



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
10568016
Component
Rear Gearbox
Fluid
SHELL OMALA 220 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor. Please specify the component make and model with your next sample.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		WC0884667	WC0769863	WC0281963
Sample Date		Client Info		22 Jan 2024	07 Jun 2023	23 Jul 2017
Machine Age	days	Client Info		0	0	0
Oil Age	days	Client Info		0	0	0
Filter Age	days	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>200	65	3	105
Chromium	ppm	ASTM D5185(m)	>10	<1	0	<1
Nickel	ppm	ASTM D5185(m)	>10	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	<1
Silver	ppm	ASTM D5185(m)		0	0	0
Aluminum	ppm	ASTM D5185(m)	>25	<1	0	<1
Lead	ppm	ASTM D5185(m)	>50	4	0	5
Copper	ppm	ASTM D5185(m)	>200	<1	<1	1
Tin	ppm	ASTM D5185(m)	>10	0	<1	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	NONE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

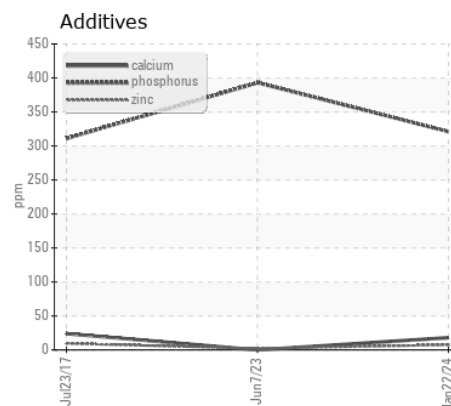
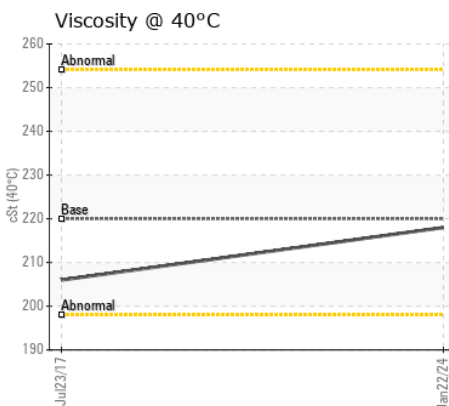
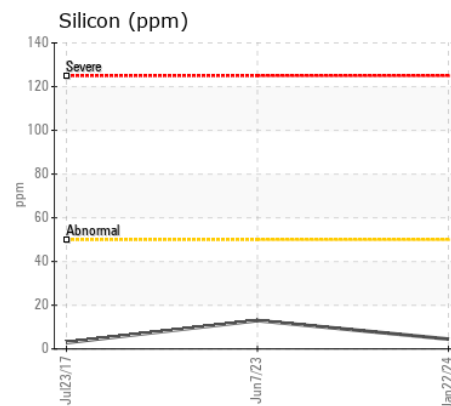
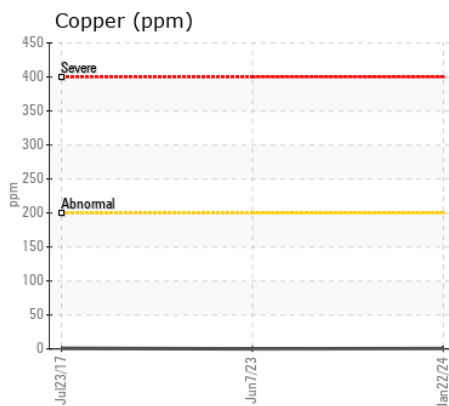
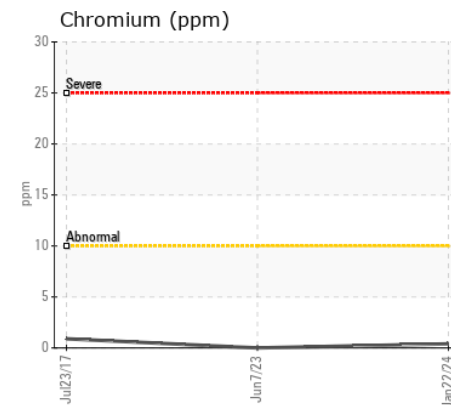
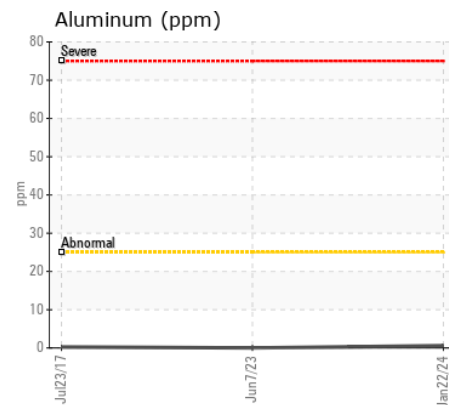
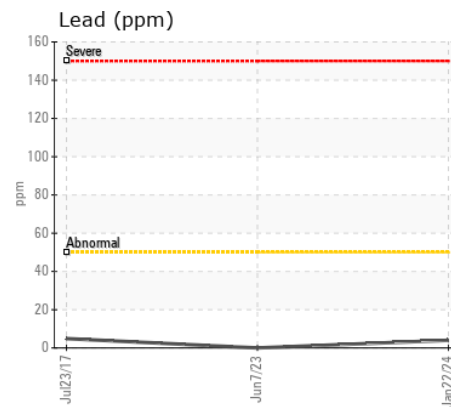
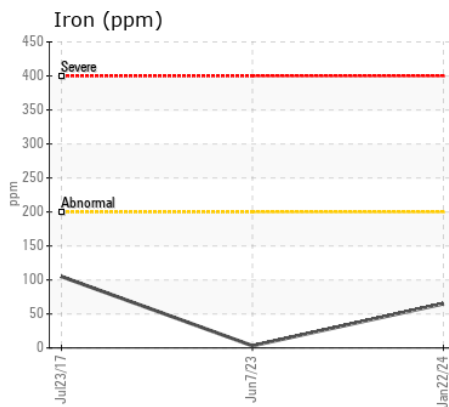
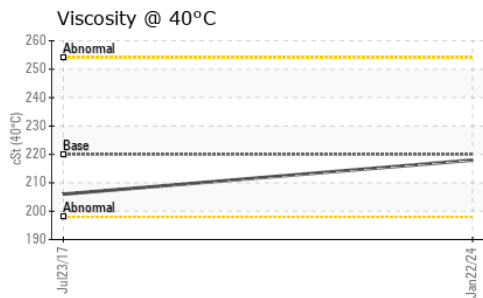
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185(m)	>50	4	13	3
Potassium	ppm	ASTM D5185(m)	>20	<1	<1	0
Water		WC Method	>0.2	NEG	NEG	NEG
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	NORML	NORML	NORML
Odor	scalar	Visual*	NORML	NORML	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	NEG	---	NEG

FLUID CONDITION

The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185(m)		4	0	4
Boron	ppm	ASTM D5185(m)	4.4	15	<1	14
Barium	ppm	ASTM D5185(m)	0.0	0	0	<1
Molybdenum	ppm	ASTM D5185(m)	0	0	0	<1
Manganese	ppm	ASTM D5185(m)		<1	0	1
Magnesium	ppm	ASTM D5185(m)	0	2	0	1
Calcium	ppm	ASTM D5185(m)	0	18	0	24
Phosphorus	ppm	ASTM D5185(m)	215	321	393	311
Zinc	ppm	ASTM D5185(m)	0	8	2	10
Sulfur	ppm	ASTM D5185(m)	7039	9100	131	10404
Visc @ 40°C	cSt	ASTM D7279(m)	220	218	---	206



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : WC0884667
Lab Number : 02616374
Unique Number : 5733484
Test Package : MOB 1
Received : 16 Feb 2024
Tested : 20 Feb 2024
Diagnosed : 20 Feb 2024 - Wes Davis

Vale - Copper Cliff Smelter
 COPPER CLIFF SMELTER WAREHOUSE, 155 BALSAM ST.
 COPPER CLIFF, ON
 CA P0M 1N0
 Contact: Andy Kozachanko
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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.