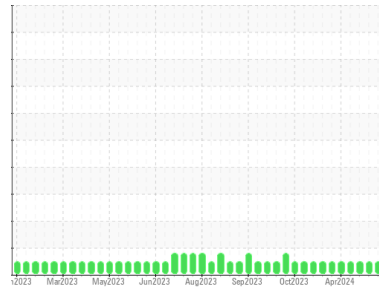




OIL ANALYSIS REPORT

Sample Rating Trend



NORMAL



Machine Id
CAPTIS ENERGY ENG 3 (S/N 1251399)
 Component
Natural Gas Engine
 Fluid
MAHLER Q8 Mahler G8 SAE 40 (--- 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 AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number	Client Info			WC0944698	WC0944701	WC06178986
Sample Date	Client Info			03 Jun 2024	28 May 2024	13 May 2024
Machine Age	hrs	Client Info		25189	25050	51574
Oil Age	hrs	Client Info		897	758	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water	WC Method		>.2	NEG	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	2	3	17
Chromium	ppm	ASTM D5185m	>5	0	<1	0
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	2	2	3
Lead	ppm	ASTM D5185m	>20	0	<1	0
Copper	ppm	ASTM D5185m	>15	0	<1	1
Tin	ppm	ASTM D5185m	>5	0	<1	0
Vanadium	ppm	ASTM D5185m		<1	0	0
Cadmium	ppm	ASTM D5185m		0	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	<1	0
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m		2	2	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		5	13	7
Calcium	ppm	ASTM D5185m		2482	2181	2455
Phosphorus	ppm	ASTM D5185m		519	494	427
Zinc	ppm	ASTM D5185m		591	543	487
Sulfur	ppm	ASTM D5185m		2899	2514	2779

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	2	2	19
Sodium	ppm	ASTM D5185m	>20	1	<1	2
Potassium	ppm	ASTM D5185m	>20	0	2	0

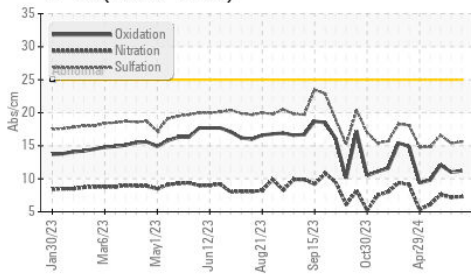
INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844	>2	0	0	0
Nitration	Abs/cm	*ASTM D7624	>20	7.3	7.2	7.6
Sulfation	Abs./1mm	*ASTM D7415	>20	15.6	15.4	16.6

FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs./1mm	*ASTM D7414	>20	11.2	11.0	12.1
Acid Number (AN)	mg KOH/g	ASTM D8045		0.28	1.639	0.35
Base Number (BN)	mg KOH/g	ASTM D2896	8.0	6.74	7.31	7.33

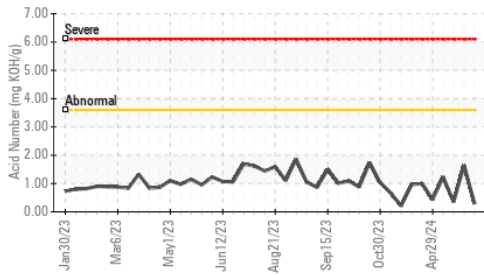


OIL ANALYSIS REPORT

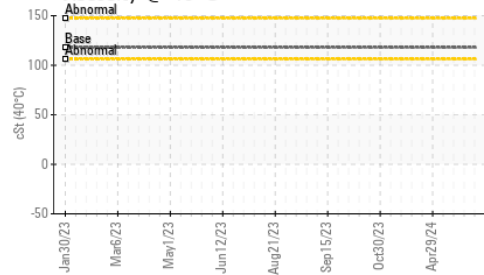
FT-IR (Direct Trend)



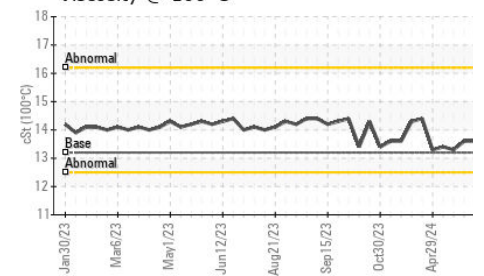
Acid Number



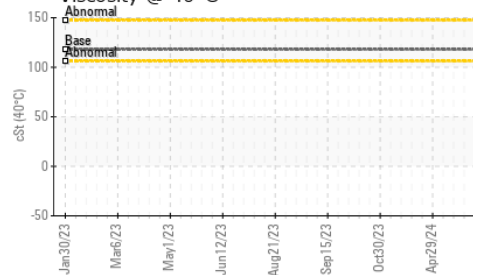
Viscosity @ 40°C



Viscosity @ 100°C



Viscosity @ 40°C

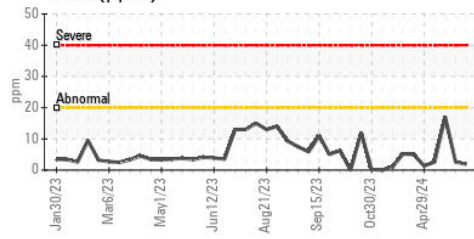


VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>.2	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

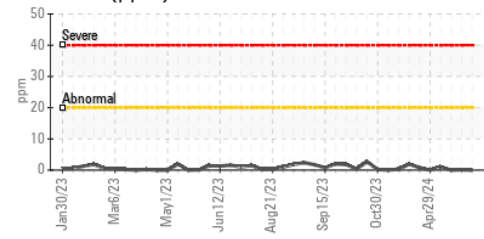
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.2	13.6	13.3

GRAPHS

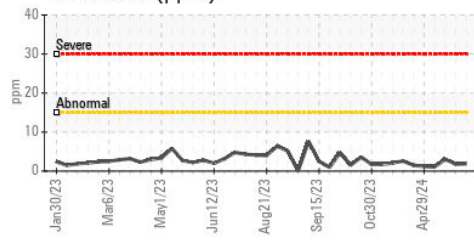
Iron (ppm)



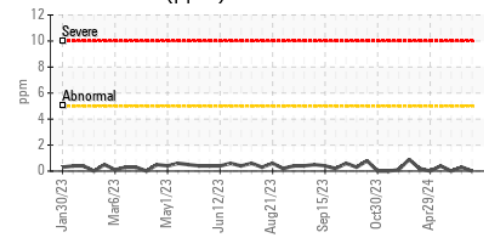
Lead (ppm)



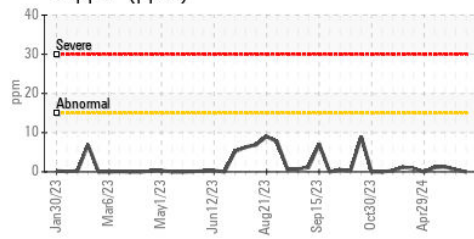
Aluminum (ppm)



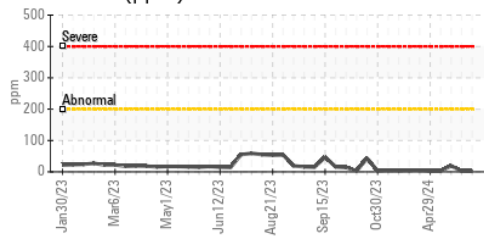
Chromium (ppm)



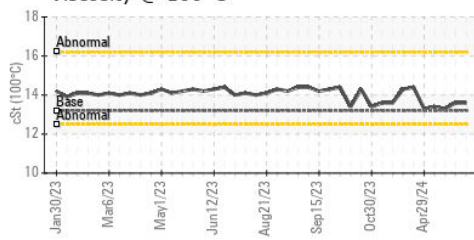
Copper (ppm)



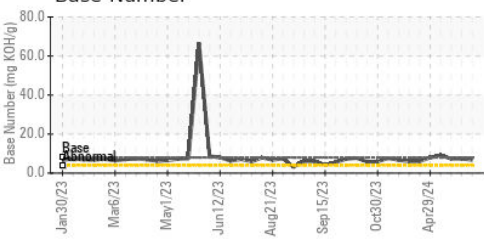
Silicon (ppm)



Viscosity @ 100°C



Base Number



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0944698
Lab Number : 06199436
Unique Number : 11061559
Test Package : MOB 2 (Additional Tests: KV40)
Received : 04 Jun 2024
Tested : 06 Jun 2024
Diagnosed : 06 Jun 2024 - Sean Felton

CUBE DISTRICT ENERGY
 1000 WINDWARD CONCOURSE SUITE 150
 ALPHARETTA, GA
 US 30005
 Contact: ED LEWIS
 ed.lewis@cubedistrictenergy.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)