



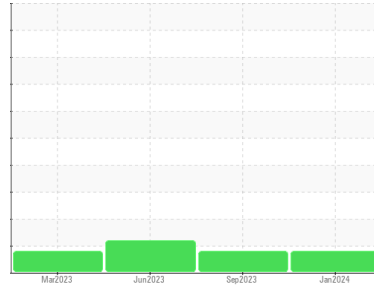
OIL ANALYSIS REPORT

Sample Rating Trend

WEAR



Machine Id
WC-9700B-0104-5 Chiller #4
 Component
Chiller
 Fluid
{not provided} (--- GAL)



DIAGNOSIS

▲ Recommendation

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

▲ Wear

The copper level is abnormal. All other component wear rates are normal.

Contamination

There is no indication of any contamination in the oil. The amount and size of particulates present in the system are acceptable.

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			WC0836557	WC0836525	WC0784745
Sample Date	Client Info			09 Jan 2024	20 Sep 2023	25 Jun 2023
Machine Age	hrs	Client Info		36123	34779	33633
Oil Age	hrs	Client Info		0	0	0
Oil Changed	Client Info			N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>8	<1	<1	0
Chromium	ppm	ASTM D5185m	>2	<1	0	0
Nickel	ppm	ASTM D5185m		0	0	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>3	2	0	0
Lead	ppm	ASTM D5185m	>2	<1	<1	0
Copper	ppm	ASTM D5185m	>8	▲ 186	▲ 134	▲ 115
Tin	ppm	ASTM D5185m	>4	0	<1	<1
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
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		0	0	0
Manganese	ppm	ASTM D5185m		0	0	<1
Magnesium	ppm	ASTM D5185m		<1	<1	<1
Calcium	ppm	ASTM D5185m		65	55	54
Phosphorus	ppm	ASTM D5185m		389	268	276
Zinc	ppm	ASTM D5185m		329	292	292
Sulfur	ppm	ASTM D5185m		1221	755	850

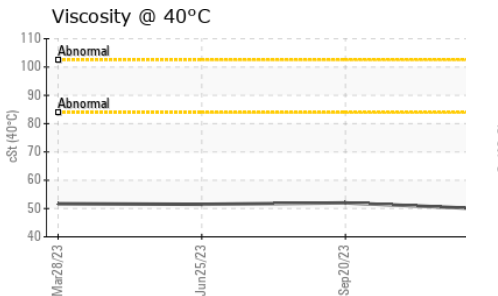
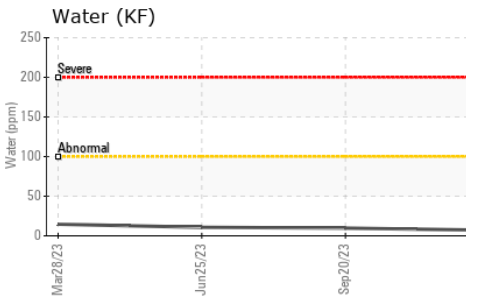
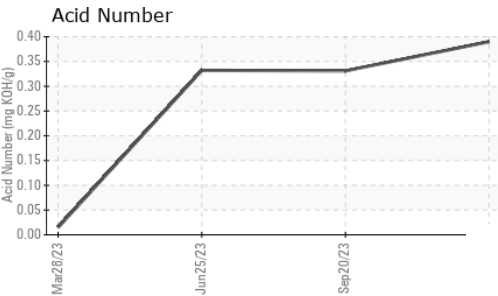
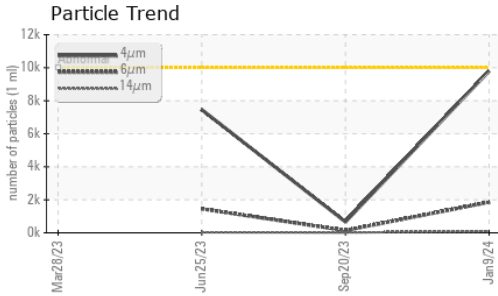
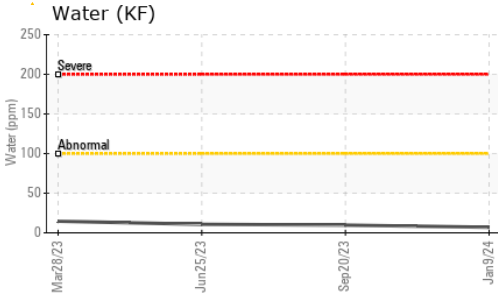
CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	5	4	2
Sodium	ppm	ASTM D5185m		0	0	<1
Potassium	ppm	ASTM D5185m	>20	<1	<1	0
Water	%	ASTM D6304	>0.01	0.001	0.001	0.001
ppm Water	ppm	ASTM D6304	>100	7	9.7	10.7

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>10000	9797	661	7462
Particles >6µm		ASTM D7647	>2500	1858	143	1452
Particles >14µm		ASTM D7647	>320	84	17	31
Particles >21µm		ASTM D7647	>80	41	7	2
Particles >38µm		ASTM D7647	>20	11	1	0
Particles >71µm		ASTM D7647	>4	3	1	0
Oil Cleanliness		ISO 4406 (c)	>20/18/15	20/18/14	17/14/11	20/18/12

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.39	0.331	0.332



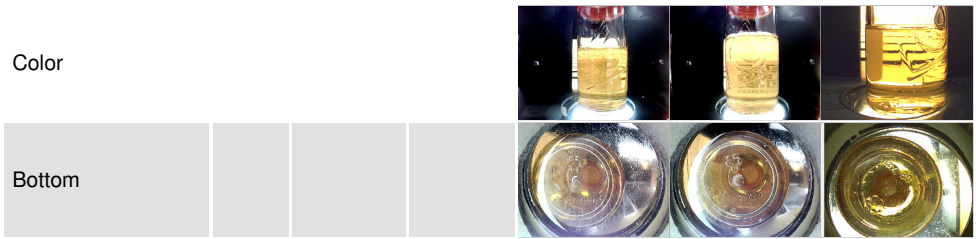
OIL ANALYSIS REPORT



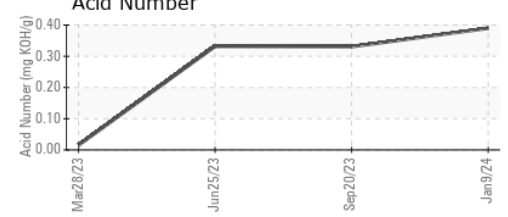
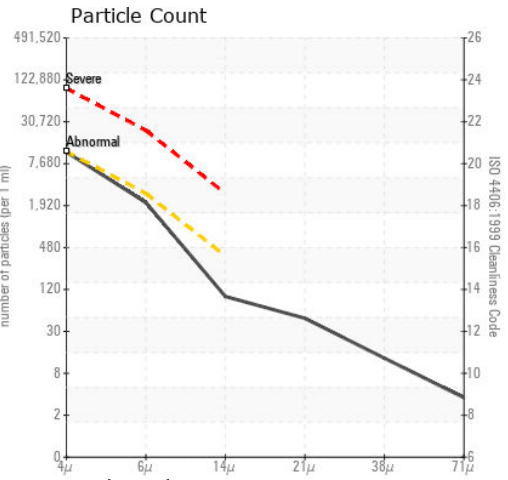
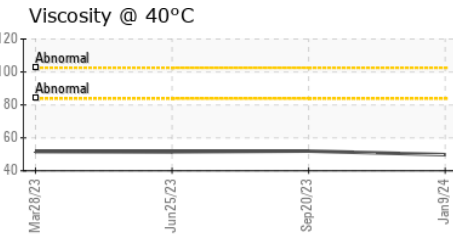
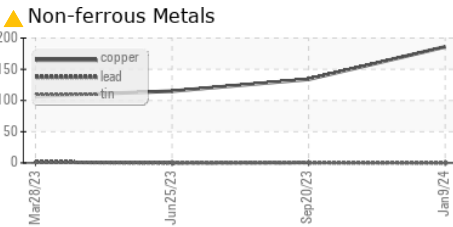
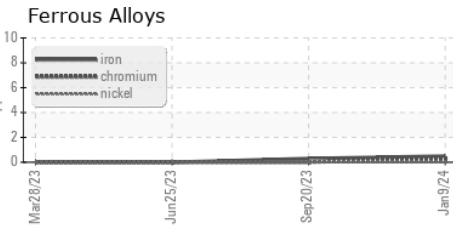
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	▲ MODER
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	scalar	*Visual	NORML	NORML	NORML
Odor	scalar	*Visual	NORML	NORML	NORML
Emulsified Water	scalar	*Visual	>0.01	NEG	NEG
Free Water	scalar	*Visual		NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	49.8	52.0	51.5

SAMPLE IMAGES	method	limit/base	current	history1	history2
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GRAPHS



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0836557 **Received** : 16 Jan 2024
Lab Number : 06061238 **Diagnosed** : 30 Jan 2024
Unique Number : 10832620 **Diagnostician** : Doug Bogart
Test Package : PLANT

Chugach Consolidated Solutions - NSA
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 Annapolis Junction, MD
 US 20701
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 susan.nord@chugachgov.com
 T: (301)688-6363
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Certificate L2367
 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)