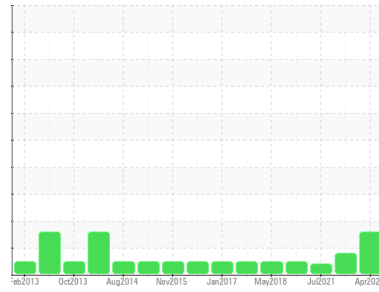




OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Area
EVA CREEK
 Machine Id
WEC 8 - 91981 (S/N 26101)
 Component
Wind Turbine Gearbox
 Fluid
CASTROL OPTIGEAR SYNTHETIC A ISO 320 (475 GAL)

DIAGNOSIS

Recommendation
 The filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Wear
 Gear wear is indicated.

Contamination
 There is a high amount of silt (particulates < 14 microns in size) present in the oil.

Fluid Condition
 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		WC0634835	WC0634820	WC0544198
Sample Date	Client Info		25 Apr 2024	26 May 2022	30 Jul 2021
Machine Age	hrs	Client Info	89637	79541	74859
Oil Age	hrs	Client Info	89637	0	74859
Oil Changed	Client Info		Not Chngd	N/A	Not Chngd
Sample Status			ABNORMAL	ABNORMAL	ATTENTION

WEAR METALS

	method	limit/base	current	history1	history2	
PQ	ASTM D8184	>80	26	29	29	
Iron	ppm	ASTM D5185m	>90	235	225	197
Chromium	ppm	ASTM D5185m	>4	3	4	3
Nickel	ppm	ASTM D5185m	>3	0	0	<1
Titanium	ppm	ASTM D5185m	>10	0	0	<1
Silver	ppm	ASTM D5185m		0	<1	0
Aluminum	ppm	ASTM D5185m	>10	14	2	1
Lead	ppm	ASTM D5185m	>11	0	<1	<1
Copper	ppm	ASTM D5185m	>55	4	5	5
Tin	ppm	ASTM D5185m	>10	<1	0	<1
Antimony	ppm	ASTM D5185m	>5	---	---	0
Vanadium	ppm	ASTM D5185m		<1	<1	<1
Cadmium	ppm	ASTM D5185m		<1	<1	0

ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185m	0	32	2	5
Barium	ppm	ASTM D5185m	0	5	4	0
Molybdenum	ppm	ASTM D5185m	1150	1142	1190	1112
Manganese	ppm	ASTM D5185m		4	3	2
Magnesium	ppm	ASTM D5185m	1800	1870	1822	1658
Calcium	ppm	ASTM D5185m	20	14	15	16
Phosphorus	ppm	ASTM D5185m	1450	1530	1383	1281
Zinc	ppm	ASTM D5185m	1650	1660	1657	1506
Sulfur	ppm	ASTM D5185m	4900	7227	5776	4980

CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>35	14	17	14
Sodium	ppm	ASTM D5185m	>25	10	7	6
Potassium	ppm	ASTM D5185m	>20	<1	0	2
Water	%	ASTM D6304	>.110	0.032	0.042	0.025
ppm Water	ppm	ASTM D6304	>1100	322	426.1	256.5

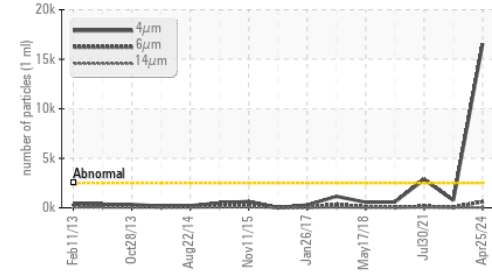
FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	16561	754	2858
Particles >6µm	ASTM D7647	>640	619	74	132
Particles >14µm	ASTM D7647	>80	10	9	8
Particles >21µm	ASTM D7647	>20	2	3	3
Particles >38µm	ASTM D7647	>4	0	1	0
Particles >71µm	ASTM D7647	>3	0	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	21/16/10	17/13/10	19/14/10

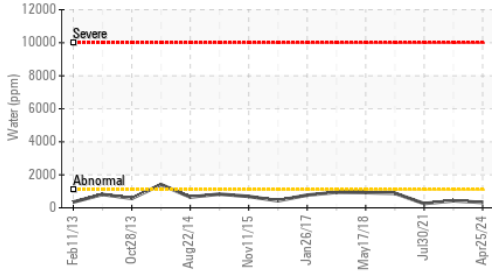


OIL ANALYSIS REPORT

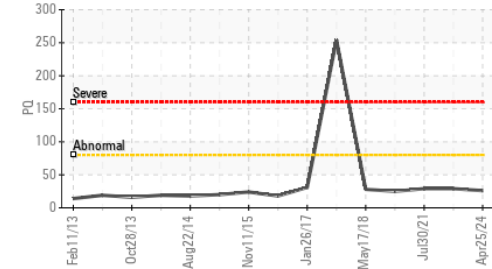
Particle Trend



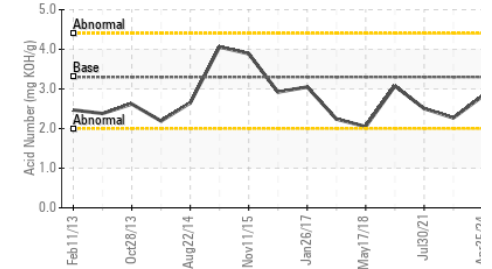
Water (KF)



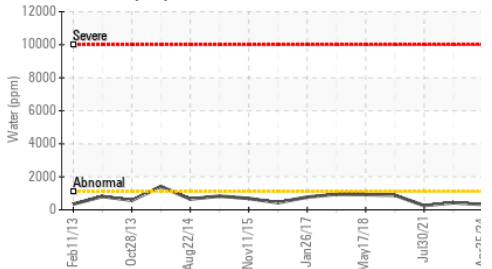
PQ



Acid Number



Water (KF)



FLUID DEGRADATION

method	limit/base	current	history1	history2	
Acid Number (AN)	mg KOH/g ASTM D8045	3.3	2.82	2.27	2.506

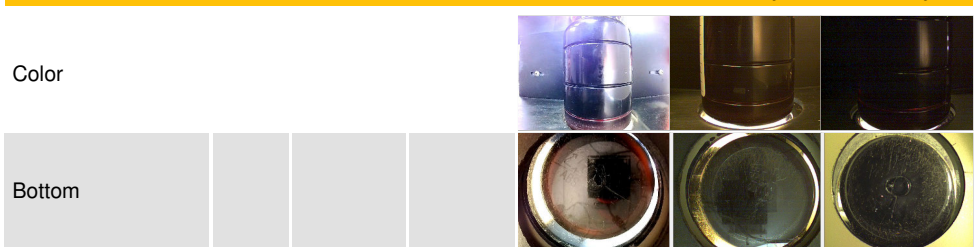
VISUAL

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	>.110	NEG	NEG	NEG
Free Water	scalar *Visual		NEG	NEG	NEG

FLUID PROPERTIES

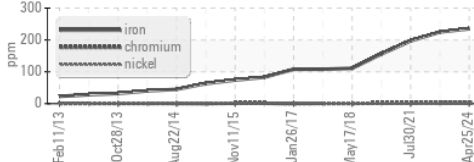
method	limit/base	current	history1	history2	
Visc @ 40°C	cSt ASTM D445	305	334	329	329

SAMPLE IMAGES

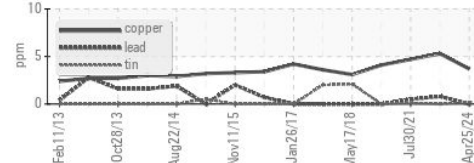


GRAPHS

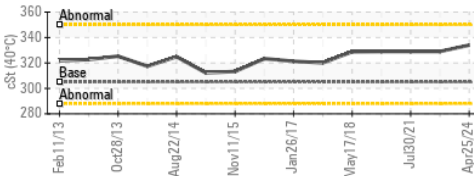
Ferrous Alloys



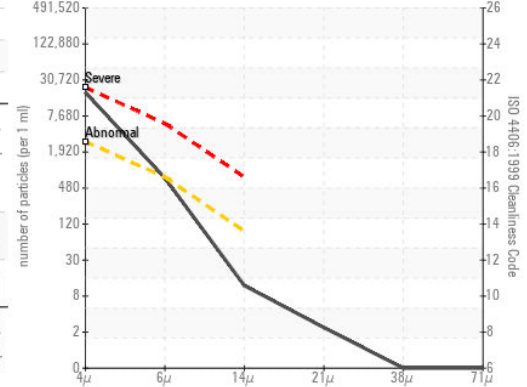
Non-ferrous Metals



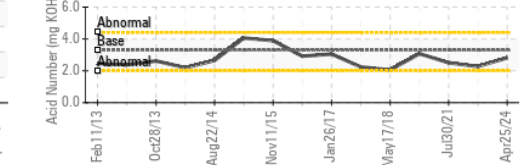
Viscosity @ 40°C



Particle Count



Acid Number



Certificate L2367

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

Sample No. : WC0634835

Lab Number : 06176148

Unique Number : 11022201

Test Package : IND 2 (Additional Tests: KF, PQ, PrtCount)

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)

Received : 10 May 2024

Tested : 16 May 2024

Diagnosed : 16 May 2024 - Angela Borella

GOLDEN VALLEY ELECTRIC

MILE 2.5 HEALY SPUR RD

HEALY, AK

US 99743

Contact: RYAN DEWITT

rjdewitt@gvea.com

T:

F: