



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
1995 IH 17
 Component
Diesel Engine
 Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (--- QTS)

RECOMMENDATION

We advise that you check for faulty combustion, plugged air filters, or aftercoolers. We recommend you service the filters on this component. We recommend an early resample to monitor this condition.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06054168	TR05493919	TR05245142
Sample Date		Client Info		30 Nov 2023	24 Feb 2022	21 Apr 2021
Machine Age	mls	Client Info		109199	89754	79758
Oil Age	mls	Client Info		8730	9996	10949
Filter Age	mls	Client Info		8730	9996	10949
Oil Changed		Client Info		Not Changd	Not Changd	Not Changd
Filter Changed		Client Info		Not Changd	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	SEVERE

WEAR

Piston, ring and cylinder wear is indicated.

Iron	ppm	ASTM D5185m	>100	▲ 119	▲ 124	▲ 301
Chromium	ppm	ASTM D5185m	>20	2	3	7
Nickel	ppm	ASTM D5185m	>4	<1	1	3
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>20	▲ 139	▲ 120	▲ 245
Lead	ppm	ASTM D5185m	>40	2	3	5
Copper	ppm	ASTM D5185m	>330	9	8	14
Tin	ppm	ASTM D5185m	>15	<1	1	0
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

There is an abnormal amount of solids and carbon present in the oil.

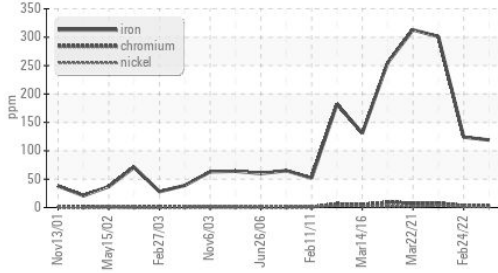
Silicon	ppm	ASTM D5185m	>25	22	14	19
Potassium	ppm	ASTM D5185m	>20	7	28	▲ 134
Fuel	%	ASTM D3524	>5	<1.0	<1.0	<1.0
Water		WC Method	>0.2	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	▲ 4.5	▲ 4.9	6
Nitration	Abs/cm	*ASTM D7624	>20	15.7	18.8	25.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	30.6	33.3	39.9
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

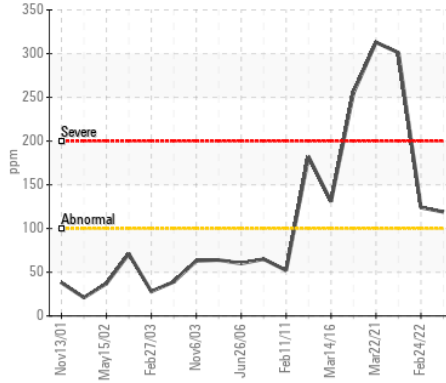
The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is acceptable for the time in service.

Sodium	ppm	ASTM D5185m		18	69	▲ 278
Boron	ppm	ASTM D5185m		<1	0	<1
Barium	ppm	ASTM D5185m		3	0	0
Molybdenum	ppm	ASTM D5185m		1219	496	390
Manganese	ppm	ASTM D5185m		<1	2	3
Magnesium	ppm	ASTM D5185m		25	35	120
Calcium	ppm	ASTM D5185m	1300	4234	4146	4037
Phosphorus	ppm	ASTM D5185m		919	850	889
Zinc	ppm	ASTM D5185m	1300	1001	937	990
Sulfur	ppm	ASTM D5185m		4978	3486	3451
Oxidation	Abs/.1mm	*ASTM D7414	>25	15.0	18.1	27.8
Base Number (BN)	mg KOH/g	ASTM D2896	14	11.32	9.89	11.4
Visc @ 100°C	cSt	ASTM D445	15.5	15.5	15.4	▲ 16.6

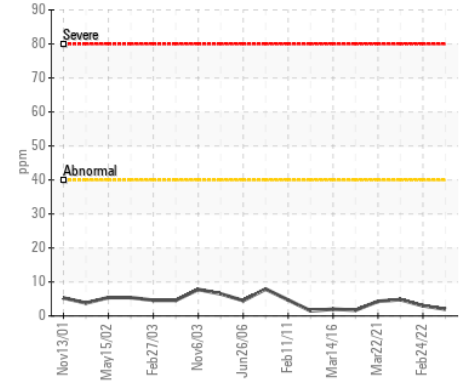
▲ Ferrous Alloys



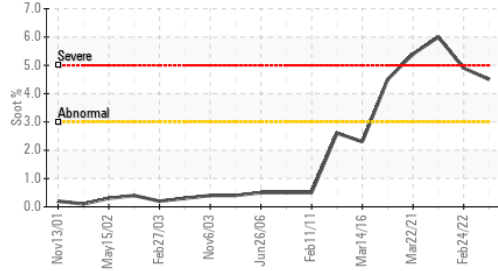
▲ Iron (ppm)



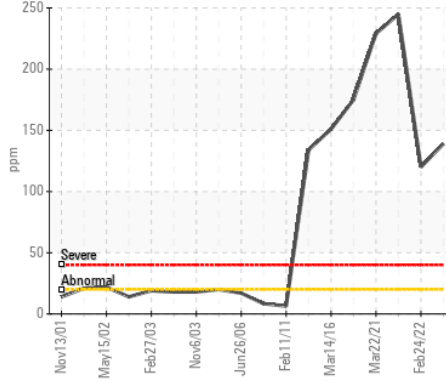
▲ Lead (ppm)



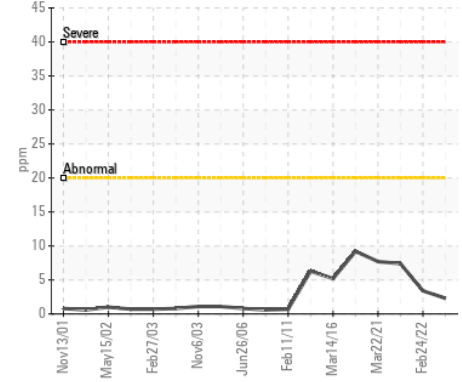
▲ Soot %



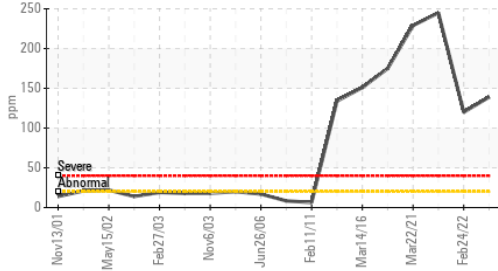
▲ Aluminum (ppm)



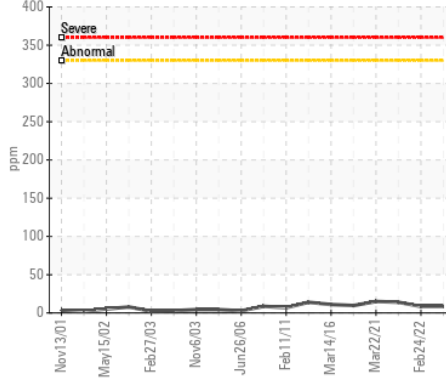
▲ Chromium (ppm)



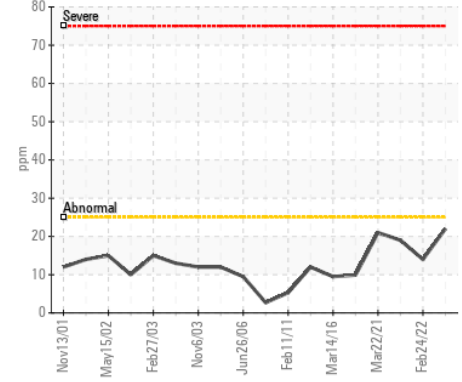
▲ Aluminum (ppm)



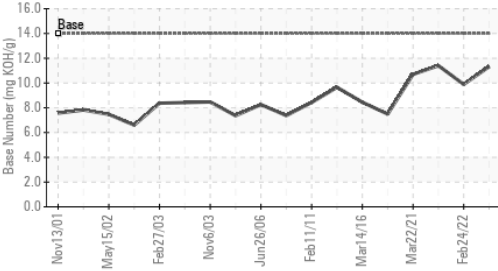
▲ Copper (ppm)



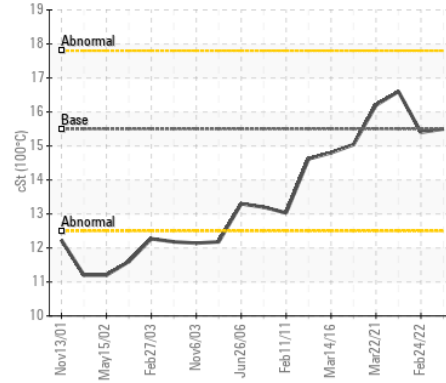
▲ Silicon (ppm)



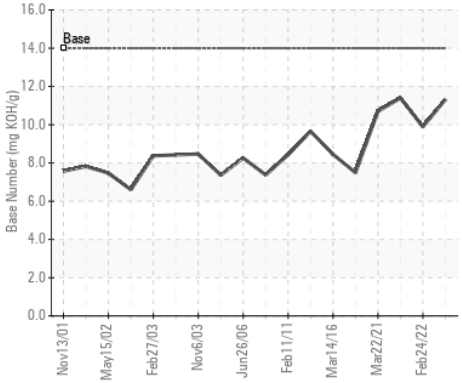
▲ Base Number



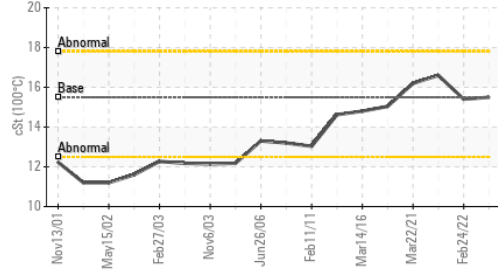
▲ Viscosity @ 100°C



▲ Base Number



▲ Viscosity @ 100°C



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06054168 **Received** : 08 Jan 2024
Lab Number : 06054168 **Diagnosed** : 09 Jan 2024
Unique Number : 10820117 **Diagnostician** : Jonathan Hester
Test Package : MOB 2 (Additional Tests: FuelDilution)

ALEXANDER SCHOOLS
 6091 AYERS RD
 ALBANY, OH
 US 45710
 Contact: DEAN WISE

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: