



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
16B
 Component
Diesel Engine
 Fluid
TRC MOLY XL PRO-SPEC IV XP 15W40 (6 GAL)

RECOMMENDATION

Oil and filter change at the time of sampling has been noted. 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		TR06229316	TR06095122	TR05841635
Sample Date		Client Info		28 Jun 2024	14 Feb 2024	19 Apr 2023
Machine Age	hrs	Client Info		9167	8822	8080
Oil Age	hrs	Client Info		1087	742	969
Filter Age	hrs	Client Info		1087	742	969
Oil Changed		Client Info		Changed	Not Changd	Changed
Filter Changed		Client Info		Changed	Not Changed	Changed
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Piston, ring and cylinder wear is indicated.

Iron	ppm	ASTM D5185m	>90	▲ 181	▲ 113	▲ 102
Chromium	ppm	ASTM D5185m	>20	10	7	2
Nickel	ppm	ASTM D5185m	>2	2	<1	<1
Titanium	ppm	ASTM D5185m	>2	1	0	<1
Silver	ppm	ASTM D5185m	>2	<1	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ 33	▲ 23	▲ 20
Lead	ppm	ASTM D5185m	>40	<1	0	0
Copper	ppm	ASTM D5185m	>330	6	3	2
Tin	ppm	ASTM D5185m	>15	<1	0	<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.

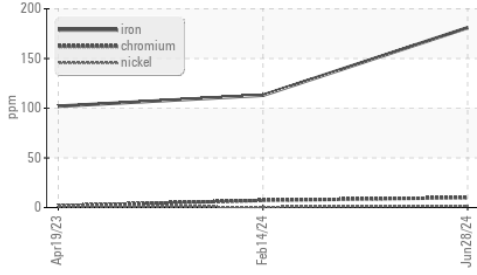
Silicon	ppm	ASTM D5185m	>25	13	10	8
Potassium	ppm	ASTM D5185m	>20	20	11	18
Fuel		WC Method	>3.0	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>6	1.9	1.4	1.2
Nitration	Abs/cm	*ASTM D7624	>20	19.8	16.5	15.8
Sulfation	Abs/.1mm	*ASTM D7415	>30	34.0	29.0	27.9
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

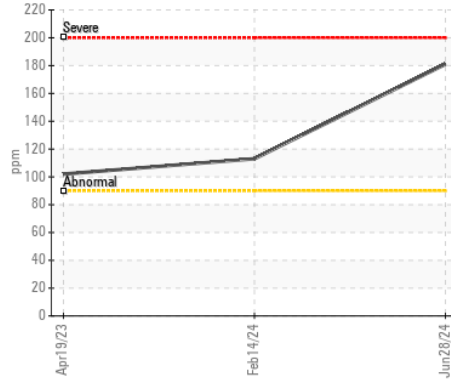
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		5	3	1
Boron	ppm	ASTM D5185m		2	1	5
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		143	130	118
Manganese	ppm	ASTM D5185m		2	1	1
Magnesium	ppm	ASTM D5185m		21	22	24
Calcium	ppm	ASTM D5185m		4767	4381	4404
Phosphorus	ppm	ASTM D5185m		1010	918	946
Zinc	ppm	ASTM D5185m		1186	1098	1105
Sulfur	ppm	ASTM D5185m		4493	4314	4320
Oxidation	Abs/.1mm	*ASTM D7414	>25	26.5	21.8	21.4
Base Number (BN)	mg KOH/g	ASTM D2896		9.17	9.79	7.88
Visc @ 100°C	cSt	ASTM D445		16.5	15.0	15.0

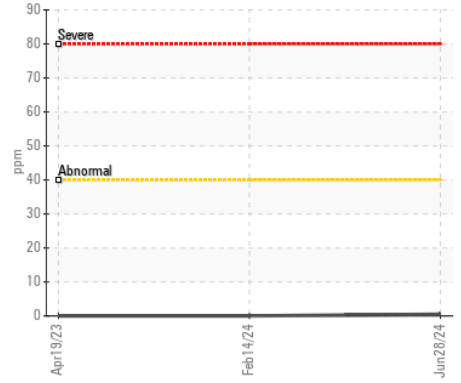
▲ Ferrous Alloys



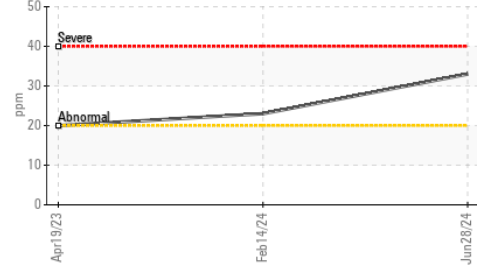
▲ Iron (ppm)



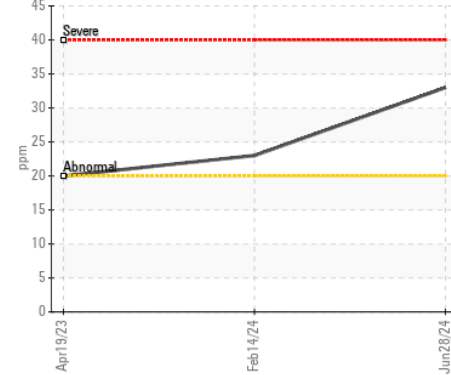
▲ Lead (ppm)



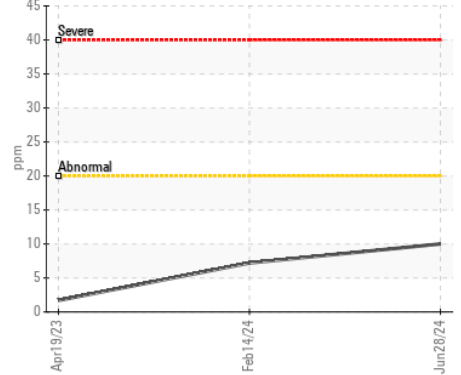
▲ Aluminum (ppm)



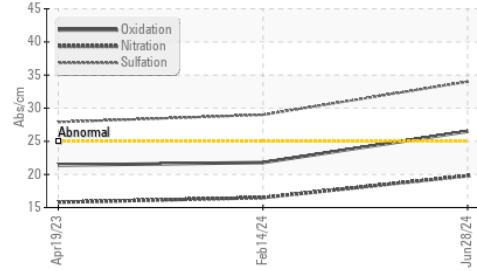
▲ Aluminum (ppm)



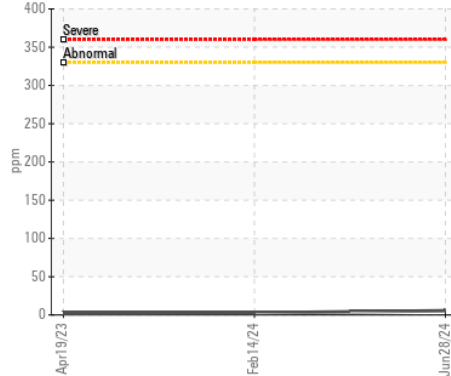
▲ Chromium (ppm)



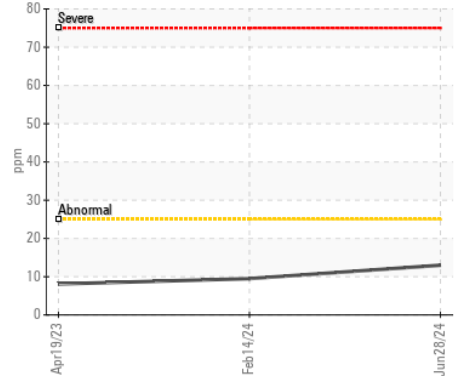
FT-IR (Direct Trend)



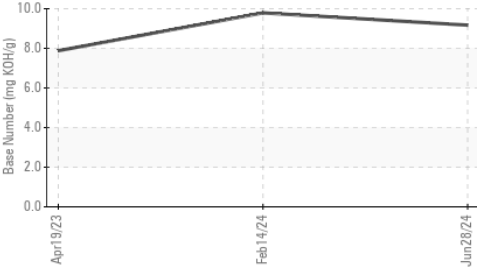
▲ Copper (ppm)



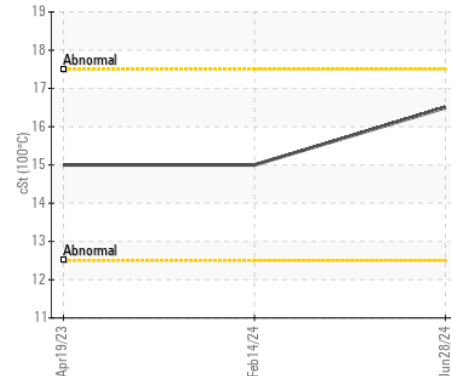
▲ Silicon (ppm)



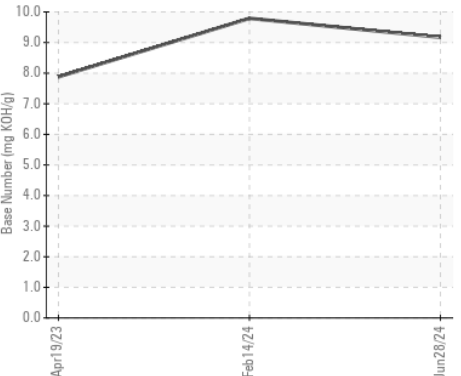
Base Number



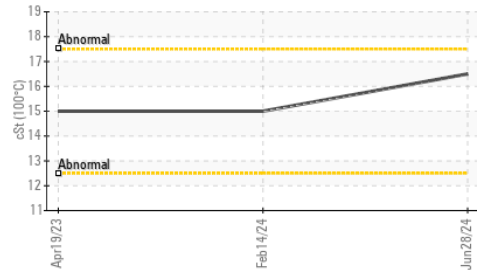
Viscosity @ 100°C



Base Number



Viscosity @ 100°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06229316
Lab Number : 06229316
Unique Number : 11112809
Test Package : MOB 2

Received : 05 Jul 2024
Tested : 09 Jul 2024
Diagnosed : 09 Jul 2024 - Sean Felton

LEROUX FUELS
 994 MILITARY TPK SUITE 101
 PLATTSBURGH, NY
 US 12901
 Contact: DAVID STARK

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)

T:
F: