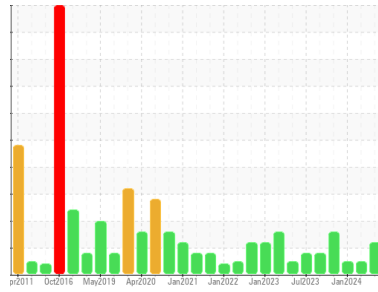




# OIL ANALYSIS REPORT

Sample Rating Trend



ISO



Area  
**Dewatering**  
 Machine Id  
**Hydraulic, Unit, 36-HU-2**  
 Component  
**2 Hydraulic System**  
 Fluid  
**SHELL TELLUS S2 M 46 (--- GAL)**

## DIAGNOSIS

### Recommendation

We recommend you service the filters on this component. 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

There is a light 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			<b>WC0933445</b>	WC0898801	WC0873788
Sample Date	Client Info			<b>11 Jul 2024</b>	09 Apr 2024	09 Jan 2024
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>ATTENTION</b>	NORMAL	NORMAL

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

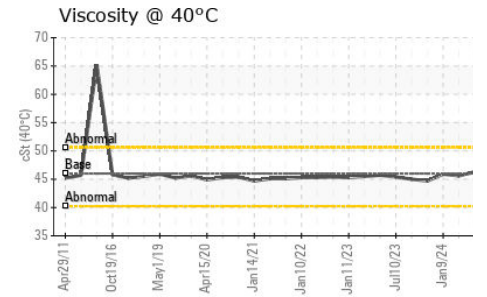
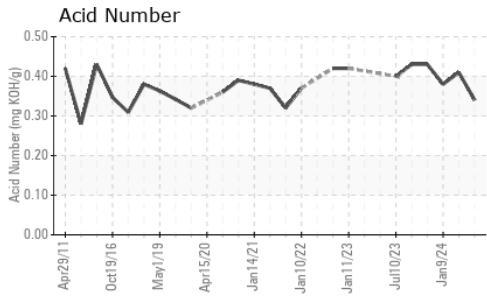
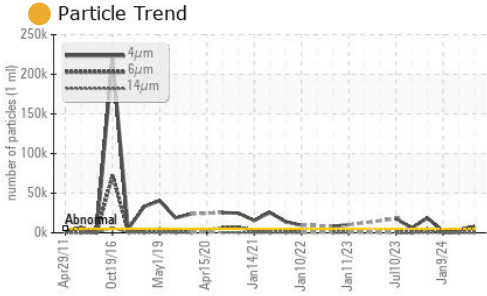
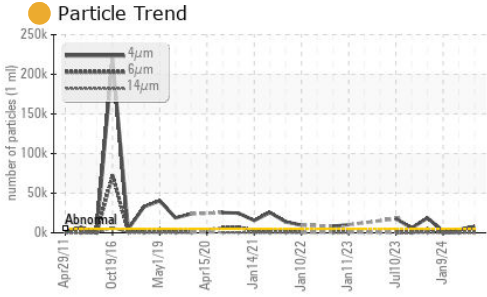
WEAR METALS		method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	9	8
Chromium	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	8	7
Nickel	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	<1
Titanium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	0	<1
Lead	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
Copper	ppm	ASTM D5185(m)	>20	<b>&lt;1</b>	2	2
Tin	ppm	ASTM D5185(m)	>20	<b>0</b>	0	0
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	0
Barium	ppm	ASTM D5185(m)		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185(m)		<b>0</b>	0	0
Manganese	ppm	ASTM D5185(m)		<b>0</b>	0	0
Magnesium	ppm	ASTM D5185(m)		<b>64</b>	63	63
Calcium	ppm	ASTM D5185(m)		<b>10</b>	6	7
Phosphorus	ppm	ASTM D5185(m)		<b>277</b>	279	284
Zinc	ppm	ASTM D5185(m)		<b>334</b>	326	337
Sulfur	ppm	ASTM D5185(m)		<b>631</b>	627	672
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>0</b>	0	1
Sodium	ppm	ASTM D5185(m)		<b>0</b>	<1	<1
Potassium	ppm	ASTM D5185(m)	>20	<b>0</b>	5	<1

FLUID CLEANLINESS		method	limit/base	current	history1	history2
Particles >4µm		ASTM D7647	>5000	<b>8046</b>	3979	2284
Particles >6µm		ASTM D7647	>1300	<b>2053</b>	944	235
Particles >14µm		ASTM D7647	>160	<b>53</b>	50	11
Particles >21µm		ASTM D7647	>40	<b>6</b>	10	3
Particles >38µm		ASTM D7647	>10	<b>1</b>	1	1
Particles >71µm		ASTM D7647	>3	<b>0</b>	1	1
Oil Cleanliness		ISO 4406 (c)	>19/17/14	<b>20/18/13</b>	19/17/13	18/15/11

# OIL ANALYSIS REPORT

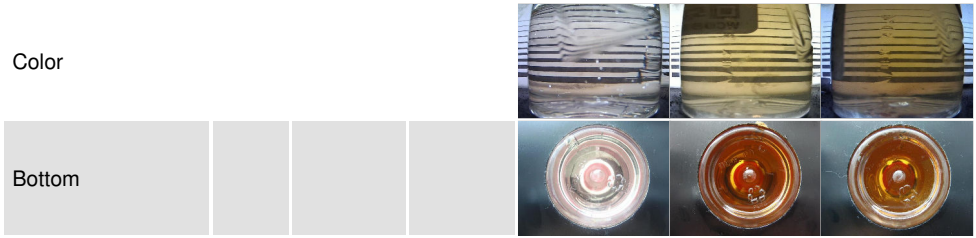


FLUID DEGRADATION		method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974*		<b>0.34</b>	0.41	0.38

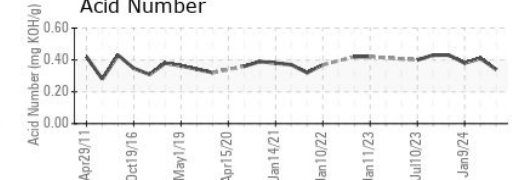
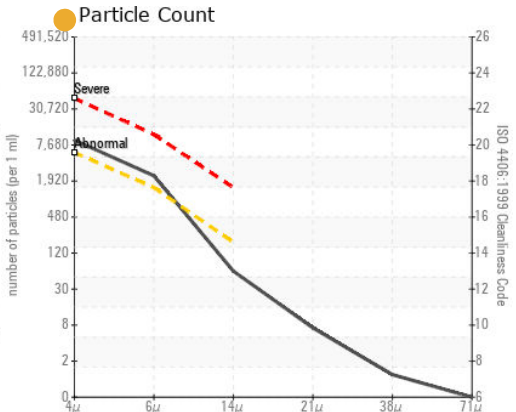
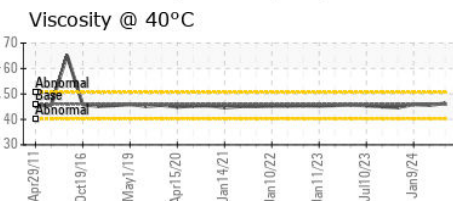
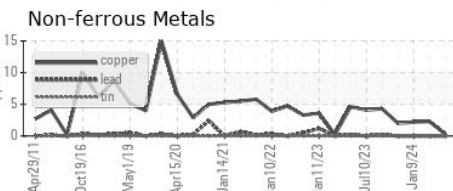
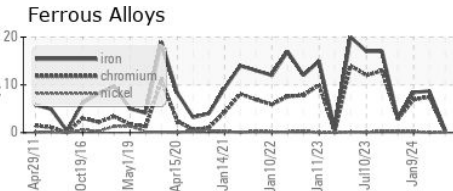
VISUAL		method	limit/base	current	history1	history2
White Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Precipitate	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.05	<b>NEG</b>	NEG	NEG
Free Water	scalar	Visual*		<b>NEG</b>	NEG	NEG

FLUID PROPERTIES		method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	46.0	<b>46.3</b>	45.6	45.9

### SAMPLE IMAGES



### GRAPHS



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0933445 **Received** : 19 Jul 2024  
**Lab Number** : **02648955** **Tested** : 22 Jul 2024  
**Unique Number** : 5814507 **Diagnosed** : 22 Jul 2024 - Wes Davis  
**Test Package** : IND 2

**Vale - Clarabelle Mill**  
 MTW (Mill, Tailings & Water)  
 COPPER CLIFF, ON  
 CA P0M1N0  
 Contact: Shannon Kingsley  
 shannon.kingsley@vale.com

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.

F: (705)682-6273