



TRAAP

Texas Refinery Advanced Analysis Program

# OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id  
**FREIGHTLINER 4000**

Component  
**Diesel Engine**

Fluid  
**TRC PRO-SPEC IV 15W40 (40 QTS)**

## RECOMMENDATION

No corrective action is recommended at this time. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06062202	TR05813587	TR05672431
Sample Date		Client Info		09 Jan 2024	20 Jan 2023	30 Aug 2022
Machine Age	mls	Client Info		637548	608457	592455
Oil Age	mls	Client Info		0	0	0
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	NORMAL	ABNORMAL

## WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	4	25	53
Chromium	ppm	ASTM D5185m	>5	<1	2	5
Nickel	ppm	ASTM D5185m	>2	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>30	3	5	9
Lead	ppm	ASTM D5185m	>30	0	<1	12
Copper	ppm	ASTM D5185m	>150	2	<1	2
Tin	ppm	ASTM D5185m	>5	1	<1	2
Vanadium	ppm	ASTM D5185m		0	0	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

## CONTAMINATION

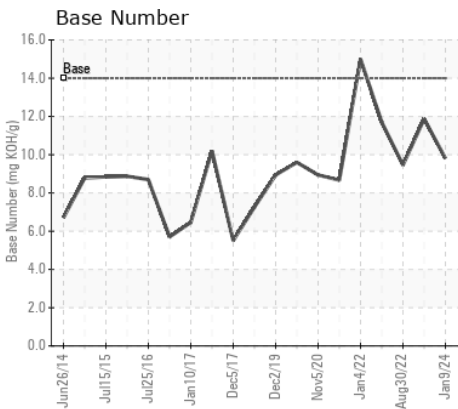
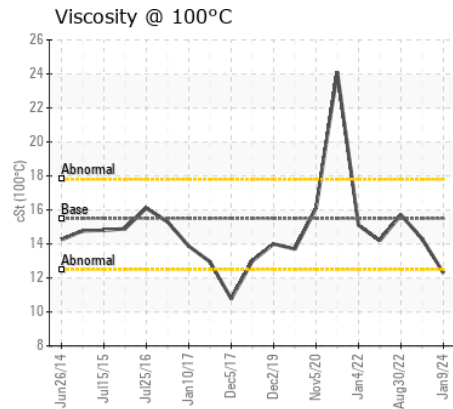
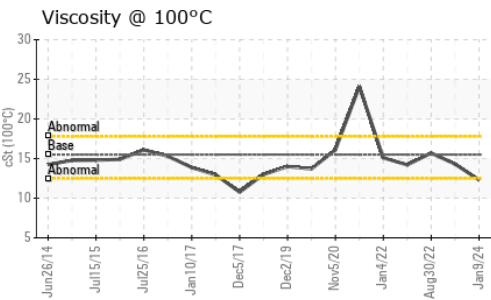
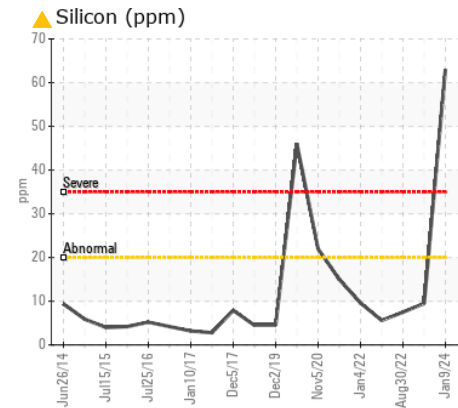
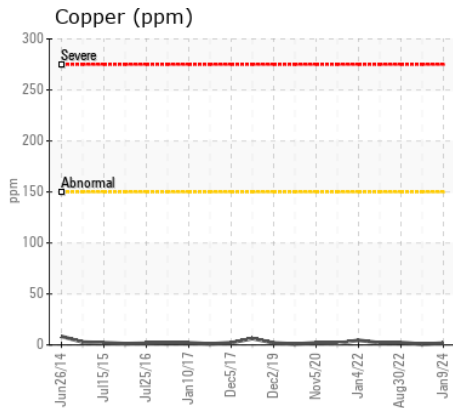
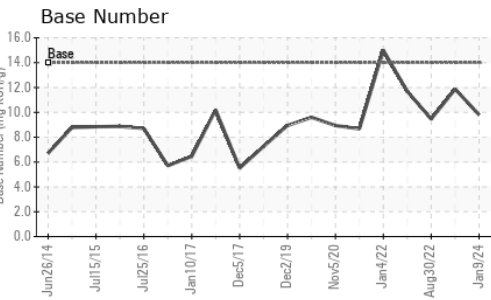
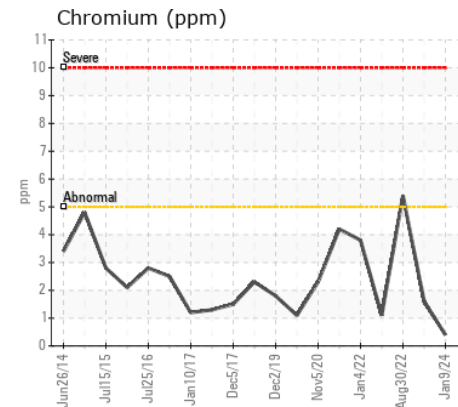
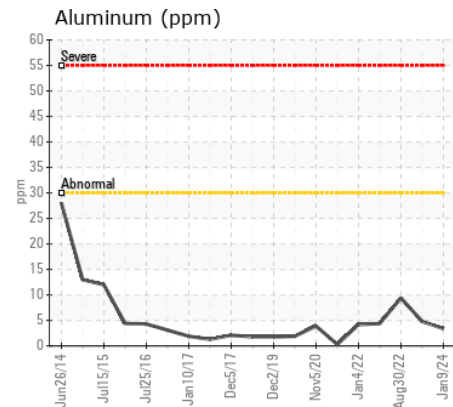
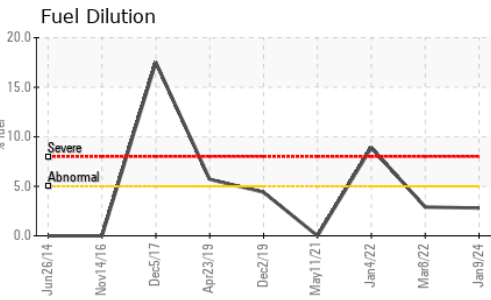
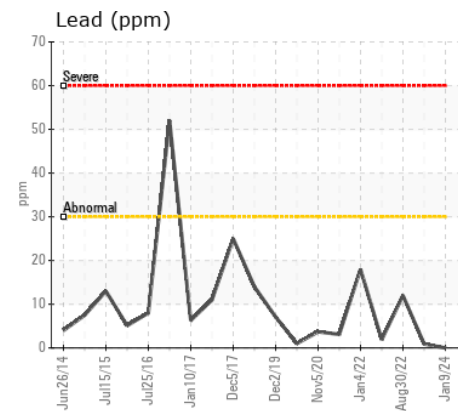
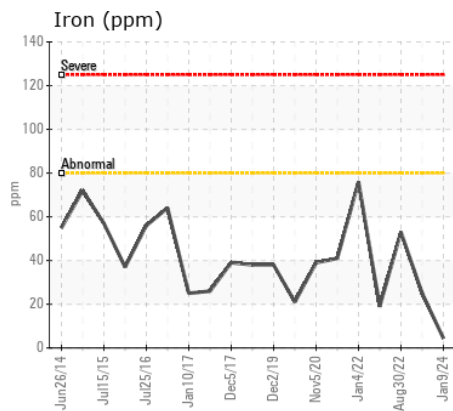
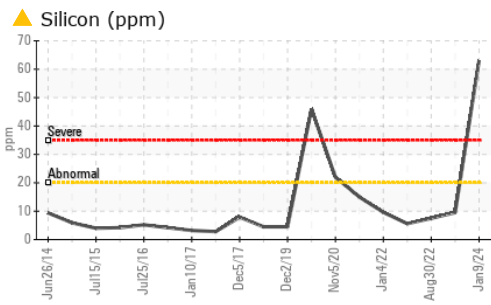
Fuel content negligible. Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	▲ 63	10	8
Potassium	ppm	ASTM D5185m	>20	0	10	31
Fuel	%	ASTM D3524	>5	2.8	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.8	1.9	▲ 4.6
Nitration	Abs/cm	*ASTM D7624	>20	8.3	11.3	18.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	20.0	25.7	42.0
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		3	2	1
Boron	ppm	ASTM D5185m		99	0	0
Barium	ppm	ASTM D5185m		0	<1	0
Molybdenum	ppm	ASTM D5185m		105	3	24
Manganese	ppm	ASTM D5185m		<1	<1	1
Magnesium	ppm	ASTM D5185m		613	23	20
Calcium	ppm	ASTM D5185m	2300	1348	4186	4229
Phosphorus	ppm	ASTM D5185m		720	816	791
Zinc	ppm	ASTM D5185m	1200	852	990	974
Sulfur	ppm	ASTM D5185m		2971	4730	3881
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.3	16.8	32.0
Base Number (BN)	mg KOH/g	ASTM D2896	14	9.81	11.87	9.46
Visc @ 100°C	cSt	ASTM D445	15.5	12.3	14.3	15.7



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : TR06062202 **Received** : 16 Jan 2024  
**Lab Number** : 06062202 **Diagnosed** : 23 Jan 2024  
**Unique Number** : 10833584 **Diagnostician** : Doug Bogart  
**Test Package** : MOB 2 ( Additional Tests: FuelDilution, PercentFuel )

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)

**CHRISTENSEN FARMS**  
 24710 US HWY 14  
 SLEEPY EYE, MN  
 US 56085  
 Contact: MATT  
 truckshop@christensenfarms.com  
 T:  
 F: (507)794-5597