



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
TORO 30881/4500-D 115625 (S/N A183642726)

Component
Diesel Engine

Fluid
TRC PRO-SPEC IV XP SYN BLEND SAE 10W30 (6 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06159332	TR05940334	TR05857520
Sample Date		Client Info		23 Apr 2024	29 Aug 2023	24 May 2023
Machine Age	hrs	Client Info		2878	2630	2255
Oil Age	hrs	Client Info		2053	1278	903
Filter Age	hrs	Client Info		2053	1278	903
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				NORMAL	ABNORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	26	▲ 127	69
Chromium	ppm	ASTM D5185m	>6	1	3	2
Nickel	ppm	ASTM D5185m	>2	1	3	2
Titanium	ppm	ASTM D5185m	>2	<1	<1	0
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>20	5	8	6
Lead	ppm	ASTM D5185m	>95	1	7	3
Copper	ppm	ASTM D5185m	>85	7	48	47
Tin	ppm	ASTM D5185m	>9	<1	1	<1
Vanadium	ppm	ASTM D5185m		<1	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

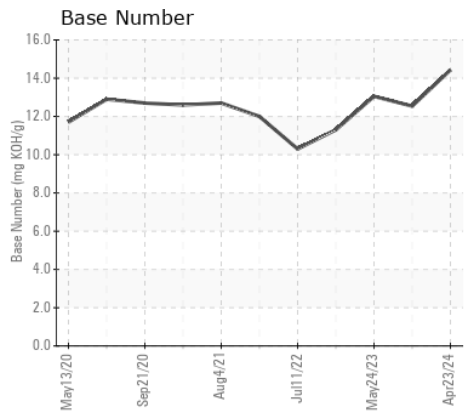
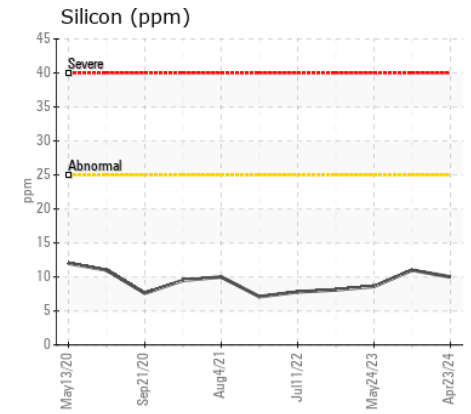
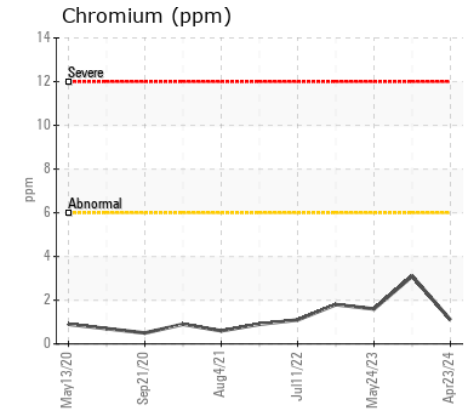
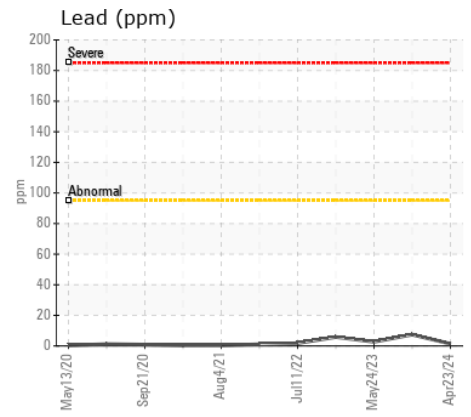
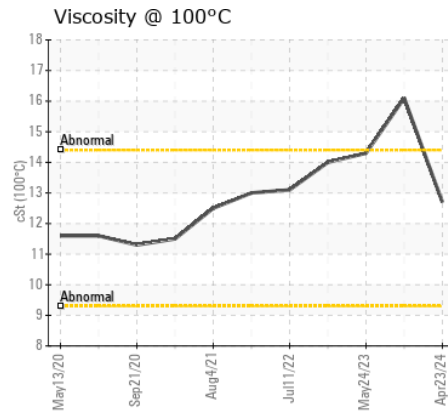
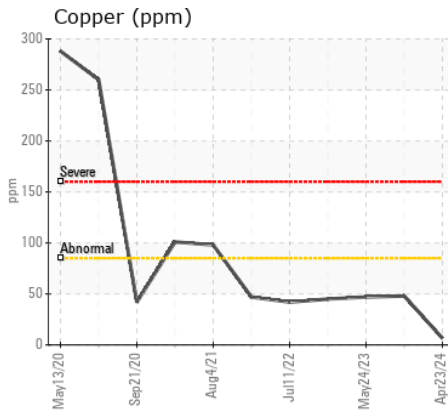
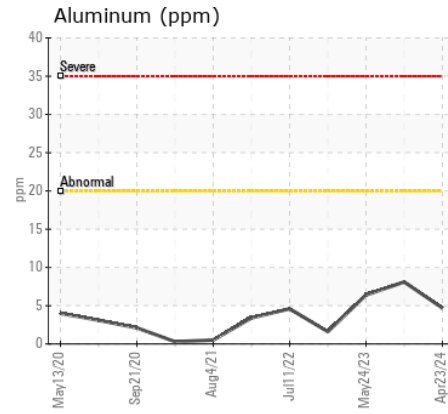
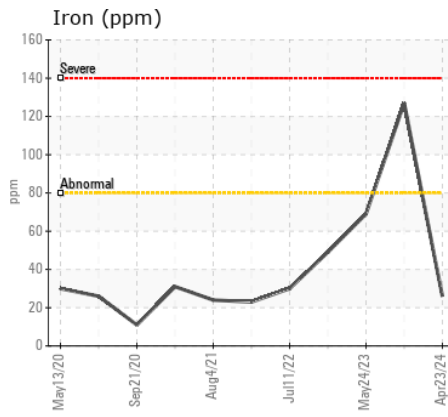
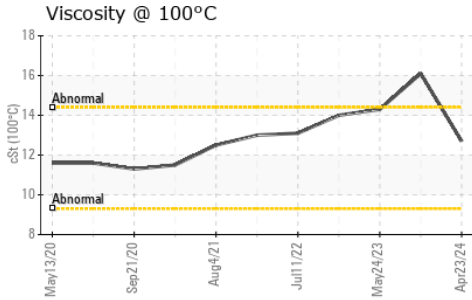
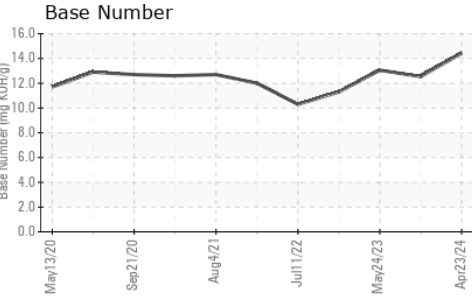
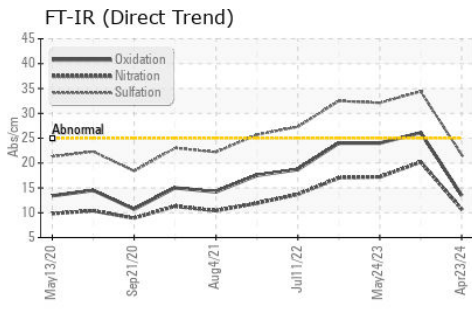
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	10	11	9
Potassium	ppm	ASTM D5185m	>20	3	6	4
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		1	3.1	2.3
Nitration	Abs/cm	*ASTM D7624	>20	10.7	20.2	17.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.7	34.4	32.1
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	>0.1	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		6	11	5
Boron	ppm	ASTM D5185m		2	0	0
Barium	ppm	ASTM D5185m		0	0	2
Molybdenum	ppm	ASTM D5185m		2	3	2
Manganese	ppm	ASTM D5185m		<1	2	<1
Magnesium	ppm	ASTM D5185m		18	25	20
Calcium	ppm	ASTM D5185m		4570	5859	5142
Phosphorus	ppm	ASTM D5185m		1098	1251	1094
Zinc	ppm	ASTM D5185m		1249	1556	1339
Sulfur	ppm	ASTM D5185m		4854	5618	4985
Oxidation	Abs/.1mm	*ASTM D7414	>25	13.5	26.1	24.0
Base Number (BN)	mg KOH/g	ASTM D2896		14.43	12.54	13.05
Visc @ 100°C	cSt	ASTM D445		12.7	16.1	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06159332
Lab Number : 06159332
Unique Number : 10994755
Test Package : MOB 2

Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 25 Apr 2024 - Wes Davis

OVERLAND PARK GC CCD
 1801 S HURON ST
 DENVER, CO
 US 80223
 Contact: JAMES WEST

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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