



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area
DIAMOND EXPRESS TRANSPORTATION

Machine Id
PETERBILT TRUCK 220

Component
Diesel Engine

Fluid
SHELL ROTELLA T3 15W40 (--- QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		KL0008983	KL0013100	---
Sample Date		Client Info		12 Feb 2024	27 Nov 2023	---
Machine Age	mls	Client Info		1964079	1948867	---
Oil Age	mls	Client Info		29386	9174	---
Filter Age	mls	Client Info		15212	9174	---
Oil Changed		Client Info		Not Chngd	Not Chngd	---
Filter Changed		Client Info		Changed	Changed	---
Sample Status				NORMAL	ABNORMAL	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	15	17	---
Chromium	ppm	ASTM D5185m	>20	<1	<1	---
Nickel	ppm	ASTM D5185m	>2	0	0	---
Titanium	ppm	ASTM D5185m	>2	<1	6	---
Silver	ppm	ASTM D5185m	>2	0	0	---
Aluminum	ppm	ASTM D5185m	>25	<1	1	---
Lead	ppm	ASTM D5185m	>40	<1	<1	---
Copper	ppm	ASTM D5185m	>330	5	18	---
Tin	ppm	ASTM D5185m	>15	2	0	---
Vanadium	ppm	ASTM D5185m		0	0	---
White Metal	scalar	*Visual	NONE	NONE	NONE	---
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	---

CONTAMINATION

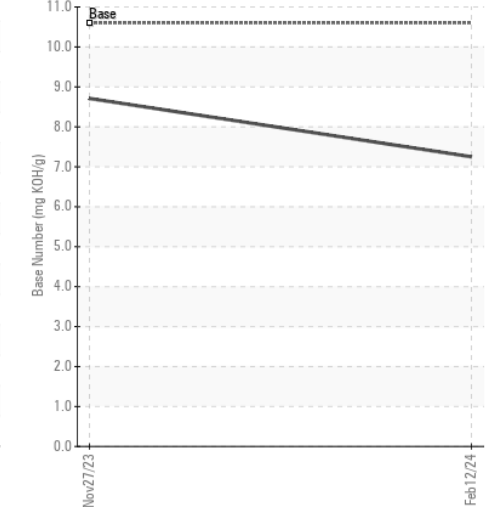
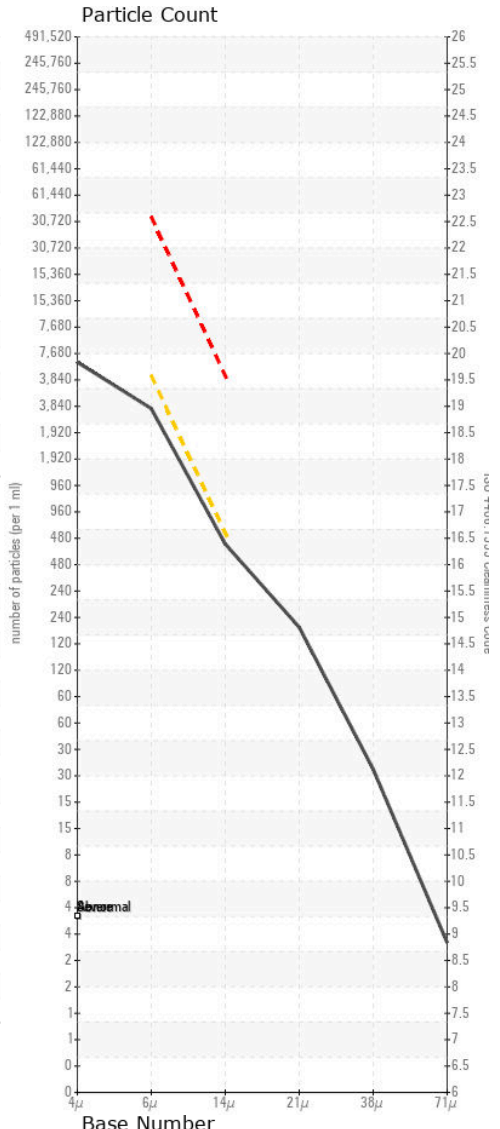
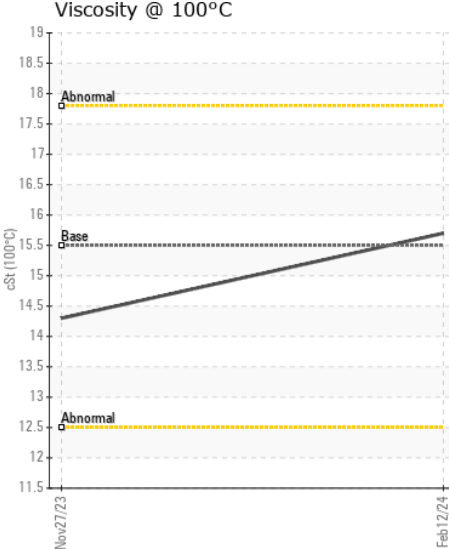
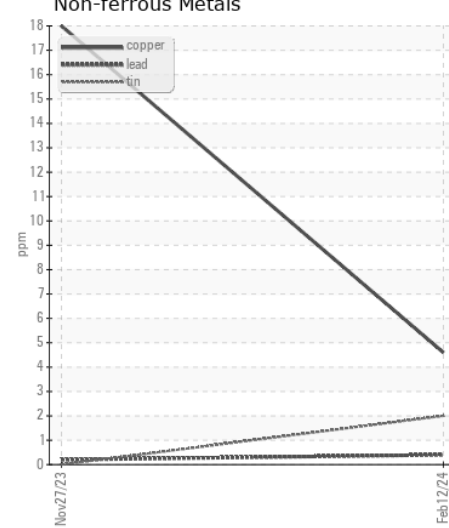
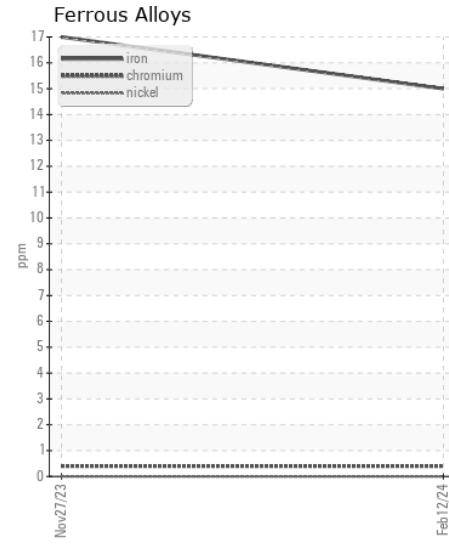
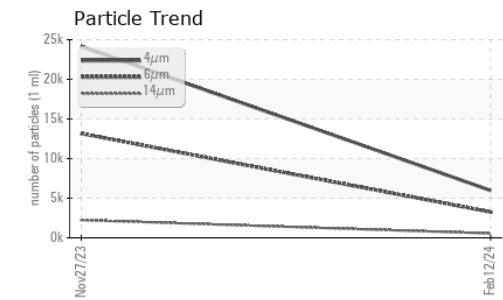
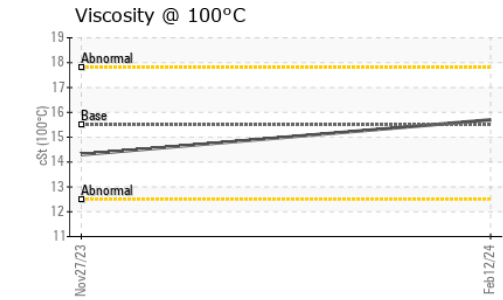
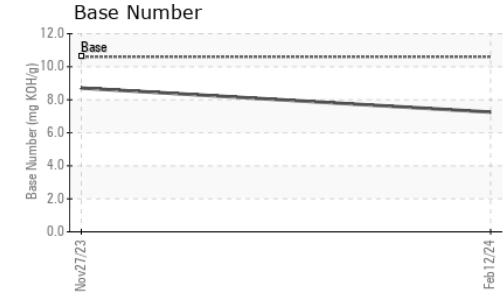
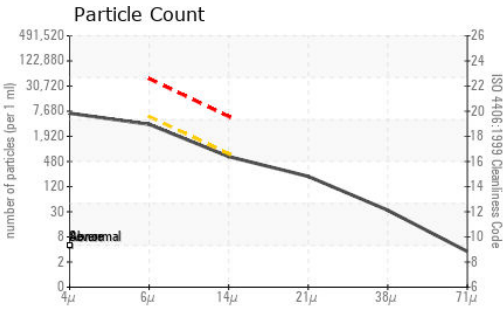
The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable.

Silicon	ppm	ASTM D5185m	>25	17	4	---
Potassium	ppm	ASTM D5185m	>20	12	12	---
Fuel		WC Method	>5	<1.0	<1.0	---
Water		WC Method	>0.2	NEG	NEG	---
Glycol		WC Method		NEG	NEG	---
Soot %	%	*ASTM D7844	>3	0.3	0.3	---
Nitration	Abs/cm	*ASTM D7624	>20	7.5	7.5	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.0	19.4	---
Particles >4µm		ASTM D7647		5968	24150	---
Particles >6µm		ASTM D7647	>5000	3251	▲ 13156	---
Particles >14µm		ASTM D7647	>640	553	▲ 2239	---
Particles >21µm		ASTM D7647	>160	186	▲ 754	---
Particles >38µm		ASTM D7647	>40	29	▲ 116	---
Particles >71µm		ASTM D7647	>10	3	12	---
Oil Cleanliness		ISO 4406 (c)	>19/16	19/16	▲ 21/18	---
Silt	scalar	*Visual	NONE	NONE	NONE	---
Debris	scalar	*Visual	NONE	NONE	NONE	---
Sand/Dirt	scalar	*Visual	NONE	NONE	NONE	---
Appearance	scalar	*Visual	NORML	NORML	NORML	---
Odor	scalar	*Visual	NORML	NORML	NORML	---
Emulsified Water	scalar	*Visual	>0.2	NEG	NEG	---

FLUID CONDITION

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

Sodium	ppm	ASTM D5185m		12	11	---
Boron	ppm	ASTM D5185m	10	35	54	---
Barium	ppm	ASTM D5185m	0	0	0	---
Molybdenum	ppm	ASTM D5185m	10	7	13	---
Manganese	ppm	ASTM D5185m		0	0	---
Magnesium	ppm	ASTM D5185m	10	43	92	---
Calcium	ppm	ASTM D5185m	2600	2134	1896	---
Phosphorus	ppm	ASTM D5185m	1050	841	800	---
Zinc	ppm	ASTM D5185m	1250	1051	998	---
Sulfur	ppm	ASTM D5185m	3900	3184	3642	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.2	12.9	---
Base Number (BN)	mg KOH/g	ASTM D2896	10.6	7.25	8.71	---
Visc @ 100°C	cSt	ASTM D445	15.5	15.7	14.3	---



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : KL0008983 **Received** : 12 Feb 2024
Lab Number : 06086702 **Tested** : 13 Feb 2024
Unique Number : 10874147 **Diagnosed** : 13 Feb 2024 - Wes Davis
Test Package : MOB 2 (Additional Tests: PrtCount)

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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)