



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
TORO 03606 4748 (S/N 404534140)

Component
Diesel Engine

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

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06221444	TR05898222	TR05602382
Sample Date		Client Info		20 Jun 2024	12 Jul 2023	26 Jul 2022
Machine Age	hrs	Client Info		3215	2661	2036
Oil Age	hrs	Client Info		266	255	412
Filter Age	hrs	Client Info		266	255	412
Oil Changed		Client Info		Changed	Changed	Not Changd
Filter Changed		Client Info		Changed	Changed	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	6	7	11
Chromium	ppm	ASTM D5185m	>20	<1	<1	<1
Nickel	ppm	ASTM D5185m	>4	0	<1	0
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>3	0	<1	0
Aluminum	ppm	ASTM D5185m	>20	2	2	4
Lead	ppm	ASTM D5185m	>40	0	0	<1
Copper	ppm	ASTM D5185m	>330	<1	0	3
Tin	ppm	ASTM D5185m	>15	0	<1	<1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

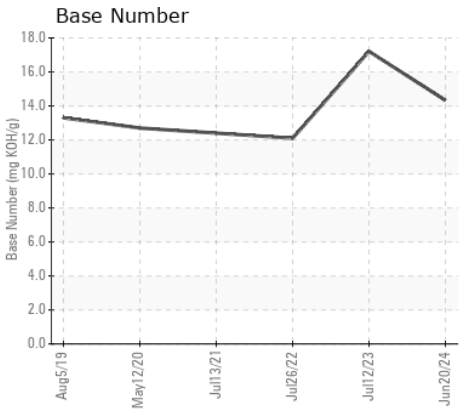
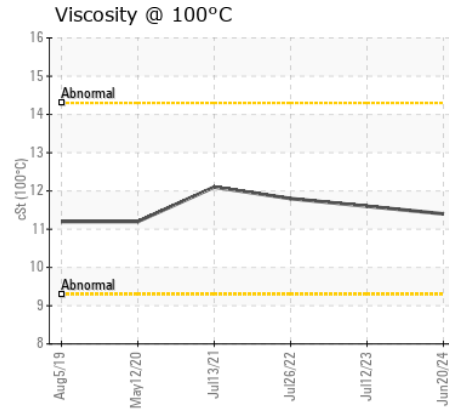
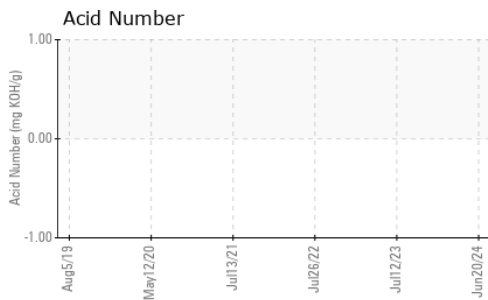
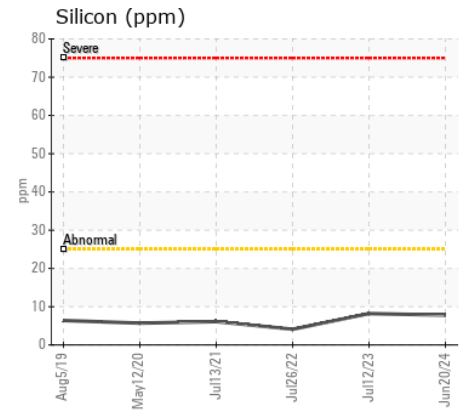
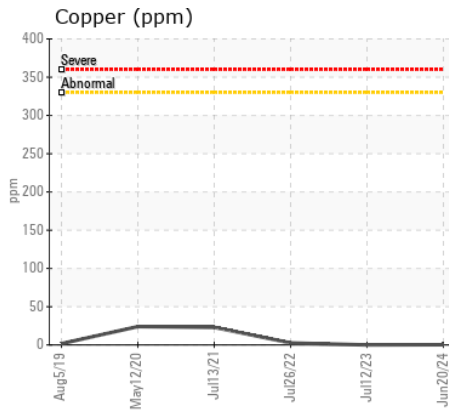
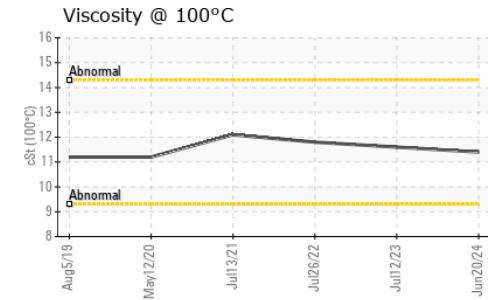
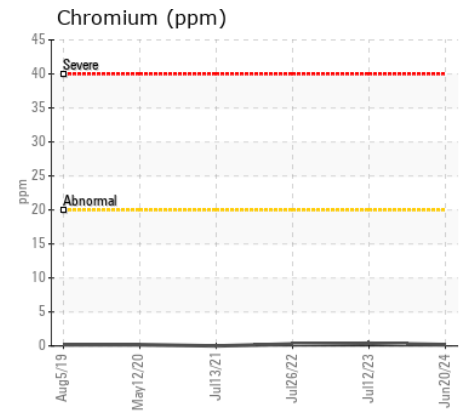
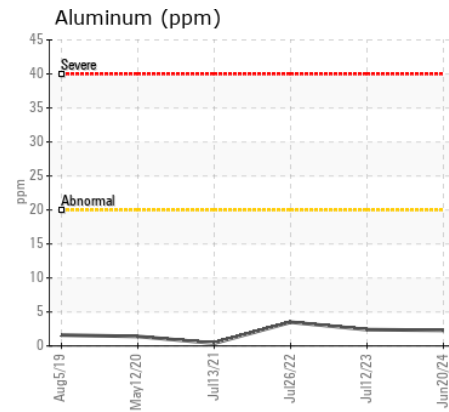
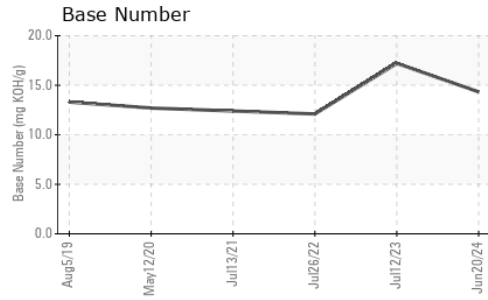
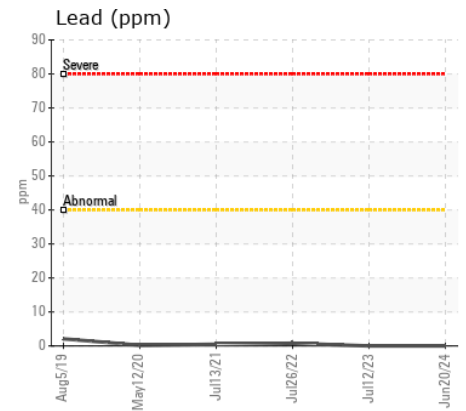
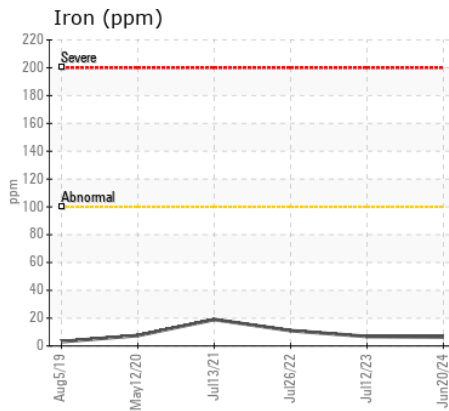
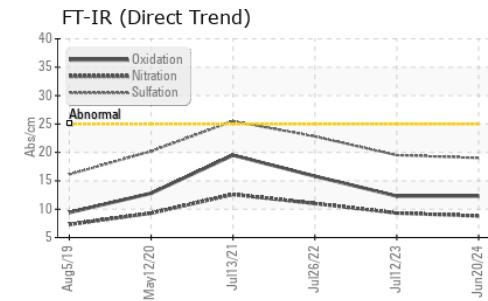
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	8	8	4
Potassium	ppm	ASTM D5185m	>20	3	2	0
Fuel		WC Method	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	8.8	9.3	11.0
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.0	19.5	22.8
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. The condition of the oil is suitable for further service.

Sodium	ppm	ASTM D5185m		2	3	4
Boron	ppm	ASTM D5185m		<1	0	0
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m		5	<1	2
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		29	22	24
Calcium	ppm	ASTM D5185m		4328	4493	4778
Phosphorus	ppm	ASTM D5185m		821	906	924
Zinc	ppm	ASTM D5185m		1112	1111	1093
Sulfur	ppm	ASTM D5185m		3916	4684	4759
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.3	12.3	15.8
Base Number (BN)	mg KOH/g	ASTM D2896		14.33	17.21	12.1
Visc @ 100°C	cSt	ASTM D445		11.4	11.6	11.8



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06221444 **Received** : 26 Jun 2024
Lab Number : 06221444 **Tested** : 28 Jun 2024
Unique Number : 11099641 **Diagnosed** : 28 Jun 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: TAN Man)

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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)