

# **OIL ANALYSIS REPORT**





Sample Rating Trend



## **DIAGNOSIS**

#### Recommendation

No corrective action is recommended at this time. Resample at the next service interval to monitor. ( Customer Sample Comment: Total oil added 121 gal)

## Wear

All component wear rates are normal.

#### Contamination

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

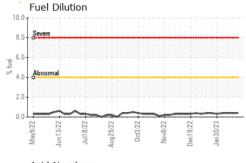
## **Fluid Condition**

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.

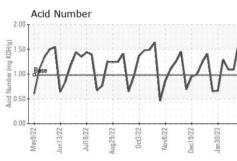
TRON CG 40 (145	GAL)	y2022 Jun20	22 Jul2022 Aug2022	Oct2022 Nov2022 Dec2022	Jan 2023	
SAMPLE INFORM	MATION	method	limit/base	current	history1	history2
Sample Number		Client Info		WC0699016	WC0699083	WC0699078
Sample Date		Client Info		27 Feb 2023	21 Feb 2023	13 Feb 2023
Machine Age	hrs	Client Info		121125	120992	120818
Oil Age	hrs	Client Info		862	729	555
Oil Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL
CONTAMINATION	١	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	6	4
Chromium	ppm	ASTM D5185m	>2	<1	0	<1
Nickel	ppm	ASTM D5185m	>2	0	0	1
Titanium	ppm	ASTM D5185m		<1	0	<1
Silver	ppm	ASTM D5185m	>5	0	0	0
Aluminum	ppm	ASTM D5185m	>10	3	2	2
Lead	ppm	ASTM D5185m	>5	1	<1	2
Copper	ppm	ASTM D5185m	>14	3	2	2
Tin	ppm	ASTM D5185m	>13	7	6	5
Vanadium	ppm	ASTM D5185m		0	<1	0
Cadmium	ppm	ASTM D5185m		0	0	0
4 D D ITIV (E.C.						
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm		limit/base	current 0	history1 <1	history2 0
	ppm ppm	ASTM D5185m				
Boron		ASTM D5185m	0	0	<1	0
Boron Barium	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0	0 0	<1 0	0
Boron Barium Molybdenum	ppm	ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2	0 0 1	<1 0 <1	0 0 1
Boron Barium Molybdenum Manganese	ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1	0 0 1 <1	<1 0 <1 <1	0 0 1 <1
Boron Barium Molybdenum Manganese Magnesium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9	0 0 1 <1 15	<1 0 <1 <1 17	0 0 1 <1 17
Boron Barium Molybdenum Manganese Magnesium Calcium	ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712	0 0 1 <1 15 3072	<1 0 <1 <1 17 3033	0 0 1 <1 17 3125
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus	ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712 292	0 0 1 <1 15 3072 295	<1 0 <1 <1 17 3033 284	0 0 1 <1 17 3125 318
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712 292 342	0 0 1 <1 15 3072 295 383	<1 0 <1 <1 17 3033 284 326	0 0 1 <1 17 3125 318 381
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur	ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712 292 342 2575	0 0 1 <1 15 3072 295 383 4102	<1 0 <1 <1 17 3033 284 326 3565 history1 ▲ 375	0 0 1 <1 17 3125 318 381 3710
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base	0 0 1 <1 15 3072 295 383 4102 current	<1 0 <1 <1 17 3033 284 326 3565 history1	0 0 1 <1 17 3125 318 381 3710 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base	0 0 1 <1 15 3072 295 383 4102 current ▲ 396	<1 0 <1 <1 17 3033 284 326 3565 history1 ▲ 375	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium	ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 Iimit/base >200	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2 0	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292 1
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel	ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 limit/base >200	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0 0.4	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2 0 0.4	0 0 1 <1 17 3125 318 381 3710 history2  292 1 <1 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 Iimit/base >200 >4.0	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0 0.4 current	<1 0 <1 <1 17 3033 284 326 3565 history1 ▲ 375 2 0 0.4 history1	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292 1 <1 0.4
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot %	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m	0 1 2 1 9 2712 292 342 2575 Iimit/base >200 >4.0	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0 0.4 current	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2 0 0.4 history1 0.1	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292 1 <1 0.4 history2
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7844	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0 0.4 current 0.1 6.9	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2 0 0.4 history1 0.1 6.2	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292 1 <1 0.4 history2 0.1 5.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D7844 *ASTM D7624 *ASTM D76145	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base >20 >30	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0 0.4 current 0.1 6.9 22.3	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2 0 0.4 history1 0.1 6.2 22.3	0 0 1 <1 17 3125 318 381 3710 history2 ▲ 292 1 <1 0.4 history2 0.1 5.8 20.8
Boron Barium Molybdenum Manganese Magnesium Calcium Phosphorus Zinc Sulfur CONTAMINANTS Silicon Sodium Potassium Fuel INFRA-RED Soot % Nitration Sulfation FLUID DEGRADA	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	ASTM D5185m ASTM D78185m ASTM D78144 *ASTM D7624 *ASTM D7624 *ASTM D7415 method	0 1 2 1 9 2712 292 342 2575 limit/base >200 >4.0 limit/base >20 >30 limit/base	0 0 1 <1 15 3072 295 383 4102 current ▲ 396 2 0 0.4 current 0.1 6.9 22.3 current	<1 0 <1 17 3033 284 326 3565 history1  ▲ 375 2 0 0.4 history1 0.1 6.2 22.3 history1	0 0 1 <1 17 3125 318 381 3710 history2 △ 292 1 <1 0.4 history2 0.1 5.8 20.8 history2

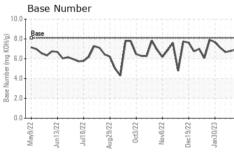


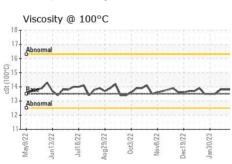
# **OIL ANALYSIS REPORT**



Acid	d Num	ber	101713		11720000 \$1122000			
(B) 1.50 -	1	7	-1		1	1	1 1	1
0.50 Base	V	1	1	V	V	V	V	
00 00 May9/22	Jun13/22	Jul18/22	Aug29/22	Oct3/22	Nov8/22 -	Dec19/22 -	Jan30/23 -	







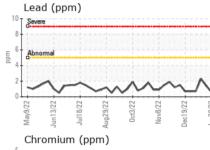
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML	NORML
<b>Emulsified Water</b>	scalar	*Visual	>0.1	NEG	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG	NEG

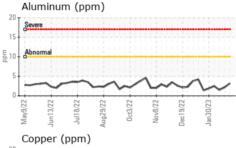
FLUID PROPER	HES	method	limit/base	current	history1	history2
Visc @ 100°C	cSt	ASTM D445	13.5	13.8	13.8	13.8

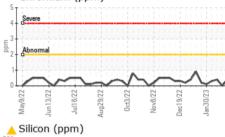
300

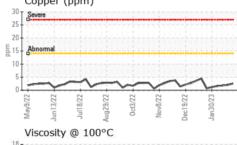
100

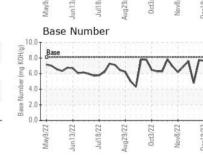
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Sever	re							
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40								
0			2		~	~	ميہ	-
May9/22	Jun13/2:	Jul18/2.	Aug29/2/	0ct3/2;	Nov8/22	Jec19/2:	Jan30/2:	















Certificate L2367

Laboratory Sample No. Unique Number : 10360976

Lab Number : 05781306

: WearCheck USA - 501 Madison Ave., Cary, NC 27513 : WC0699016

Received **Tested** 

: 02 Mar 2023 : 03 Mar 2023

: 03 Mar 2023 - Jonathan Hester Diagnosed 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. 74265 Bombing Range Road Boardman, OR US 97818

**FINLEY BIOENERGY** 

Contact: Blain Middleton bmiddleton@archaea.energy T: (541)481-3232

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

F: