



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
PETERBILT 107
 Component
Diesel Engine
 Fluid
MOBIL DELVAC 1300 SUPER15W40 (11 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06146079	TR06078518	TR06025346
Sample Date		Client Info		02 Mar 2024	06 Jan 2024	17 Nov 2023
Machine Age	mls	Client Info		722332	706186	694418
Oil Age	mls	Client Info		11350	11768	13259
Filter Age	mls	Client Info		11350	11768	13259
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

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). All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	13	9	9
Chromium	ppm	ASTM D5185m	>20	2	1	1
Nickel	ppm	ASTM D5185m	>2	2	2	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>25	4	4	3
Lead	ppm	ASTM D5185m	>40	2	3	2
Copper	ppm	ASTM D5185m	>330	▲ 416	▲ 559	▲ 271
Tin	ppm	ASTM D5185m	>15	2	2	<1
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

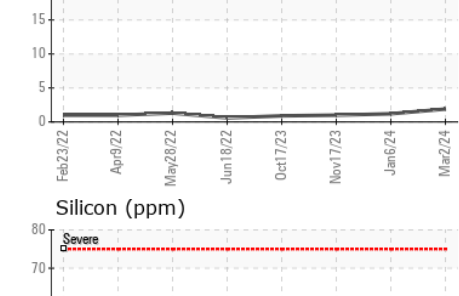
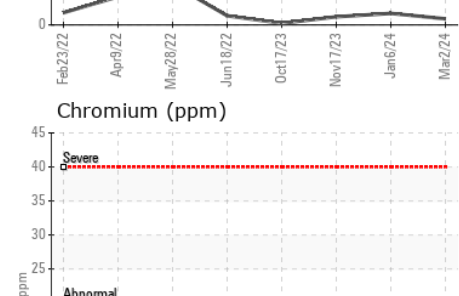
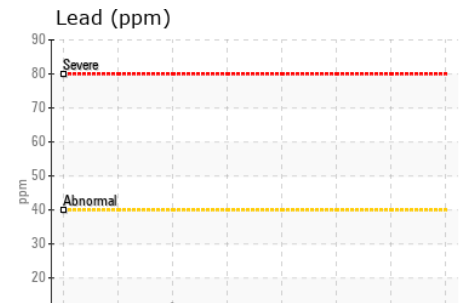
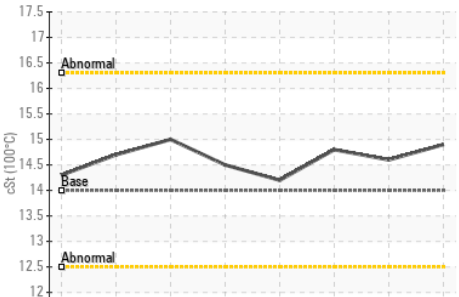
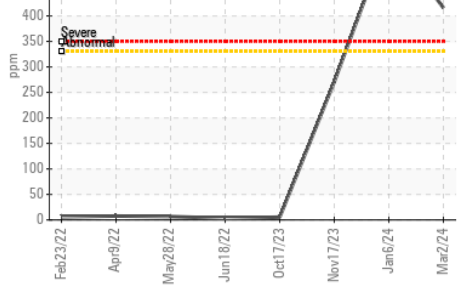
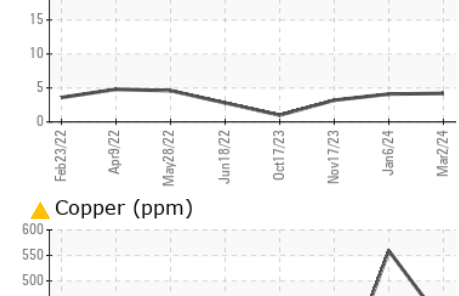
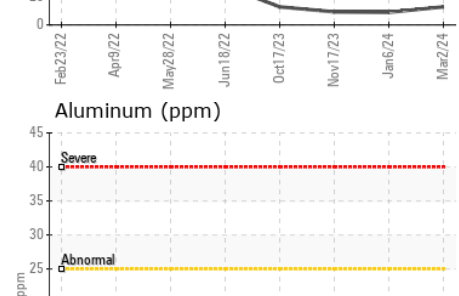
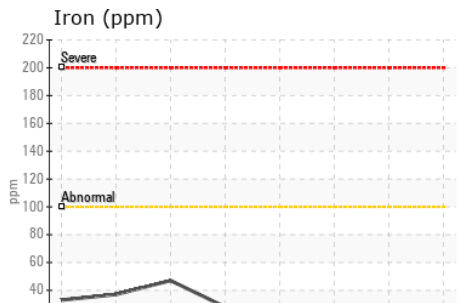
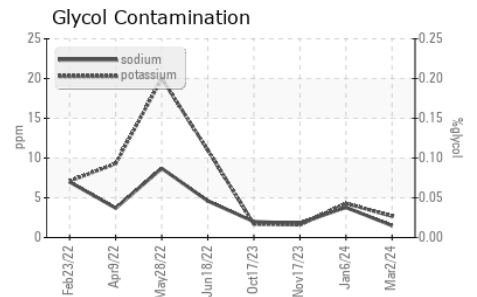
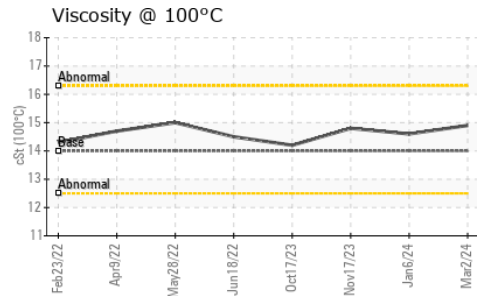
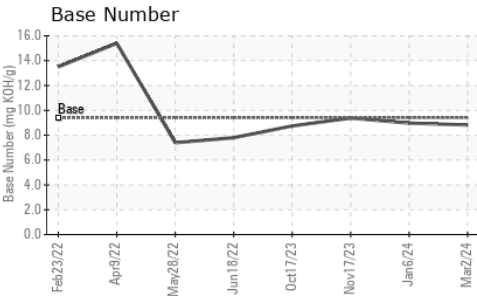
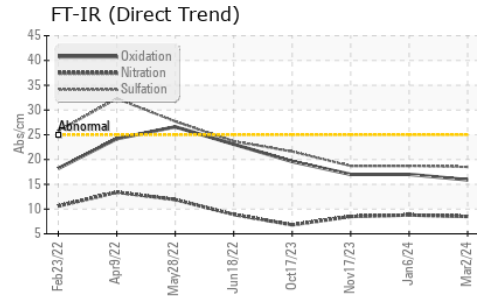
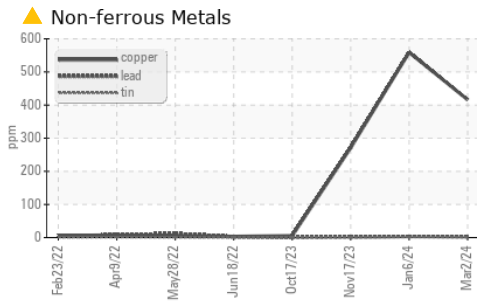
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	15	6	6
Potassium	ppm	ASTM D5185m	>20	3	4	2
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	0.2	0.1	0.2
Nitration	Abs/cm	*ASTM D7624	>20	8.5	8.8	8.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.5	18.7	18.7
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 suitable for further service.

Sodium	ppm	ASTM D5185m		2	4	2
Boron	ppm	ASTM D5185m	0	101	92	90
Barium	ppm	ASTM D5185m	0	<1	0	0
Molybdenum	ppm	ASTM D5185m	0	106	106	106
Manganese	ppm	ASTM D5185m		1	2	0
Magnesium	ppm	ASTM D5185m	0	585	604	615
Calcium	ppm	ASTM D5185m		1258	1196	1338
Phosphorus	ppm	ASTM D5185m		733	666	655
Zinc	ppm	ASTM D5185m		778	774	857
Sulfur	ppm	ASTM D5185m		3032	2752	3037
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.9	17.0	17.0
Base Number (BN)	mg KOH/g	ASTM D2896	9.4	8.82	8.97	9.38
Visc @ 100°C	cSt	ASTM D445	14	14.9	14.6	14.8



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06146079
Lab Number : 06146079
Unique Number : 10976157
Test Package : MOB 2 (Additional Tests: Glycol)

Received : 11 Apr 2024
Tested : 15 Apr 2024
Diagnosed : 15 Apr 2024 - Don Baldrige

DARWIN UNRUH
 19679 416TH AVE
 CARPENTER, SD
 US 57322
 Contact: CALVIN KOEHN

To discuss this sample report, contact Customer Service at 1-800-827-0711.

* - 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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F: