



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	ABNORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	NORMAL

Machine Id
1997 IHC BCSD 34E
 Component
Diesel Engine
 Fluid
TRC MOLY XL PRO-SPEC IV 15W40 (30 QTS)

RECOMMENDATION

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		TR06155279	TR05896974	TR05692117
Sample Date		Client Info		11 Mar 2024	18 Apr 2023	11 Oct 2022
Machine Age	mls	Client Info		175738	156135	162360
Oil Age	mls	Client Info		19603	11700	18708
Filter Age	mls	Client Info		0	0	0
Oil Changed		Client Info		N/A	N/A	N/A
Filter Changed		Client Info		N/A	N/A	N/A
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

Cylinder, crank, or cam shaft wear is indicated.

Iron	ppm	ASTM D5185m	>150	▲ 173	91	58
Chromium	ppm	ASTM D5185m	>15	4	3	2
Nickel	ppm	ASTM D5185m	>4	2	<1	0
Titanium	ppm	ASTM D5185m		<1	<1	<1
Silver	ppm	ASTM D5185m	>3	0	0	0
Aluminum	ppm	ASTM D5185m	>15	7	7	5
Lead	ppm	ASTM D5185m	>70	38	25	15
Copper	ppm	ASTM D5185m	>175	35	27	21
Tin	ppm	ASTM D5185m	>5	8	6	5
Vanadium	ppm	ASTM D5185m		0	<1	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

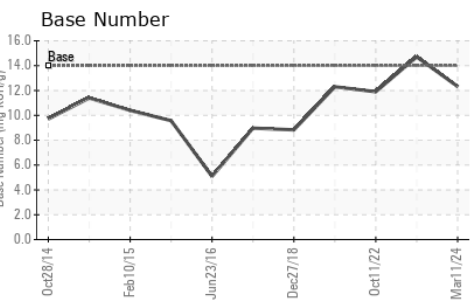
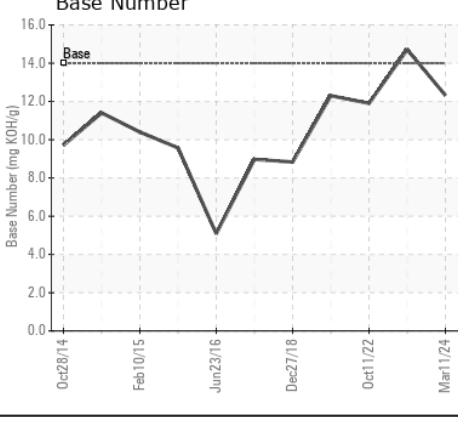
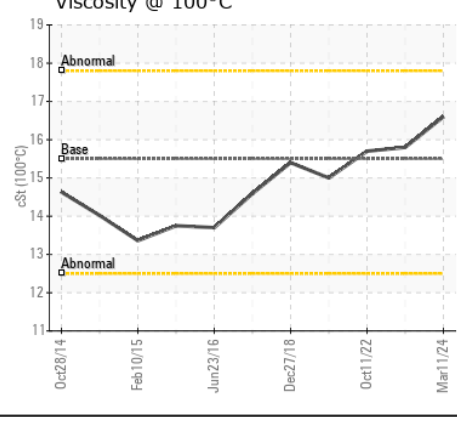
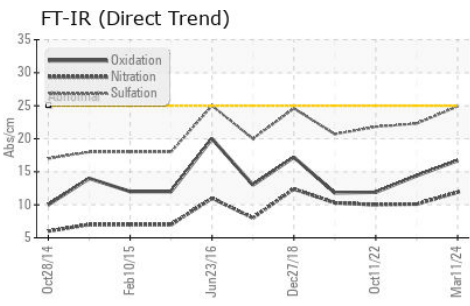
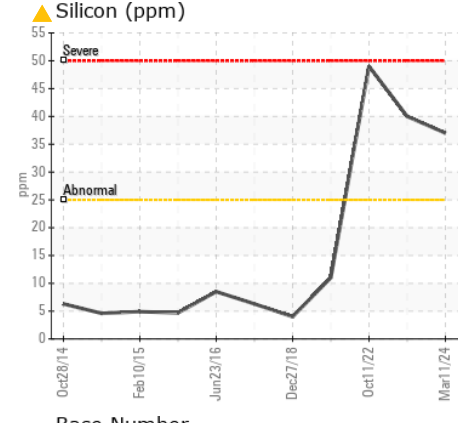
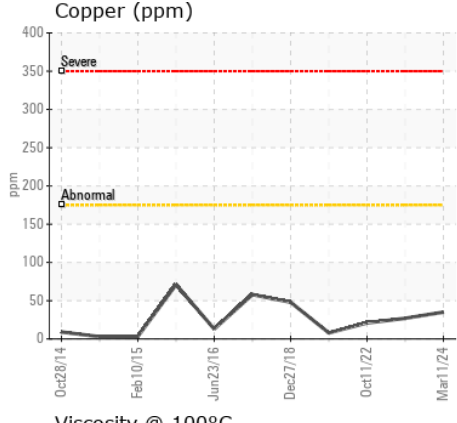
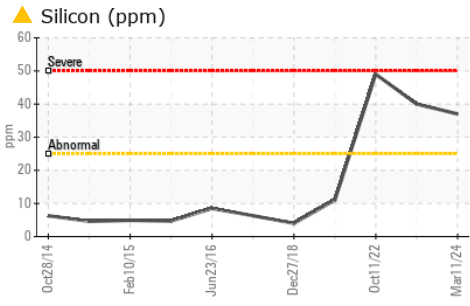
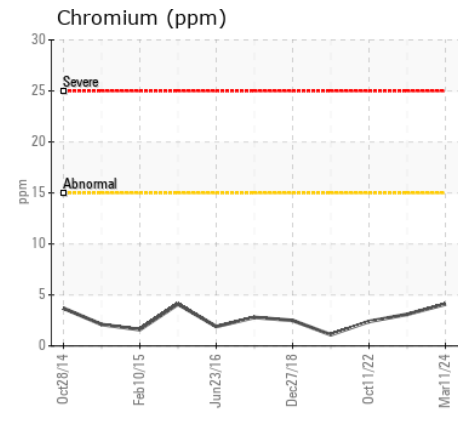
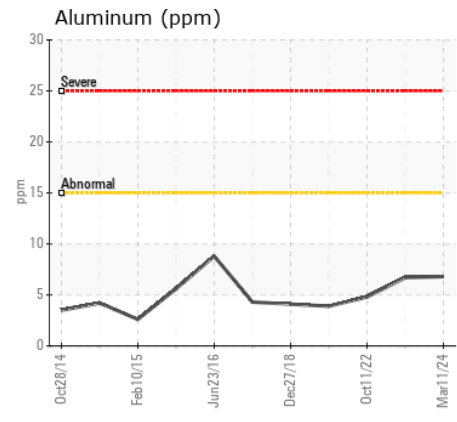
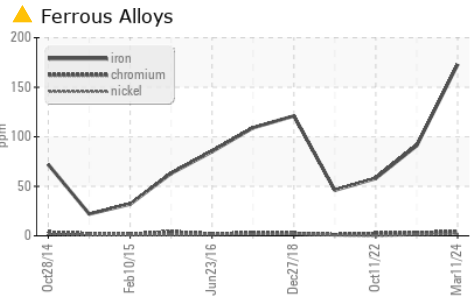
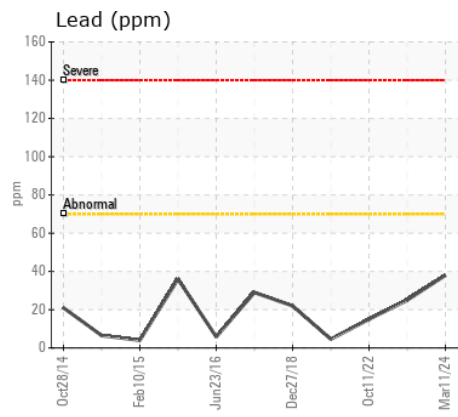
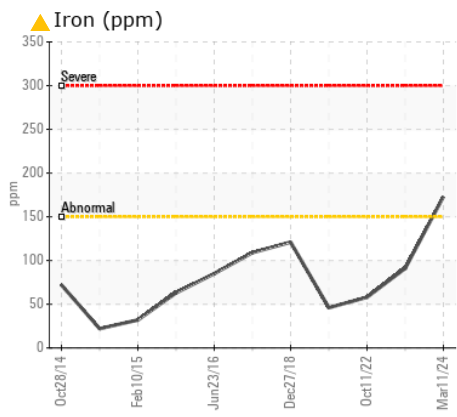
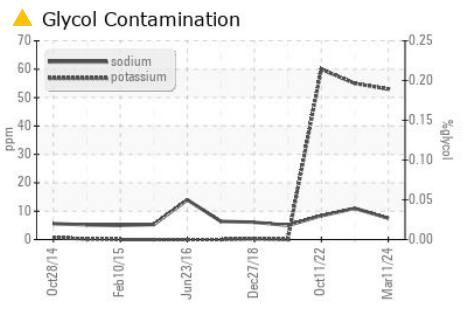
Sodium and/or potassium levels are high. Elemental level of silicon (Si) above normal indicating ingress of seal material. Test for glycol is negative.

Silicon	ppm	ASTM D5185m	>25	▲ 37	▲ 40	▲ 49
Potassium	ppm	ASTM D5185m	>20	▲ 53	▲ 55	▲ 60
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	>3	1.4	0.9	0.7
Nitration	Abs/cm	*ASTM D7624	>20	11.9	10.1	10
Sulfation	Abs/.1mm	*ASTM D7415	>30	24.9	22.3	21.8
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 suitable for further service.

Sodium	ppm	ASTM D5185m		8	11	8
Boron	ppm	ASTM D5185m		<1	0	2
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		155	137	138
Manganese	ppm	ASTM D5185m		2	2	2
Magnesium	ppm	ASTM D5185m		17	22	18
Calcium	ppm	ASTM D5185m	1300	4699	4596	4553
Phosphorus	ppm	ASTM D5185m		932	890	870
Zinc	ppm	ASTM D5185m	1300	1108	1106	1050
Sulfur	ppm	ASTM D5185m		4299	4831	4892
Oxidation	Abs/.1mm	*ASTM D7414	>25	16.7	14.4	11.9
Base Number (BN)	mg KOH/g	ASTM D2896	14	12.32	14.71	11.9
Visc @ 100°C	cSt	ASTM D445	15.5	16.6	15.8	15.7



Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06155279
Lab Number : 06155279
Unique Number : 10990702
Test Package : MOB 2
Received : 19 Apr 2024
Tested : 24 Apr 2024
Diagnosed : 24 Apr 2024 - Sean Felton

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Certificate L2367
 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)