



OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ATTENTION
FLUID CONDITION	NORMAL

Machine Id
PIERCE M01846
 Component
Diesel Engine
 Fluid
DIESEL ENGINE OIL SAE 15W40 (38 QTS)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		DC0034114	DC0028253	DC0023044
Sample Date		Client Info		04 May 2024	03 Oct 2023	30 Jan 2023
Machine Age	mls	Client Info		149661	137439	0
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The copper level is abnormal. In the absence of other significant wear metals, suspect copper due to sources other than wear (i.e. cooling core).

Iron	ppm	ASTM D5185m	>65	21	26	11
Chromium	ppm	ASTM D5185m	>5	<1	2	<1
Nickel	ppm	ASTM D5185m	>3	0	<1	0
Titanium	ppm	ASTM D5185m	>5	0	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>35	11	14	5
Lead	ppm	ASTM D5185m	>10	<1	0	0
Copper	ppm	ASTM D5185m	>180	▲ 323	32	4
Tin	ppm	ASTM D5185m	>8	1	3	<1
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

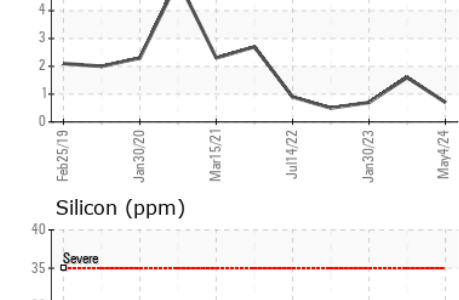
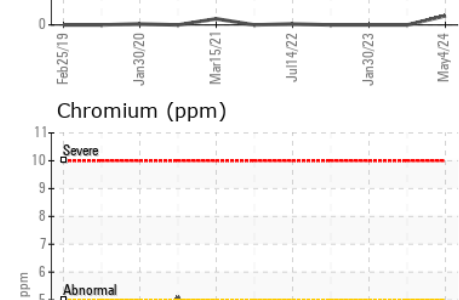
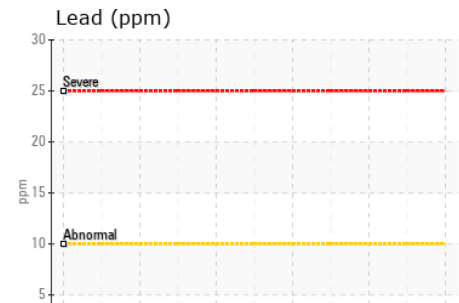
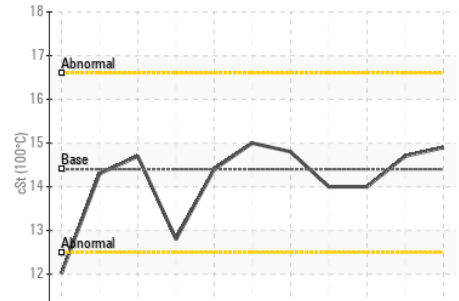
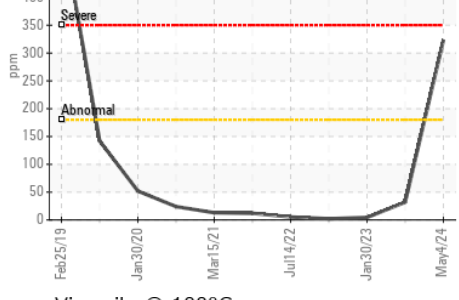
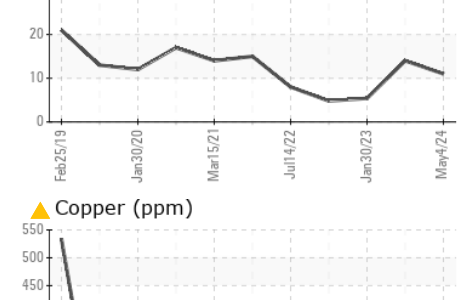
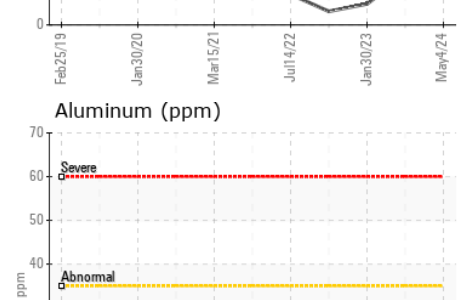
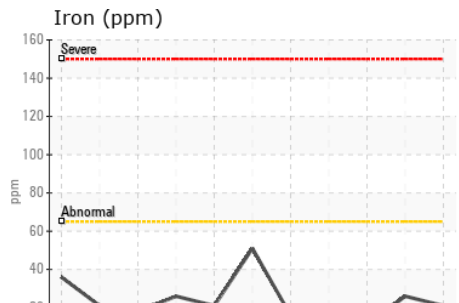
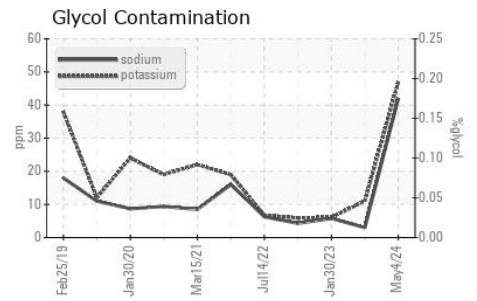
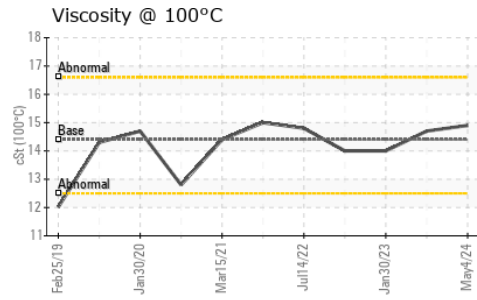
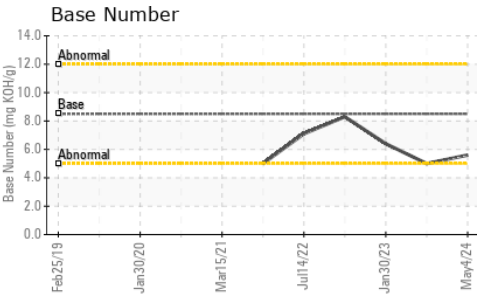
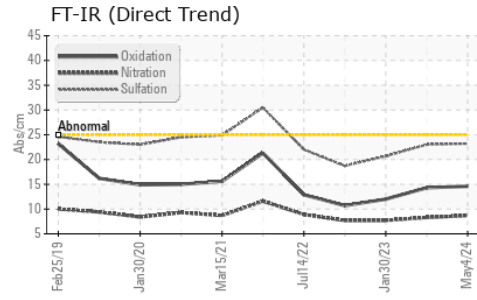
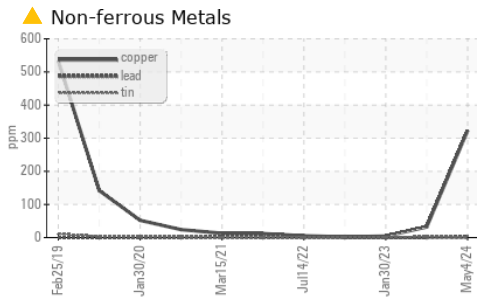
Sodium and/or potassium levels are high. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>15	8	5	5
Potassium	ppm	ASTM D5185m	>20	● 47	11	6
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.8	1	0.5
Nitration	Abs/cm	*ASTM D7624	>20	8.7	8.3	7.7
Sulfation	Abs/.1mm	*ASTM D7415	>30	23.2	23.0	20.7
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	>0.2	NEG	NEG	NEG

FLUID CONDITION

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>158	42	3	6
Boron	ppm	ASTM D5185m	250	4	0	0
Barium	ppm	ASTM D5185m	10	0	11	0
Molybdenum	ppm	ASTM D5185m	100	6	3	2
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m	450	92	49	30
Calcium	ppm	ASTM D5185m	3000	2383	2335	2324
Phosphorus	ppm	ASTM D5185m	1150	944	857	827
Zinc	ppm	ASTM D5185m	1350	1134	1125	1033
Sulfur	ppm	ASTM D5185m	4250	3713	3286	3322
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	14.3	12.0
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	5.6	5.0	6.4
Visc @ 100°C	cSt	ASTM D445	14.4	14.9	14.7	14.0



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : DC0034114 **Received** : 21 May 2024
Lab Number : 06187159 **Tested** : 24 May 2024
Unique Number : 11043911 **Diagnosed** : 24 May 2024 - Jonathan Hester
Test Package : MOB 1 (Additional Tests: Glycol, TBN)

To discuss this sample report, contact Customer Service at 1-800-237-1369.

* - Denotes test methods that are outside of the ISO 17025 scope of accreditation.

Statements of conformity to specifications are based on the simple acceptance decision rule (JCGM 106:2012)

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