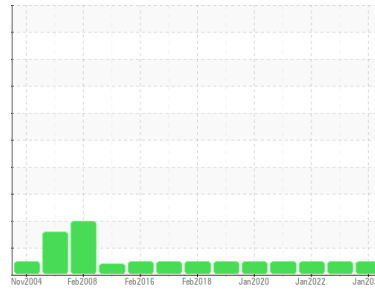




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area  
**Thompson Falls**  
 Machine Id  
**THF06 Governor**

Component  
**Tank Governor System**  
 Fluid  
**LUBRICATION ENG 6802 MULTEC IND OIL 46 (40 GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.

### Wear

All 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		<b>WC0757770</b>	WCI2326306	WCI2326875
Sample Date	Client Info		<b>22 Jan 2024</b>	07 Feb 2023	19 Jan 2022
Machine Age	yrs	Client Info	<b>20</b>	19	18
Oil Age	yrs	Client Info	<b>20</b>	19	18
Oil Changed	Client Info		<b>Not Chngd</b>	Not Chngd	Not Chngd
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.1	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185m	>50	<b>&lt;1</b>	<1	<1
Chromium	ppm	ASTM D5185m	>10	<b>0</b>	0	0
Nickel	ppm	ASTM D5185m	>10	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185m		<b>0</b>	0	0
Silver	ppm	ASTM D5185m		<b>&lt;1</b>	0	0
Aluminum	ppm	ASTM D5185m	>3	<b>&lt;1</b>	0	0
Lead	ppm	ASTM D5185m	>75	<b>2</b>	<1	<1
Copper	ppm	ASTM D5185m	>15	<b>2</b>	<1	<1
Tin	ppm	ASTM D5185m	>55	<b>&lt;1</b>	0	<1
Antimony	ppm	ASTM D5185m	>5	<b>---</b>	---	0
Vanadium	ppm	ASTM D5185m		<b>0</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>0</b>	0	<1
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>&lt;1</b>	<1	0
Manganese	ppm	ASTM D5185m		<b>2</b>	0	0
Magnesium	ppm	ASTM D5185m		<b>2</b>	<1	<1
Calcium	ppm	ASTM D5185m		<b>102</b>	112	122
Phosphorus	ppm	ASTM D5185m		<b>287</b>	283	319
Zinc	ppm	ASTM D5185m		<b>120</b>	126	134
Sulfur	ppm	ASTM D5185m		<b>795</b>	833	813

## CONTAMINANTS

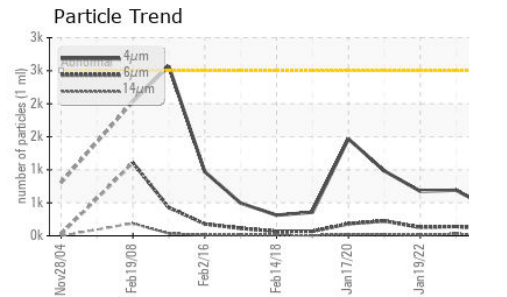
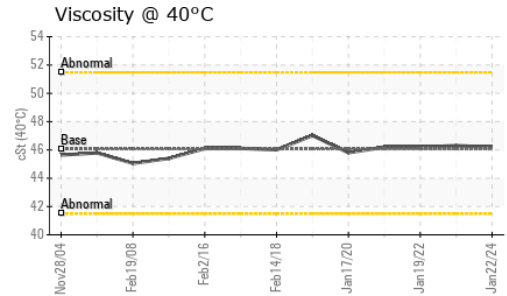
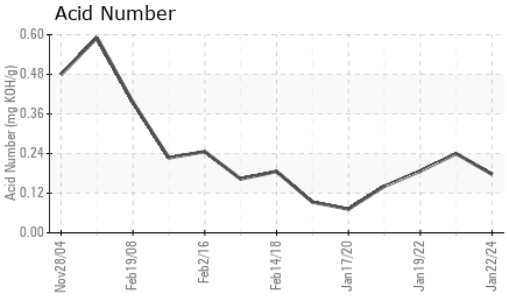
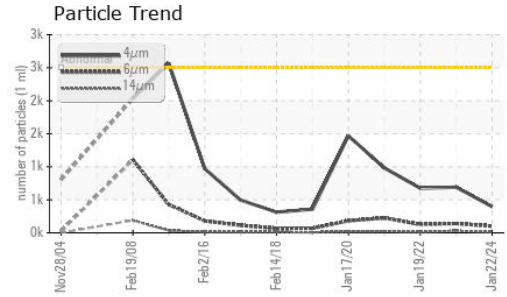
	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185m	>8	<b>2</b>	0	<1
Sodium	ppm	ASTM D5185m		<b>4</b>	2	3
Potassium	ppm	ASTM D5185m	>20	<b>4</b>	<1	0

## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>2500	<b>396</b>	691	674
Particles >6µm	ASTM D7647	>640	<b>100</b>	141	127
Particles >14µm	ASTM D7647	>80	<b>10</b>	30	9
Particles >21µm	ASTM D7647	>20	<b>2</b>	6	2
Particles >38µm	ASTM D7647	>4	<b>0</b>	2	0
Particles >71µm	ASTM D7647	>3	<b>0</b>	0	0
Oil Cleanliness	ISO 4406 (c)	>18/16/13	<b>16/14/10</b>	17/14/12	17/14/10



# OIL ANALYSIS REPORT

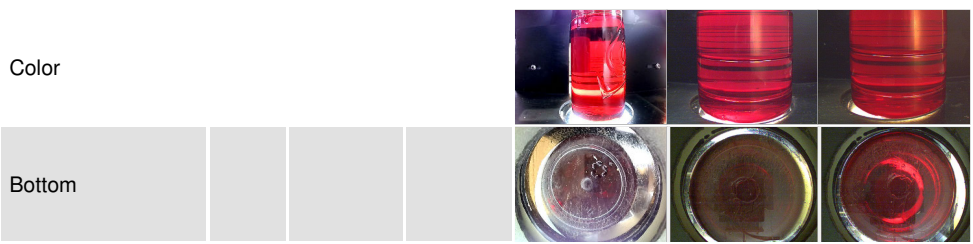


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D8045	<b>0.177</b>	0.24	0.187

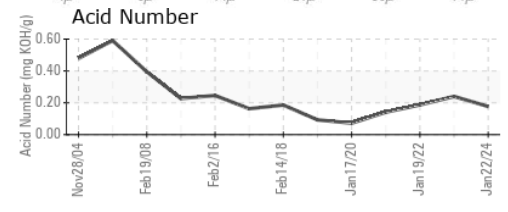
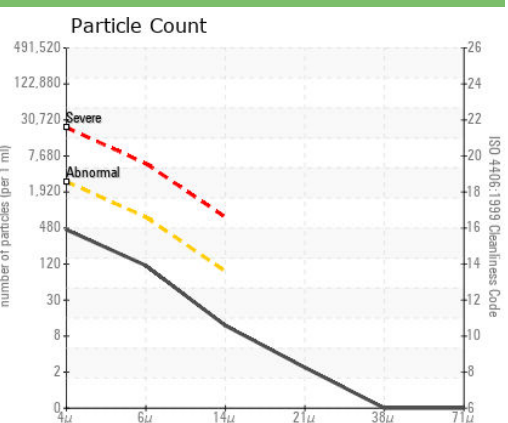
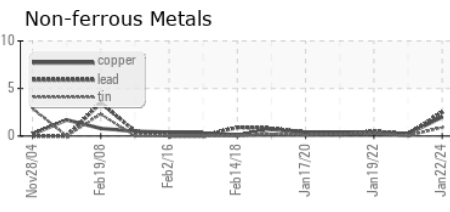
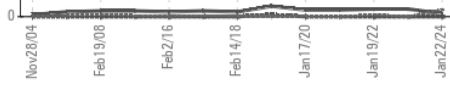
VISUAL	method	limit/base	current	history1	history2
White Metal	scalar	*Visual	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE
Precipitate	scalar	*Visual	NONE	NONE	NONE
Silt	scalar	*Visual	NONE	NONE	NONE
Debris	scalar	*Visual	NONE	NONE	VLITE
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE
Appearance	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	<b>46.2</b>	46.3	46.2

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



**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : WC0757770 **Received** : 01 Feb 2024  
**Lab Number** : 06077660 **Diagnosed** : 04 Feb 2024  
**Unique Number** : 10859751 **Diagnostician** : Don Baldrige  
**Test Package** : IND 2 ( Additional Tests: PrtCount )

**NORTHWESTERN ENERGY**  
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 GREAT FALLS, MT  
 US 59404  
 Contact: BRIAN WARD  
 brian.ward@northwestern.com  
 T:  
 F: (406)533-3401

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)