



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
KALMAR RT022 00004

Component
Diesel Engine

Fluid
DIESEL ENGINE OIL SAE 15W40 (--- GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06221446	---	---
Sample Date		Client Info		12 Jun 2024	---	---
Machine Age	hrs	Client Info		552	---	---
Oil Age	hrs	Client Info		100	---	---
Filter Age	hrs	Client Info		100	---	---
Oil Changed		Client Info		Not Chngd	---	---
Filter Changed		Client Info		Not Chngd	---	---
Sample Status				NORMAL	---	---

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	12	---	---
Chromium	ppm	ASTM D5185m	>20	<1	---	---
Nickel	ppm	ASTM D5185m	>4	<1	---	---
Titanium	ppm	ASTM D5185m		<1	---	---
Silver	ppm	ASTM D5185m	>3	0	---	---
Aluminum	ppm	ASTM D5185m	>20	3	---	---
Lead	ppm	ASTM D5185m	>40	<1	---	---
Copper	ppm	ASTM D5185m	>330	2	---	---
Tin	ppm	ASTM D5185m	>15	0	---	---
Vanadium	ppm	ASTM D5185m		0	---	---
White Metal	scalar	*Visual	NONE	NONE	---	---
Yellow Metal	scalar	*Visual	NONE	NONE	---	---

CONTAMINATION

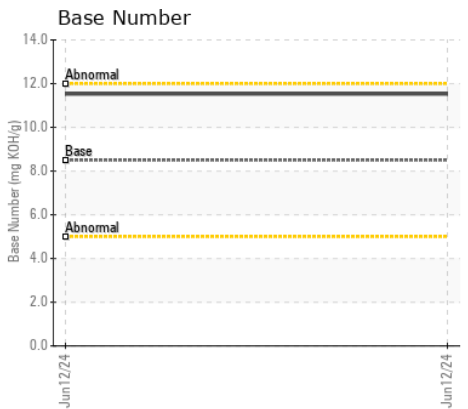
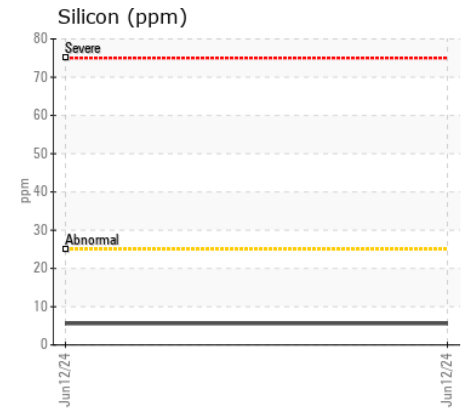
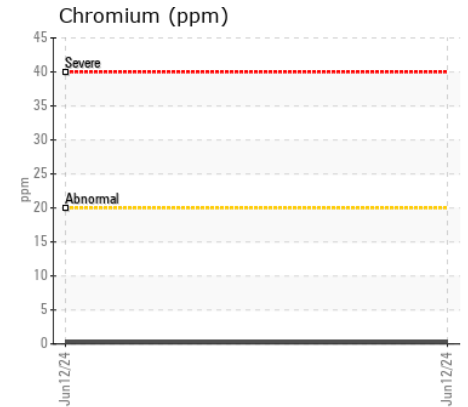
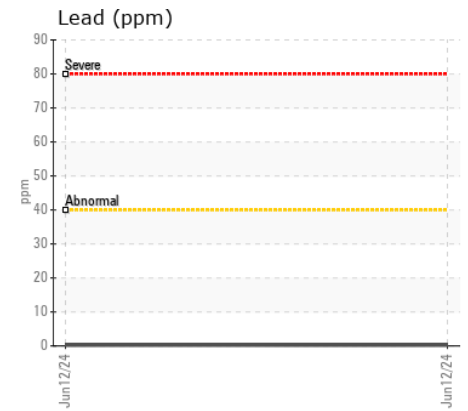
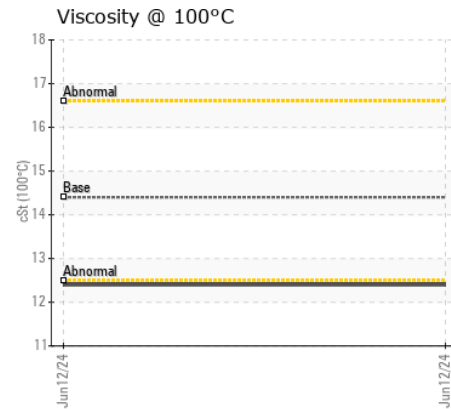
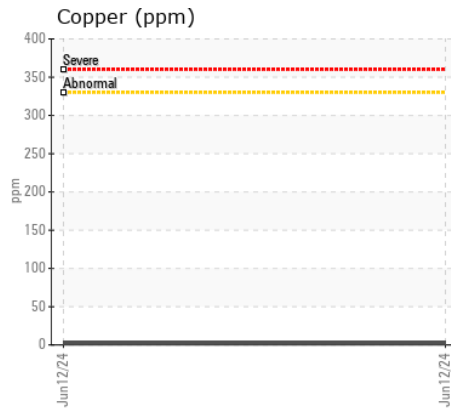
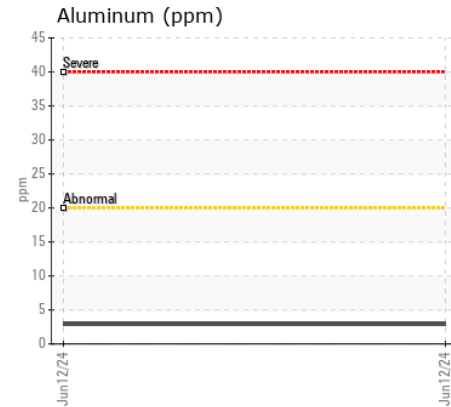
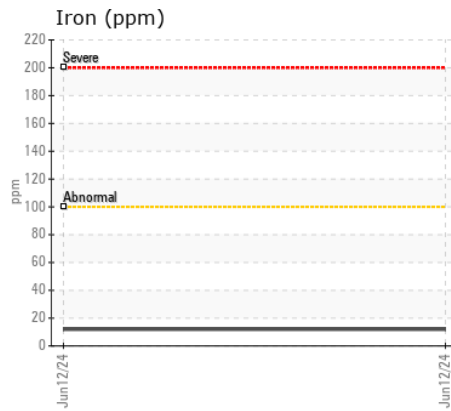
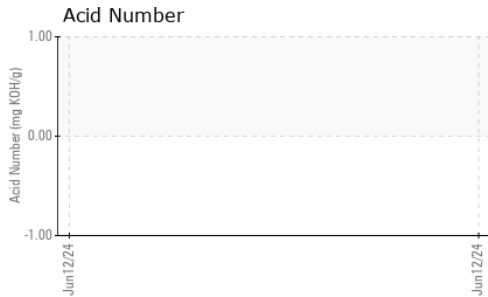
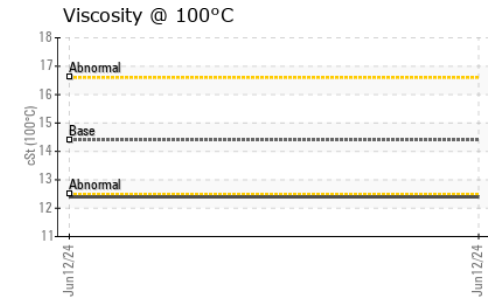
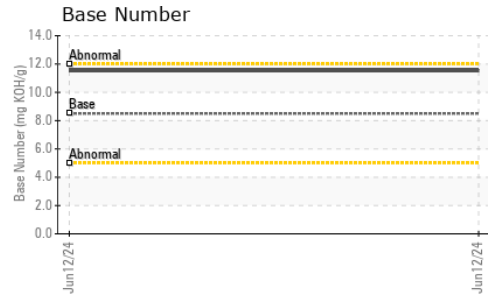
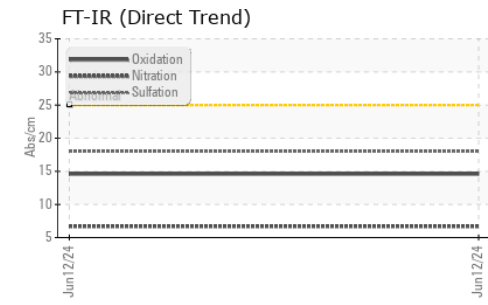
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	6	---	---
Potassium	ppm	ASTM D5185m	>20	3	---	---
Fuel	%	ASTM D3524	>5	<1.0	---	---
Water		WC Method	>0.2	NEG	---	---
Glycol		WC Method		NEG	---	---
Soot %	%	*ASTM D7844	>3	0.1	---	---
Nitration	Abs/cm	*ASTM D7624	>20	6.7	---	---
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.0	---	---
Silt	scalar	*Visual	NONE	NONE	---	---
Debris	scalar	*Visual	NONE	NONE	---	---
Sand/Dirt	scalar	*Visual	NONE	NONE	---	---
Appearance	scalar	*Visual	NORML	NORML	---	---
Odor	scalar	*Visual	NORML	NORML	---	---
Emulsified Water	scalar	*Visual	>0.2	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	>158	3	---	---
Boron	ppm	ASTM D5185m	250	160	---	---
Barium	ppm	ASTM D5185m	10	<1	---	---
Molybdenum	ppm	ASTM D5185m	100	8	---	---
Manganese	ppm	ASTM D5185m		<1	---	---
Magnesium	ppm	ASTM D5185m	450	597	---	---
Calcium	ppm	ASTM D5185m	3000	1275	---	---
Phosphorus	ppm	ASTM D5185m	1150	709	---	---
Zinc	ppm	ASTM D5185m	1350	825	---	---
Sulfur	ppm	ASTM D5185m	4250	2825	---	---
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.6	---	---
Base Number (BN)	mg KOH/g	ASTM D2896	8.5	11.53	---	---
Visc @ 100°C	cSt	ASTM D445	14.4	12.4	---	---



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06221446 **Received** : 26 Jun 2024
Lab Number : 06221446 **Tested** : 28 Jun 2024
Unique Number : 11099643 **Diagnosed** : 28 Jun 2024 - Sean Felton
Test Package : MOB 2 (Additional Tests: FuelDilution, TAN Man)

WIE - WESTERN INDUSTRIAL EQUIPMENT
 10761 N WILSON RD
 LAKE CITY, MI
 US 49651
 Contact: JOHN HIGGINS

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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F: