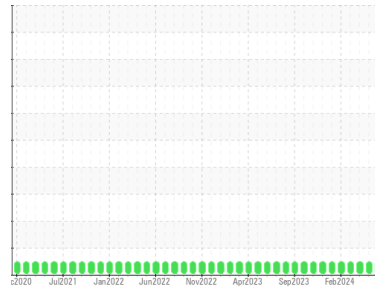




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
Ohio Valley
 Machine Id
[Ohio Valley] Oil - Starboard Genset
 Component
Starboard Genset
 Fluid
DIESEL ENGINE OIL SAE 15W40 (8 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor.
 Please specify the brand, type, and viscosity of the oil on your next sample.

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 INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0719220	WC0719224	WC0845943
Sample Date	Client Info			06 Jun 2024	11 May 2024	11 Apr 2024
Machine Age	hrs	Client Info		20243	19766	19433
Oil Age	hrs	Client Info		476	500	170
Oil Changed	Client Info			Not Chngd	N/A	Not Chngd
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Fuel	WC Method	>4.0		<1.0	<1.0	<1.0
Water	WC Method	>0.1		NEG	NEG	NEG
Glycol	WC Method			NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	8	7	2
Chromium	ppm	ASTM D5185m	>4	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	<1	0	0
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>12	2	<1	1
Lead	ppm	ASTM D5185m	>17	<1	0	0
Copper	ppm	ASTM D5185m	>70	2	<1	0
Tin	ppm	ASTM D5185m	>15	<1	0	<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	250	48	53	65
Barium	ppm	ASTM D5185m	10	0	0	0
Molybdenum	ppm	ASTM D5185m	100	32	31	30
Manganese	ppm	ASTM D5185m		<1	0	<1
Magnesium	ppm	ASTM D5185m	450	1000	1011	898
Calcium	ppm	ASTM D5185m	3000	1564	1631	1425
Phosphorus	ppm	ASTM D5185m	1150	846	873	798
Zinc	ppm	ASTM D5185m	1350	1038	1018	909
Sulfur	ppm	ASTM D5185m	4250	3219	3812	3533

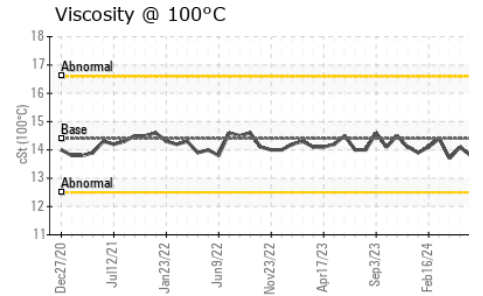
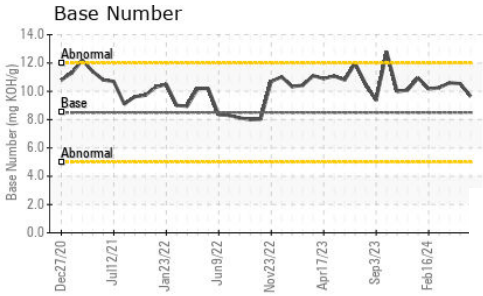
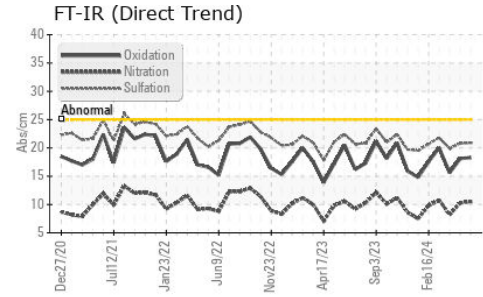
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>25	4	2	3
Sodium	ppm	ASTM D5185m	>158	3	1	2
Potassium	ppm	ASTM D5185m	>20	2	<1	2

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		0.4	0.3	0.1
Nitration	Abs/cm	*ASTM D7624	>20	10.5	10.3	8.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.9	20.8	19.9

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	18.3	18.1	15.6
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	9.65	10.54	10.60



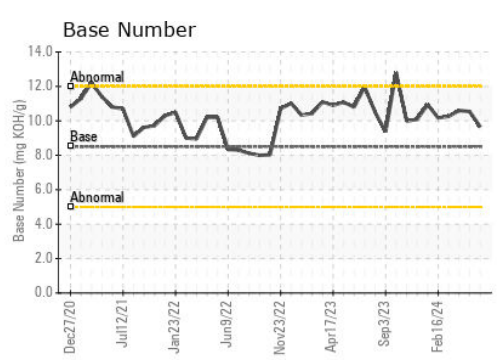
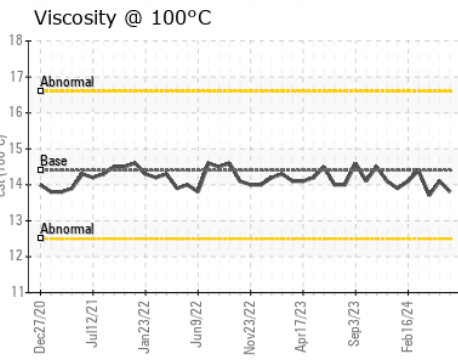
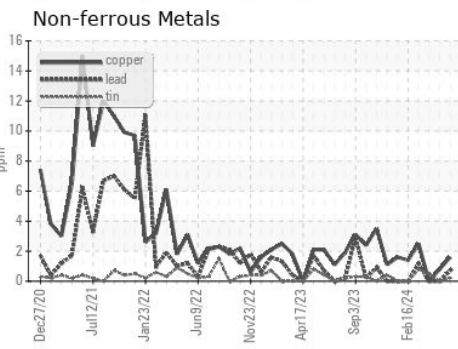
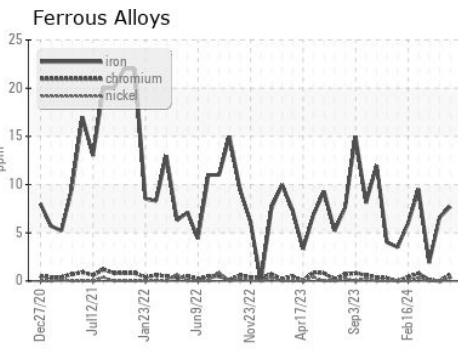
OIL ANALYSIS REPORT



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 @ 100°C	cSt	ASTM D445	14.4	13.8	14.1	13.7

GRAPHS



Certificate L2367

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)

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0719220
Lab Number : **06210378**
Unique Number : 11083242
Test Package : IND 2
Received : 14 Jun 2024
Tested : 17 Jun 2024
Diagnosed : 17 Jun 2024 - Wes Davis

MARATHON PETROLEUM CO.
 101 12TH ST
 CATLETTSBURG, KY
 US 41169
 Contact: CORY GUMBERT
 cagumbert@marathonpetroleum.com
 T: (606)585-3950
 F: x: