



LIEBHERR

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
IRON SHORING
Machine Id
100-028
Component
Crowd Winch Drive
Fluid
GEAR OIL LS 80W90 (--- GAL)

RECOMMENDATION

The oil change at the time of sampling has been noted. We recommend an early resample to monitor this condition. The fluid was not specified, however, a fluid match indicates that this fluid is (GENERIC) GEAR OIL LS 80W90. Please confirm.

WEAR

PQ levels are abnormal. Chromium and iron ppm levels are abnormal. The high ferrous density (PQ) index indicates that abnormal wear is occurring.

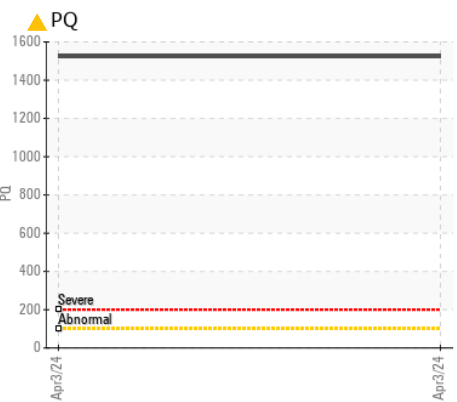
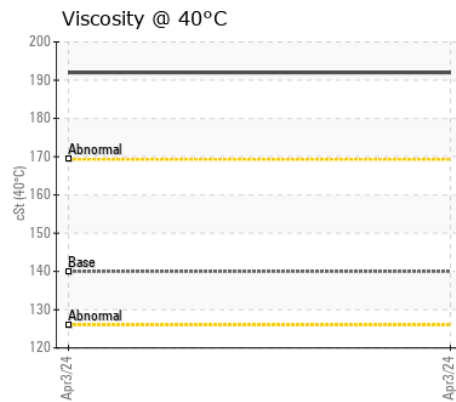
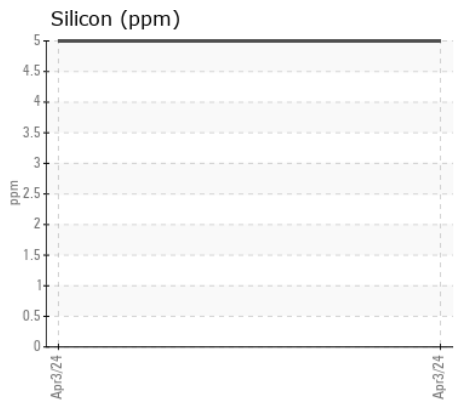
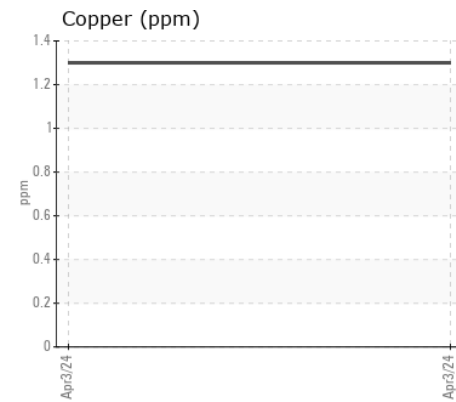
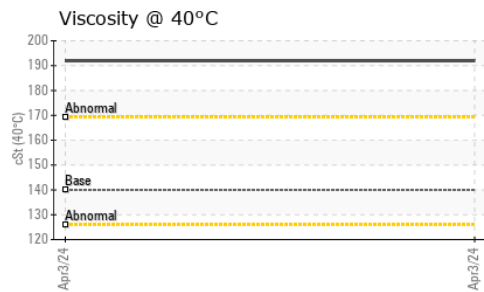
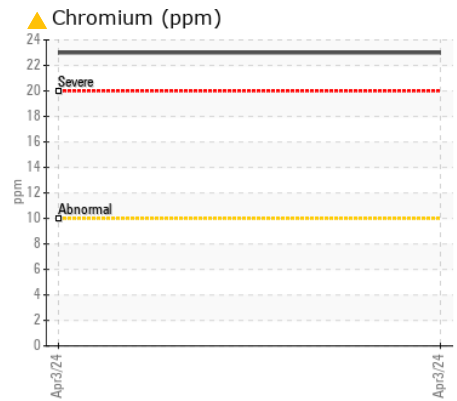
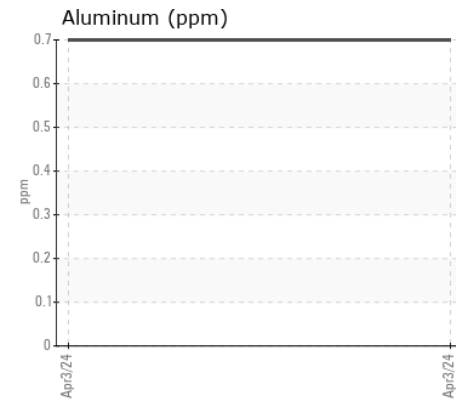
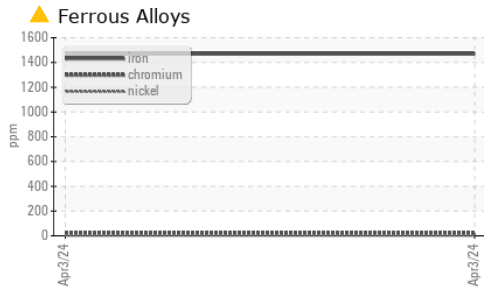
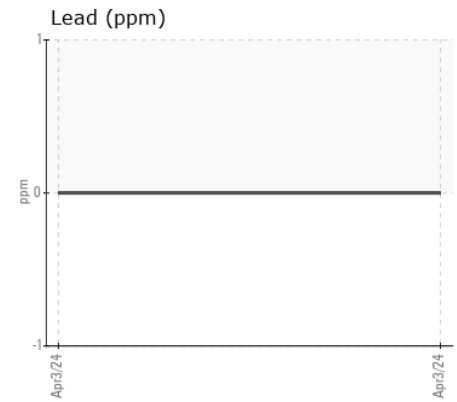
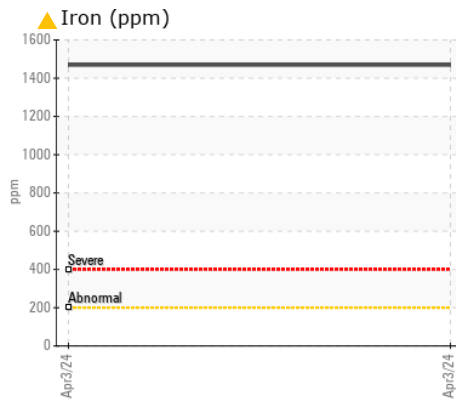
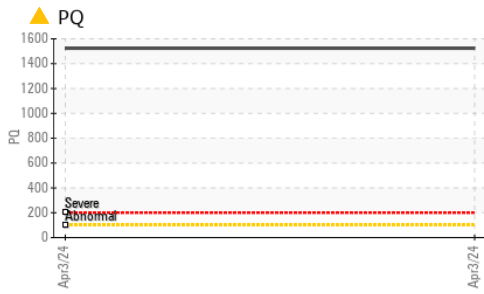
CONTAMINATION

There is no indication of any contamination in the oil.

FLUID CONDITION

The oil is no longer serviceable as a result of the abnormal and/or severe wear.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0286934	---	---
Sample Date		Client Info		03 Apr 2024	---	---
Machine Age	hrs	Client Info		0	---	---
Oil Age	hrs	Client Info		0	---	---
Filter Age	hrs	Client Info		0	---	---
Oil Changed		Client Info		Changed	---	---
Filter Changed		Client Info		N/A	---	---
Sample Status				ABNORMAL	---	---
PQ		ASTM D8184*		▲ 1524	---	---
Iron	ppm	ASTM D5185(m)	>200	▲ 1469	---	---
Chromium	ppm	ASTM D5185(m)	>10	▲ 23	---	---
Nickel	ppm	ASTM D5185(m)	>10	2	---	---
Titanium	ppm	ASTM D5185(m)		0	---	---
Silver	ppm	ASTM D5185(m)		0	---	---
Aluminum	ppm	ASTM D5185(m)		<1	---	---
Lead	ppm	ASTM D5185(m)		0	---	---
Copper	ppm	ASTM D5185(m)		1	---	---
Tin	ppm	ASTM D5185(m)		0	---	---
Vanadium	ppm	ASTM D5185(m)		0	---	---
White Metal	scalar	Visual*	NONE	NONE	---	---
Yellow Metal	scalar	Visual*	NONE	NONE	---	---
Silicon	ppm	ASTM D5185(m)		5	---	---
Potassium	ppm	ASTM D5185(m)	>20	2	---	---
Water		WC Method	>0.2	NEG	---	---
Silt	scalar	Visual*	NONE	VLITE	---	---
Debris	scalar	Visual*	NONE	NONE	---	---
Sand/Dirt	scalar	Visual*	NONE	NONE	---	---
Appearance	scalar	Visual*	NORML	NORML	---	---
Odor	scalar	Visual*	NORML	NORML	---	---
Emulsified Water	scalar	Visual*	>0.2	NEG	---	---
Sodium	ppm	ASTM D5185(m)		4	---	---
Boron	ppm	ASTM D5185(m)	150	3	---	---
Barium	ppm	ASTM D5185(m)		<1	---	---
Molybdenum	ppm	ASTM D5185(m)		0	---	---
Manganese	ppm	ASTM D5185(m)		9	---	---
Magnesium	ppm	ASTM D5185(m)	10	1	---	---
Calcium	ppm	ASTM D5185(m)	70	25	---	---
Phosphorus	ppm	ASTM D5185(m)	2000	730	---	---
Zinc	ppm	ASTM D5185(m)	50	98	---	---
Sulfur	ppm	ASTM D5185(m)	20000	17992	---	---
Visc @ 40°C	cSt	ASTM D7279(m)	140	192	---	---



ISO 17025:2017
Accredited
Laboratory

Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0286934
Lab Number : 02626709
Unique Number : 5759841
Test Package : MOB 1 (Additional Tests: PQ)

RONI/IRON SHORE EXCAVATING LTD.
 100 MACINTOSH BLVD
 VAUGHAN, ON
 CA L4K 4P3
 Contact: Nathan Fernandes
 nfernandes@roni.ca

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.

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F: