



# OIL ANALYSIS REPORT

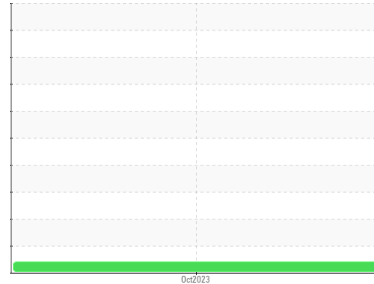
Sample Rating Trend

VISCOSITY

Machine Id  
**11544230**

Component  
**Turbine**

Fluid  
**SHELL TURBO T ISO 100 (--- GAL)**



## DIAGNOSIS

### Recommendation

Confirm the source of the lubricant being utilized for top-up/fill. Resample at the next service interval to monitor. The fluid was specified as SHELL TURBO T ISO 100, however, a fluid match indicates that this fluid is ISO 150 R&O Hydraulic Oil. Please confirm the oil type and grade on your next sample.

### Wear

All component wear rates are normal.

### Contamination

There is no indication of any contamination in the oil.

### Fluid Condition

Viscosity of sample indicates oil is within ISO 150 range, advise investigate. This plus the additive levels indicates that this is not the same brand, or type of oil as reported. The condition of the oil is acceptable for the time in service.

## SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		<b>WC0814346</b>	---	---
Sample Date	Client Info		<b>16 Oct 2023</b>	---	---
Machine Age	hrs	Client Info	<b>0</b>	---	---
Oil Age	hrs	Client Info	<b>0</b>	---	---
Oil Changed	Client Info		<b>N/A</b>	---	---
Sample Status			<b>ABNORMAL</b>	---	---

## WEAR METALS

	method	limit/base	current	history1	history2
Iron	ppm	ASTM D5185(m) >15	<b>&lt;1</b>	---	---
Chromium	ppm	ASTM D5185(m) >4	<b>0</b>	---	---
Nickel	ppm	ASTM D5185(m) >2	<b>0</b>	---	---
Titanium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Silver	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---
Aluminum	ppm	ASTM D5185(m) >10	<b>0</b>	---	---
Lead	ppm	ASTM D5185(m)	<b>29</b>	---	---
Copper	ppm	ASTM D5185(m) >5	<b>4</b>	---	---
Tin	ppm	ASTM D5185(m) >5	<b>0</b>	---	---
Antimony	ppm	ASTM D5185(m)	<b>0</b>	---	---
Vanadium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Beryllium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Cadmium	ppm	ASTM D5185(m)	<b>0</b>	---	---

## ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---
Barium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---
Molybdenum	ppm	ASTM D5185(m)	<b>0</b>	---	---
Manganese	ppm	ASTM D5185(m)	<b>0</b>	---	---
Magnesium	ppm	ASTM D5185(m)	<b>0</b>	---	---
Calcium	ppm	ASTM D5185(m)	<b>3</b>	---	---
Phosphorus	ppm	ASTM D5185(m)	<b>76</b>	---	---
Zinc	ppm	ASTM D5185(m)	<b>32</b>	---	---
Sulfur	ppm	ASTM D5185(m)	<b>518</b>	---	---
Lithium	ppm	ASTM D5185(m)	<b>&lt;1</b>	---	---

## CONTAMINANTS

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

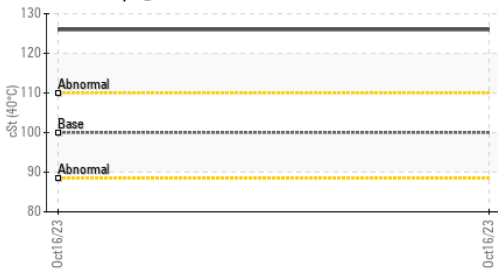
## VISUAL

	method	limit/base	current	history1	history2
White Metal	scalar	Visual* NONE	<b>NONE</b>	---	---
Yellow Metal	scalar	Visual* NONE	<b>NONE</b>	---	---
Precipitate	scalar	Visual* NONE	<b>NONE</b>	---	---
Silt	scalar	Visual* NONE	<b>NONE</b>	---	---
Debris	scalar	Visual* NONE	<b>VLITE</b>	---	---
Sand/Dirt	scalar	Visual* NONE	<b>NONE</b>	---	---
Appearance	scalar	Visual* NORML	<b>NORML</b>	---	---
Odor	scalar	Visual* NORML	<b>NORML</b>	---	---
Emulsified Water	scalar	Visual* >0.03	<b>NEG</b>	---	---
Free Water	scalar	Visual*	<b>NEG</b>	---	---

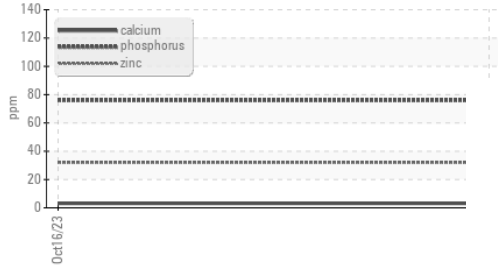


# OIL ANALYSIS REPORT

## ▲ Viscosity @ 40°C



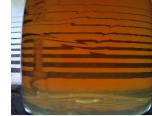
## Additives



FLUID PROPERTIES	method	limit/base	current	history1	history2
Visc @ 40°C	cSt	ASTM D7279(m)	▲ 126	---	---

SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color



no image

no image

Bottom

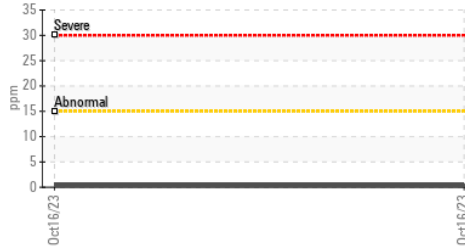


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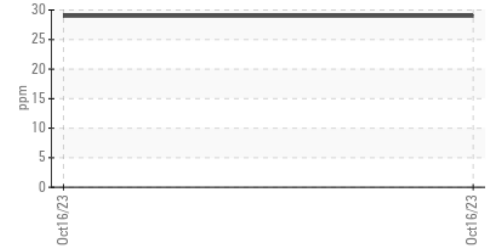
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## GRAPHS

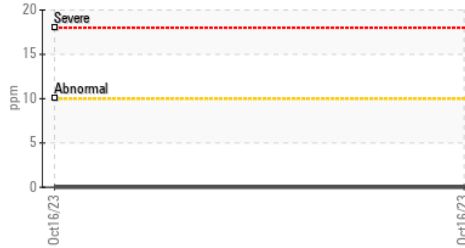
### Iron (ppm)



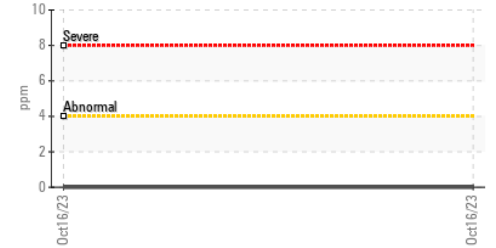
### Lead (ppm)



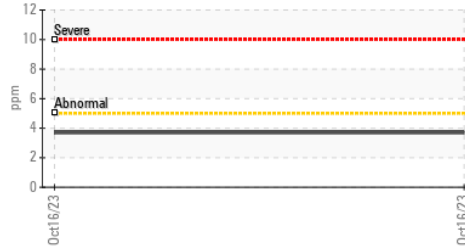
### Aluminum (ppm)



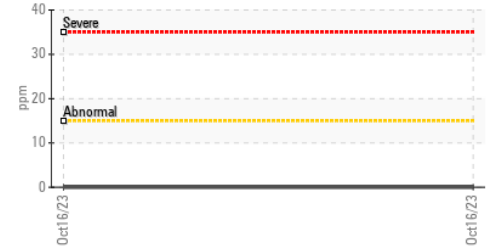
### Chromium (ppm)



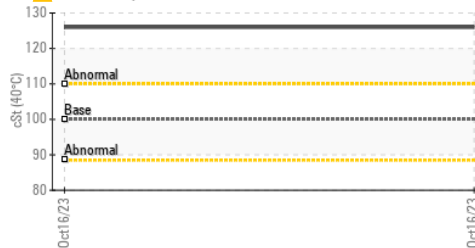
### Copper (ppm)



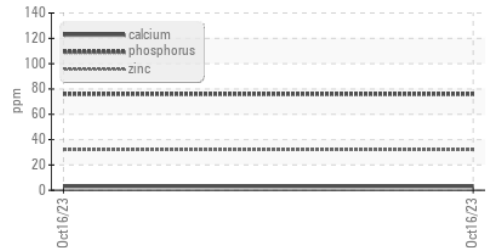
### Silicon (ppm)



## ▲ Viscosity @ 40°C



## Additives



ISO 17025:2017  
Accredited  
Laboratory

**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : WC0814346 **Received** : 27 Oct 2023  
**Lab Number** : 02592419 **Diagnosed** : 27 Oct 2023  
**Unique Number** : 5669498 **Diagnostician** : Kevin Marson  
**Test Package** : MOB 1

**Vale - Copper Cliff Smelter**  
 COPPER CLIFF SMELTER WAREHOUSE, 155 BALSAM ST.  
 COPPER CLIFF, ON  
 CA P0M 1N0  
 Contact: Jacynthe Gelinat  
 jacynthe.gelinat@vale.com  
 T: (705)682-5980  
 F: (705)682-6535

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.