



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
FREIGHTLINER M2 N-31 (S/N MR5378)

Component
Diesel Engine

Fluid
TRC PRO-SPEC IV SYNTHETIC BLEND 15W40 (6 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06159860	TR05903919	TR05764153
Sample Date		Client Info		22 Mar 2024	17 Jul 2023	06 Feb 2023
Machine Age	hrs	Client Info		1896	1450	1045
Oil Age	hrs	Client Info		446	405	487
Filter Age	hrs	Client Info		446	405	487
Oil Changed		Client Info		N/A	Changed	Changed
Filter Changed		Client Info		N/A	Changed	Changed
Sample Status				NORMAL	NORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>80	18	15	20
Chromium	ppm	ASTM D5185m	>5	2	<1	1
Nickel	ppm	ASTM D5185m	>2	1	<1	<1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	<1	<1	<1
Aluminum	ppm	ASTM D5185m	>30	7	6	8
Lead	ppm	ASTM D5185m	>30	2	<1	4
Copper	ppm	ASTM D5185m	>150	10	32	▲ 131
Tin	ppm	ASTM D5185m	>5	2	<1	1
Vanadium	ppm	ASTM D5185m		<1	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

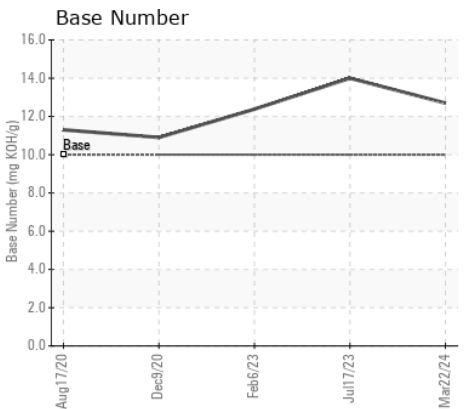
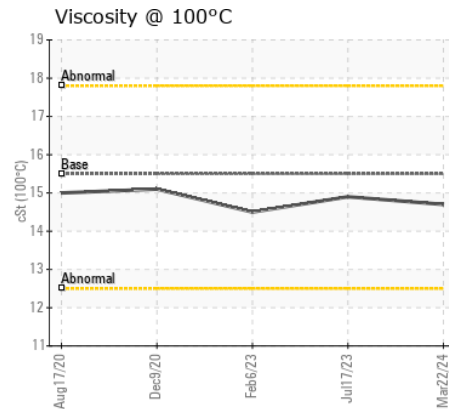
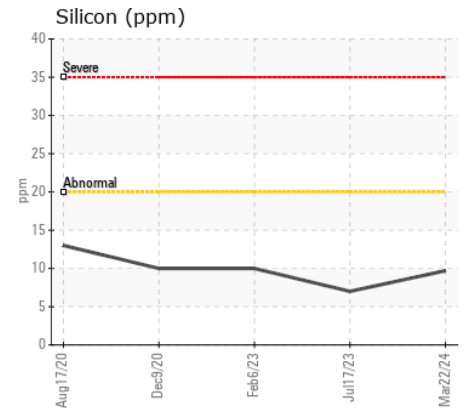
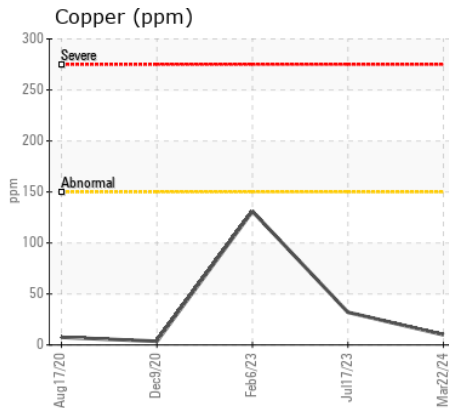
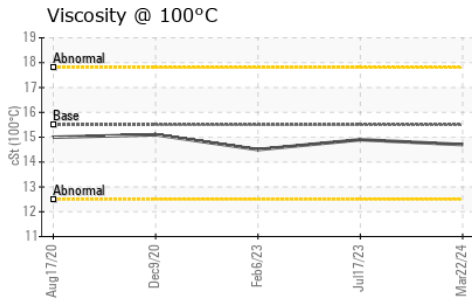
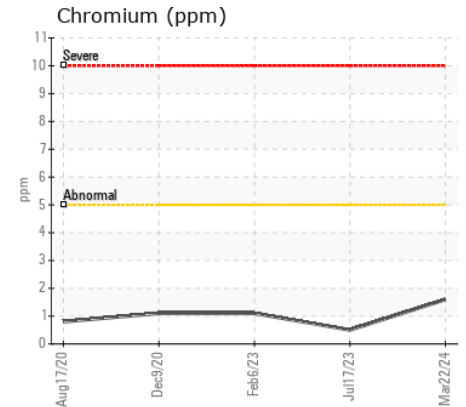
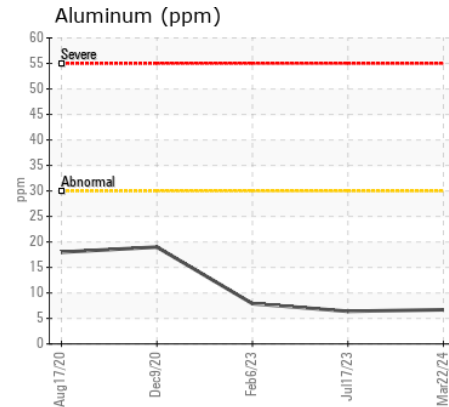
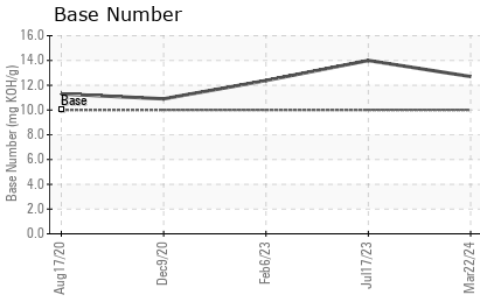
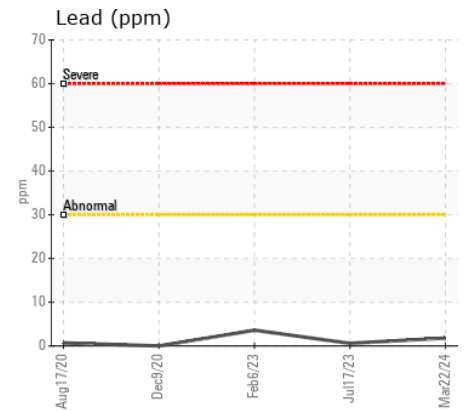
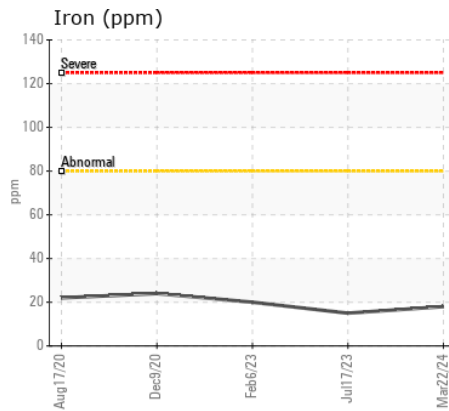
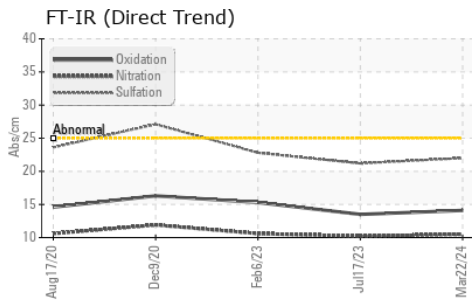
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>20	10	7	10
Potassium	ppm	ASTM D5185m	>20	12	12	19
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	0.3	0.3	0.3
Nitration	Abs/cm	*ASTM D7624	>20	10.5	10.2	10.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	22.0	21.2	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		3	0	4
Boron	ppm	ASTM D5185m		0	0	<1
Barium	ppm	ASTM D5185m		<1	2	0
Molybdenum	ppm	ASTM D5185m		123	145	121
Manganese	ppm	ASTM D5185m		1	<1	<1
Magnesium	ppm	ASTM D5185m		17	18	37
Calcium	ppm	ASTM D5185m	2300	4362	4685	4222
Phosphorus	ppm	ASTM D5185m		952	912	825
Zinc	ppm	ASTM D5185m	1200	1060	1103	1076
Sulfur	ppm	ASTM D5185m		5178	4883	4432
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.1	13.5	15.3
Base Number (BN)	mg KOH/g	ASTM D2896	10	12.70	14.00	12.38
Visc @ 100°C	cSt	ASTM D445	15.5	14.7	14.9	14.5



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06159860
Lab Number : 06159860
Unique Number : 10995283
Test Package : MOB 2
Received : 24 Apr 2024
Tested : 25 Apr 2024
Diagnosed : 26 Apr 2024 - Sean Felton

NORTHLAND CONTRACTING INC
 4735 W LAKE RD
 DUNKIRK, NY
 US 14048
 Contact: NATE TERRILL

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)