



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Machine Id
MAHINDRA MAHINDRA JEEP

Component
Diesel Engine

Fluid
TRC MOLY XL PRO-SPEC IV HD SYN 5W40 (8 QTS)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR05914101	TR05736734	TR05164923
Sample Date		Client Info		30 Jul 2023	05 Jan 2023	20 Jan 2021
Machine Age	mls	Client Info		7247	6179	3187
Oil Age	mls	Client Info		4060	2992	2400
Filter Age	mls	Client Info		375	2992	2400
Oil Changed		Client Info		Not Changd	Not Changd	Changed
Filter Changed		Client Info		Not Changd	Not Changd	Changed
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

Metal levels are typical for a new component breaking in.

Iron	ppm	ASTM D5185m	>100	55	50	28
Chromium	ppm	ASTM D5185m	>20	2	2	2
Nickel	ppm	ASTM D5185m	>4	1	2	1
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	6	9	2
Lead	ppm	ASTM D5185m	>40	4	5	5
Copper	ppm	ASTM D5185m	>330	38	18	15
Tin	ppm	ASTM D5185m	>15	3	3	2
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

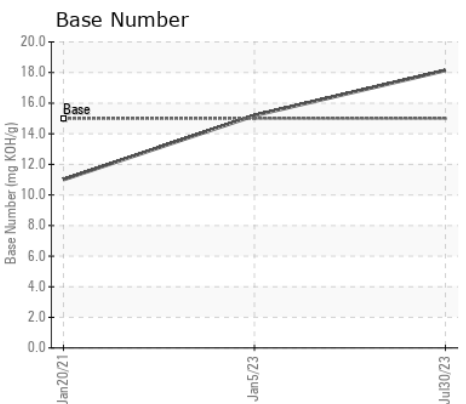
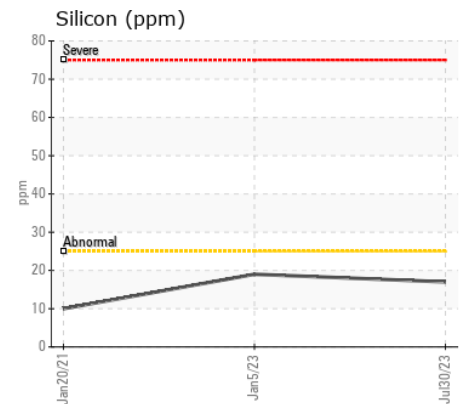
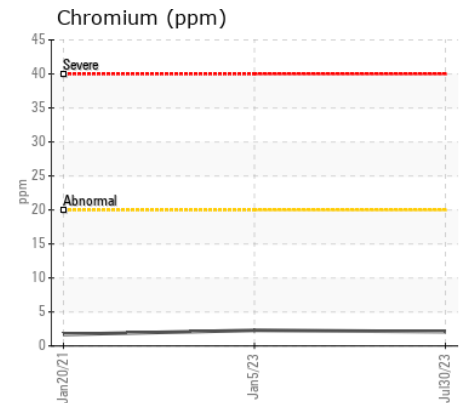
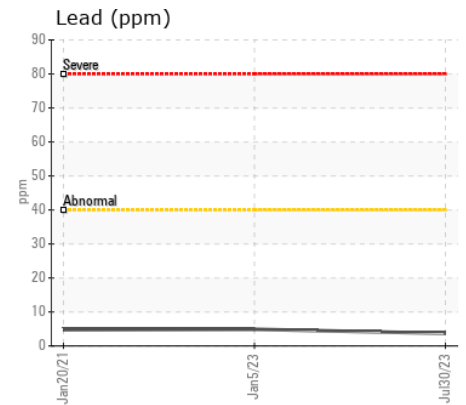
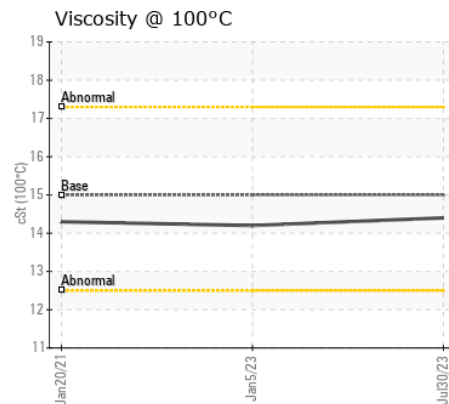
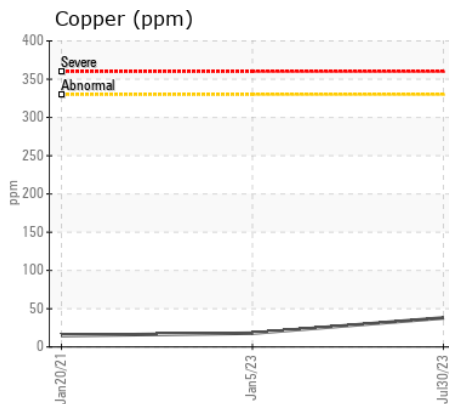
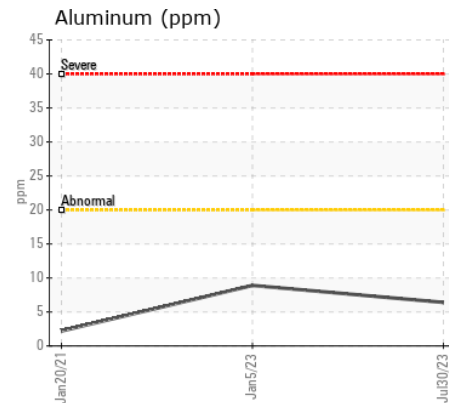
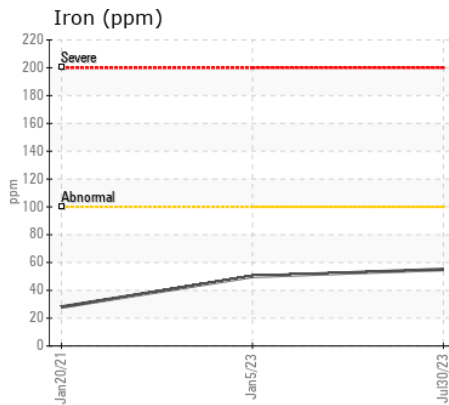
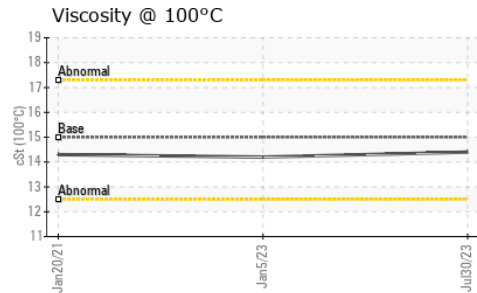
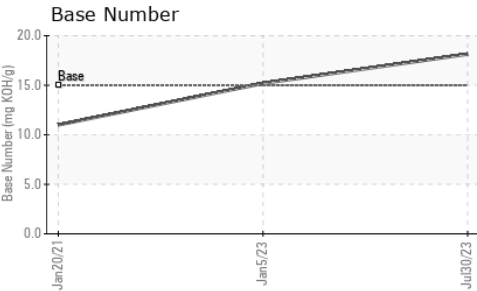
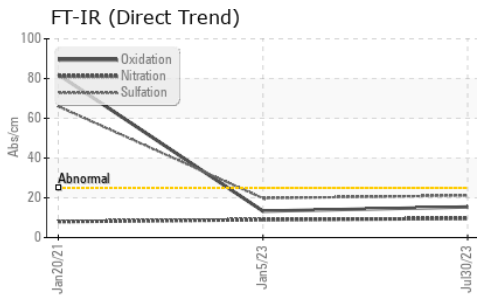
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>25	17	19	10
Potassium	ppm	ASTM D5185m	>20	3	3	2
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	0.4	0.4	0.4
Nitration	Abs/cm	*ASTM D7624	>20	9.6	9.0	8
Sulfation	Abs/.1mm	*ASTM D7415	>30	21.2	19.8	66
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		5	5	4
Boron	ppm	ASTM D5185m		24	8	75
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		132	137	84
Manganese	ppm	ASTM D5185m		1	1	<1
Magnesium	ppm	ASTM D5185m		85	51	874
Calcium	ppm	ASTM D5185m	4500	5175	4535	1197
Phosphorus	ppm	ASTM D5185m		927	897	1112
Zinc	ppm	ASTM D5185m	1200	1139	1068	1317
Sulfur	ppm	ASTM D5185m		5738	5461	3476
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.4	13.3	82
Base Number (BN)	mg KOH/g	ASTM D2896	15	18.14	15.19	11.0
Visc @ 100°C	cSt	ASTM D445	15	14.4	14.2	14.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
 Sample No. : TR05914101
 Lab Number : 05914101
 Unique Number : 10586015
 Test Package : MOB 2

Received : 02 Aug 2023
 Tested : 03 Aug 2023
 Diagnosed : 03 Aug 2023 - Wes Davis

TORQUE KING 4X4 - JESSE GUARINO
 7095 COMMERCIAL AVE
 BILLINGS, MT
 US 59101
 Contact: MARK OPHEIM

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: