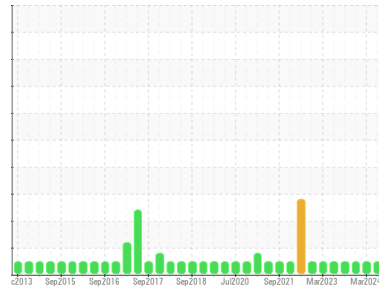




# OIL ANALYSIS REPORT

Sample Rating Trend



**NORMAL**



Area

[132445]

Machine Id

**0038 HILLE 1 MILL POWER PACK**

Component

**Hydraulic System**

Fluid

**MONARCH PREMIUM HYDRAULIC OIL AW R&O 46 (--- GAL)**

## DIAGNOSIS

### Recommendation

Resample at the next service interval to monitor.  
NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

### Wear

All component wear rates are normal.

### Contamination

The system cleanliness is acceptable for your target ISO 4406 cleanliness code. 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>WC0487111</b>	WC0487123	WC0378077
Sample Date	Client Info		<b>28 Jun 2024</b>	28 Mar 2024	20 Dec 2023
Machine Age	hrs	Client Info	<b>0</b>	0	0
Oil Age	hrs	Client Info	<b>0</b>	0	0
Oil Changed	Client Info		<b>N/A</b>	N/A	N/A
Sample Status			<b>NORMAL</b>	NORMAL	NORMAL

## CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.05	<b>NEG</b>	NEG	NEG

## WEAR METALS

	method	limit/base	current	history1	history2	
Iron	ppm	ASTM D5185(m)	>20	<b>8</b>	9	10
Chromium	ppm	ASTM D5185(m)	>20	<b>1</b>	<1	<1
Nickel	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	<1
Lead	ppm	ASTM D5185(m)	>20	<b>5</b>	4	6
Copper	ppm	ASTM D5185(m)	>20	<b>12</b>	11	11
Tin	ppm	ASTM D5185(m)	>20	<b>6</b>	5	4
Antimony	ppm	ASTM D5185(m)		<b>0</b>	0	0
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Beryllium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Cadmium	ppm	ASTM D5185(m)		<b>0</b>	0	0

## ADDITIVES

	method	limit/base	current	history1	history2	
Boron	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1
Barium	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>&lt;1</b>	0	<1
Magnesium	ppm	ASTM D5185(m)		<b>31</b>	28	37
Calcium	ppm	ASTM D5185(m)		<b>84</b>	80	92
Phosphorus	ppm	ASTM D5185(m)		<b>392</b>	410	437
Zinc	ppm	ASTM D5185(m)		<b>462</b>	459	476
Sulfur	ppm	ASTM D5185(m)		<b>1089</b>	1135	1339
Lithium	ppm	ASTM D5185(m)		<b>&lt;1</b>	<1	<1

## CONTAMINANTS

	method	limit/base	current	history1	history2	
Silicon	ppm	ASTM D5185(m)	>15	<b>&lt;1</b>	0	<1
Sodium	ppm	ASTM D5185(m)		<b>1</b>	<1	2
Potassium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	<1	0

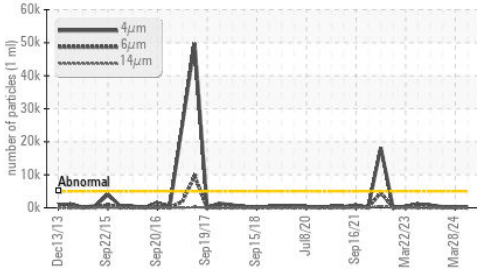
## FLUID CLEANLINESS

	method	limit/base	current	history1	history2
Particles >4µm	ASTM D7647	>5000	<b>238</b>	171	333
Particles >6µm	ASTM D7647	>1300	<b>63</b>	43	61
Particles >14µm	ASTM D7647	>160	<b>8</b>	5	4
Particles >21µm	ASTM D7647	>40	<b>3</b>	4	1
Particles >38µm	ASTM D7647	>10	<b>0</b>	1	1
Particles >71µm	ASTM D7647	>3	<b>0</b>	1	0
Oil Cleanliness	ISO 4406 (c)	>19/17/14	<b>15/13/10</b>	15/13/10	16/13/9

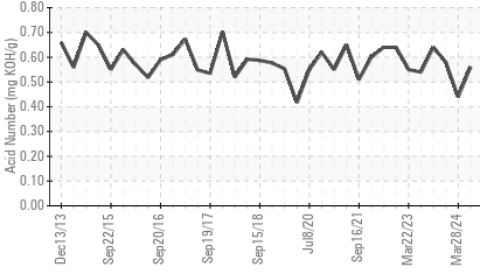


# OIL ANALYSIS REPORT

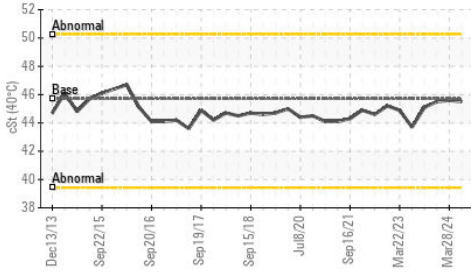
Particle Trend



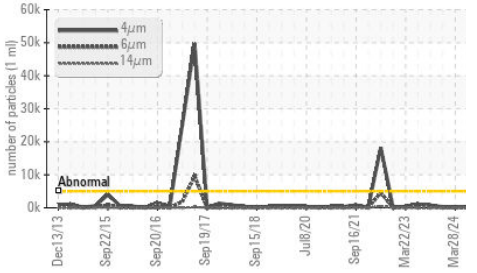
Acid Number



Viscosity @ 40°C



Particle Trend

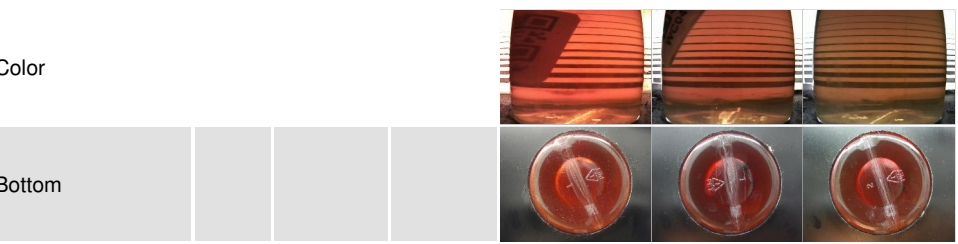


FLUID DEGRADATION	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*	<b>0.56</b>	0.44	0.58

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*	>0.05	NEG	NEG
Free Water	scalar	Visual*	NEG	NEG	NEG

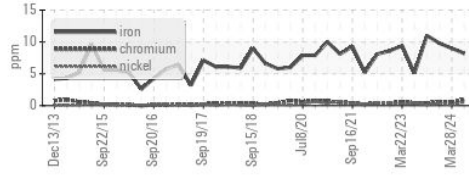
FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	<b>45.5</b>	45.6	45.5

SAMPLE IMAGES

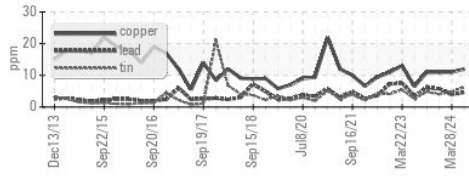


## GRAPHS

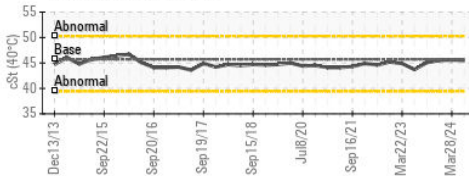
Ferrous Alloys



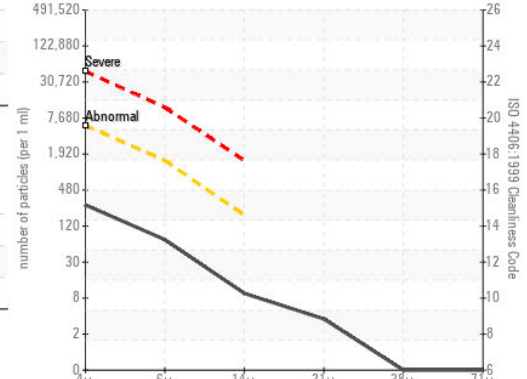
Non-ferrous Metals



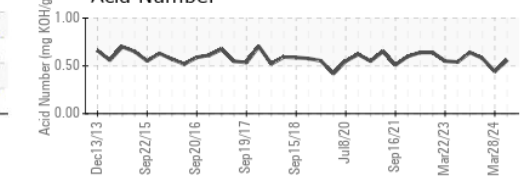
Viscosity @ 40°C



Particle Count



Acid Number



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
 Sample No. : WC0487111  
 Lab Number : 02644852  
 Unique Number : 5802391  
 Test Package : IND 2

**HENDRICKSON CANADA LTD.**  
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 T: (519)273-8707  
 F: (519)271-3103

To discuss this sample report, contact Customer Service at 1-800-268-2131.  
 Test denoted (\*) outside scope of accreditation, (m) method modified, (e) tested at external lab.  
 Validity of results and interpretation are based on the sample and information as supplied.