



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Area
TRUCK - URBAN

Machine Id
WESTERN STAR M127

Component
Diesel Engine

Fluid
SHELL Rotella T5 15W-40 (7 GAL)

RECOMMENDATION

We advise that you check for the source of the coolant leak. Check for low coolant level. Oil and filter change at the time of sampling has been noted. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		PE0003328	PE0003279	PE0002383
Sample Date		Client Info		20 May 2024	08 Mar 2024	28 Nov 2023
Machine Age	hrs	Client Info		25096	24570	24283
Oil Age	hrs	Client Info		526	287	513
Filter Age	hrs	Client Info		526	287	513
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	9	14	6
Chromium	ppm	ASTM D5185m	>20	<1	2	<1
Nickel	ppm	ASTM D5185m	>4	0	2	0
Titanium	ppm	ASTM D5185m		<1	<1	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	8	3
Lead	ppm	ASTM D5185m	>40	1	1	0
Copper	ppm	ASTM D5185m	>330	1	2	<1
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

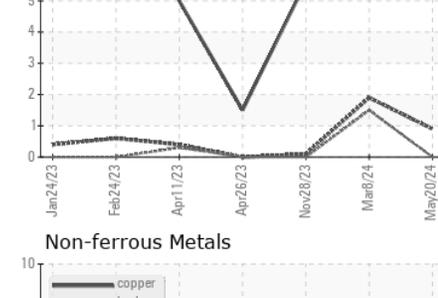
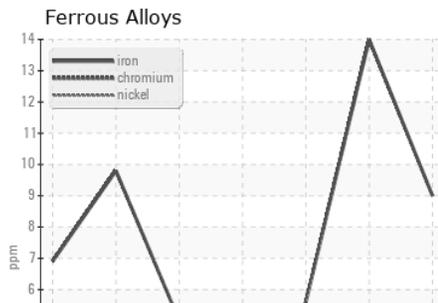
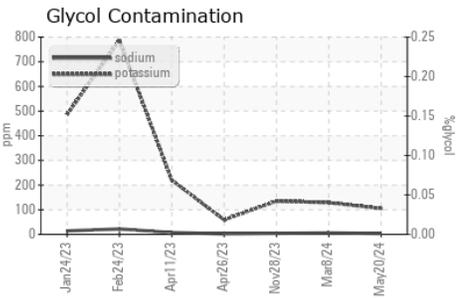
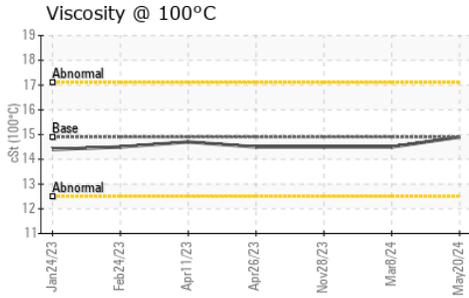
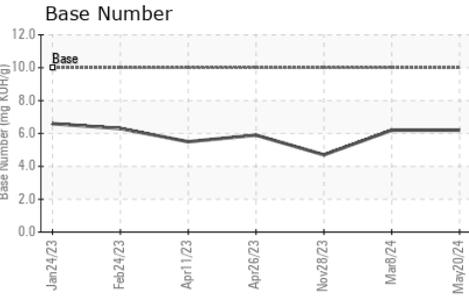
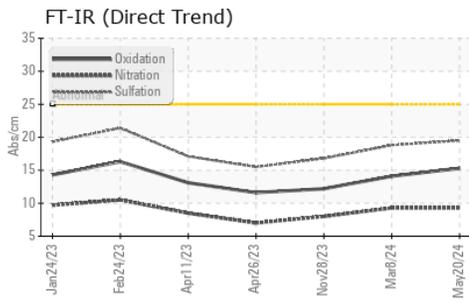
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>25	6	9	8
Potassium	ppm	ASTM D5185m	>20	▲ 105	▲ 129	▲ 135
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol	%	*ASTM D2982		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	9.3	9.3	8.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.5	18.8	16.8
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.

Sodium	ppm	ASTM D5185m		4	6	4
Boron	ppm	ASTM D5185m		18	23	20
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		80	89	79
Manganese	ppm	ASTM D5185m		<1	1	0
Magnesium	ppm	ASTM D5185m		24	18	35
Calcium	ppm	ASTM D5185m		2324	2221	1929
Phosphorus	ppm	ASTM D5185m		1039	1141	906
Zinc	ppm	ASTM D5185m		1213	1237	1065
Sulfur	ppm	ASTM D5185m		4150	4333	3851
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.3	14.1	12.2
Base Number (BN)	mg KOH/g	ASTM D2896	10	6.2	6.2	4.7
Visc @ 100°C	cSt	ASTM D445	14.9	14.9	14.5	14.5



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : PE0003328
Lab Number : 06194845
Unique Number : 11056968
Test Package : CONST (Additional Tests: FT-IR, Glycol, ICP, KV100, SCREEN, 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)

PetroCard - Aberdeen
 110 Commerce St
 Aberdeen, WA
 US 98520
 Contact: Sean McNealley
 smcnealley@petrocard.com
 T:
 F: