



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MACK GR64B R014 (S/N 1378414)
 Component
Diesel Engine
 Fluid
TRC PRO-SPEC V SYN BLEND 15W40 (44 LTR)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06218423	TR06136948	TR06042725
Sample Date		Client Info		13 Jun 2024	20 Mar 2024	13 Dec 2023
Machine Age	mls	Client Info		50904	38652	26339
Oil Age	mls	Client Info		36423	24171	12058
Filter Age	mls	Client Info		12252	11685	12058
Oil Changed		Client Info		Changed	Not Changed	Not Changed
Filter Changed		Client Info		Changed	Changed	Changed
Sample Status				NORMAL	ATTENTION	ATTENTION

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>120	78	61	55
Chromium	ppm	ASTM D5185m	>20	2	1	<1
Nickel	ppm	ASTM D5185m	>15	2	2	1
Titanium	ppm	ASTM D5185m	>2	<1	0	0
Silver	ppm	ASTM D5185m	>3	<1	<1	0
Aluminum	ppm	ASTM D5185m	>20	5	5	5
Lead	ppm	ASTM D5185m	>40	4	4	4
Copper	ppm	ASTM D5185m	>330	150	190	281
Tin	ppm	ASTM D5185m	>15	5	6	6
Vanadium	ppm	ASTM D5185m		<1	<1	<1
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

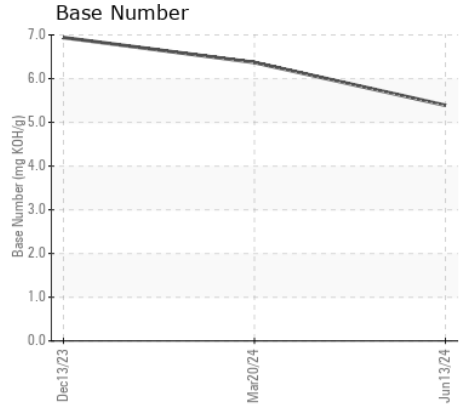
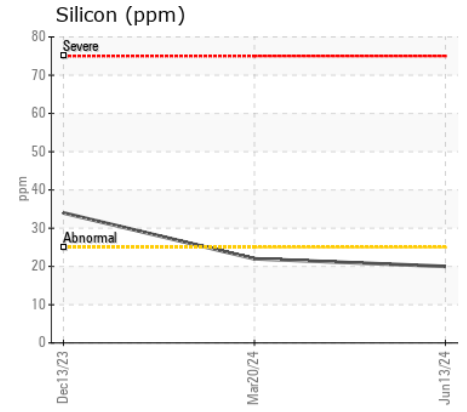
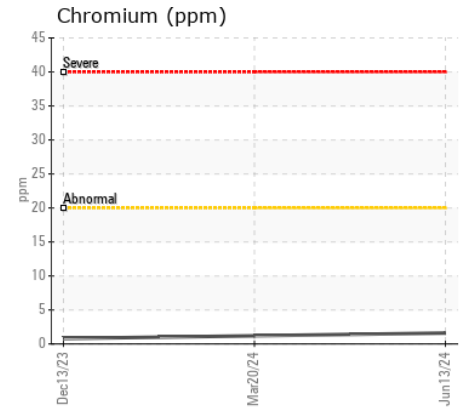
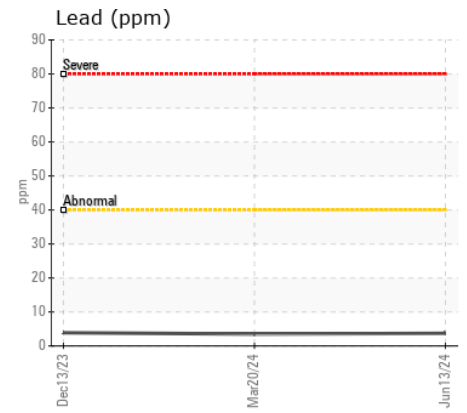
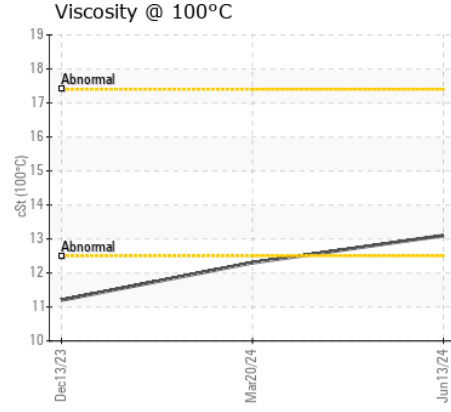
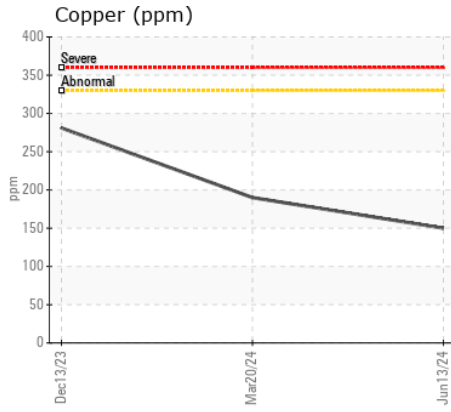
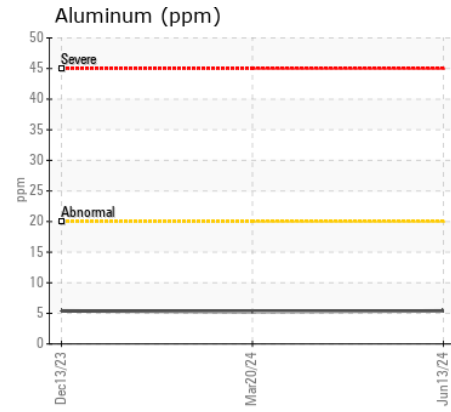
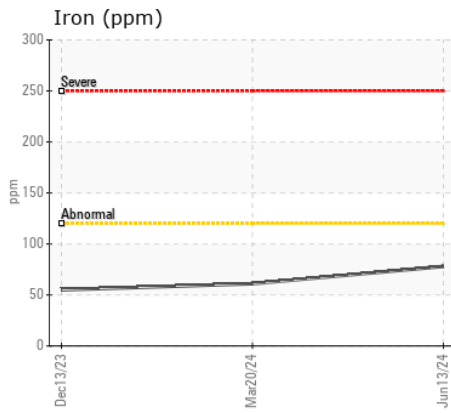
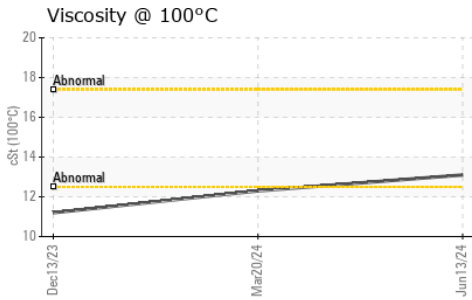
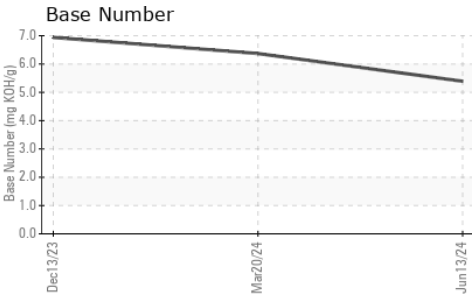
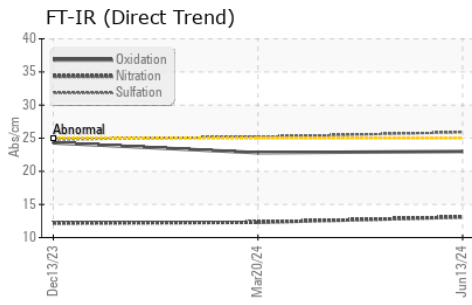
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	20	22	34
Potassium	ppm	ASTM D5185m	>20	14	11	11
Fuel		WC Method	>3.0	<1.0	<1.0	0.6
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>4	0.8	0.6	0.5
Nitration	Abs/cm	*ASTM D7624	>20	13.1	12.3	12.2
Sulfation	Abs/.1mm	*ASTM D7415	>30	25.9	25.2	24.8
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 acceptable for the time in service.

Sodium	ppm	ASTM D5185m		4	4	3
Boron	ppm	ASTM D5185m		8	14	33
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		49	59	86
Manganese	ppm	ASTM D5185m		4	3	4
Magnesium	ppm	ASTM D5185m		272	342	462
Calcium	ppm	ASTM D5185m		2479	2120	1683
Phosphorus	ppm	ASTM D5185m		922	779	748
Zinc	ppm	ASTM D5185m		1102	984	865
Sulfur	ppm	ASTM D5185m		3378	3087	2278
Oxidation	Abs/.1mm	*ASTM D7414	>25	23.0	22.8	24.3
Base Number (BN)	mg KOH/g	ASTM D2896		5.39	6.37	6.94
Visc @ 100°C	cSt	ASTM D445		13.1	12.3	11.2



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06218423
Lab Number : 06218423
Unique Number : 11096620
Test Package : MOB 2
Received : 24 Jun 2024
Tested : 25 Jun 2024
Diagnosed : 25 Jun 2024 - Sean Felton

NORTHWEST REFUSE SERVICE
 2001 WINDSOR AVE
 BALTIMORE, MD
 US 21217
 Contact: JASON

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)

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