



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id  
**TORO 3500-G-1 15572 (S/N 404766066)**  
 Component  
**Left Gasoline Engine**  
 Fluid  
**TRC PRO-SPEC IV XP SYN BLEND SAE 10W30 (4 QTS)**

**RECOMMENDATION**

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06235152	TR05652803	TR05433759
Sample Date		Client Info		10 Jul 2024	20 Sep 2022	09 Dec 2021
Machine Age	hrs	Client Info		1420	648	440
Oil Age	hrs	Client Info		220	448	240
Filter Age	hrs	Client Info		220	448	240
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	>150	12	47	22
Chromium	ppm	ASTM D5185m	>20	0	<1	<1
Nickel	ppm	ASTM D5185m	>5	<1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>40	4	4	2
Lead	ppm	ASTM D5185m	>50	12	▲ 145	1
Copper	ppm	ASTM D5185m	>155	3	10	4
Tin	ppm	ASTM D5185m	>10	<1	0	<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**

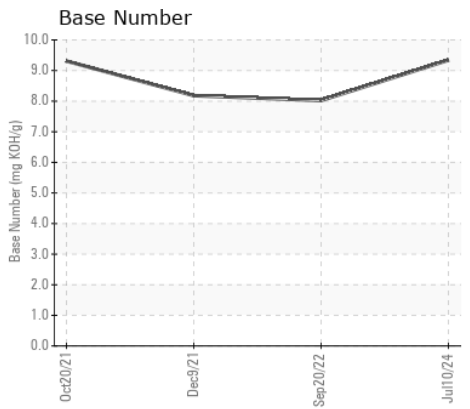
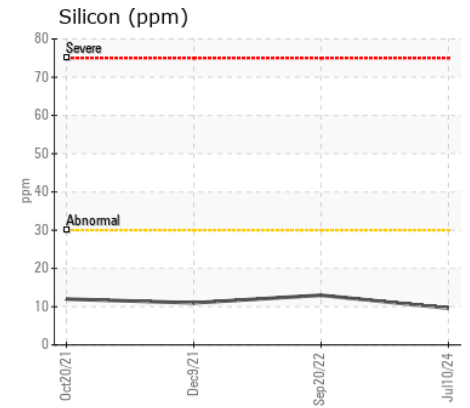
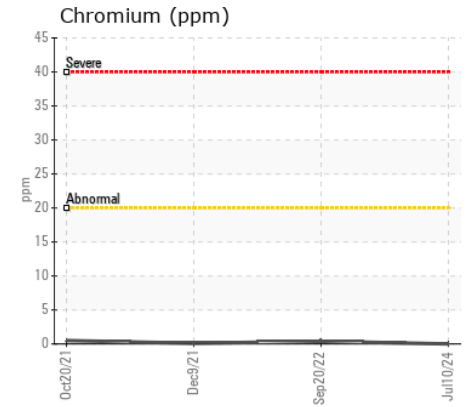
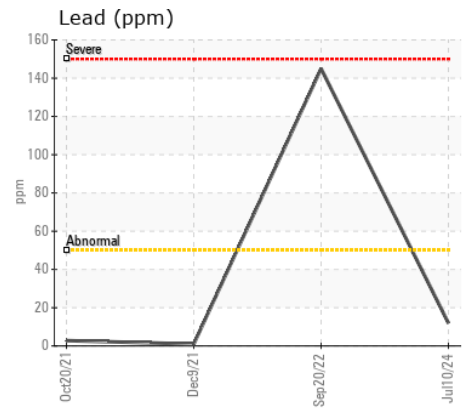
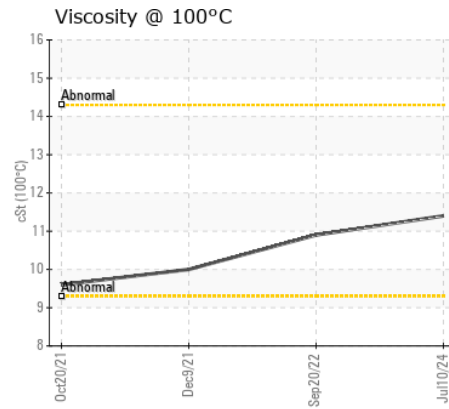
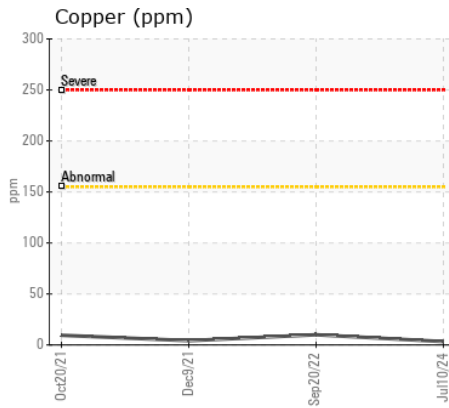
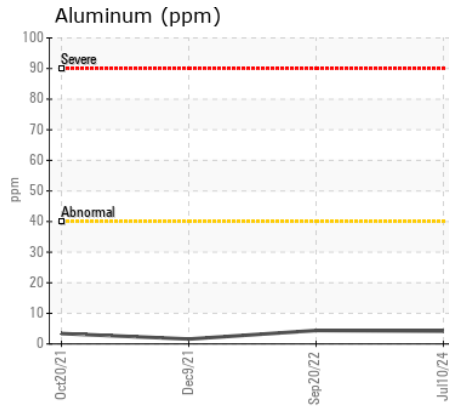
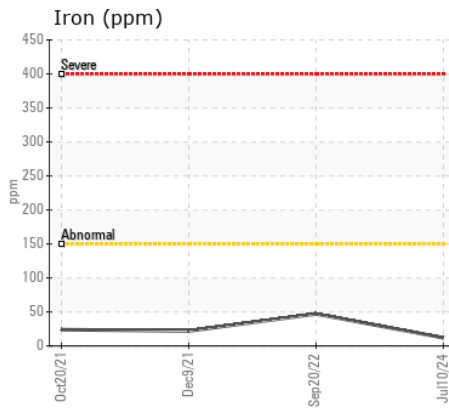
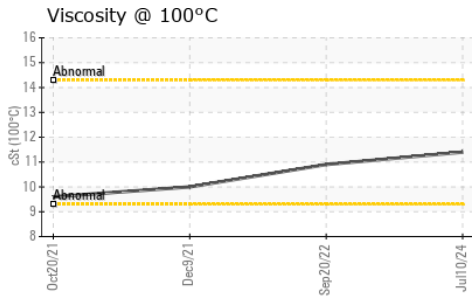
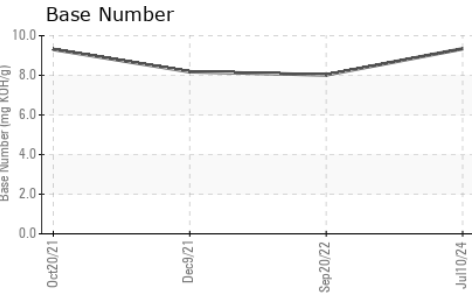
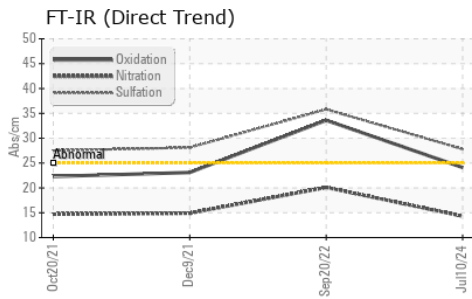
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>30	10	13	11
Potassium	ppm	ASTM D5185m	>20	3	0	2
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.1	0.1
Nitration	Abs/cm	*ASTM D7624	>20	14.3	20.1	14.9
Sulfation	Abs/.1mm	*ASTM D7415	>30	27.8	35.8	28.1
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	>0.2	NEG	NEG	NEG

**FLUID CONDITION**

The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m	>400	12	30	30
Boron	ppm	ASTM D5185m		12	0	2
Barium	ppm	ASTM D5185m		0	1	0
Molybdenum	ppm	ASTM D5185m		109	102	69
Manganese	ppm	ASTM D5185m		0	<1	<1
Magnesium	ppm	ASTM D5185m		52	50	42
Calcium	ppm	ASTM D5185m		3976	3882	2279
Phosphorus	ppm	ASTM D5185m		918	710	461
Zinc	ppm	ASTM D5185m		1113	900	580
Sulfur	ppm	ASTM D5185m		5024	4296	3144
Oxidation	Abs/.1mm	*ASTM D7414	>25	24.1	33.6	23.1
Base Number (BN)	mg KOH/g	ASTM D2896		9.34	8.02	8.18
Visc @ 100°C	cSt	ASTM D445		11.4	10.9	10.0



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR06235152 **Received** : 12 Jul 2024  
**Lab Number** : 06235152 **Tested** : 15 Jul 2024  
**Unique Number** : 11123986 **Diagnosed** : 15 Jul 2024 - Sean Felton  
**Test Package** : MOB 2

**CITY PARK GOLF COURSE**  
 3201 E 23RD AVE  
 DENVER, CO  
 US 80205  
 Contact: COLIN MURPHY  
 Colin.murphy@denvergov.org

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)