



TRAAP

Texas Refinery Advanced Analysis Program

# OIL ANALYSIS REPORT

WEAR	<b>NORMAL</b>
CONTAMINATION	<b>NORMAL</b>
FLUID CONDITION	<b>NORMAL</b>

Machine Id  
**INTERNATIONAL BCSD 32E - 1997**

Component  
**Diesel Engine**

Fluid  
**TRC MOLY XL PRO-SPEC SYN BLEND 15W40 (30 QTS)**

## RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		<b>TR06155284</b>	TR05765287	TR05479439
Sample Date		Client Info		<b>11 Mar 2024</b>	29 Nov 2022	30 Nov 2021
Machine Age	mls	Client Info		<b>253454</b>	243083	235060
Oil Age	mls	Client Info		<b>38378</b>	28007	19984
Filter Age	mls	Client Info		<b>0</b>	0	0
Oil Changed		Client Info		<b>N/A</b>	N/A	N/A
Filter Changed		Client Info		<b>N/A</b>	N/A	N/A
Sample Status				<b>NORMAL</b>	NORMAL	NORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>150	<b>105</b>	71	66
Chromium	ppm	ASTM D5185m	>15	<b>2</b>	2	2
Nickel	ppm	ASTM D5185m	>4	<b>2</b>	1	1
Titanium	ppm	ASTM D5185m		<b>&lt;1</b>	<1	<1
Silver	ppm	ASTM D5185m	>3	<b>0</b>	0	0
Aluminum	ppm	ASTM D5185m	>15	<b>4</b>	2	3
Lead	ppm	ASTM D5185m	>70	<b>13</b>	8	8
Copper	ppm	ASTM D5185m	>175	<b>20</b>	17	21
Tin	ppm	ASTM D5185m	>5	<b>2</b>	1	1
Vanadium	ppm	ASTM D5185m		<b>0</b>	0	0
White Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE

## CONTAMINATION

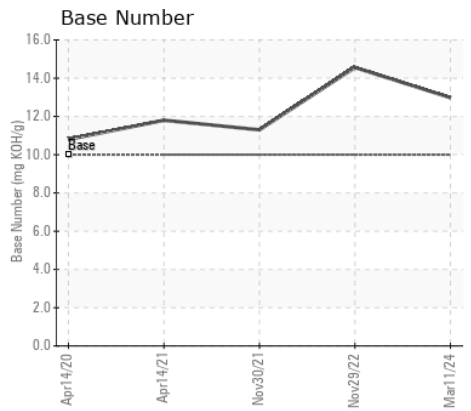
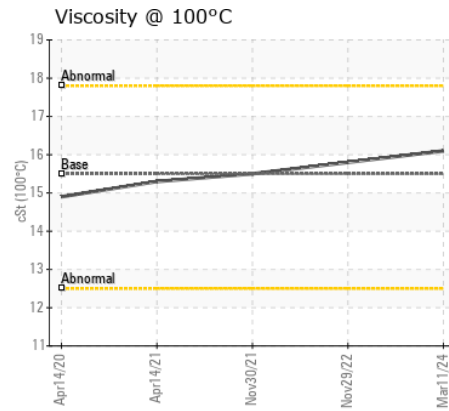
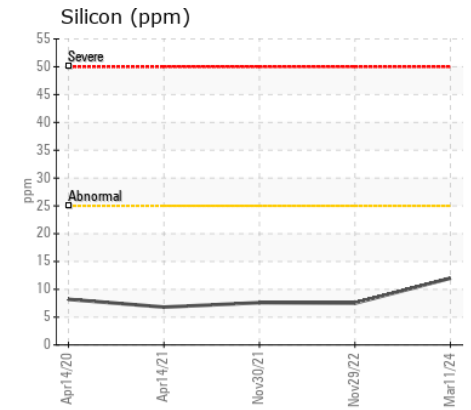
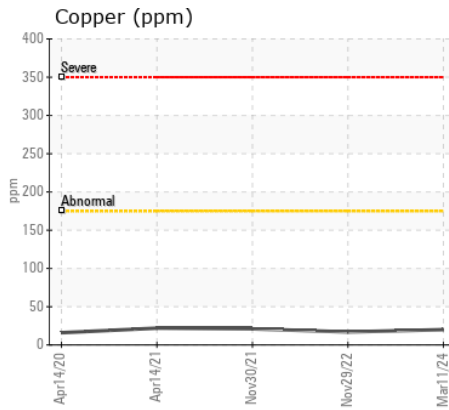
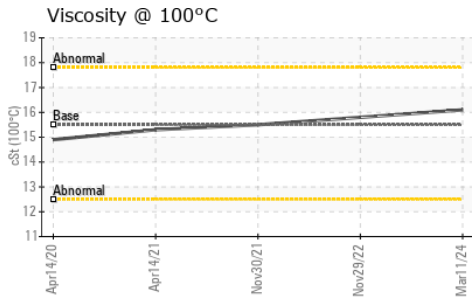
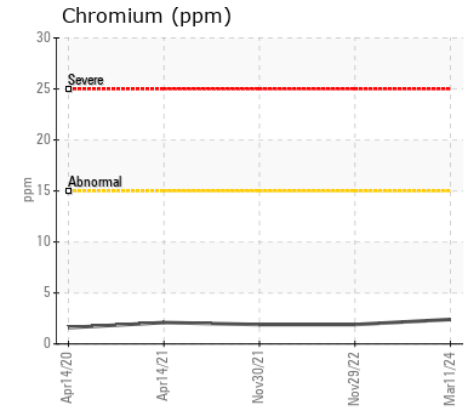
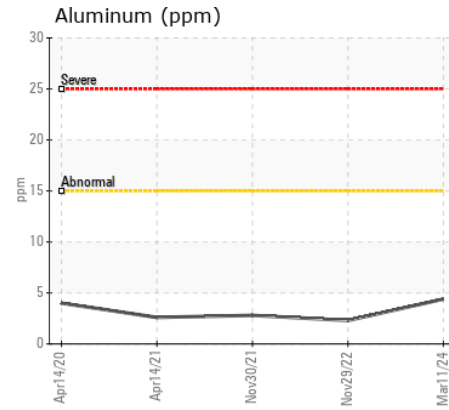
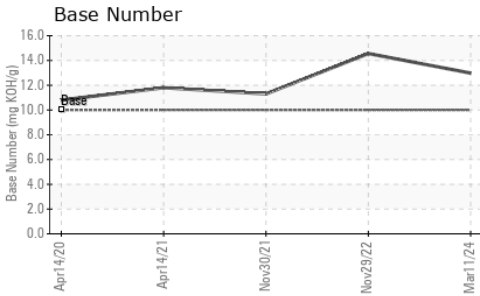
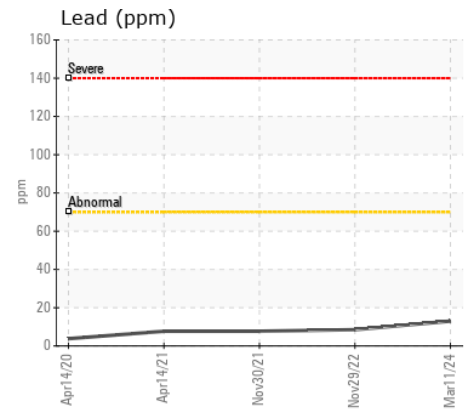
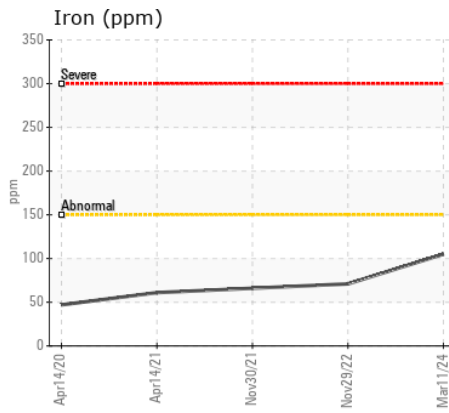
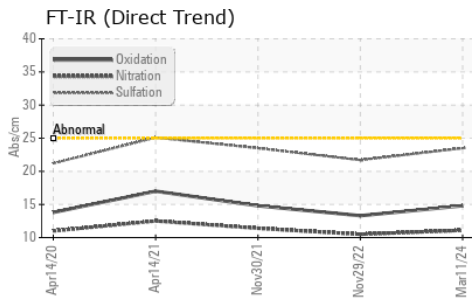
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	<b>12</b>	8	8
Potassium	ppm	ASTM D5185m	>20	<b>8</b>	2	<1
Fuel		WC Method	>3.0	<b>&lt;1.0</b>	<1.0	<1.0
Water		WC Method	>0.2	<b>NEG</b>	NEG	NEG
Glycol		WC Method		<b>NEG</b>	NEG	NEG
Soot %	%	*ASTM D7844	>3	<b>0.9</b>	0.7	0.7
Nitration	Abs/cm	*ASTM D7624	>20	<b>11.1</b>	10.5	11.4
Sulfation	Abs/.1mm	*ASTM D7415	>30	<b>23.5</b>	21.7	23.5
Silt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Debris	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Sand/Dirt	scalar	*Visual	NONE	<b>NONE</b>	NONE	NONE
Appearance	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Odor	scalar	*Visual	NORML	<b>NORML</b>	NORML	NORML
Emulsified Water	scalar	*Visual	>0.2	<b>NEG</b>	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		<b>40</b>	4	4
Boron	ppm	ASTM D5185m		<b>1</b>	0	6
Barium	ppm	ASTM D5185m		<b>0</b>	0	0
Molybdenum	ppm	ASTM D5185m		<b>167</b>	146	150
Manganese	ppm	ASTM D5185m		<b>1</b>	<1	<1
Magnesium	ppm	ASTM D5185m		<b>68</b>	111	230
Calcium	ppm	ASTM D5185m	2300	<b>4548</b>	4256	4392
Phosphorus	ppm	ASTM D5185m		<b>950</b>	903	1078
Zinc	ppm	ASTM D5185m	1200	<b>1135</b>	1149	1235
Sulfur	ppm	ASTM D5185m		<b>4350</b>	4780	4005
Oxidation	Abs/.1mm	*ASTM D7414	>25	<b>14.8</b>	13.3	14.8
Base Number (BN)	mg KOH/g	ASTM D2896	10	<b>12.98</b>	14.56	11.3
Visc @ 100°C	cSt	ASTM D445	15.5	<b>16.1</b>	15.8	15.5



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR06155284  
**Lab Number** : 06155284  
**Unique Number** : 10990707  
**Test Package** : MOB 2

**Received** : 19 Apr 2024  
**Tested** : 22 Apr 2024  
**Diagnosed** : 22 Apr 2024 - Wes Davis

**COLORADO RIVER UNION HS**  
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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)