



# LIEBHERR

## OIL ANALYSIS REPORT

WEAR  
CONTAMINATION  
FLUID CONDITION

**ATTENTION**  
**ABNORMAL**  
**NORMAL**



Area  
**(355226)**  
Machine Id  
**LIEBHERR R938 053191-1650**  
Component  
**Left Final Drive**  
Fluid  
**PETRO CANADA TRAXON 75W90 SYNTHETIC (--- GAL)**

### RECOMMENDATION

We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Confirm the source of the lubricant being utilized for top-up/fill. We recommend an early resample to monitor this condition.

### WEAR

Aluminum ppm levels are noted. Titanium ppm levels are marginal. All other component wear rates are normal.

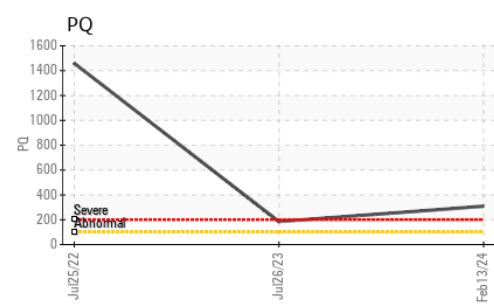
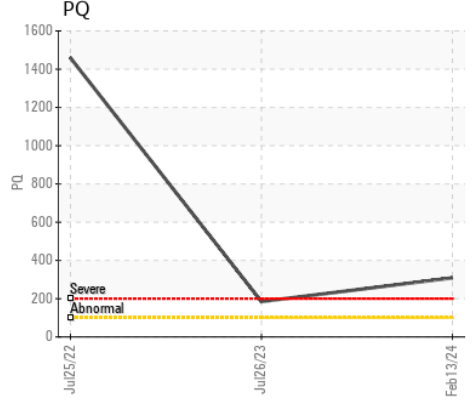
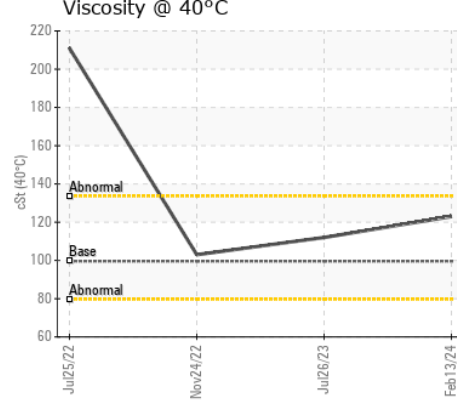
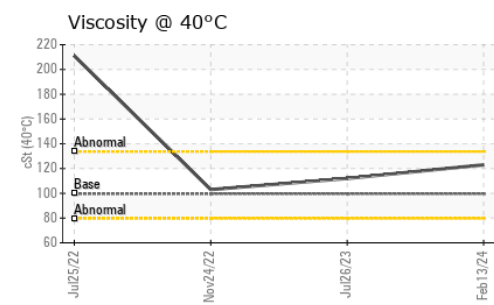
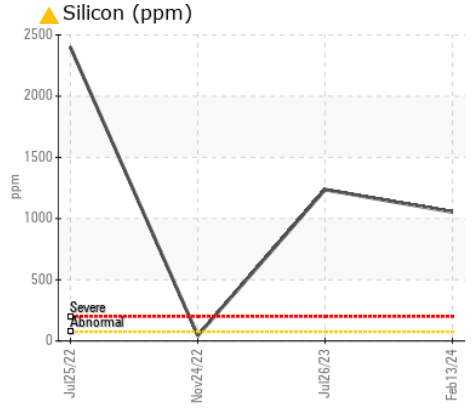
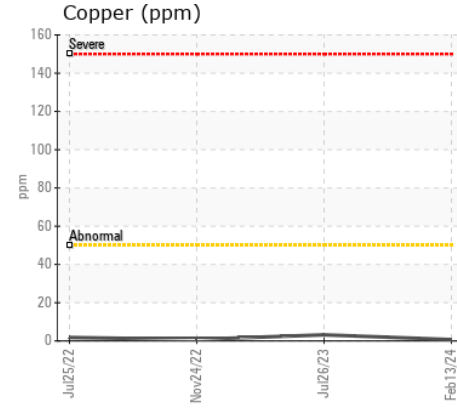
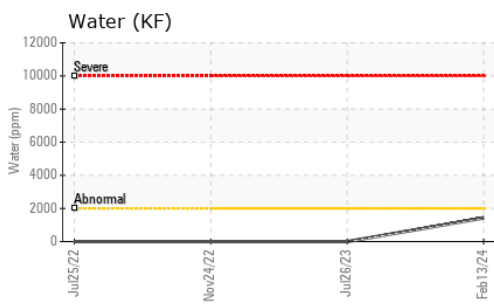
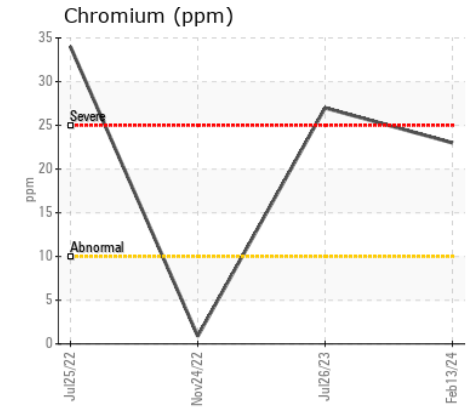
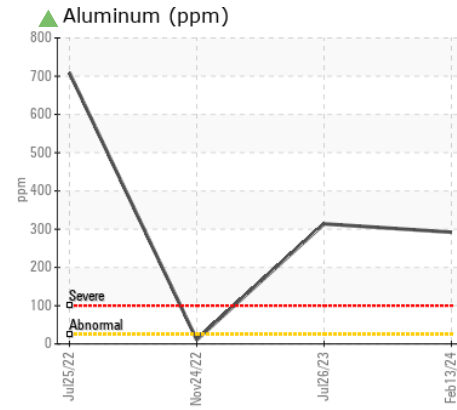
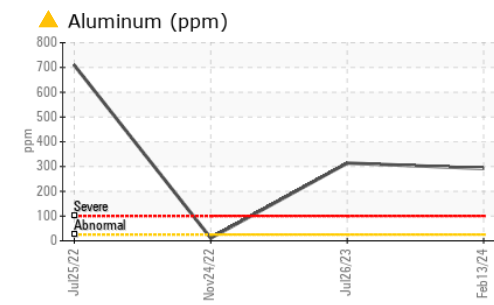
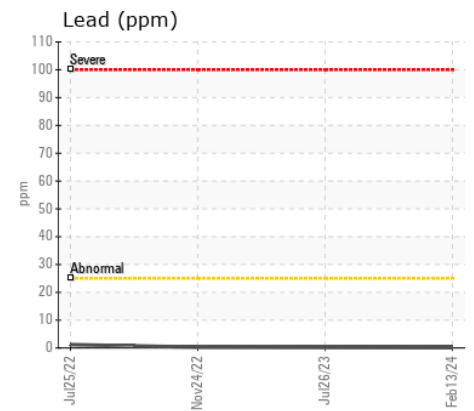
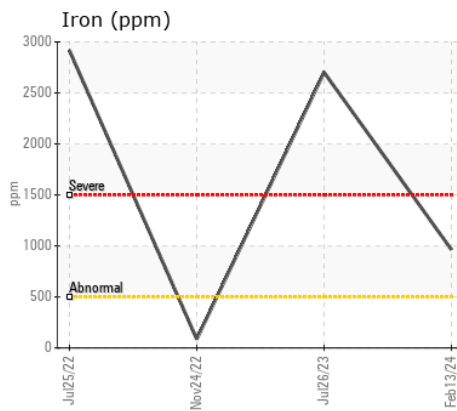
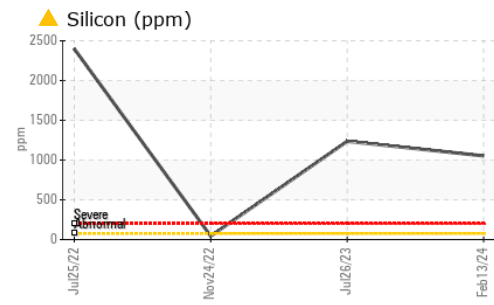
### CONTAMINATION

Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The water content is negligible.

### FLUID CONDITION

Additive levels indicate the addition of a different brand, or type of oil. The oil is no longer serviceable due to the presence of contaminants.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>LH0284895</b>	LH0195719	LH0242485
Sample Date		Client Info		<b>13 Feb 2024</b>	26 Jul 2023	24 Nov 2022
Machine Age	hrs	Client Info		<b>3960</b>	3133	2095
Oil Age	hrs	Client Info		<b>0</b>	0	0
Filter Age	hrs	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>Changed</b>	Changed	Changed
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>ABNORMAL</b>	ABNORMAL	NORMAL
PQ		ASTM D8184*		<b>309</b>	185	---
Iron	ppm	ASTM D5185(m)	>500	<b>964</b>	▲ 2702	87
Chromium	ppm	ASTM D5185(m)	>10	<b>23</b>	▲ 27	<1
Nickel	ppm	ASTM D5185(m)	>10	<b>2</b>	4	<1
Titanium	ppm	ASTM D5185(m)		▲ <b>18</b>	▲ 21	<1
Silver	ppm	ASTM D5185(m)		<b>0</b>	0	0
Aluminum	ppm	ASTM D5185(m)	>25	▲ <b>292</b>	▲ 314	11
Lead	ppm	ASTM D5185(m)	>25	<b>&lt;1</b>	<1	<1
Copper	ppm	ASTM D5185(m)	>50	<b>&lt;1</b>	3	<1
Tin	ppm	ASTM D5185(m)	>10	<b>0</b>	0	<1
Vanadium	ppm	ASTM D5185(m)		<b>0</b>	1	<1
White Metal	scalar	Visual*	NONE	<b>NONE</b>	VLITE	NONE
Yellow Metal	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Silicon	ppm	ASTM D5185(m)	>75	▲ <b>1053</b>	▲ 1236	44
Potassium	ppm	ASTM D5185(m)	>20	<b>99</b>	100	7
Water	%	ASTM D6304*	>0.2	<b>0.142</b>	---	---
ppm Water	ppm	ASTM D6304*	>2000	<b>1425</b>	---	---
Silt	scalar	Visual*	NONE	<b>LIGHT</b>	NONE	NONE
Debris	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	Visual*	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	Visual*	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	Visual*	>0.2	<b>.5%</b>	NEG	NEG
Sodium	ppm	ASTM D5185(m)		<b>79</b>	104	39
Boron	ppm	ASTM D5185(m)	328	<b>97</b>	171	225
Barium	ppm	ASTM D5185(m)	1	<b>3</b>	84	359
Molybdenum	ppm	ASTM D5185(m)		<b>2</b>	2	0
Manganese	ppm	ASTM D5185(m)		<b>11</b>	21	<1
Magnesium	ppm	ASTM D5185(m)	1	<b>91</b>	83	6
Calcium	ppm	ASTM D5185(m)	7	<b>236</b>	282	35
Phosphorus	ppm	ASTM D5185(m)	1145	<b>1833</b>	2188	1275
Zinc	ppm	ASTM D5185(m)	3	<b>33</b>	34	22
Sulfur	ppm	ASTM D5185(m)	17909	<b>22721</b>	26807	20879
Visc @ 40°C	cSt	ASTM D7279(m)	99.6	<b>123</b>	112	103



**Laboratory** : WearCheck - C8-1175 Appleby Line, Burlington, ON L7L 5H9  
**Sample No.** : LH0284895 **Received** : 23 Feb 2024  
**Lab Number** : 02617711 **Tested** : 27 Feb 2024  
**Unique Number** : 5734821 **Diagnosed** : 27 Feb 2024 - Kevin Marson  
**Test Package** : MOB 1 ( Additional Tests: KF, PQ )

**THOMAS CAVANAGH CONSTRUCTION LTD**  
 RR # 2, 9094 CAVANAGH ROAD  
 ASHTON, ON  
 CA K0A 1B0  
 Contact: Keith

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: (613)253-0071