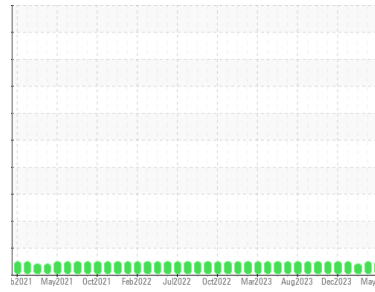




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Tri State**  
 Machine Id  
**[Tri State] Oil - Port Genset**  
 Component  
**Port Genset**  
 Fluid  
**DIESEL ENGINE OIL SAE 15W40 (5 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### 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		<b>WC0874534</b>	WC0874624	WC0874789
Sample Date	Client Info		<b>24 May 2024</b>	23 Apr 2024	20 Mar 2024
Machine Age	hrs	Client Info	<b>14390</b>	14022	13620
Oil Age	hrs	Client Info	<b>353</b>	382	233
Oil Changed	Client Info		<b>Changed</b>	Changed	Changed
Sample Status			<b>NORMAL</b>	NORMAL	ABNORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Fuel	WC Method	>4.0	<b>&lt;1.0</b>	<1.0	<1.0
Glycol	WC Method		<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m >50	<b>7</b>	9	8
Chromium	ppm	ASTM D5185m >4	<b>&lt;1</b>	<1	<1
Nickel	ppm	ASTM D5185m >2	<b>0</b>	0	<1
Titanium	ppm	ASTM D5185m	<b>0</b>	<1	<1
Silver	ppm	ASTM D5185m >5	<b>0</b>	<1	<1
Aluminum	ppm	ASTM D5185m >12	<b>&lt;1</b>	3	2
Lead	ppm	ASTM D5185m >17	<b>0</b>	2	<1
Copper	ppm	ASTM D5185m >70	<b>0</b>	2	1
Tin	ppm	ASTM D5185m >15	<b>0</b>	1	<1
Vanadium	ppm	ASTM D5185m	<b>&lt;1</b>	<1	<1
Cadmium	ppm	ASTM D5185m	<b>0</b>	<1	<1

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m 250	<b>0</b>	10	9
Barium	ppm	ASTM D5185m 10	<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m 100	<b>68</b>	72	66
Manganese	ppm	ASTM D5185m	<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185m 450	<b>1530</b>	1571	▲ 1447
Calcium	ppm	ASTM D5185m 3000	<b>1255</b>	1249	1175
Phosphorus	ppm	ASTM D5185m 1150	<b>1133</b>	1275	1121
Zinc	ppm	ASTM D5185m 1350	<b>1400</b>	1420	1290
Sulfur	ppm	ASTM D5185m 4250	<b>4074</b>	3725	3568

## CONTAMINANTS

	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m >25	<b>4</b>	6	5
Sodium	ppm	ASTM D5185m >158	<b>&lt;1</b>	0	<1
Potassium	ppm	ASTM D5185m >20	<b>0</b>	3	2
Water	%	ASTM D6304 >0.1	<b>NEG</b>	NEG	NEG

## INFRA-RED

	method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	<b>0.1</b>	0.1	0.1
Nitration	Abs/cm	*ASTM D7624 >20	<b>7.5</b>	7.3	7.1
Sulfation	Abs/.1mm	*ASTM D7415 >30	<b>19.3</b>	19.3	19.4

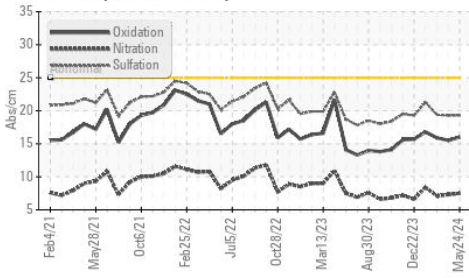
## FLUID DEGRADATION

	method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414 >25	<b>16.0</b>	15.5	15.9
Base Number (BN)	mg KOH/g	ASTM D2896 8.5	<b>10.10</b>	13.07	13.70

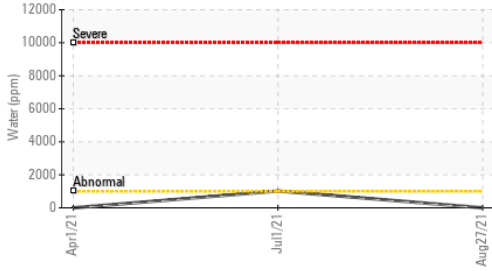


# OIL ANALYSIS REPORT

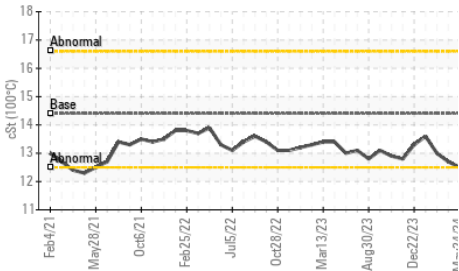
FT-IR (Direct Trend)



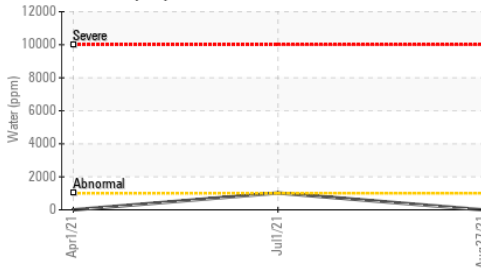
Water (KF)



Viscosity @ 100°C



Water (KF)

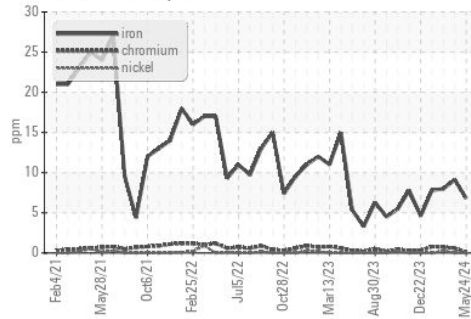


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

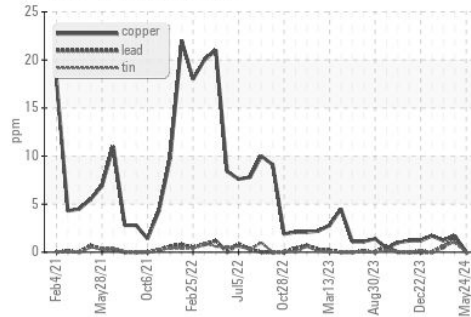
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	14.4	12.5	12.7

## GRAPHS

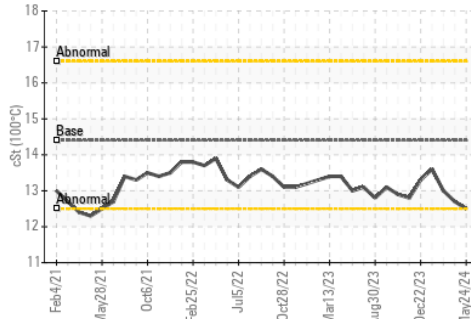
Ferrous Alloys



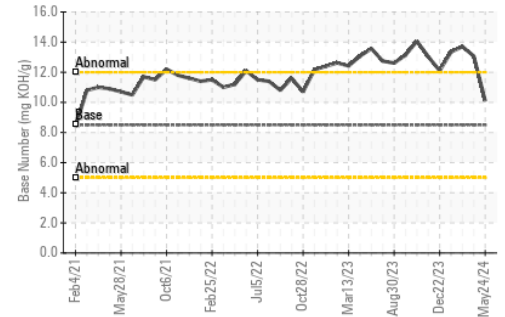
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513

Sample No. : WC0874534

Lab Number : 06201659

Unique Number : 11063782

Test Package : IND 2 ( Additional Tests: KF )

Received : 06 Jun 2024

Tested : 11 Jun 2024

Diagnosed : 11 Jun 2024 - Sean Felton

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)