



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Area
MACHINERY
Machine Id
CATERPILLAR JCS STARBOARD
Component
Marine Diesel
Fluid
{not provided} (--- GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor. Please specify the brand, type, and viscosity of the oil on your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DC0011538	---	---
Sample Date		Client Info		06 Jan 2024	---	---
Machine Age	hrs	Client Info		0	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		N/A	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				ABNORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	20	---	---
Chromium	ppm	ASTM D5185m	>14	<1	---	---
Nickel	ppm	ASTM D5185m	>3	0	---	---
Titanium	ppm	ASTM D5185m	>2	0	---	---
Silver	ppm	ASTM D5185m	>2	0	---	---
Aluminum	ppm	ASTM D5185m	>10	1	---	---
Lead	ppm	ASTM D5185m	>11	0	---	---
Copper	ppm	ASTM D5185m	>25	3	---	---
Tin	ppm	ASTM D5185m	>2	0	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

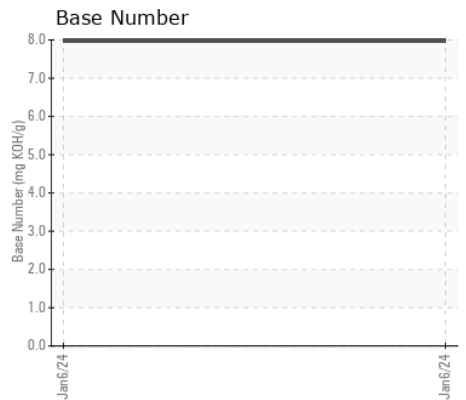
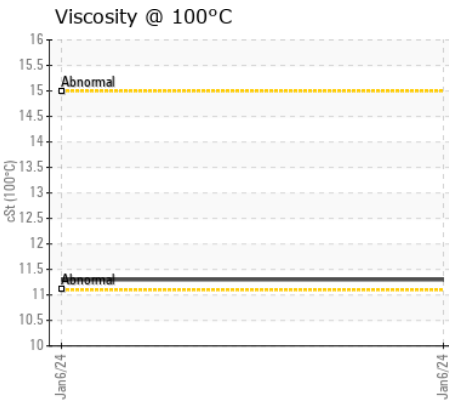
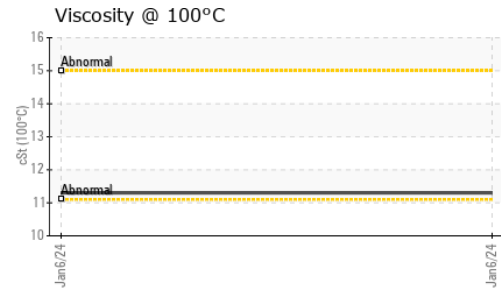
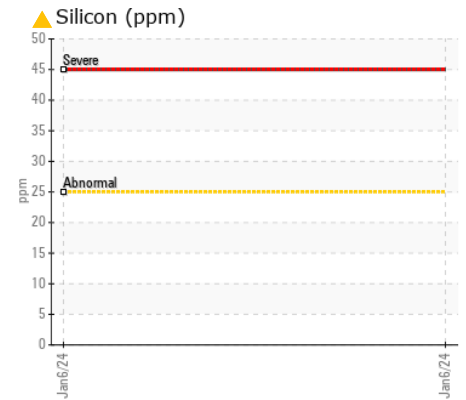
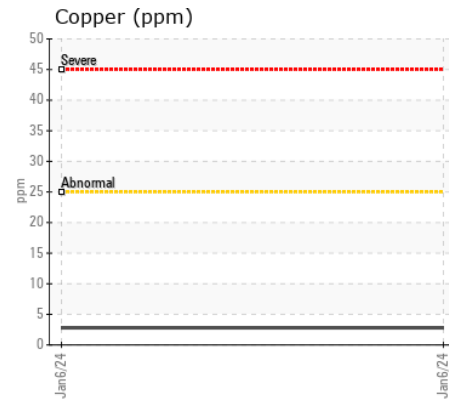
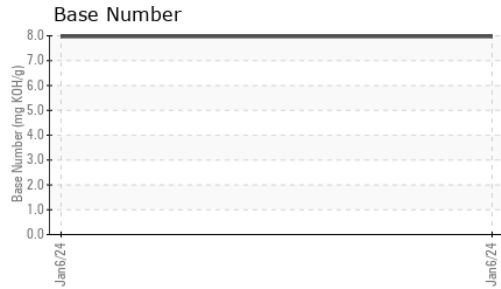
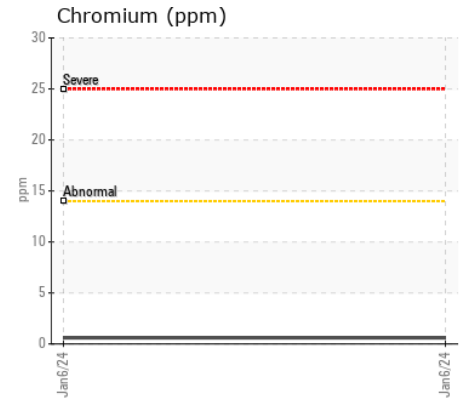
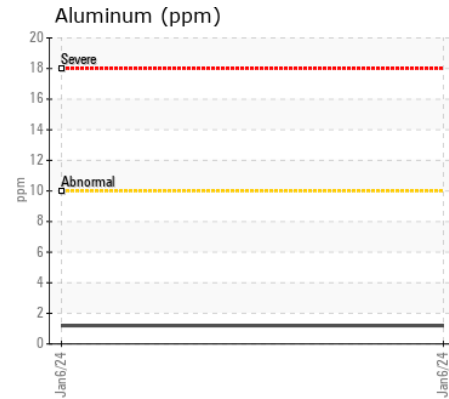
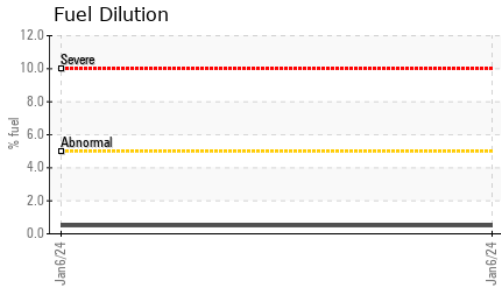
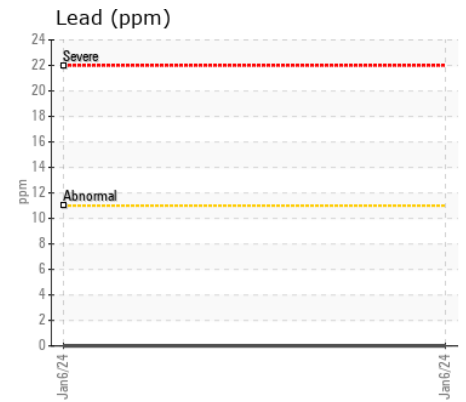
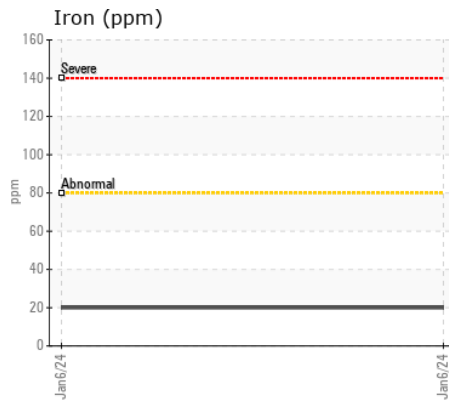
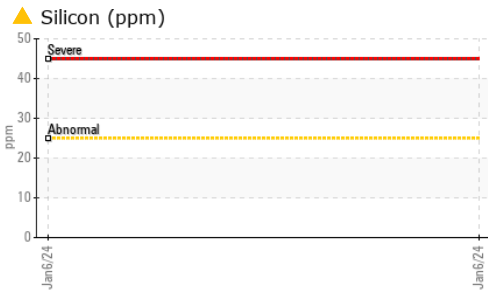
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>25	▲ 45	---	---
Potassium	ppm	ASTM D5185m	>20	0	---	---
Fuel	%	ASTM D3524	>5	0.5	---	---
Water		WC Method	>0.1	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844		0.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	5.0	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	12.7	---	---
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	---	---

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.

Sodium	ppm	ASTM D5185m	>40	0	---	---
Boron	ppm	ASTM D5185m		0	---	---
Barium	ppm	ASTM D5185m		0	---	---
Molybdenum	ppm	ASTM D5185m		0	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m		1025	---	---
Calcium	ppm	ASTM D5185m		580	---	---
Phosphorus	ppm	ASTM D5185m		1102	---	---
Zinc	ppm	ASTM D5185m		1260	---	---
Sulfur	ppm	ASTM D5185m		6323	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	5.0	---	---
Base Number (BN)	mg KOH/g	ASTM D2896		7.97	---	---
Visc @ 100°C	cSt	ASTM D445		11.3	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DC0011538 **Received** : 16 Jan 2024
Lab Number : 06061398 **Diagnosed** : 23 Jan 2024
Unique Number : 10832780 **Diagnostician** : Doug Bogart
Test Package : MOB 2 (Additional Tests: FUELDILUTION, PercentFuel)

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)

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