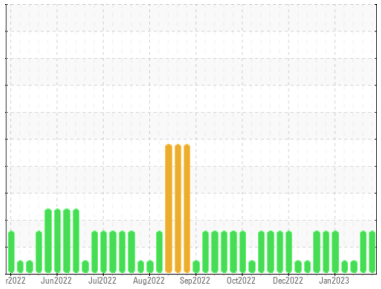
OIL ANALYSIS REPORT

Machine Id
GZJ00403
Component
Biogas Engine
Fluid
PETRO CANADA SENTRON CG 40 (--- GAL)

Sample Rating Trend



DIRT

DIAGNOSIS

Recommendation
No corrective action is recommended at this time. Resample at the next service interval to monitor. (Customer Sample Comment: Total oil added 33 gal)

Wear
All component wear rates are normal.

Contamination
Fuel content negligible. Elemental level of silicon (Si) above normal.

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		**WC0699080**	WC0699002	WC0698999
Sample Date		Client Info		**13 Feb 2023**	06 Feb 2023	30 Jan 2023
Machine Age	hrs	Client Info		**112217**	112053	111882
Oil Age	hrs	Client Info		**575**	411	240
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ABNORMAL**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.1	**NEG**	NEG	NEG
Glycol		WC Method		**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>45	**7**	7	4
Chromium	ppm	ASTM D5185m	>2	**<1**	<1	<1
Nickel	ppm	ASTM D5185m	>2	**1**	1	1
Titanium	ppm	ASTM D5185m		**0**	<1	<1
Silver	ppm	ASTM D5185m	>5	**0**	0	0
Aluminum	ppm	ASTM D5185m	>10	**<1**	2	2
Lead	ppm	ASTM D5185m	>5	**3**	2	1
Copper	ppm	ASTM D5185m	>14	**2**	2	1
Tin	ppm	ASTM D5185m	>13	**5**	4	2
Vanadium	ppm	ASTM D5185m		**0**	0	0
Cadmium	ppm	ASTM D5185m		**0**	0	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	0	0
Barium	ppm	ASTM D5185m	1	**0**	0	0
Molybdenum	ppm	ASTM D5185m	2	**2**	2	1
Manganese	ppm	ASTM D5185m	1	**<1**	<1	<1
Magnesium	ppm	ASTM D5185m	9	**17**	16	12
Calcium	ppm	ASTM D5185m	2712	**2966**	2934	2760
Phosphorus	ppm	ASTM D5185m	292	**303**	284	263
Zinc	ppm	ASTM D5185m	342	**359**	328	332
Sulfur	ppm	ASTM D5185m	2575	**3638**	3824	3406

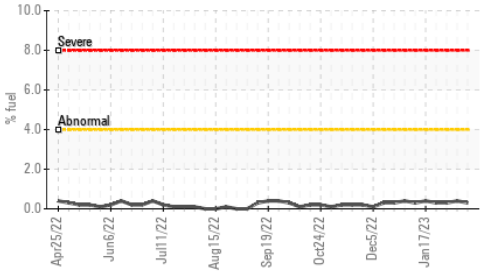
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>200	▲ **308**	▲ 239	162
Sodium	ppm	ASTM D5185m		**1**	<1	0
Potassium	ppm	ASTM D5185m	>20	**<1**	0	1
Fuel	%	ASTM D3524	>4.0	**0.3**	0.4	0.3

INFRA-RED		method	limit/base	current	history1	history2
Soot %	%	*ASTM D7844		**0.1**	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	**4.9**	4.6	4.3
Sulfation	Abs/.1mm	*ASTM D7415	>30	**18.5**	17.1	15.7

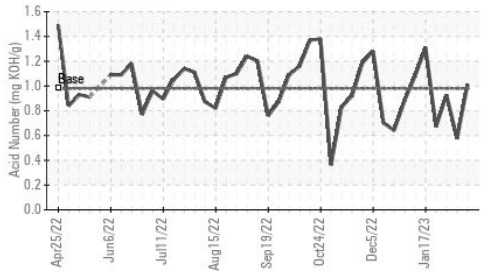
FLUID DEGRADATION		method	limit/base	current	history1	history2
Oxidation	Abs/.1mm	*ASTM D7414	>25	**9.7**	8.9	8.1
Acid Number (AN)	mg KOH/g	ASTM D8045	0.98	**1.01**	0.575	0.928
Base Number (BN)	mg KOH/g	ASTM D2896	8.1	**6.99**	8.13	7.87

OIL ANALYSIS REPORT

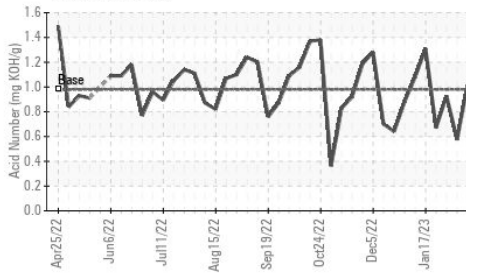
Fuel Dilution



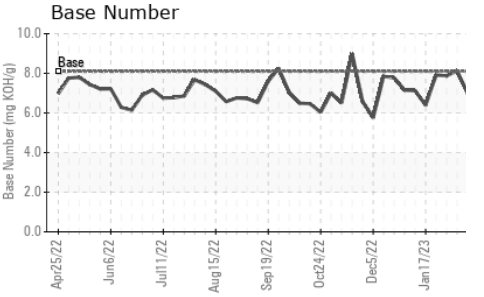
Acid Number



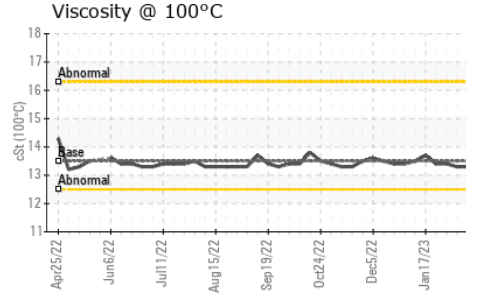
Acid Number



Base Number



Viscosity @ 100°C

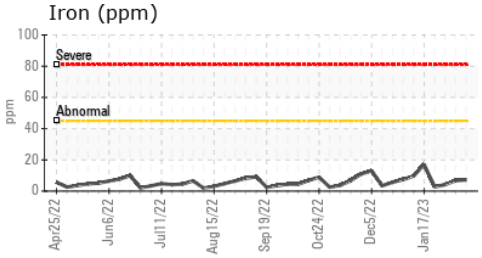


VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt	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
Free Water	scalar	*Visual		**NEG**	NEG	NEG

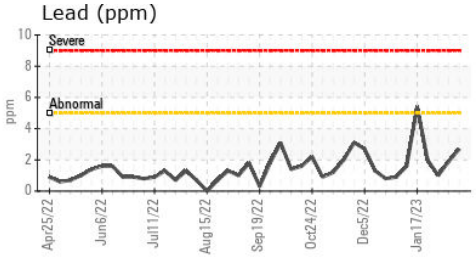
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.5	**13.3**	13.3	13.4

GRAPHS

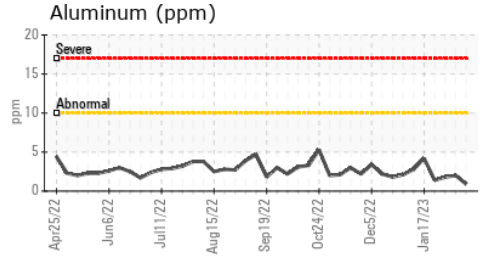
Iron (ppm)



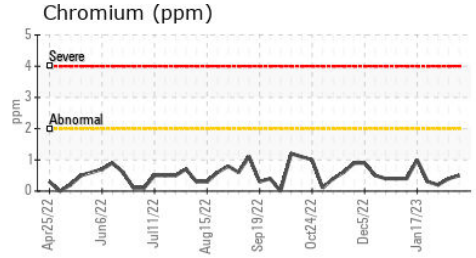
Lead (ppm)



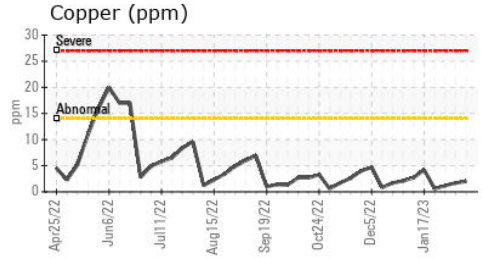
Aluminum (ppm)



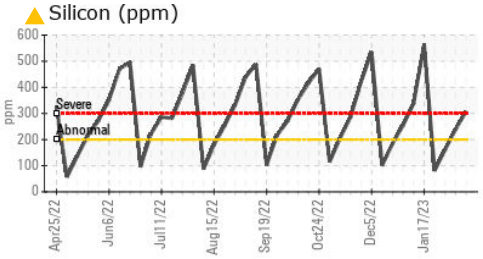
Chromium (ppm)



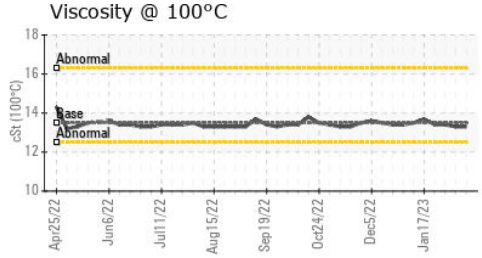
Copper (ppm)



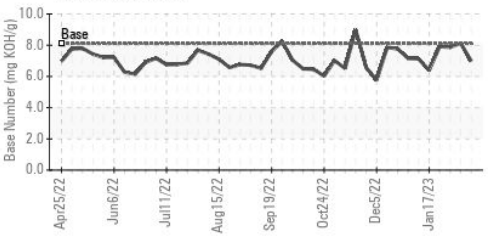
Silicon (ppm)



Viscosity @ 100°C



Base Number



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0699080 **Received** : 15 Feb 2023
Lab Number : 05769012 **Tested** : 17 Feb 2023
Unique Number : 10338620 **Diagnosed** : 17 Feb 2023 - Sean Felton
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)

FINLEY BIOENERGY
74265 Bombing Range Road
Boardman, OR
US 97818
Contact: Blain Middleton
bmiddleton@archaea.energy
T: (541)481-3232
F: