



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
JENBACHER E1
 Component
Biogas Engine
 Fluid
CONOCO EL MAR LA4 EXD (180 GAL)

RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0896464	WC0896462	WC0896468
Sample Date		Client Info		09 Jul 2024	28 Jun 2024	17 Jun 2024
Machine Age	hrs	Client Info		27721	27509	27306
Oil Age	hrs	Client Info		7323	7111	6908
Filter Age	hrs	Client Info		7323	7111	6908
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>20	5	6	6
Chromium	ppm	ASTM D5185m	>5	<1	1	<1
Nickel	ppm	ASTM D5185m	>2	0	<1	0
Titanium	ppm	ASTM D5185m		0	<1	0
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>15	8	9	8
Lead	ppm	ASTM D5185m	>20	3	5	3
Copper	ppm	ASTM D5185m	>15	2	2	1
Tin	ppm	ASTM D5185m	>5	1	3	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

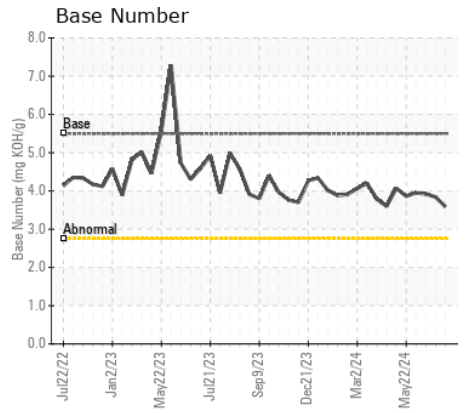
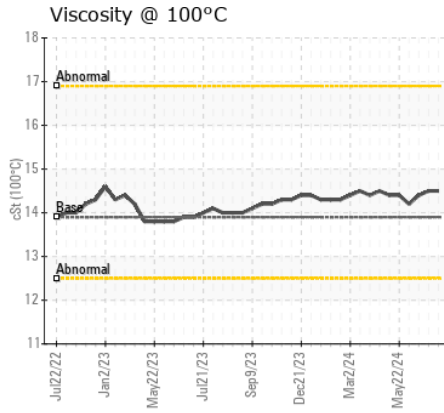
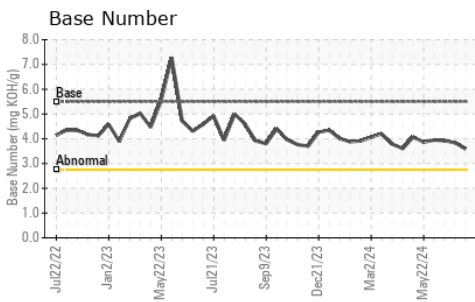
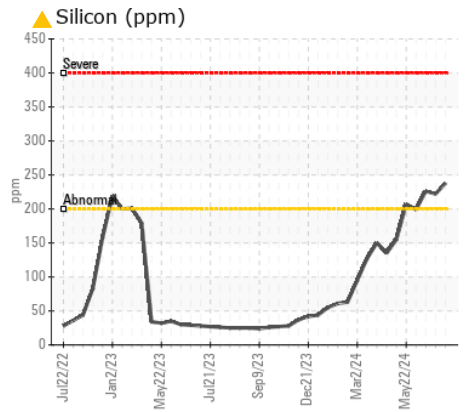
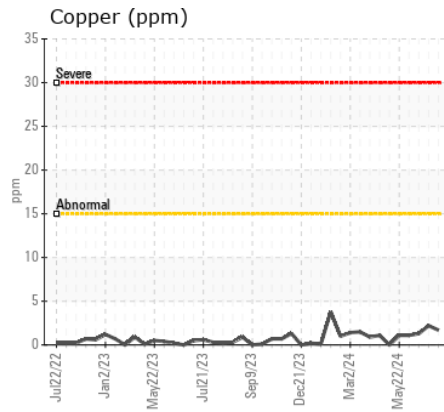
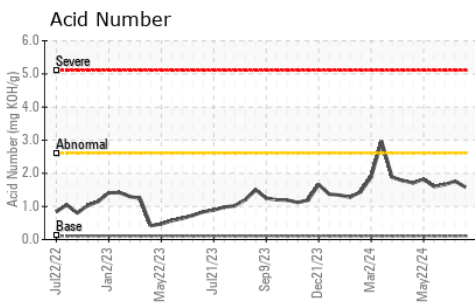
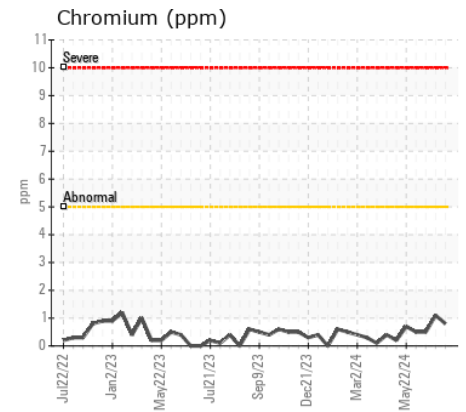
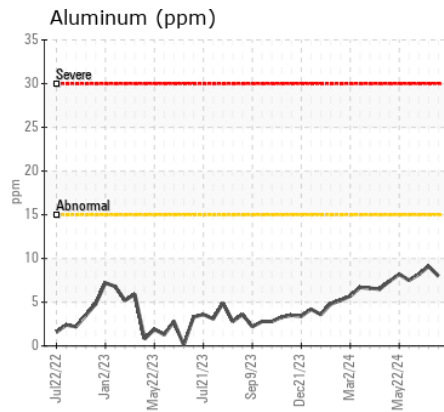
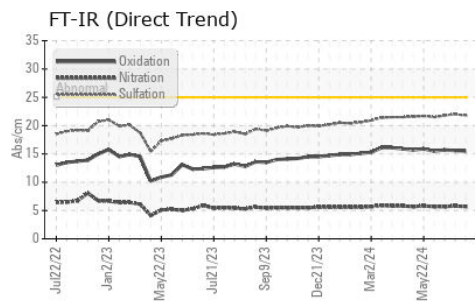
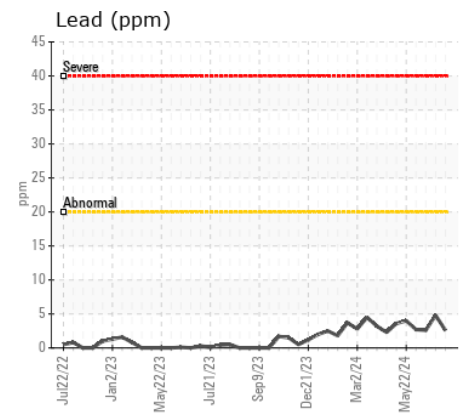
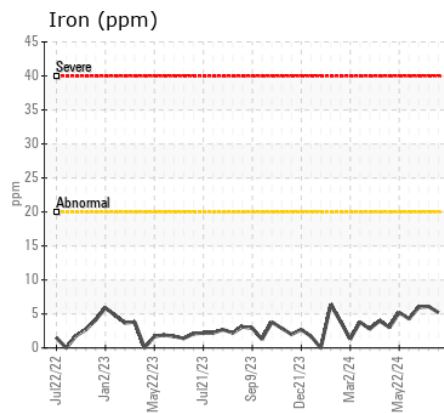
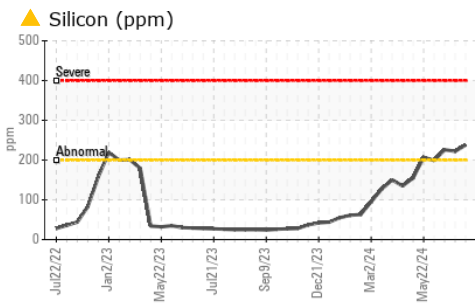
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>200	▲ 238	▲ 222	▲ 226
Potassium	ppm	ASTM D5185m	>20	0	2	0
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>2	0.1	0	0
Nitration	Abs/cm	*ASTM D7624	>20	5.7	5.8	5.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.8	22.0	21.8
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	>.2	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	>20	2	1	2
Boron	ppm	ASTM D5185m		1	7	0
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		<1	1	<1
Manganese	ppm	ASTM D5185m		0	<1	0
Magnesium	ppm	ASTM D5185m		7	6	8
Calcium	ppm	ASTM D5185m	1500	1973	1865	2095
Phosphorus	ppm	ASTM D5185m	280	333	362	346
Zinc	ppm	ASTM D5185m	330	426	471	451
Sulfur	ppm	ASTM D5185m		3641	4427	3845
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.5	15.6	15.7
Acid Number (AN)	mg KOH/g	ASTM D8045	0.11	1.58	1.76	1.66
Base Number (BN)	mg KOH/g	ASTM D2896	5.5	3.59	3.84	3.92
Visc @ 100°C	cSt	ASTM D445	13.9	14.5	14.5	14.4



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0896464
Lab Number : 06232386
Unique Number : 11115879
Test Package : MOB 2

Received : 10 Jul 2024
Tested : 11 Jul 2024
Diagnosed : 11 Jul 2024 - Sean Felton

SANTEE COOPER / LEE COUNTY LANDFILL
 1435 SUMTER HIGHWAY (HWY 15)
 BISHOPVILLE, SC
 US 29010

Contact: DAVID WINSTEAD
 david.winstead@santeecooper.com; dhwinste@santeecooper.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)

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