 0.3	208 0 120 <1 706 1569 720 891 2431 history2 5 6 <1 NEG history2 0.3
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Water INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D6304 ASTM D6304 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 20 >25 >158 >20 >0.1 imit/base	198 0 129 <1 712 1512 713 867 2910 Current 5 3 1 NEG 0.2 9.6	232 0 130 <1 714 1643 754 896 2583 history1 5 4 0 NEG NEG NEG 0.3 9.7	208 0 120 <1 706 1569 720 891 2431 history2 5 6 <1 NEG NEG 0.3 9.8
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	250 10 100 450 3000 1150 1350 4250 <b>Imit/base</b> >25 >158 >20 >0.1 <b>Imit/base</b> >20 >0.1	198 0 129 <1 712 1512 713 867 2910 <b>current</b> 5 3 1 NEG 0.2 9.6 23.1	232 0 130 <1 714 1643 754 896 2583 history1 5 4 0 NEG history1 0.3 9.7 24.2	208 0 120 <1 706 1569 720 891 2431 history2 5 6 <1 NEG history2 0.3 9.8 24.6
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 D6304 •ASTM D7844 *ASTM D7624 *ASTM D7844	250 10 100 450 3000 1150 1350 4250 <b>imit/base</b> >25 >158 >20 >0.1 <b>imit/base</b> >20 >0.1	198 0 129 <1 712 1512 713 867 2910 Current 5 3 1 NEG 0.2 9.6 23.1 Current	232 0 130 <1 714 1643 754 896 2583 history1 5 4 0 NEG NEG history1 0.3 9.7 24.2 history1	208 0 120 <1 706 1569 720 891 2431 history2 5 6 <1 NEG 0.3 9.8 24.6 history2

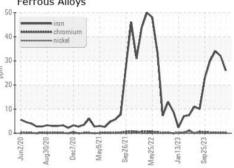


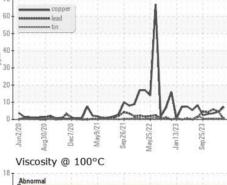
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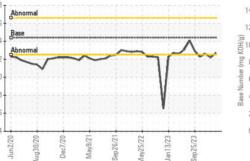


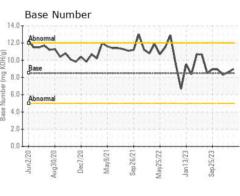
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	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	14.4	12.7	12.2	12.6
CDADUS						

Ferrous Alloys









Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513 MARATHON PETROLEUM CO. Sample No. : WC0846113 Received : 23 Apr 2024 101 12TH ST Lab Number : 06157867 Tested : 25 Apr 2024 CATLETTSBURG, KY Unique Number : 10993290 Diagnosed : 25 Apr 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] 06157867 (Generated: 04/25/2024 20:13:52) Rev: 1

Submitted By: M/V MARATHON

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