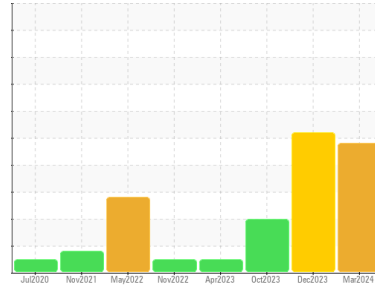




PROBLEM SUMMARY

Sample Rating Trend

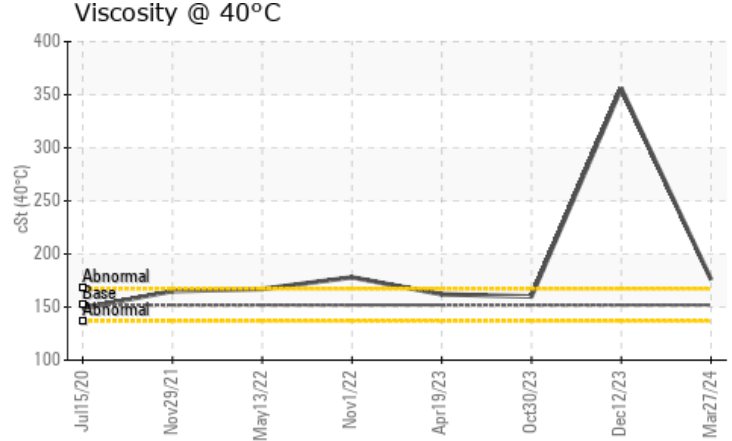
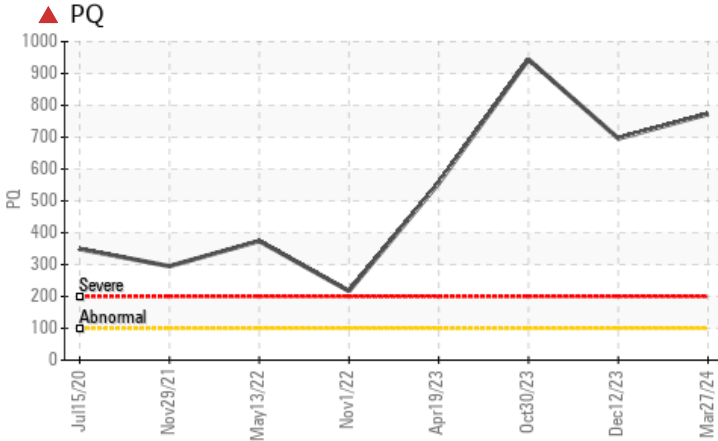


Machine Id
10574142

Component
Gearbox

Fluid
SHELL MORLINA OIL 150 (--- GAL)

COMPONENT CONDITION SUMMARY



RECOMMENDATION

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

PROBLEMATIC TEST RESULTS

Sample Status	ASTM D8184*	SEVERE	SEVERE	MARGINAL
PQ		▲ 773	▲ 696	▲ 944
Appearance	scalar Visual*	▲ LAYRD	▲ LAYRD	NORML

Customer Id: INCOOLE
Sample No.: WC0884184
Lab Number: 02625224
Test Package: IND 2



To manage this report scan the QR code

To discuss the diagnosis or test data:
Kevin Marson +1 (289)291-4644 x4644
Kevin.Marson@wearcheck.com

To change component or sample information:
Gloria Gonzalez +1 (289)291-4643 x4643
gloria.gonzalez@wearcheck.com

RECOMMENDED ACTIONS

Action	Status	Date	Done By	Description
Change Fluid	---	---	?	We recommend that you drain the oil from the component if this has not already been done.
Resample	---	---	?	We recommend an early resample to monitor this condition.
Information Required	---	---	?	NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

HISTORICAL DIAGNOSIS

12 Dec 2023 Diag: Kevin Marson

WEAR



We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. PQ levels are severe. The very high ferrous density (PQ) index indicates that severe wear is occurring. The sample contained a visible layer of foreign fluid contaminant, the origin and/or type of fluid is unknown. Viscosity of sample indicates oil is within ISO 320 range, advise investigate. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

view report



30 Oct 2023 Diag: Kevin Marson

WEAR



No corrective action is recommended at this time. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. PQ levels are marginal. Light concentration of visible metal present. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

view report



19 Apr 2023 Diag: Kevin Marson

NORMAL



Resample at the next service interval to monitor. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample. All component wear rates are normal. There is no indication of any contamination in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

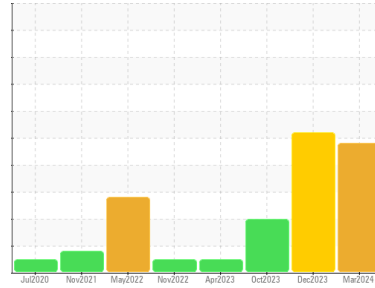
view report





OIL ANALYSIS REPORT

Sample Rating Trend



WEAR



Machine Id
10574142

Component
Gearbox

Fluid
SHELL MORLINA OIL 150 (--- GAL)

DIAGNOSIS

▲ Recommendation

We recommend that you drain the oil from the component if this has not already been done. We recommend an early resample to monitor this condition. NOTE: Please provide information regarding reservoir capacity, filter type and micron rating with next sample.

▲ Wear

PQ levels are severe. The very high ferrous density (PQ) index indicates that severe wear is occurring.

▲ Contamination

The sample contained a visible layer of foreign fluid contaminant, the origin and/or type of fluid is unknown.

Fluid Condition

The viscosity of the oil is higher than normal, possibly indicating the addition of a heavier grade of oil. The AN level is acceptable for this fluid. The oil is no longer serviceable as a result of the abnormal and/or severe wear.

SAMPLE INFORMATION

	method	limit/base	current	history1	history2
Sample Number	Client Info		WC0884184	WC0811767	WC0718785
Sample Date	Client Info		27 Mar 2024	12 Dec 2023	30 Oct 2023
Machine Age	hrs	Client Info	0	0	0
Oil Age	hrs	Client Info	0	0	0
Oil Changed	Client Info		N/A	N/A	N/A
Sample Status			SEVERE	SEVERE	MARGINAL

CONTAMINATION

	method	limit/base	current	history1	history2
Water	WC Method	>0.2	NEG	NEG	NEG

WEAR METALS

	method	limit/base	current	history1	history2
PQ	ASTM D8184*		▲ 773	▲ 696	▲ 944
Iron	ppm	ASTM D5185(m) >200	14	8	47
Chromium	ppm	ASTM D5185(m) >15	0	0	0
Nickel	ppm	ASTM D5185(m) >15	0	0	<1
Titanium	ppm	ASTM D5185(m)	0	0	0
Silver	ppm	ASTM D5185(m)	0	0	<1
Aluminum	ppm	ASTM D5185(m) >25	0	<1	0
Lead	ppm	ASTM D5185(m) >100	0	<1	<1
Copper	ppm	ASTM D5185(m) >200	2	13	5
Tin	ppm	ASTM D5185(m) >25	0	0	0
Antimony	ppm	ASTM D5185(m) >5	0	0	0
Vanadium	ppm	ASTM D5185(m)	0	0	0
Beryllium	ppm	ASTM D5185(m)	0	0	0
Cadmium	ppm	ASTM D5185(m)	0	0	0

ADDITIVES

	method	limit/base	current	history1	history2
Boron	ppm	ASTM D5185(m)	<1	<1	<1
Barium	ppm	ASTM D5185(m)	0	0	0
Molybdenum	ppm	ASTM D5185(m)	0	0	0
Manganese	ppm	ASTM D5185(m)	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	<1	0
Calcium	ppm	ASTM D5185(m)	0	<1	6
Phosphorus	ppm	ASTM D5185(m)	37	42	54
Zinc	ppm	ASTM D5185(m)	4	8	17
Sulfur	ppm	ASTM D5185(m)	175	364	227
Lithium	ppm	ASTM D5185(m)	<1	<1	<1

CONTAMINANTS

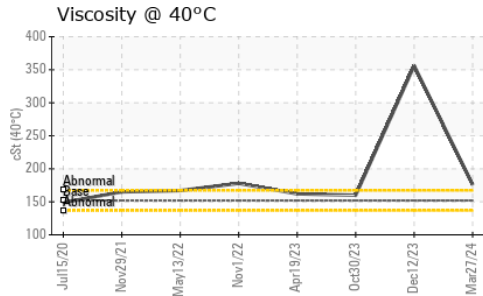
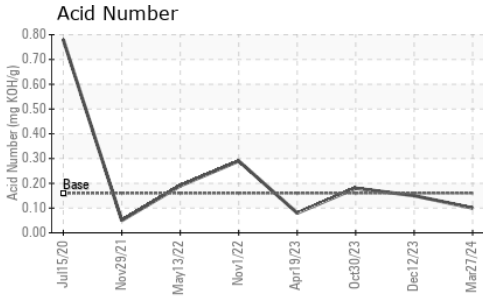
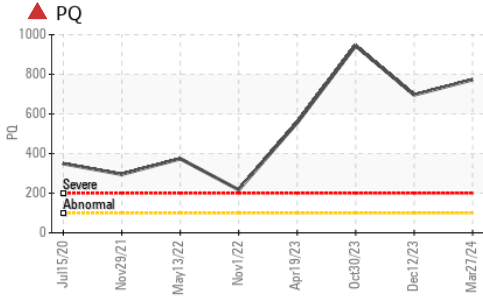
	method	limit/base	current	history1	history2
Silicon	ppm	ASTM D5185(m) >50	2	3	25
Sodium	ppm	ASTM D5185(m)	0	0	1
Potassium	ppm	ASTM D5185(m) >20	2	<1	10

FLUID DEGRADATION

	method	limit/base	current	history1	history2
Acid Number (AN)	mg KOH/g	ASTM D974* 0.16	0.10	0.15	0.18



OIL ANALYSIS REPORT



PARAMETER	method	limit/base	current	history1	history2	
White Metal	scalar	Visual*	NONE	VLITE	NONE	VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Precipitate	scalar	Visual*	NONE	NONE	NONE	NONE
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	VLITE	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	NONE	NONE	NONE
Appearance	scalar	Visual*	NORML	▲ LAYRD	▲ LAYRD	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	NEG	NEG
Free Water	scalar	Visual*		NEG	NEG	NEG

FLUID PROPERTIES	method	limit/base	current	history1	history2	
Visc @ 40°C	cSt	ASTM D7279(m)	152	176	▲ 356	160

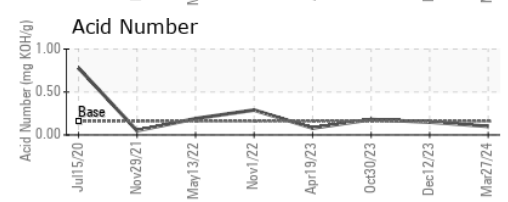
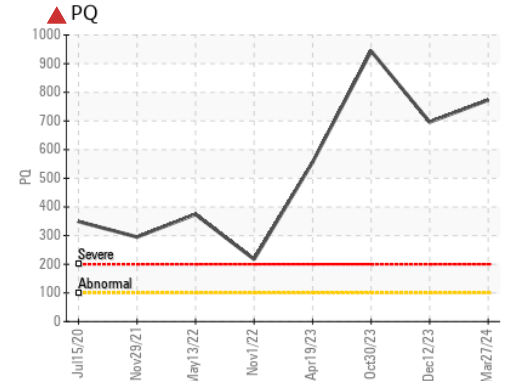
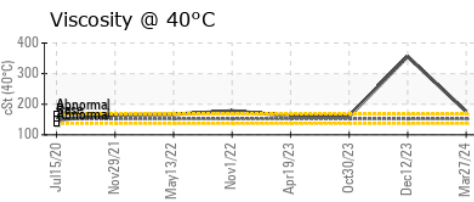
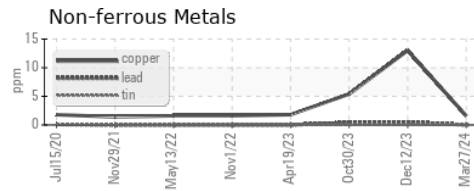
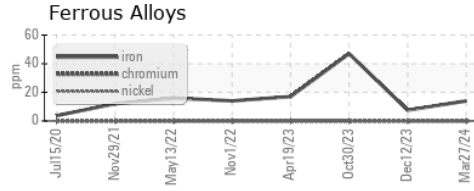
SAMPLE IMAGES	method	limit/base	current	history1	history2
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Color

Bottom

PrtFilter

GRAPHS



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0884184
Lab Number : 02625224
Unique Number : 5750343
Test Package : IND 2 (Additional Tests: TAN Man)

Vale - Coleman Mine
 COLEMAN MINE (PLANT 10), 117 Mine Road
 LEVACK, ON
 CA P0M 2C0
 Contact: Ryan Davies
 ryan.davies@vale.com
 T: (705)682-8952
 F: (705)966-4114

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.