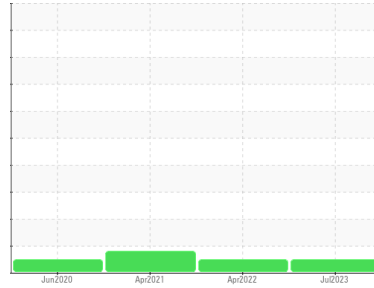


# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Machine Id  
**SH-1**  
Component  
**Hydraulic System**  
Fluid  
**DURAGUARD IND 46 (--- GAL)**

**DIAGNOSIS**

**Recommendation**

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

**Wear**

All component wear rates are normal.

**Contamination**

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The water content is negligible. The system and fluid cleanliness is 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			<b>Y2K0001259</b>	Y2K0001260	Y2K0000408
Sample Date	Client Info			<b>21 Jul 2023</b>	28 Apr 2022	13 Apr 2021
Machine Age	hrs	Client Info		<b>4457</b>	2846	1560
Oil Age	hrs	Client Info		<b>4457</b>	2846	1560
Oil Changed	Client Info			<b>Not Changed</b>	Changed	Not Changed
Sample Status				<b>NORMAL</b>	NORMAL	ABNORMAL

WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185m	>20	<b>0</b>	<1	<1
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Silver	ppm	ASTM D5185m		<b>0</b>	<1	0
Aluminum	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	0
Copper	ppm	ASTM D5185m	>75	<b>16</b>	15	13
Tin	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Antimony	ppm	ASTM D5185m		<b>---</b>	---	0
Vanadium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Cadmium	ppm	ASTM D5185m		<b>&lt;1</b>	0	0

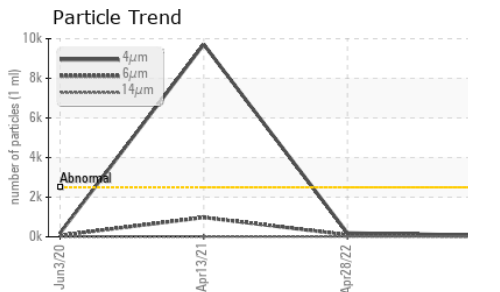
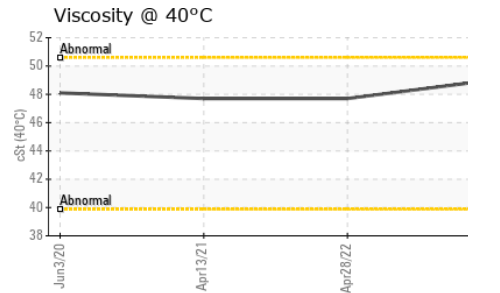
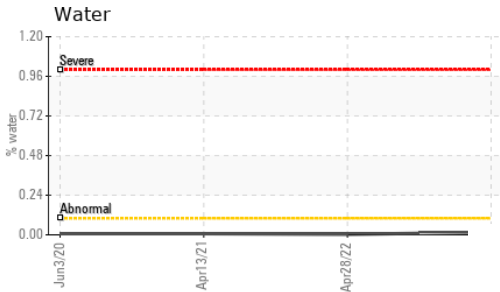
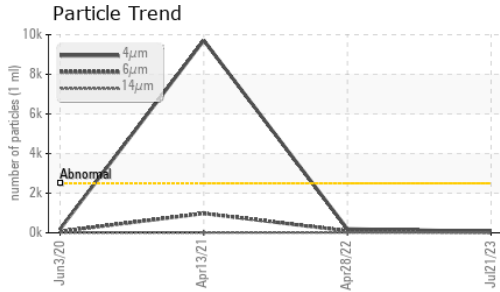
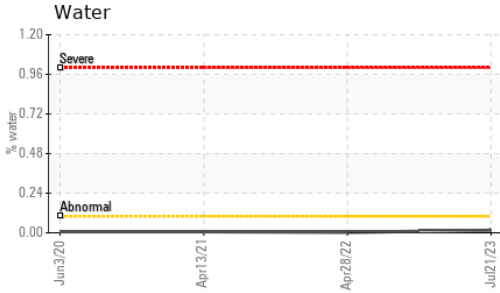
ADDITIVES		method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185m		<b>&lt;1</b>	5	5
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>2</b>	2	2
Manganese	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>5</b>	3	4
Calcium	ppm	ASTM D5185m		<b>153</b>	154	148
Phosphorus	ppm	ASTM D5185m		<b>640</b>	678	633
Zinc	ppm	ASTM D5185m		<b>800</b>	778	782
Sulfur	ppm	ASTM D5185m		<b>1885</b>	1486	1402

CONTAMINANTS		method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185m	>20	<b>&lt;1</b>	<1	0
Sodium	ppm	ASTM D5185m		<b>2</b>	<1	0
Potassium	ppm	ASTM D5185m	>20	<b>2</b>	0	0
Water	%	ASTM D6304	>0.1	<b>0.015</b>	0.003	0.007
ppm Water	ppm	ASTM D6304	>1000	<b>159.1</b>	34.0	71.5

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>2500	<b>72</b>	195	▲ 9713
Particles >6µm		ASTM D7647	>640	<b>33</b>	94	▲ 979
Particles >14µm		ASTM D7647	>80	<b>7</b>	15	14
Particles >21µm		ASTM D7647	>20	<b>1</b>	5	6
Particles >38µm		ASTM D7647	>4	<b>0</b>	0	0
Particles >71µm		ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness		ISO 4406 (c)	>18/16/13	<b>13/12/10</b>	15/14/11	▲ 20/17/11

FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045		<b>0.38</b>	0.39	0.359

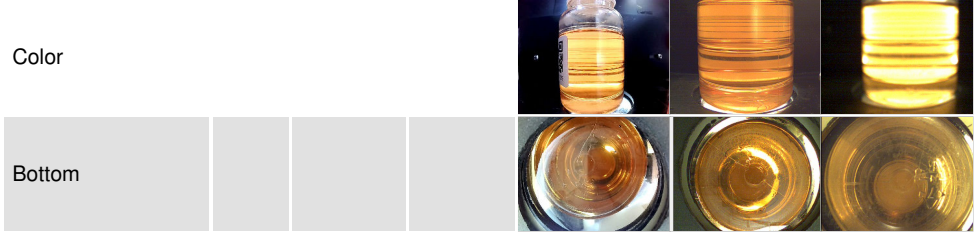
# OIL ANALYSIS REPORT



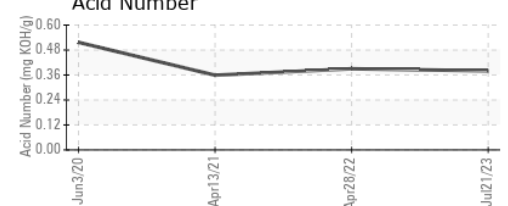
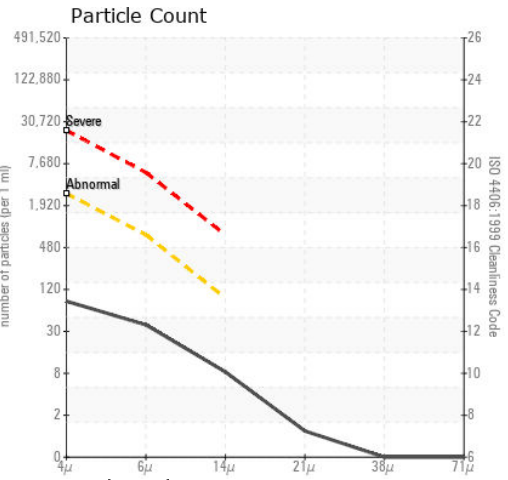
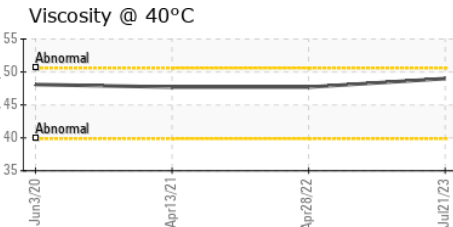
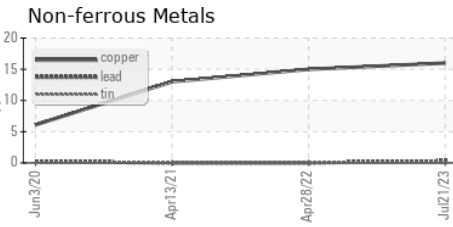
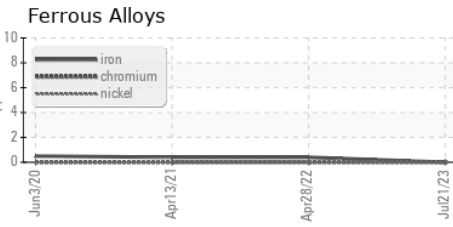
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance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

FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D445	49.0	47.7	47.7

SAMPLE IMAGES	method	limit/base	current	history1	history2
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## GRAPHS



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : Y2K0001259 **Received** : 17 Aug 2023  
**Lab Number** : 05927215 **Diagnosed** : 18 Aug 2023  
**Unique Number** : 10607162 **Diagnostician** : Wes Davis  
**Test Package** : MOB 2 ( Additional Tests: KF )

**CITY OF RED WING SOLID WASTE**  
 1873 BENCH ST  
 RED WING, MN  
 US 55066  
 Contact: JEFF HUPPERT  
 jeff.huppert@ci.red-wing.mn.us  
 T: (651)385-3669  
 F:

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)