



LIEBHERR

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL



Machine Id
LIEBHERR R954C 023859

Component
Hydraulic System

Fluid
PETRO CANADA HYDREX XV ALL SEASON HYDRAULIC OIL (--- GAL)

RECOMMENDATION

We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		LH0289333	LH0278967	LH0251352
Sample Date		Client Info		20 Jun 2024	07 Nov 2023	14 Mar 2023
Machine Age	hrs	Client Info		22108	21581	21061
Oil Age	hrs	Client Info		0	0	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185(m)	>50	5	6	4
Chromium	ppm	ASTM D5185(m)	>15	4	4	2
Nickel	ppm	ASTM D5185(m)	>5	<1	<1	<1
Titanium	ppm	ASTM D5185(m)		0	0	0
Silver	ppm	ASTM D5185(m)		0	<1	0
Aluminum	ppm	ASTM D5185(m)	>8	<1	<1	0
Lead	ppm	ASTM D5185(m)	>5	0	<1	<1
Copper	ppm	ASTM D5185(m)	>15	2	2	1
Tin	ppm	ASTM D5185(m)	>5	0	0	0
Vanadium	ppm	ASTM D5185(m)		0	0	0
White Metal	scalar	Visual*	NONE	NONE	NONE	▲ VLITE
Yellow Metal	scalar	Visual*	NONE	NONE	NONE	NONE

CONTAMINATION

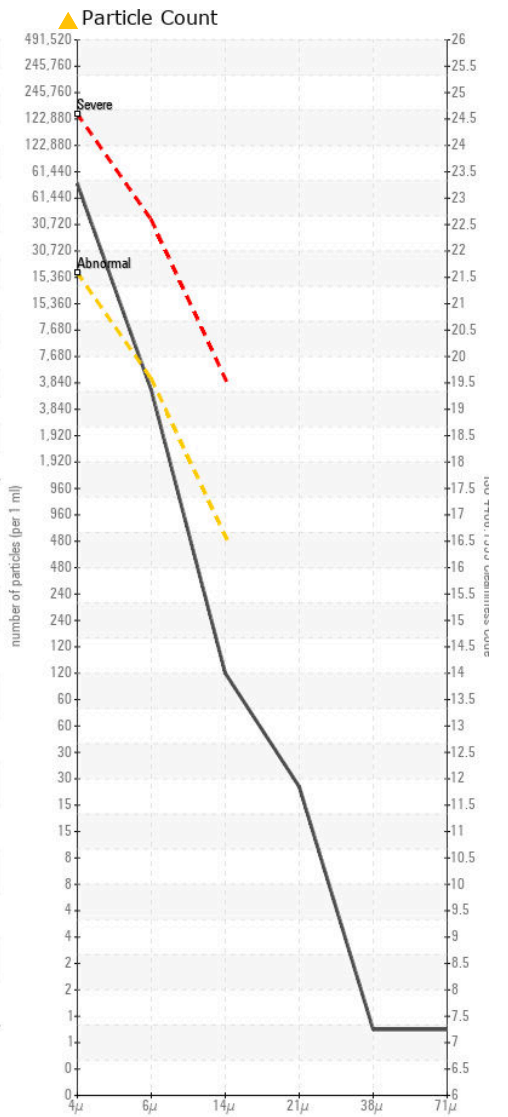
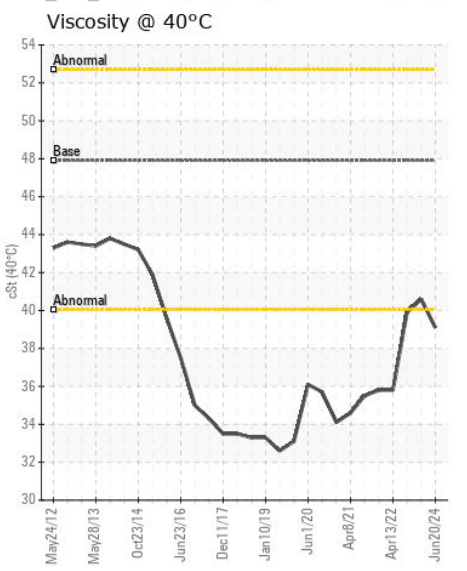
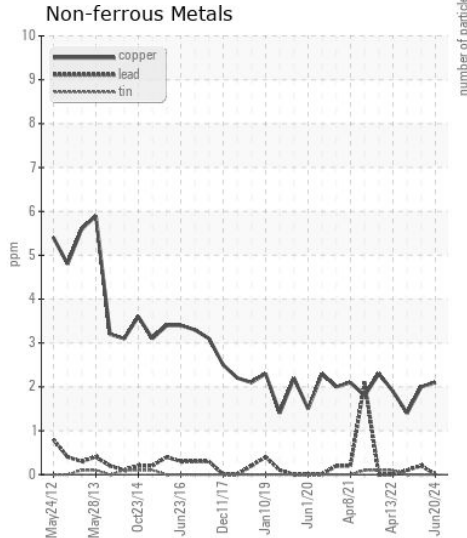
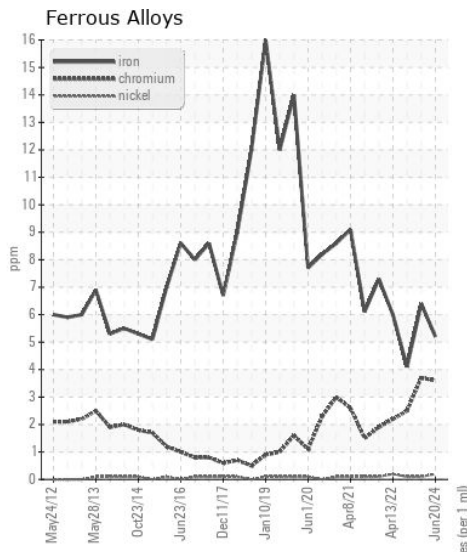
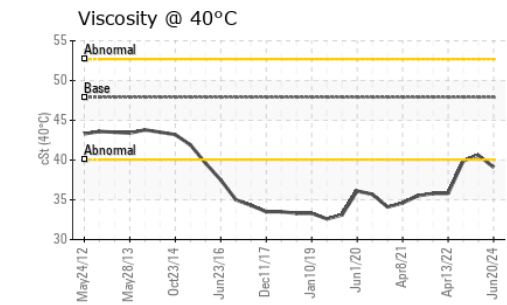
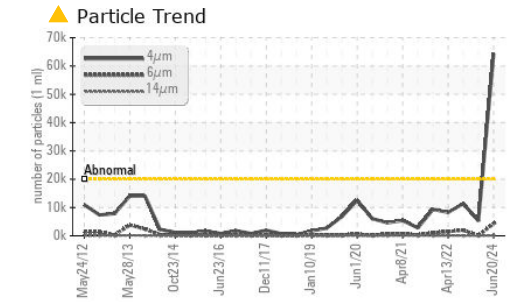
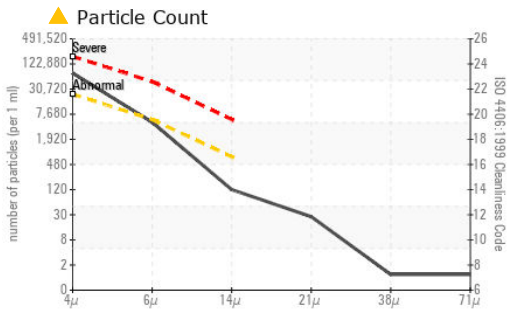
There is a moderate amount of silt (particulates < 14 microns in size) present in the oil.

Silicon	ppm	ASTM D5185(m)	>25	2	2	<1
Potassium	ppm	ASTM D5185(m)	>20	<1	4	<1
Water		WC Method	>0.1	NEG	NEG	NEG
Particles >4µm		ASTM D7647	>20000	▲ 64273	5287	11362
Particles >6µm		ASTM D7647	>5000	4308	75	1966
Particles >14µm		ASTM D7647	>640	106	4	63
Particles >21µm		ASTM D7647	>160	24	1	9
Particles >38µm		ASTM D7647	>40	1	0	0
Particles >71µm		ASTM D7647	>10	1	0	0
Oil Cleanliness		ISO 4406 (c)	>21/19/16	▲ 23/19/14	20/13/9	21/18/13
Silt	scalar	Visual*	NONE	NONE	NONE	NONE
Debris	scalar	Visual*	NONE	NONE	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*	>0.1	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is lower than typical, possibly indicating the addition of lighter grade oil. The oil is still serviceable provided that the contaminant(s) can be reduced to acceptable levels.

Sodium	ppm	ASTM D5185(m)		1	2	<1
Boron	ppm	ASTM D5185(m)	0	12	3	1
Barium	ppm	ASTM D5185(m)	0	<1	<1	0
Molybdenum	ppm	ASTM D5185(m)	0	6	1	2
Manganese	ppm	ASTM D5185(m)	1	0	0	0
Magnesium	ppm	ASTM D5185(m)	0	63	4	5
Calcium	ppm	ASTM D5185(m)	100	311	95	118
Phosphorus	ppm	ASTM D5185(m)	670	484	373	427
Zinc	ppm	ASTM D5185(m)	850	585	457	475
Sulfur	ppm	ASTM D5185(m)	1600	1612	878	987
Visc @ 40°C	cSt	ASTM D7279(m)	47.9	39.1	40.6	39.9



Laboratory : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9
Sample No. : LH0289333 **Received** : 27 Jun 2024
Lab Number : 02644359 **Tested** : 28 Jun 2024
Unique Number : 5801898 **Diagnosed** : 28 Jun 2024 - Kevin Marson
Test Package : MOB 1 (Additional Tests: PrtCount)

Gerdau Ameristeel
 55A Fenmar Drive
 Toronto, ON
 CA M9L 1M3
 Contact: Liebherr Maintenance

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: