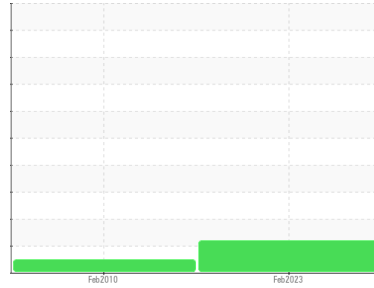




OIL ANALYSIS REPORT

Sample Rating Trend



ISO



TURBINE HYDRAULIC RESEROIR

Machine Id
Component
Hydraulic System

Fluid
CHEVRON GST OIL ISO 32 (--- QTS)

DIAGNOSIS

Recommendation

We recommend you service the filters on this component. Resample at the next service interval to monitor.

Wear

All component wear rates are normal.

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			WC0722121	RW02569015	---
Sample Date	Client Info			01 Feb 2023	02 Feb 2010	---
Machine Age	hrs	Client Info		0	0	---
Oil Age	hrs	Client Info		0	0	---
Oil Changed	Client Info			Not Changed	N/A	---
Sample Status				ABNORMAL	ABNORMAL	---

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	0	<1	---
Chromium	ppm	ASTM D5185m	>10	0	0	---
Nickel	ppm	ASTM D5185m	>10	0	0	---
Titanium	ppm	ASTM D5185m		0	0	---
Silver	ppm	ASTM D5185m		0	<1	---
Aluminum	ppm	ASTM D5185m	>10	0	<1	---
Lead	ppm	ASTM D5185m	>10	0	0	---
Copper	ppm	ASTM D5185m	>75	1	<1	---
Tin	ppm	ASTM D5185m	>10	0	0	---
Antimony	ppm	ASTM D5185m		---	0	---
Vanadium	ppm	ASTM D5185m		0	1	---
Cadmium	ppm	ASTM D5185m		0	<1	---

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		0	0	---
Barium	ppm	ASTM D5185m		0	<1	---
Molybdenum	ppm	ASTM D5185m		0	<1	---
Manganese	ppm	ASTM D5185m		0	0	---
Magnesium	ppm	ASTM D5185m		0	0	---
Calcium	ppm	ASTM D5185m		2	<1	---
Phosphorus	ppm	ASTM D5185m		96	86	---
Zinc	ppm	ASTM D5185m		56	4	---
Sulfur	ppm	ASTM D5185m		1025	1056	---

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	<1	<1	---
Sodium	ppm	ASTM D5185m		1	<1	---
Potassium	ppm	ASTM D5185m	>20	0	2	---

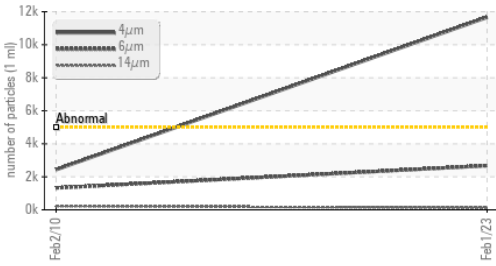
FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	▲ 11664	2430	---
Particles >6µm		ASTM D7647	>1300	▲ 2673	▲ 1324	---
Particles >14µm		ASTM D7647	>160	117	▲ 225	---
Particles >21µm		ASTM D7647	>40	27	▲ 76	---
Particles >38µm		ASTM D7647	>10	2	▲ 11	---
Particles >71µm		ASTM D7647	>3	0	▲ 1	---
Oil Cleanliness		ISO 4406 (c)	>19/17/14	▲ 21/19/14	▲ 18/18/15	---

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		0.063	0.056	---

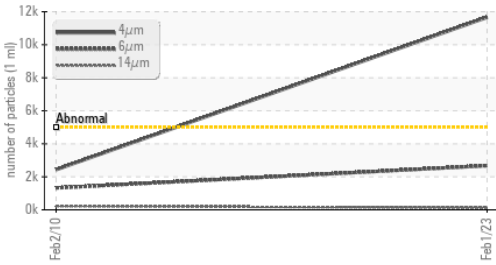


OIL ANALYSIS REPORT

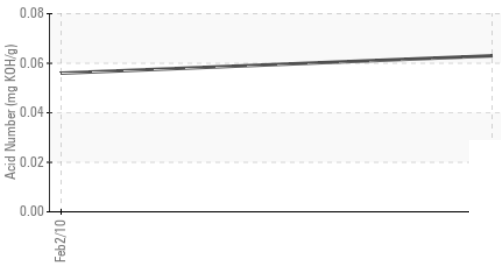
▲ Particle Trend



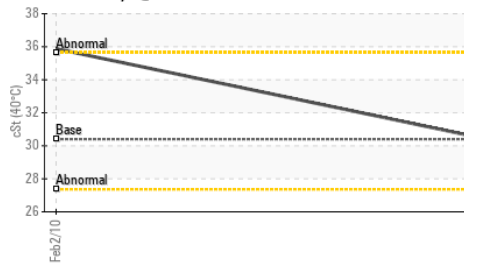
▲ Particle Trend



Acid Number



Viscosity @ 40°C



VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	---
Precipitate	scalar	*Visual	NONE	NONE	---
Silt	scalar	*Visual	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	LIGHT
Sand/Dirt	scalar	*Visual	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	▲ HAZY
Odor	scalar	*Visual	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.1	NEG	▲ 0.2%
Free Water	scalar	*Visual		NEG	---

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	30.4	35.88	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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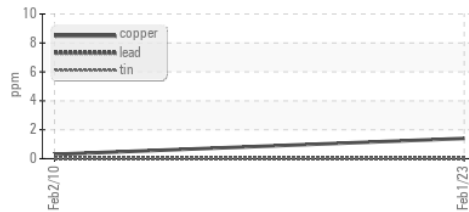
Color		no image	no image
Bottom		no image	no image

GRAPHS

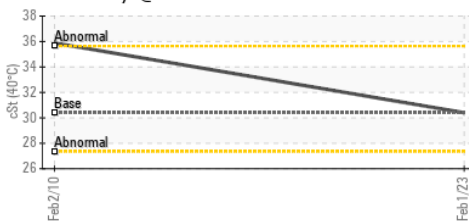
Ferrous Alloys



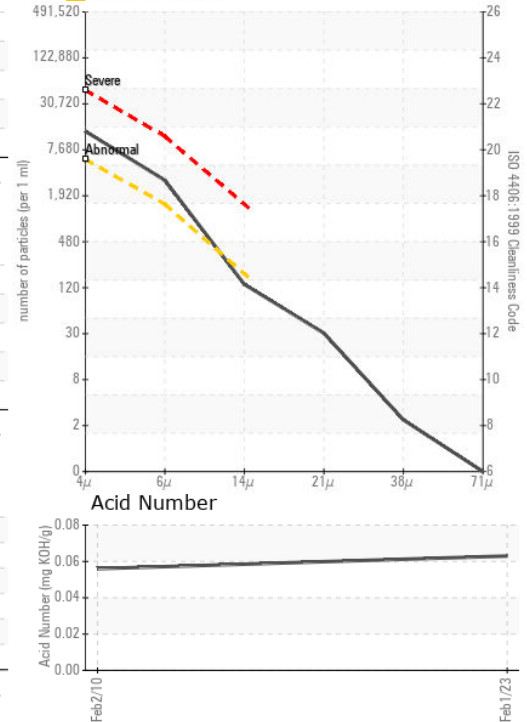
Non-ferrous Metals



Viscosity @ 40°C



▲ Particle Count



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : WC0722121 **Received** : 06 Feb 2023
Lab Number : 05759365 **Diagnosed** : 07 Feb 2023
Unique Number : 10323972 **Diagnostician** : Don Baldrige
Test Package : MOB 2

T.E.S. FILER CITY STATION
 700 MEE ST.
 FILER CITY, MI
 US 49634
 Contact: CLARK JOHNSON
 clark.johnson@cmsenergy.com
 T: (231)723-6573
 F: (231)723-6630

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)