



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ABNORMAL

Machine Id
PETERBILT 378 446 (S/N 662321)
 Component
Diesel Engine
 Fluid
TRC PRO-SPEC IV SYNTHETIC BLEND 15W40 (12 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		TR06228146	TR05389017	TR05159611
Sample Date		Client Info		10 Apr 2024	15 Mar 2021	05 Sep 2020
Machine Age	wks	Client Info		0	0	0
Oil Age	wks	Client Info		62	27	0
Filter Age	wks	Client Info		62	27	0
Oil Changed		Client Info		Changed	Changed	Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				ABNORMAL	NORMAL	NORMAL

WEAR

The lead level is abnormal. All other component wear rates are normal.

Iron	ppm	ASTM D5185m	>75	19	53	31
Chromium	ppm	ASTM D5185m	>4	<1	1	1
Nickel	ppm	ASTM D5185m	>5	0	<1	<1
Titanium	ppm	ASTM D5185m	>2	0	<1	1
Silver	ppm	ASTM D5185m	>2	<1	<1	0
Aluminum	ppm	ASTM D5185m	>54	3	3	2
Lead	ppm	ASTM D5185m	>20	▲ 28	13	0
Copper	ppm	ASTM D5185m	>240	4	5	5
Tin	ppm	ASTM D5185m	>5	0	2	2
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

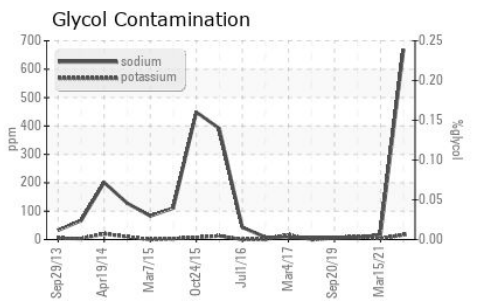
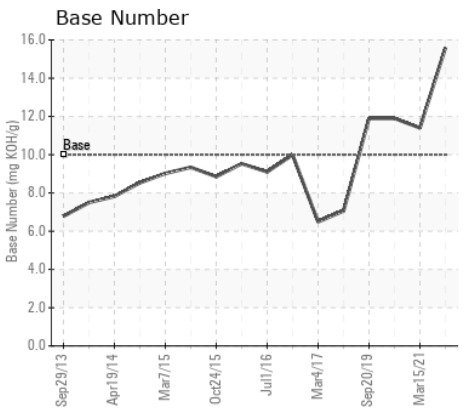
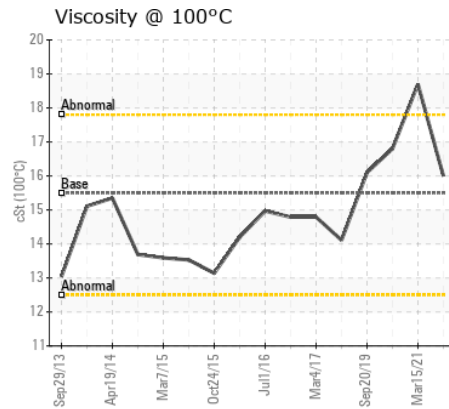
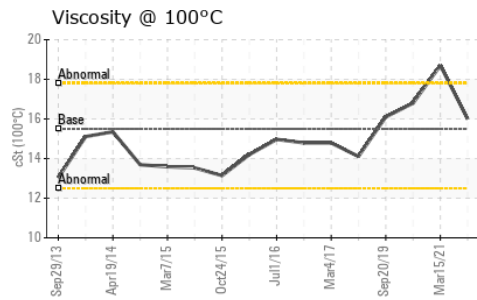
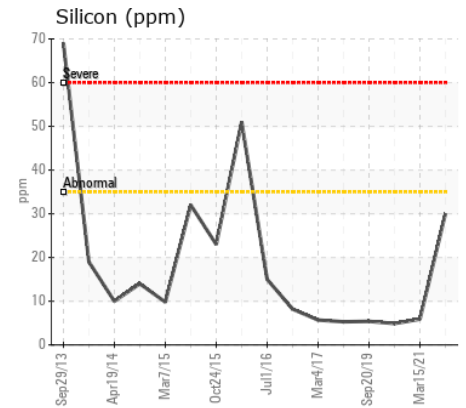
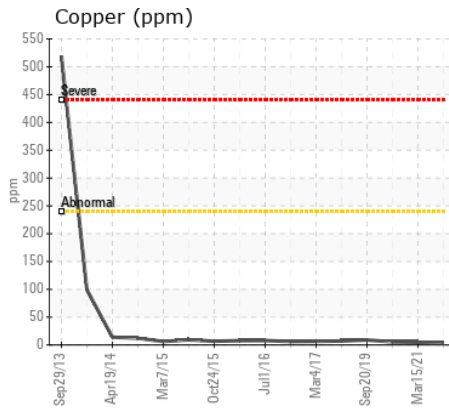
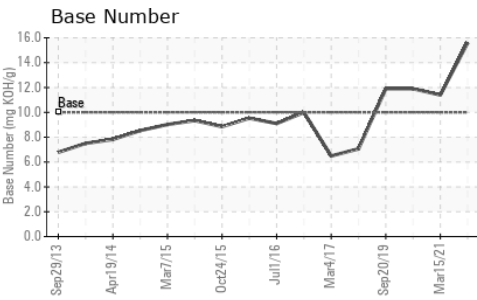
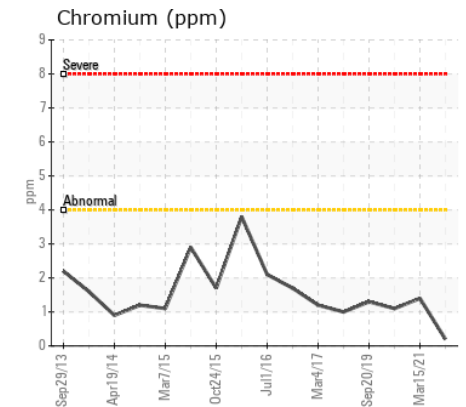
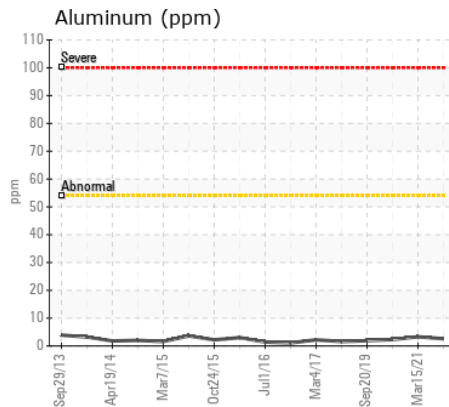
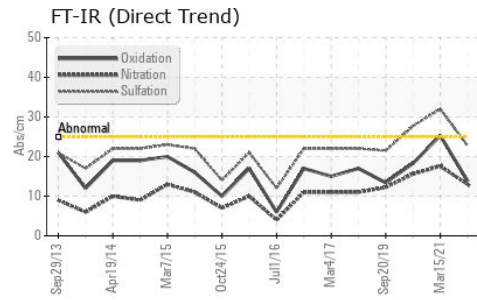
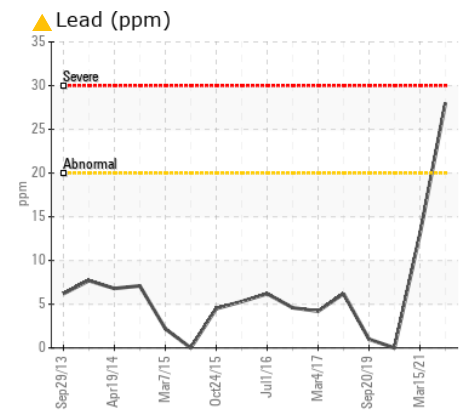
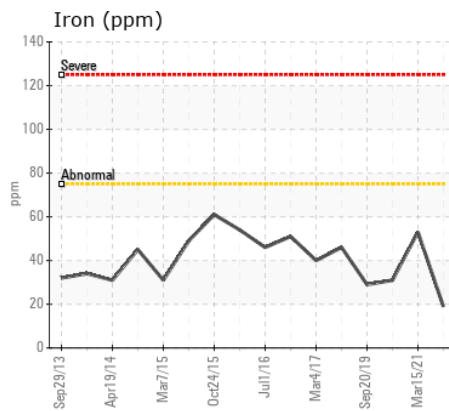
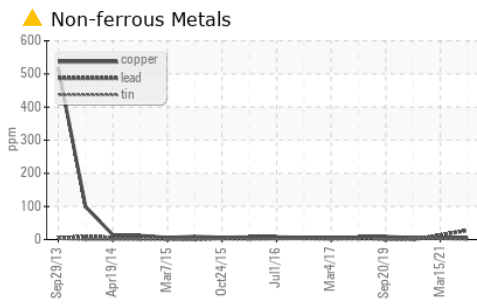
Sodium and/or potassium levels are high.

Silicon	ppm	ASTM D5185m	>35	30	6	5
Potassium	ppm	ASTM D5185m	>20	▲ 17	3	11
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	0.8	0.6
Nitration	Abs/cm	*ASTM D7624	>20	13.0	17.6	15.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.7	32	27.7
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.

Sodium	ppm	ASTM D5185m		▲ 670	18	6
Boron	ppm	ASTM D5185m		27	5	<1
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		2	2	2
Manganese	ppm	ASTM D5185m		<1	<1	<1
Magnesium	ppm	ASTM D5185m		33	25	21
Calcium	ppm	ASTM D5185m	2300	4872	5105	4664
Phosphorus	ppm	ASTM D5185m		1019	1015	892
Zinc	ppm	ASTM D5185m	1200	1176	1441	1030
Sulfur	ppm	ASTM D5185m		5250	4054	3225
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.8	25.3	18.3
Base Number (BN)	mg KOH/g	ASTM D2896	10	15.59	11.4	11.9
Visc @ 100°C	cSt	ASTM D445	15.5	16.0	18.7	16.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06228146 **Received** : 03 Jul 2024
Lab Number : 06228146 **Tested** : 09 Jul 2024
Unique Number : 11111639 **Diagnosed** : 09 Jul 2024 - Jonathan Hester
Test Package : MOB 2 (Additional Tests: Glycol)

ZACHRY FARMS
 15231 COUNTY FARM RD
 CARLYLE, IL
 US 62231
 Contact: CHARLES FLATT

Certificate L2367
 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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