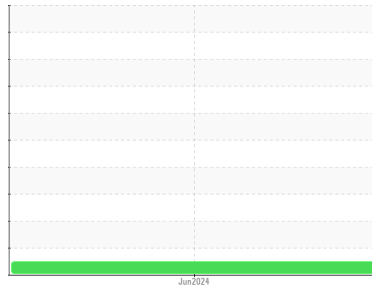


OIL ANALYSIS REPORT



Machine Id
CATERPILLAR BARBARA ANN
Component
Main Engine
Fluid
KENDALL SUPER-D XA 15W40 (--- GAL)

Sample Rating Trend



NORMAL

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	HRE0000252	---	---
Sample Date	Client Info	06 Jun 2024	---	---
Machine Age	hrs	Client Info	7578	---
Oil Age	hrs	Client Info	500	---
Oil Changed	Client Info	Changed	---	---
Sample Status		NORMAL	---	---

CONTAMINATION method limit/base current history1 history2

Fuel	WC Method	>4.0	<1.0	---	---
Water	WC Method	>0.1	NEG	---	---
Glycol	WC Method		NEG	---	---

WEAR METALS method limit/base current history1 history2

Iron	ppm	ASTM D5185m	>75	72	---	---
Chromium	ppm	ASTM D5185m	>8	2	---	---
Nickel	ppm	ASTM D5185m	>2	1	---	---
Titanium	ppm	ASTM D5185m	>3	51	---	---
Silver	ppm	ASTM D5185m	>2	0	---	---
Aluminum	ppm	ASTM D5185m	>15	2	---	---
Lead	ppm	ASTM D5185m	>18	<1	---	---
Copper	ppm	ASTM D5185m	>80	4	---	---
Tin	ppm	ASTM D5185m	>14	<1	---	---
Vanadium	ppm	ASTM D5185m		<1	---	---
Cadmium	ppm	ASTM D5185m		0	---	---

ADDITIVES method limit/base current history1 history2

Boron	ppm	ASTM D5185m	50	43	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		18	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m	270	533	---	---
Calcium	ppm	ASTM D5185m	1900	1326	---	---
Phosphorus	ppm	ASTM D5185m	1000	934	---	---
Zinc	ppm	ASTM D5185m	1260	1131	---	---
Sulfur	ppm	ASTM D5185m	3400	4630	---	---

CONTAMINANTS method limit/base current history1 history2

Silicon	ppm	ASTM D5185m	>20	6	---	---
Sodium	ppm	ASTM D5185m	>75	12	---	---
Potassium	ppm	ASTM D5185m	>20	4	---	---

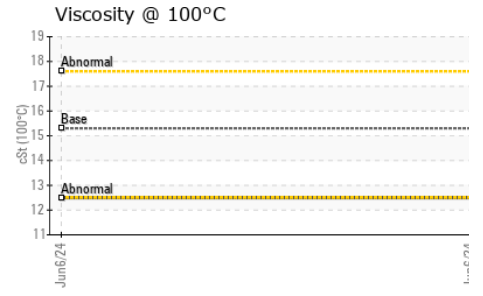
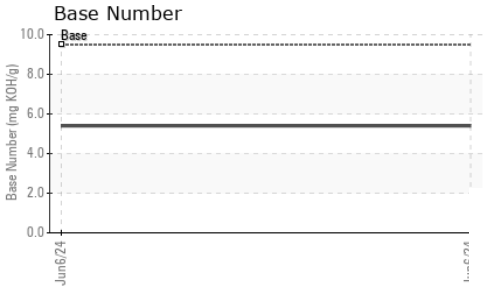
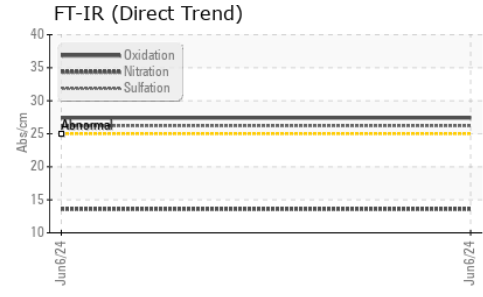
INFRA-RED method limit/base current history1 history2

Soot %	%	*ASTM D7844		0.4	---	---
Nitration	Abs/cm	*ASTM D7624	>20	13.6	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	26.2	---	---

FLUID DEGRADATION method limit/base current history1 history2

Oxidation	Abs/.1mm	*ASTM D7414	>25	27.4	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	9.5	5.4	---	---

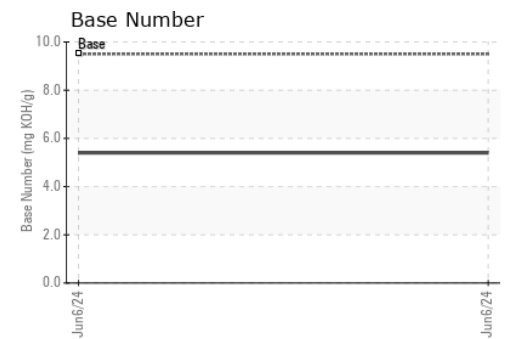
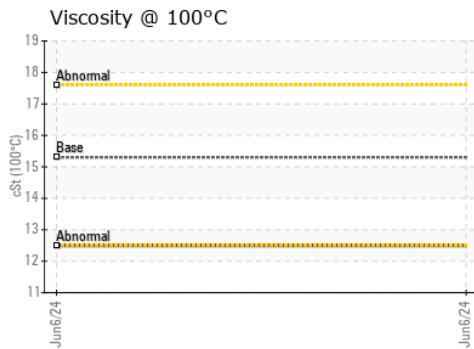
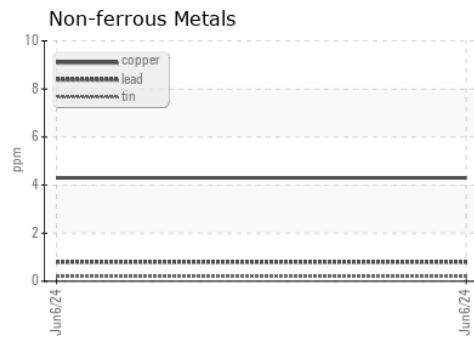
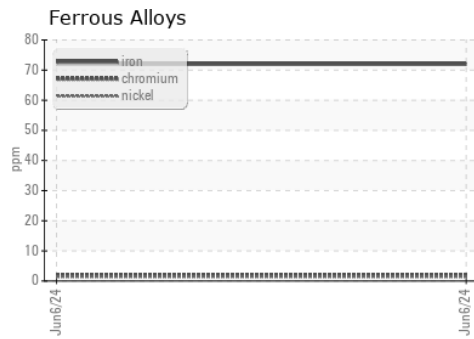
OIL ANALYSIS REPORT



VISUAL	method	limit/base	current	history1	history2	
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---
Precipitate	scalar	*Visual	NONE	NONE	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.1	NEG	---	---
Free Water	scalar	*Visual		NEG	---	---

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 100°C	cSt	ASTM D445	15.3	12.5	---	---

GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : HRE0000252 **Received** : 20 Jun 2024
Lab Number : 06216463 **Tested** : 22 Jun 2024
Unique Number : 11089327 **Diagnosed** : 23 Jun 2024 - Don Baldrige
Test Package : FLEET

SUPERIOR MARINE
 201 KELLY LANE
 CHESAPEAKE, OH
 US 45619
 Contact: DARRELL KEARNS
 darrellkearns@superiormarineinc.com

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)