



TRAAP

Texas Refinery Advanced Analysis Program

OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	ABNORMAL
FLUID CONDITION	ATTENTION

Machine Id
VOLVO ECR305CL E-12 (S/N 0377)

Component
Diesel Engine

Fluid
TRC MOLY XL PROSPEC III 15W40 (12 QTS)

RECOMMENDATION

No corrective action is recommended at this time. Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		TR06086206	TR05970947	TR05871136
Sample Date		Client Info		05 Feb 2024	29 Sep 2023	05 Jun 2023
Machine Age	hrs	Client Info		0	0	0
Oil Age	hrs	Client Info		887	706	555
Filter Age	hrs	Client Info		887	706	555
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				ABNORMAL	ABNORMAL	ABNORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>100	31	26	13
Chromium	ppm	ASTM D5185m	>10	4	5	3
Nickel	ppm	ASTM D5185m	>10	0	1	0
Titanium	ppm	ASTM D5185m		0	<1	<1
Silver	ppm	ASTM D5185m	>2	0	0	0
Aluminum	ppm	ASTM D5185m	>10	2	0	1
Lead	ppm	ASTM D5185m	>20	0	<1	0
Copper	ppm	ASTM D5185m	>15	4	5	4
Tin	ppm	ASTM D5185m	>10	1	3	1
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

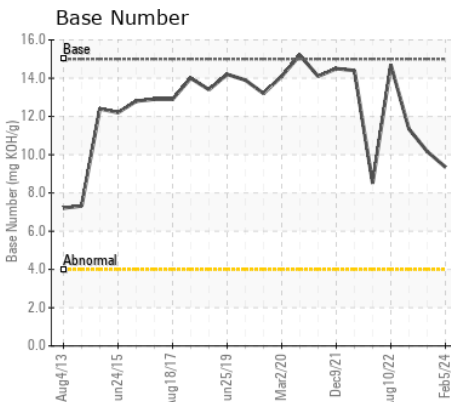
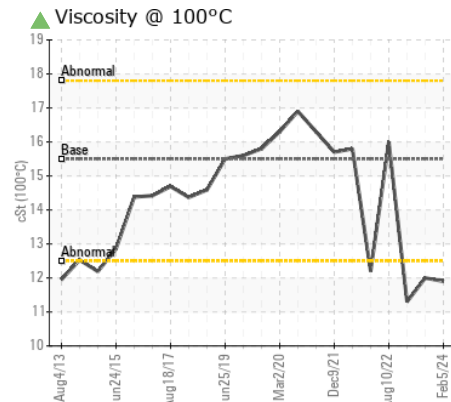
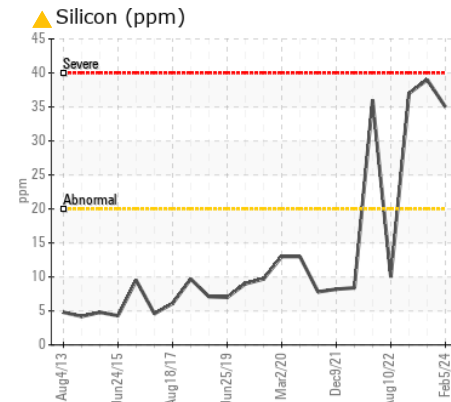
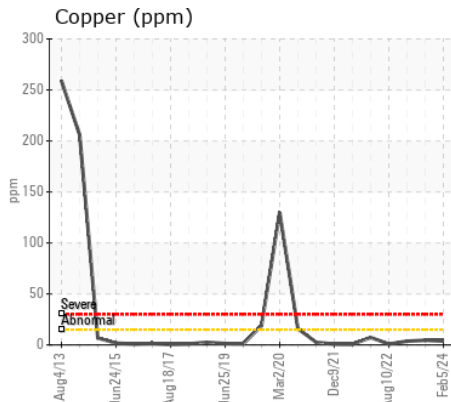
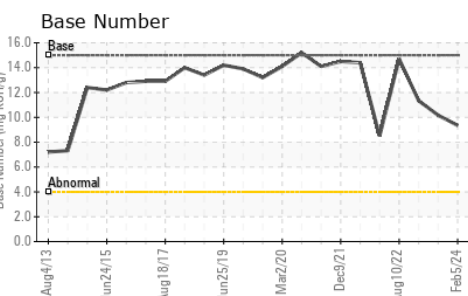
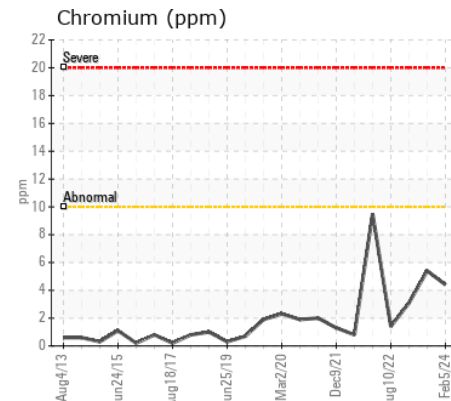
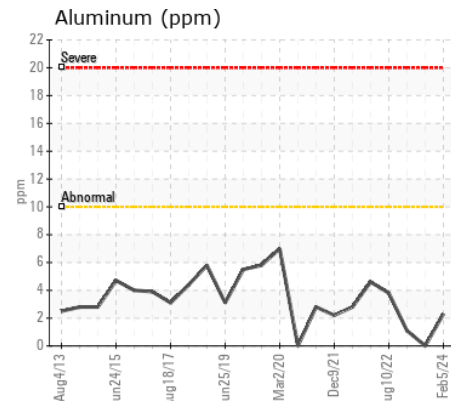
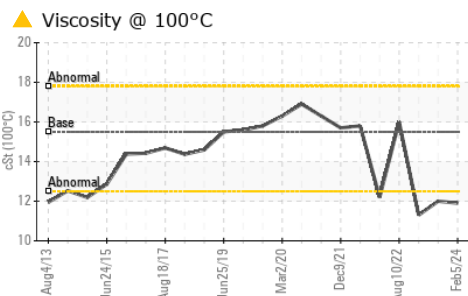
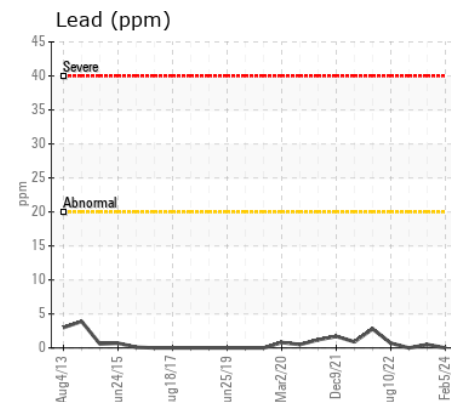
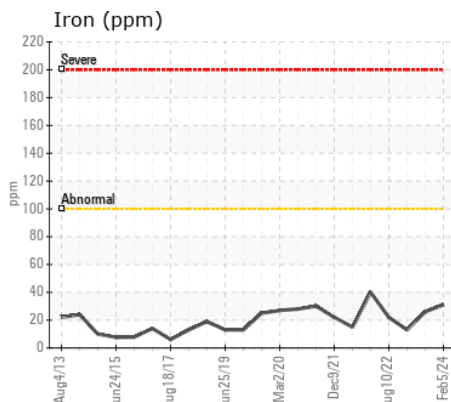
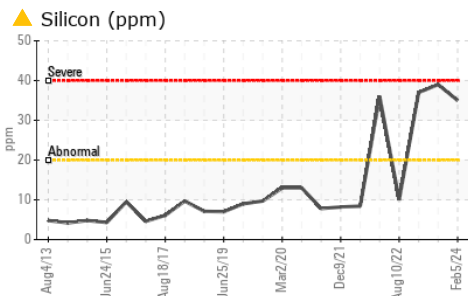
Elemental level of silicon (Si) above normal indicating ingress of seal material.

Silicon	ppm	ASTM D5185m	>20	▲ 35	▲ 39	▲ 37
Potassium	ppm	ASTM D5185m	>20	9	14	8
Fuel		WC Method	>6.0	<1.0	<1.0	0.3
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844	>3	0.5	0.4	0.1
Nitration	Abs/cm	*ASTM D7624	>20	7.4	6.4	5.5
Sulfation	Abs/.1mm	*ASTM D7415	>30	18.9	17.9	17.7
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	>0.1	NEG	NEG	NEG

FLUID CONDITION

The oil viscosity is lower than normal. The BN result indicates that there is suitable alkalinity remaining in the oil. Confirm oil type.

Sodium	ppm	ASTM D5185m		8	6	10
Boron	ppm	ASTM D5185m		85	90	88
Barium	ppm	ASTM D5185m		0	0	0
Molybdenum	ppm	ASTM D5185m		77	95	63
Manganese	ppm	ASTM D5185m		2	3	2
Magnesium	ppm	ASTM D5185m		347	385	288
Calcium	ppm	ASTM D5185m	4500	2753	2648	2282
Phosphorus	ppm	ASTM D5185m		978	1117	868
Zinc	ppm	ASTM D5185m	1400	1260	1486	1005
Sulfur	ppm	ASTM D5185m		4245	7532	4280
Oxidation	Abs/.1mm	*ASTM D7414	>25	12.5	11.7	11.4
Base Number (BN)	mg KOH/g	ASTM D2896	15	9.35	10.17	11.34
Visc @ 100°C	cSt	ASTM D445	15.5	▲ 11.9	▲ 12.0	▲ 11.3



Certificate L2367

Laboratory : WearCheck USA - 501 Madison Ave., Cary, NC 27513
Sample No. : TR06086206
Lab Number : 06086206
Unique Number : 10873651
Test Package : MOB 2
Received : 12 Feb 2024
Tested : 13 Feb 2024
Diagnosed : 13 Feb 2024 - Sean Felton

NUTTER ENTERPRISES INC
 28 STONE RD
 BELMONT, NH
 US 03220
 Contact: DON PERCY

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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