



OIL ANALYSIS REPORT

WEAR	NORMAL
CONTAMINATION	NORMAL
FLUID CONDITION	NORMAL

Area

NADINE URCIUOLI [FRED DWYER]

Machine Id

VOLVO PENTA 2006039445

Component

Center Gasoline Engine

Fluid

VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3 (5 GAL)

RECOMMENDATION

Resample at the next service interval to monitor.

Test	UOM	Method	Limit/Abn	Current	History1	History2
Sample Number		Client Info		VPA053029	VPA040455	VPA019412
Sample Date		Client Info		18 Apr 2024	09 May 2022	22 May 2019
Machine Age	hrs	Client Info		1156	1138	976
Oil Age	hrs	Client Info		1156	1138	0
Filter Age	hrs	Client Info		0	0	0
Oil Changed		Client Info		Changed	Not Changd	Not Changd
Filter Changed		Client Info		Changed	Not Changd	Not Changd
Sample Status				NORMAL	NORMAL	NORMAL

WEAR

All component wear rates are normal.

Iron	ppm	ASTM D5185m	>150	12	18	11
Chromium	ppm	ASTM D5185m	>20	0	1	<1
Nickel	ppm	ASTM D5185m	>5	0	0	<1
Titanium	ppm	ASTM D5185m		0	0	0
Silver	ppm	ASTM D5185m	>2	0	<1	0
Aluminum	ppm	ASTM D5185m	>40	<1	3	7
Lead	ppm	ASTM D5185m	>50	0	1	3
Copper	ppm	ASTM D5185m	>155	<1	3	3
Tin	ppm	ASTM D5185m	>10	0	<1	0
Vanadium	ppm	ASTM D5185m		0	0	0
White Metal	scalar	*Visual	NONE	NONE	NONE	NONE
Yellow Metal	scalar	*Visual	NONE	NONE	NONE	NONE

CONTAMINATION

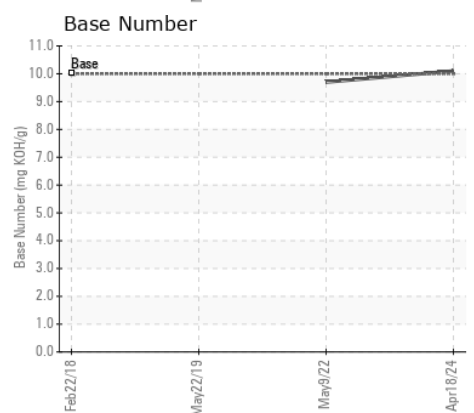
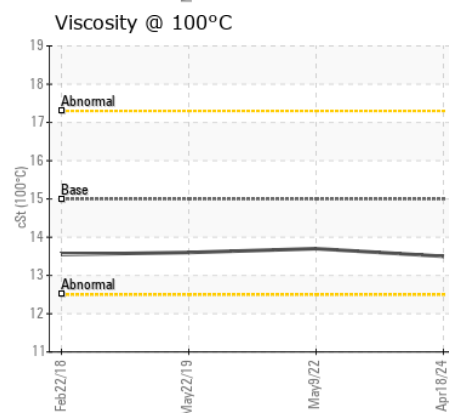
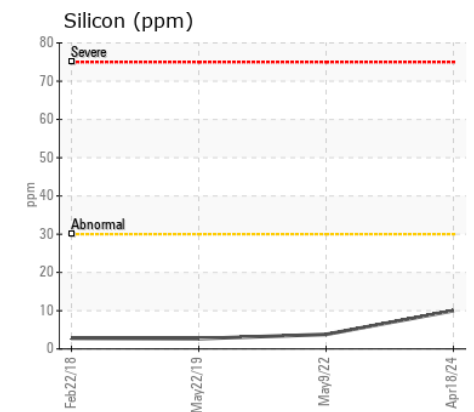
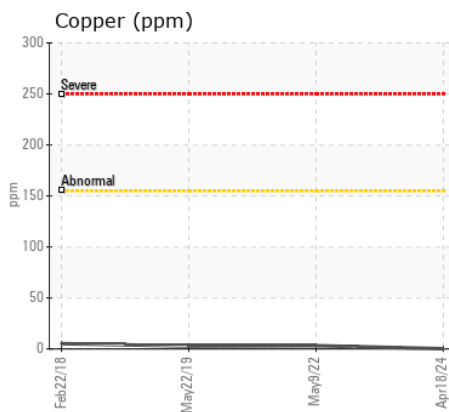
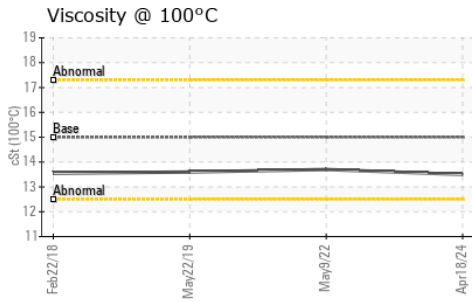
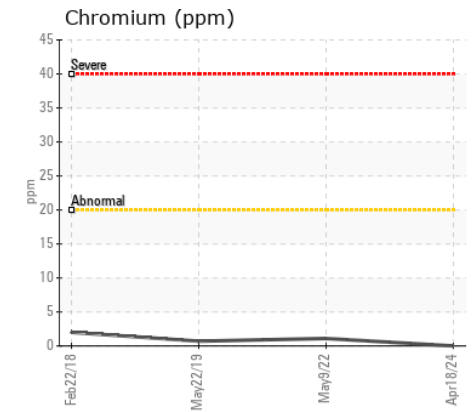
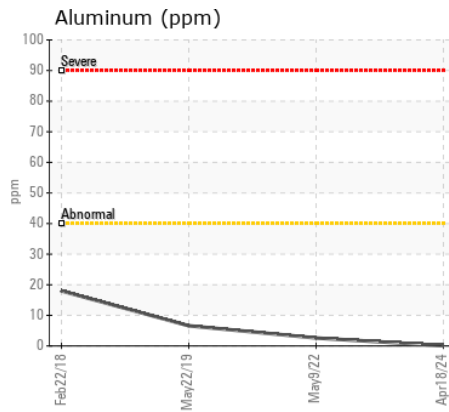
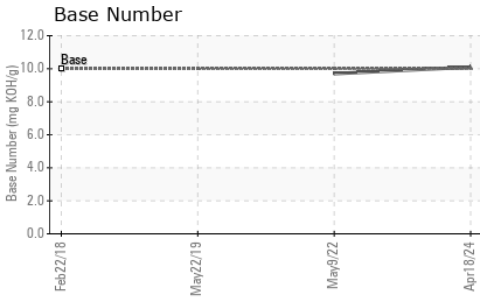
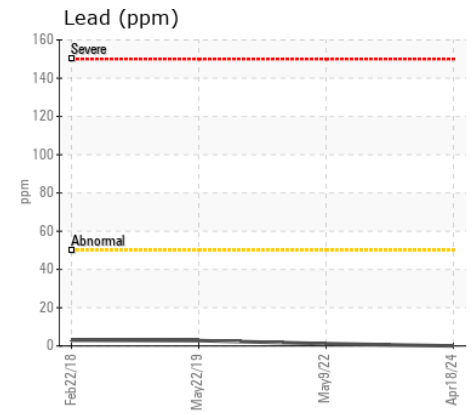
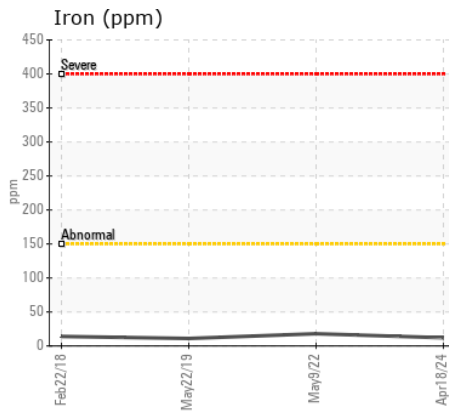
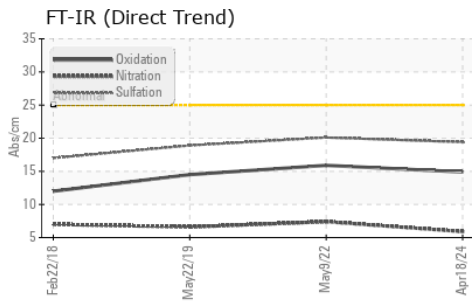
There is no indication of any contamination in the oil.

Silicon	ppm	ASTM D5185m	>30	10	4	3
Potassium	ppm	ASTM D5185m	>20	<1	1	1
Fuel		WC Method	>4.0	<1.0	<1.0	<1.0
Water		WC Method	>0.1	NEG	NEG	NEG
Glycol		WC Method		NEG	NEG	NEG
Soot %	%	*ASTM D7844		0.1	0.2	0.1
Nitration	Abs/cm	*ASTM D7624	>20	5.9	7.4	6.6
Sulfation	Abs/.1mm	*ASTM D7415	>30	19.4	20.1	18.9
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	>0.1	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		6	21	8
Boron	ppm	ASTM D5185m	2.5	0	8	7
Barium	ppm	ASTM D5185m	0.0	0	0	0
Molybdenum	ppm	ASTM D5185m	0.7	62	58	65
Manganese	ppm	ASTM D5185m	0.0	0	<1	1
Magnesium	ppm	ASTM D5185m	256	1014	1059	1058
Calcium	ppm	ASTM D5185m	2057	1297	1126	1167
Phosphorus	ppm	ASTM D5185m	935	1204	1123	1108
Zinc	ppm	ASTM D5185m	1223	1466	1386	1281
Sulfur	ppm	ASTM D5185m	4079	4267	3006	3151
Oxidation	Abs/.1mm	*ASTM D7414	>25	14.9	15.9	14.5
Base Number (BN)	mg KOH/g	ASTM D2896	10	10.1	9.7	---
Visc @ 100°C	cSt	ASTM D445	15.0	13.5	13.7	13.6



Certificate L2367

**Laboratory** : WearCheck USA - 501 Madison Ave., Cary, NC 27513  
**Sample No.** : VPA053029 **Received** : 24 Apr 2024  
**Lab Number** : 06158683 **Tested** : 25 Apr 2024  
**Unique Number** : 10994106 **Diagnosed** : 25 Apr 2024 - Angela Borella  
**Test Package** : MOB 1 ( Additional Tests: TBN )

**Helmuts Marine Service**  
 619 Canal Street  
 SAN RAFAEL, CA  
 US 94901-3545  
 Contact: NADINE URCIUOLI  
 SERVICE@HELMUTSMARINE.COM

To discuss this sample report, contact Customer Service at 1-800-237-1369.  
 \* - 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: x:  
 F: x: