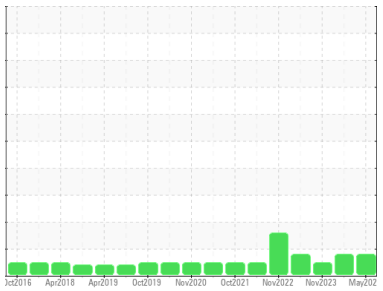
OIL ANALYSIS REPORT

Sample Rating Trend



ISO

Area
DALE A HELLER
Machine Id
[DALE A HELLER] 010 624201-10
Component
Steering
Fluid
CHEVRON RANDO HDZ 68 (--- GAL)

DIAGNOSIS

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

Wear
All component wear rates are normal.

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

Fluid Condition
The AN level is acceptable for this fluid. The condition of the fluid is suitable for further service.

SAMPLE INFORMATION		method	limit/base	current	history1	history2
Sample Number		Client Info		**MW0049573**	MW06186648	MW0058850
Sample Date		Client Info		**28 May 2024**	01 May 2024	01 Nov 2023
Machine Age	hrs	Client Info		**75300**	74655	70500
Oil Age	hrs	Client Info		**0**	0	70500
Oil Changed		Client Info		**N/A**	N/A	N/A
Sample Status				**ATTENTION**	ABNORMAL	NORMAL

CONTAMINATION		method	limit/base	current	history1	history2
Water		WC Method	>0.2	**NEG**	NEG	NEG

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>50	**3**	2	<1
Chromium	ppm	ASTM D5185m	>15	**<1**	<1	0
Nickel	ppm	ASTM D5185m	>5	**0**	<1	0
Titanium	ppm	ASTM D5185m		**<1**	<1	0
Silver	ppm	ASTM D5185m		**0**	<1	0
Aluminum	ppm	ASTM D5185m	>5	**2**	0	0
Lead	ppm	ASTM D5185m	>10	**1**	2	0
Copper	ppm	ASTM D5185m	>50	**22**	21	19
Tin	ppm	ASTM D5185m	>5	**<1**	<1	0
Vanadium	ppm	ASTM D5185m		**0**	<1	0
Cadmium	ppm	ASTM D5185m		**0**	<1	0

ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m	0	**0**	0	0
Barium	ppm	ASTM D5185m	0	**<1**	0	0
Molybdenum	ppm	ASTM D5185m	0	**0**	0	0
Manganese	ppm	ASTM D5185m		**0**	<1	0
Magnesium	ppm	ASTM D5185m	0	**<1**	0	0
Calcium	ppm	ASTM D5185m	75	**45**	47	42
Phosphorus	ppm	ASTM D5185m	275	**370**	389	343
Zinc	ppm	ASTM D5185m	350	**468**	494	403
Sulfur	ppm	ASTM D5185m	550	**946**	1115	967

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>15	**<1**	<1	0
Sodium	ppm	ASTM D5185m		**0**	1	<1
Potassium	ppm	ASTM D5185m	>20	**<1**	0	0

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	**2707**	▲ 5079	290
Particles >6µm		ASTM D7647	>640	**86**	142	117
Particles >14µm		ASTM D7647	>80	**5**	10	13
Particles >21µm		ASTM D7647	>20	**1**	3	5
Particles >38µm		ASTM D7647	>4	**0**	0	0
Particles >71µm		ASTM D7647	>3	**0**	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	**19/14/10**	▲ 20/14/10	15/14/11

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		**0.20**	0.32	0.31

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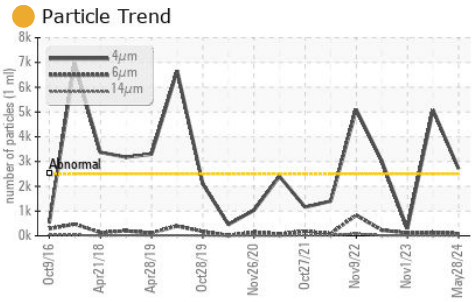
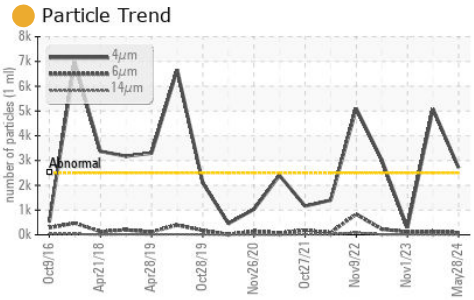
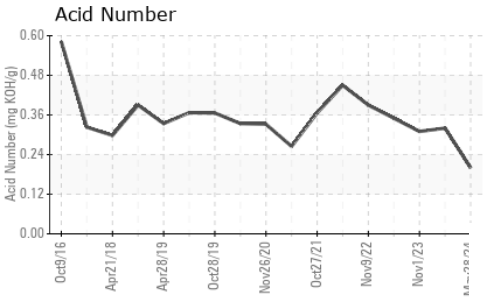
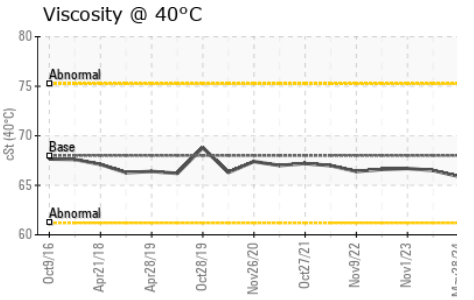


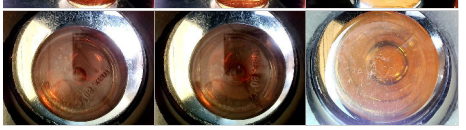




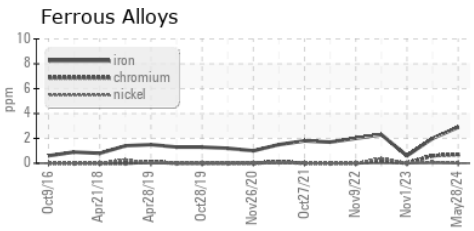


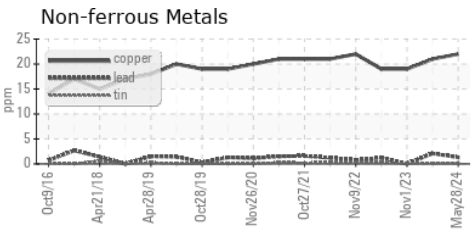
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	**NONE**	NONE	NONE
Precipitate	scalar	*Visual	NONE	**NONE**	NONE	NONE
Silt	scalar	*Visual	NONE	**NONE**	NONE	NONE
Debris	scalar	*Visual	NONE	**NONE**	NONE	NONE
Sand/Dirt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

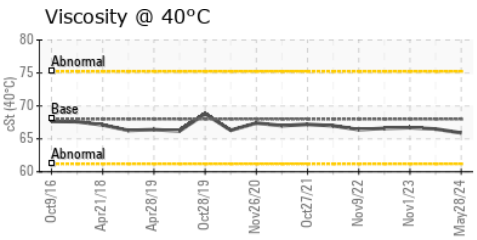
FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	68.0	**65.9**	66.5	66.7

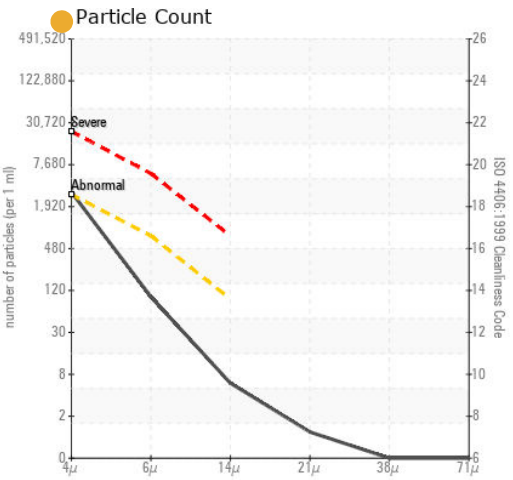
SAMPLE IMAGES	method	limit/base	current	history1	history2
Color					
Bottom					

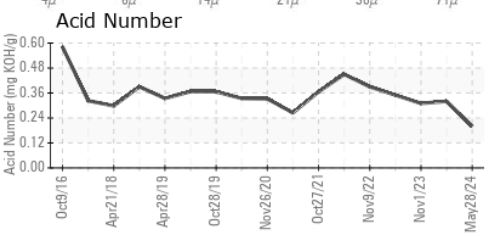
GRAPHS











Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : MW0049573 **Received** : 14 Jun 2024
Lab Number : 06210701 **Tested** : 18 Jun 2024
Unique Number : 11083565 **Diagnosed** : 18 Jun 2024 - Angela Borella
Test Package : MAR 2 (Additional Tests: 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)

INGRAM BARGE
900 S 3RD ST
PADUCAH, KY
US 42003
Contact: JUSTIN WHEELER
justin.wheeler@ingrambarge.com
T:
F: (615)695-3697