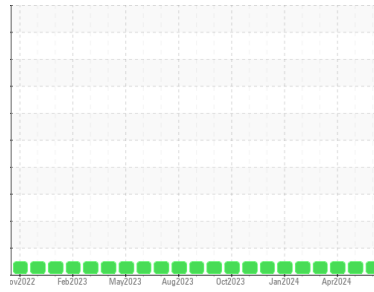




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Area
West Virginia

Machine Id
[West Virginia] Oil - Port Genset

Component
Port Genset

Fluid
NOT GIVEN (8 GAL)

DIAGNOSIS

Recommendation

Resample at the next service interval to monitor. (Customer Sample Comment: Thurman Richardson)

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	WC0731872	WC0874541	WC0769378
Sample Date	Client Info	09 Jun 2024	13 May 2024	16 Apr 2024
Machine Age	hrs Client Info	28416	28135	27995
Oil Age	hrs Client Info	483	600	500
Oil Changed	Client Info	N/A	Changed	N/A
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	5	4	7
Chromium	ppm ASTM D5185m >4	<1	<1	<1
Nickel	ppm ASTM D5185m >2	<1	<1	0
Titanium	ppm ASTM D5185m	<1	<1	<1
Silver	ppm ASTM D5185m >5	0	<1	<1
Aluminum	ppm ASTM D5185m >12	2	2	2
Lead	ppm ASTM D5185m >17	<1	<1	2
Copper	ppm ASTM D5185m >70	<1	1	<1
Tin	ppm ASTM D5185m >15	<1	<1	1
Vanadium	ppm ASTM D5185m	0	<1	<1
Cadmium	ppm ASTM D5185m	<1	<1	<1

ADDITIVES

method	limit/base	current	history1	history2
Boron	ppm ASTM D5185m	11	10	11
Barium	ppm ASTM D5185m	0	<1	0
Molybdenum	ppm ASTM D5185m	65	65	71
Manganese	ppm ASTM D5185m	<1	<1	0
Magnesium	ppm ASTM D5185m	1460	1388	1458
Calcium	ppm ASTM D5185m	1231	1226	1262
Phosphorus	ppm ASTM D5185m	1085	1083	1165
Zinc	ppm ASTM D5185m	1340	1290	1332
Sulfur	ppm ASTM D5185m	3567	3533	3465

CONTAMINANTS

method	limit/base	current	history1	history2
Silicon	ppm ASTM D5185m >25	4	3	5
Sodium	ppm ASTM D5185m	5	5	3
Potassium	ppm ASTM D5185m >20	1	2	3

INFRA-RED

method	limit/base	current	history1	history2
Soot %	% *ASTM D7844	0.1	0.1	0.1
Nitration	Abs/cm *ASTM D7624 >20	8.4	8.4	10.6
Sulfation	Abs/.1mm *ASTM D7415 >30	20.3	20.7	22.2

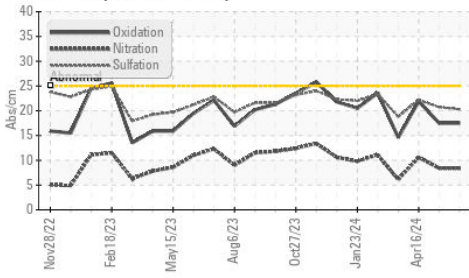
FLUID DEGRADATION

method	limit/base	current	history1	history2
Oxidation	Abs/.1mm *ASTM D7414 >25	17.5	17.5	21.9
Base Number (BN)	mg KOH/g ASTM D2896	12.29	12.45	11.03

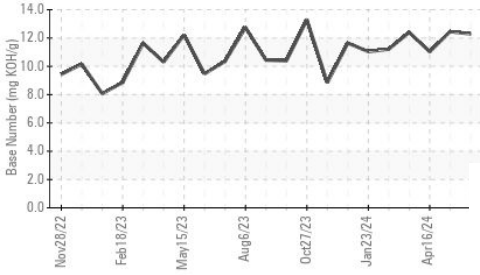


OIL ANALYSIS REPORT

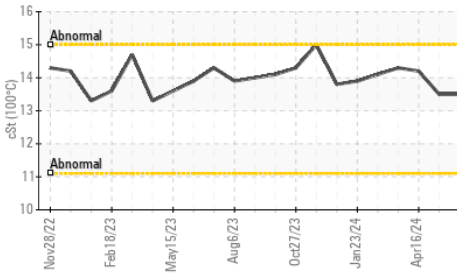
FT-IR (Direct Trend)



Base Number



Viscosity @ 100°C

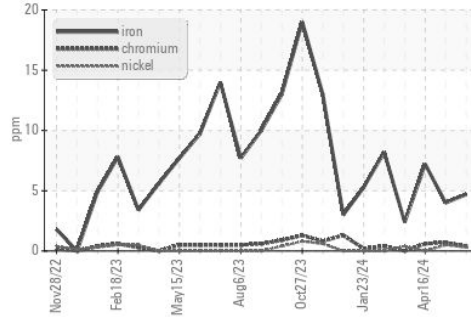


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

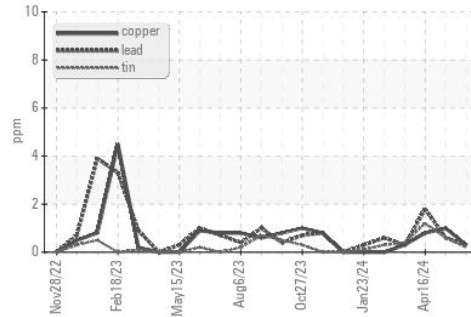
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.5	13.5	14.2

GRAPHS

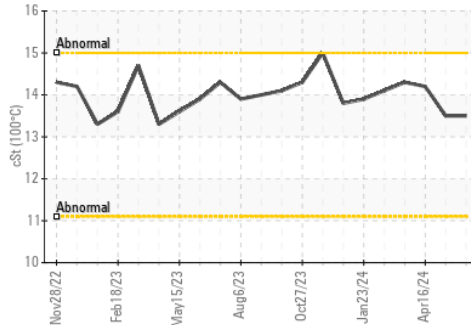
Ferrous Alloys



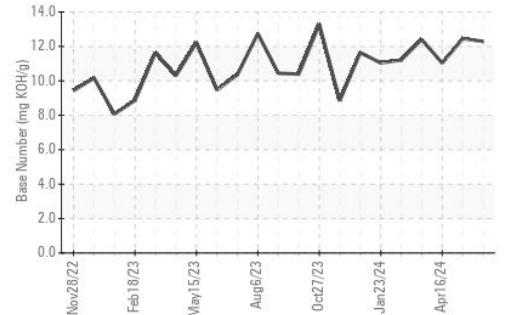
Non-ferrous Metals



Viscosity @ 100°C



Base Number



Certificate L2367

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

Sample No. : WC0731872

Lab Number : 06210379

Unique Number : 11083243

Test Package : IND 2

Received : 14 Jun 2024

Tested : 17 Jun 2024

Diagnosed : 18 Jun 2024 - Don Baldrige

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)