



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
E-1 - RICHLAND CREEK
 Component
Biogas Engine
 Fluid
MAHLER Q8 Mahler G8 SAE 40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0944659	WC0944684	WC0914255
Sample Date		Client Info		18 Jun 2024	03 Jun 2024	14 May 2024
Machine Age	hrs	Client Info		44728	44654	44637
Oil Age	hrs	Client Info		2190	2125	2108
Filter Age	hrs	Client Info		414	349	332
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>45	12	15	13
Chromium	ppm	ASTM D5185m	>2	0	<1	<1
Nickel	ppm	ASTM D5185m	>2	0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	6	6	5
Lead	ppm	ASTM D5185m	>5	<1	<1	0
Copper	ppm	ASTM D5185m	>14	3	2	3
Tin	ppm	ASTM D5185m	>13	8	8	7
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

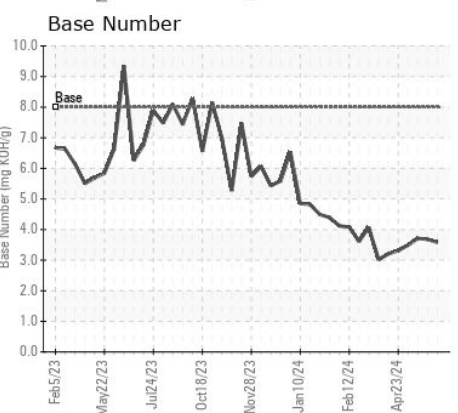
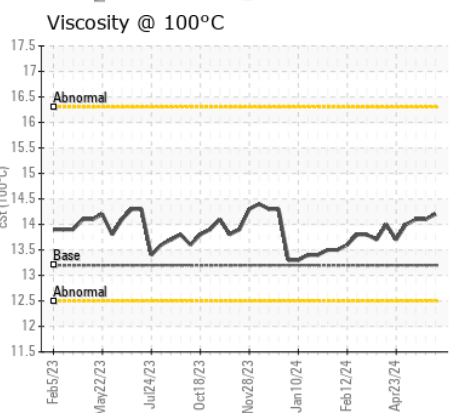
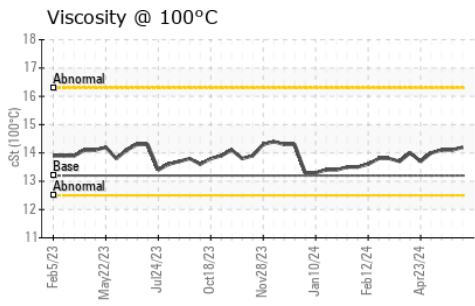
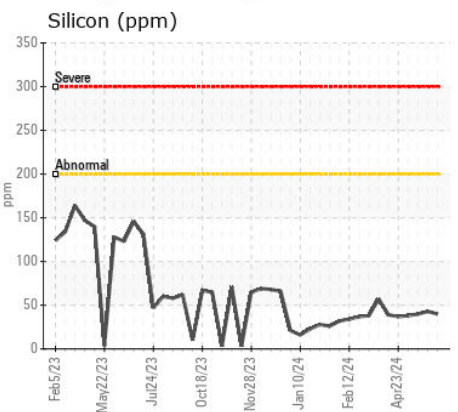
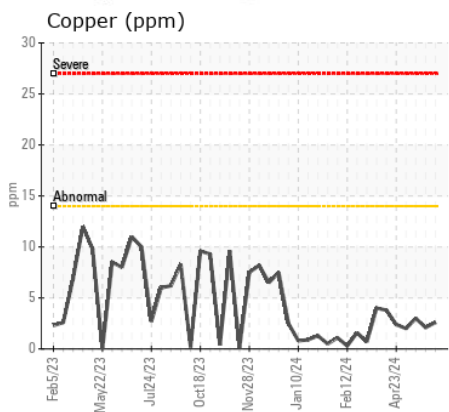
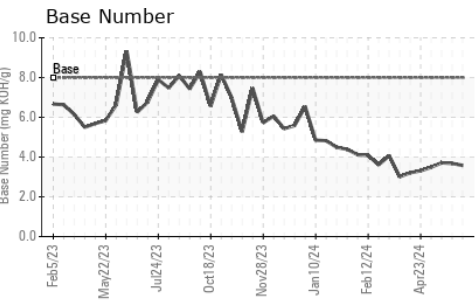
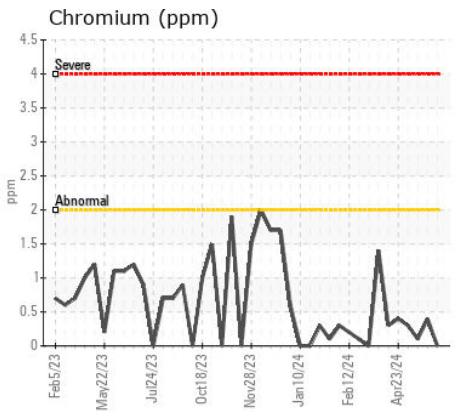
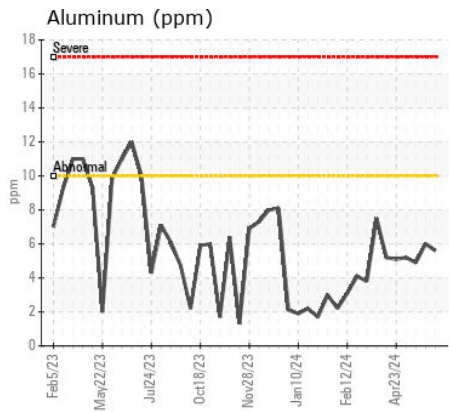
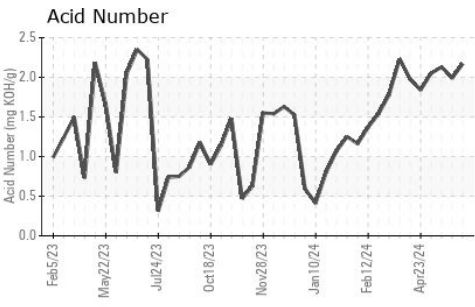
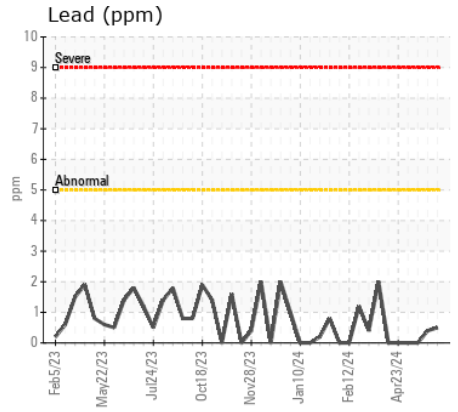
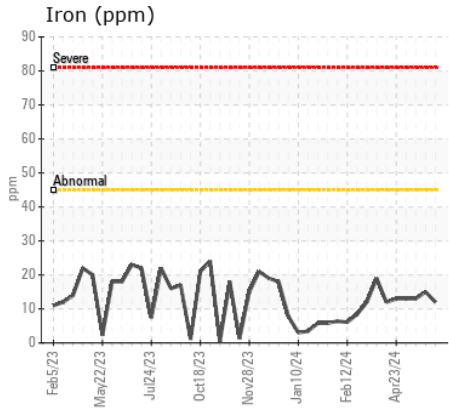
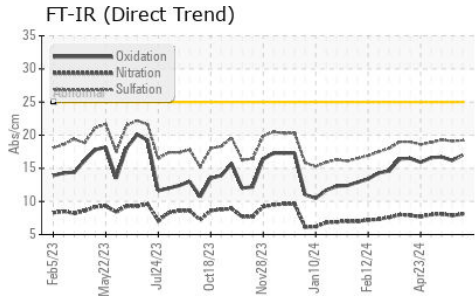
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>200	40	43	40
Potassium	ppm	ASTM D5185m	>20	5	4	1
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
Soot %	%	*ASTM D7844		0.1	0	0
Nitration	Abs/cm	*ASTM D7624	>20	8.1	7.9	8.1
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.2	19.1	19.3
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.1	NEG	NEG	NEG

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.

Sodium	ppm	ASTM D5185m		10	9	8
Boron	ppm	ASTM D5185m		0	0	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	<1	<1
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		6	0	0
Calcium	ppm	ASTM D5185m		1687	1922	1617
Phosphorus	ppm	ASTM D5185m		464	494	426
Zinc	ppm	ASTM D5185m		539	592	506
Sulfur	ppm	ASTM D5185m		2651	2979	2381
Oxidation	Abs/.1mm	*ASTM D7414	>25	17.0	16.2	16.7
Acid Number (AN)	mg KOH/g	ASTM D8045		2.17	1.99	2.13
Base Number (BN)	mg KOH/g	ASTM D2896	8.0	3.58	3.68	3.71
Visc @ 100°C	cSt	ASTM D445	13.2	14.2	14.1	14.1



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0944659 **Received** : 20 Jun 2024
Lab Number : 06216351 **Tested** : 21 Jun 2024
Unique Number : 11089215 **Diagnosed** : 23 Jun 2024 - Don Baldrige
Test Package : MOB 2

CUBE DISTRICT ENERGY - MAS GEORGIA LFG PLANT SITE
 5691 S RICHLAND CREEK RD
 BUFORD, GA
 US 30518
 Contact: RYAN INGALLS
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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)