

# CONSTRUCTION EQUIPMENT - DIESEL ENGINE



Sample No: VCP437594

Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3

Job No:

VOLVO					
	NFORMATION				
Sample Number	-	VCP437594	VCP396271	VCP358457	
Sample Date		06 Jun 2024	25 Feb 2023	22 Jun 2022	
Machine Hours		4000	2203	1320	
Oil Hours		0	500	0	
Oil Changed		Changed	Changed	Changed	
Sample Status		NORMAL	ABNORMAL	ATTENTION	
OIT CONDI.	TION				
Visc @ 100°C	cSt	<b>12.4</b>	<b>12.6</b>	12.4	
Base Number (BN)		8.8	9.1	9.2	
Oxidation (PA)	%	73	56	63	
Oxidation (1 A)	70	75	30	03	
VOLVO	INTION				
CONTAMIN	NATION				
Water	%	NEG	NEG	NEG	
Soot %	%	<b>0.2</b>	■ 0.1	□ 0.2	
Nitration (PA)	%	63	56	69	
Sulfation (PA)	%	58	52	56	
Glycol	%	NEG	NEG	NEG	
Fuel	%	<1.0	<1.0	■ 1.8	
Silicon	ppm	<b>6</b>	<b>2</b>	<b>3</b>	
Sodium	ppm	<b>1</b>	0	_2	
Potassium	ppm	<b>1</b>	<b>2</b>	□0	
VOLVO					
WEAR ME	TALS				
Iron	ppm	■8	■8	<b>6</b>	
Copper	ppm	<b>■</b> 4	<u>^</u> 24	<b>1</b> 0	
Lead	ppm	<b>■ &lt;1</b>	<b>-</b> <1	<b></b>	
Tin	ppm	<b>1</b>	<b></b>	<b>-</b> <1	
Aluminum	ppm	■4	<b>3</b>	■3	
Chromium	ppm	<b>■&lt;1</b>	<b>-</b> <1	<b>-</b> <1	
Molybdenum	ppm	<b>■</b> 54	<b>58</b>	<b>5</b> 7	
Nickel	ppm	<b>2</b>	2	0	
Titanium	ppm	<1	0	0	
Silver	ppm	<b>0</b>	0	<1	
Manganese	ppm	<b>■</b> <1	<1	<1	
Vanadium	ppm	<1	<1	0	
VOLVO					
ADDITIVE!	2				
Calcium	ppm	<b>1663</b>	□1089	□1127	
Magnesium	ppm	685	■887	■889	
Zinc	ppm	<b>1267</b>	<b>1182</b>	<b>1174</b>	
Phosphorus	ppm	<b>1036</b>	993	■987	
Barium	ppm	<b>■</b> 0	<b>2</b>	□ 0	



#### **ALTA EQUIPMENT COMPANY**

5151 DR MARTIN LUTHER KING BLVD FORT MYERS, FL US 33905 Contact: TODD LARK tlark@altaequipfl.com

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### Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The BN result indicates that there is suitable alkalinity remaining in the oil. The condition of the oil is suitable for further service.

Depot:VOLVO0090Unique No:11073566Signed:Wes DavisReport Date:12 Jun 2024

ppm

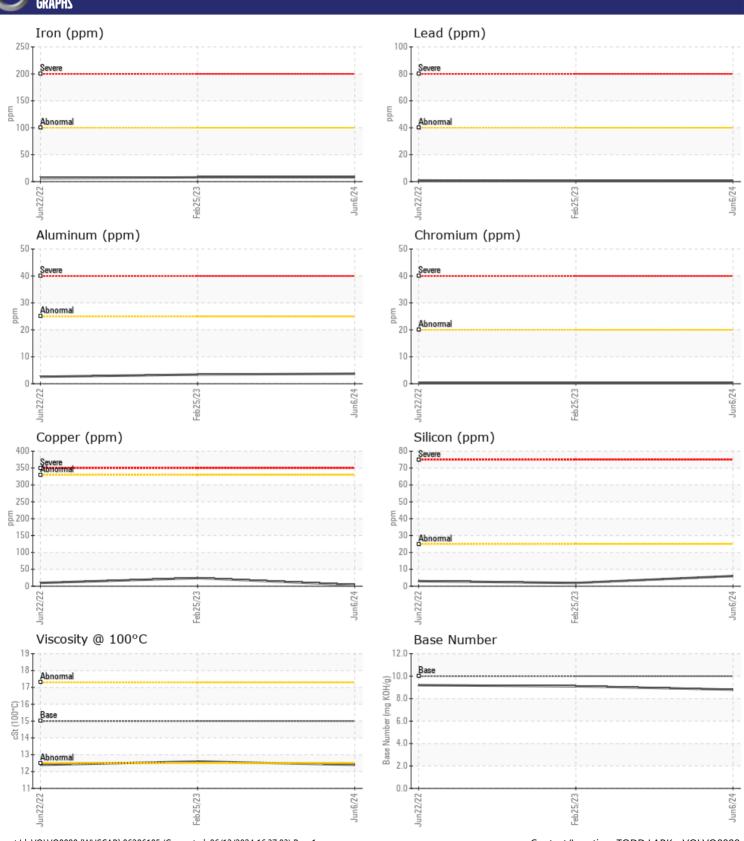
**28** 

Boron











# CONSTRUCTION EQUIPMENT - TRANSMISSION (AUTO)



Sample No: VCP438728

Oil Type: VOLVO AUTOMATIC TRANSMISSION FLUID AT102

Job No:

SAMPLE	INFORMATION				
Sample Number		VCP438728	VCP395826	VCP358461	
Sample Date		06 Jun 2024	08 Mar 2023	22 Jun 2022	
Machine Hours		4000	2203	1320	
Oil Hours		0	1500	0	
Oil Changed		Changed	Changed	Not Changd	
Sample Status		ABNORMAL	ABNORMAL	NORMAL	
VOLVO	DITION				
OIL CON	DITIUN				
Visc @ 40°C	cSt	<b>27.9</b>	<b>107</b>	<b>26.9</b>	
CONTAN	MINATION				
Water	%	NEG	NEG	NEG	
vvater Silicon					
Silicon Sodium	ppm	<b>■8</b>	□ 17 □ 7	□ 13 □ 4	
	ppm		□ / □ 3	_	
Potassium	ppm	<b>■</b> 5	3	<b>4</b>	
VOLVO					
WEAR N	METALS				
Iron	ppm	<b>□</b> 33	<b>6</b> 1	<b>1</b> 42	
Copper	ppm	 <b>■</b> 12	<b>2</b> 6		
Lead	ppm	■3	<b>0</b>	<b></b> <1	
Tin	ppm	<b>3</b>	3	<u>9</u>	
Aluminum	ppm	<b>1</b> 3	<b>2</b> 2	<b>2</b> 2	
Chromium	ppm	<b>■&lt;1</b>	<b>-</b> <1	<b></b>	
Molybdenum	ppm	<b>2</b>	<b>-</b> <1	<1	
Nickel	ppm	<b>-&lt;1</b>	<b>2</b>	■8	
Titanium	ppm	0	0	0	
Silver	ppm	<b>■</b> 0	0	0	
Manganese	ppm	<b>2</b>	<b>4</b>	4	
Vanadium	ppm	0	0	0	
	•				
ADDITIV	100				
_					
Calcium	ppm	<b>55</b>	<b>7</b> 7	87	
Magnesium	ppm	<b>■2</b>	1	2	
Zinc	ppm	■0	<b>1</b> 0	5	
Phosphorus	ppm	<b>139</b>	<b>181</b>	176	
Barium	ppm	■0	<b>0</b>	0	
Boron	ppm	<b>63</b>	<b>6</b> 7	75	



#### **ALTA EQUIPMENT COMPANY**

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### Diagnosis

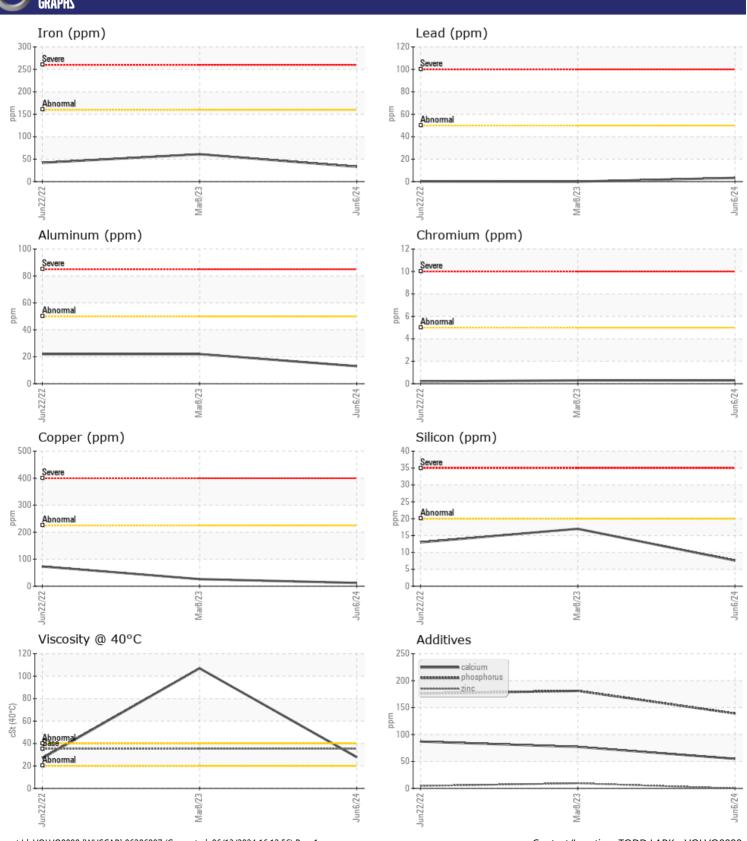
Oil and filter change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is a moderate amount of visible silt present in the sample. The condition of the fluid is acceptable for the time in service.

Depot:VOLVO0090Unique No:11074448Signed:Don BaldridgeReport Date:13 Jun 2024











## CONSTRUCTION EQUIPMENT - WET DISC BRAKE



Sample No: VCP455243
Oil Type: VOLVO WB 102

Job No:

TAMPLE	INFORMATION			
Sample Number		VCP455243	VCP395829	 
Sample Date		06 Jun 2024	25 Feb 2023	 
Machine Hours		4000	2203	 
Oil Hours		0	1000	 
Oil Changed		Changed	Not Changd	 
Sample Status		ABNORMAL	ABNORMAL	 
VOLVO				
OIL CON	DITION			
Visc @ 40°C	cSt	<b>40.6</b>	<b>40.3</b>	 
VOLVO	AIN A TION			
LUNIAN	MINATION			
Water	%	NEG	NEG	 
Silicon	ppm	<b>21</b>	<b>2</b> 4	 
Sodium	ppm	<b>10</b>	<b>6</b>	 
Potassium	ppm	<b>4</b>	<b>2</b>	 
WEAR N	AETAL C			
_	JE I ML7			
ron	ppm	<b>27</b>	■21	 
Copper	ppm	<u></u> ∠ 280	<u>^</u> 227	 
Lead	ppm	<b>4</b>	<b>-</b> <1	 
Tin	ppm	<b>2</b>	0	 
Aluminum	ppm	<b>1</b>	<b>2</b>	 
Chromium	ppm	<b>■&lt;1</b>	<b>1</b>	 
Molybdenum	ppm	<b>2</b>	<b>0</b>	 
Vickel	ppm	<b>6</b>	<b>7</b>	 
Γitanium	ppm	0	<1	 
Silver	ppm	0	0	 
Manganese	ppm	<b>2</b>	<b>2</b>	 
Vanadium	ppm	0	0	 
ADDITIV	IES			
Calcium		3258	<b>4267</b>	 
	ppm	■ 3236 ■ 11	11	 
Magnesium	ppm			 
Zinc	ppm	<b>1428</b>	□ 1706	
Phosphorus	ppm	<b>1232</b>	1389	 
Barium	ppm	<b>0</b>	0	 
Boron	ppm	<b>116</b>	<b>128</b>	 



#### **ALTA EQUIPMENT COMPANY**

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### Diagnosis

The oil change at the time of sampling has been noted. No corrective action is recommended at this time. Resample at the next service interval to monitor. The copper level is abnormal. All other component wear rates are normal. There is no indication of any contamination in the oil. The condition of the oil is acceptable for the time in service.

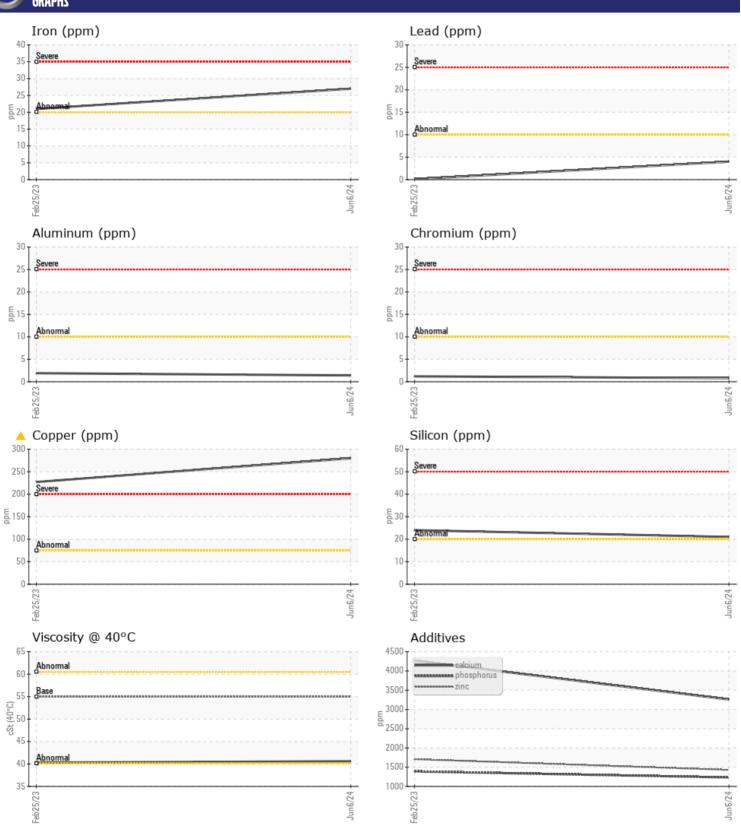
Depot:VOLVO0090Unique No:11074365Signed:Don BaldridgeReport Date:13 Jun 2024







#### GRAPHS





# CONSTRUCTION EQUIPMENT - HYDRAULIC SYSTEM



Sample No: VCP437587

Oil Type: VOLVO SUPER HYDRAULIC OIL 46

Job No:

Boron

SAMPLE	INFORMATION				
Sample Number		VCP437587	VCP396430	VCP358478	
Sample Date		06 Jun 2024	25 Feb 2023	22 Jun 2022	
Machine Hours		4000	2203	1320	
Oil Hours		0	1000	0	
Oil Changed		Changed	Not Changd	Not Changd	
Sample Status		NORMAL	ABNORMAL	ATTENTION	
Sumple Status		110111111111	/ IDI (OTALVI) (E	71112111011	
VOLVO	DITION				
OIL CON	DITION				
Visc @ 40°C	cSt	<b>42.9</b>	<b>42.9</b>	<b>41.1</b>	
Acid Number (AN	N) mg KOH/g	■ 0.31	0.35	□ 0.42	
CONTAN	MINATION				
_					
Water	%	NEG	NEG	NEG	
Particles >4µm		13394	54636	16020	
Particles >6µm		■ 3886	<u> </u>	■3976	
Particles > 14µm		<b>130</b>	<b>△</b> 978	<b>262</b>	
ISO 4406:1999 (c)		21/19/14	23/21/17	21/19/15	
Silicon	ppm	<b>11</b>	■8	<b>4</b>	
Sodium	ppm	<b>2</b>	<b>1</b>	<b>2</b>	
Potassium	ppm	■0	<b>0</b>	<b>0</b>	
WEAR N	METALS				
Iron	ppm	<b>10</b>	<b>6</b>	□9	
Copper	ppm	<u> </u>	1	7	
Lead	ppm	<b>2</b>	1	<u> </u>	
Tin	ppm	■0	0	<1	
Aluminum	ppm	<b>5</b>	□3	<u> </u>	
Chromium	ppm	■0	0	<1	
Molybdenum	ppm	■0	0	<1	
Nickel	ppm	■0	0	<b>□</b> 0	
Titanium	ppm	0	0	0	
Silver	ppm	0	0	<1	
Manganese	ppm	■0	< 1	0	
Vanadium	ppm	0	0	0	
	is leave				
VOLVO	IFF				
ADDITIV	/EZ				
Calcium	ppm	<b>61</b>	□56	55	
Magnesium	ppm	<b>■&lt;1</b>	<b>6</b>	<1	
Zinc	ppm	<b>405</b>	<b>434</b>	405	
Phosphorus	ppm	■ 322	■342	318	
Barium	ppm	<b>0</b>	<b>0</b>	0	



#### **ALTA EQUIPMENT COMPANY**

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### Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. The system cleanliness is acceptable for your target ISO 4406 cleanliness code. The system and fluid cleanliness is acceptable. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.

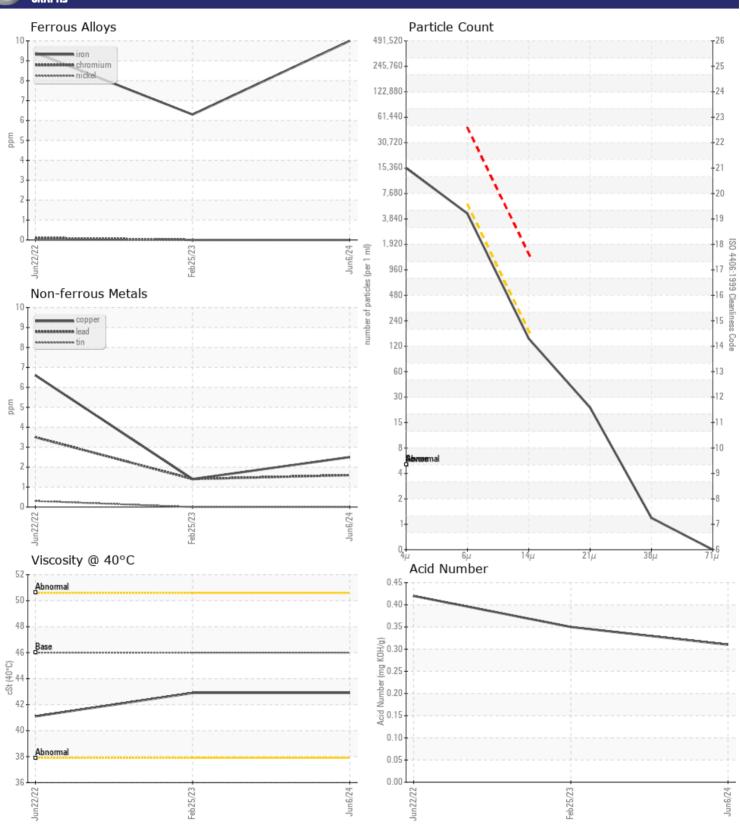
Depot:VOLVO0090Unique No:11073888Signed:Wes DavisReport Date:13 Jun 2024







#### GRAPHS



Report Id: VOLVO0090 [WUSCAR] 06206427 (Generated: 06/13/2024 08:37:22) Rev: 1

Contact/Location: TODD LARK - VOLVO0090



# CONSTRUCTION EQUIPMENT - FRONT AXLE



Sample No: VCP446908

Oil Type: VOLVO PREMIUM GEAR OIL 85W-140 GL-5

Job No:

SAMPI F	INFORMATION			
Sample Number		VCP446908	VCP395828	 
Sample Date		06 Jun 2024	25 Feb 2023	 
•		4000		
Machine Hours			2203	 
Oil Hours		0	1000	 
Oil Changed		Changed	Not Changd	 
Sample Status		ATTENTION	NORMAL	 
VOLVO				
OIL CONE	DITION			
Visc @ 40°C	cSt	<b>49.1</b>	49.4	 
CONTAM	INATION			
Water	%	NEG	NEG	 
Silicon	ppm	<b>6</b>	<b>5</b>	 
Sodium	ppm	■3	■3	 
Potassium	ppm	<b>7</b>	<b>3</b>	 
VOLVO				
WEAR M	FTΔIS			
Iron		<b>□322</b>	□342	 
Copper	ppm	<b>6</b>	2	
Lead	ppm		0	 
Tin	ppm	<b>4</b>	_	
	ppm	_	0	 
Aluminum	ppm	<b>■</b> <1	1	 
Chromium	ppm	<b>4</b>	<u>5</u>	 
Molybdenum	ppm	<b>7</b>	6	 
Nickel	ppm	<b>■&lt;1</b>	<b>-</b> <1	 
Titanium	ppm	0	0	 
Silver	ppm	0	0	 
Manganese	ppm	<b>14</b>	<b>1</b> 3	 
Vanadium	ppm	0	0	 
VOLVO				
<b>ADDITIV</b>	ES			
Calcium	ppm	<b>48</b>	<b>2</b> 0	 
Magnesium	ppm	<b>1</b>	0	 
Zinc	ppm	<b>■28</b>	<b>1</b> 3	 
Phosphorus	ppm	2220	2306	 
Barium	ppm	<b>0</b>	0	 
Boron	ppm	168	88	 
231011	PPIII			



#### **ALTA EQUIPMENT COMPANY**

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### Diagnosis

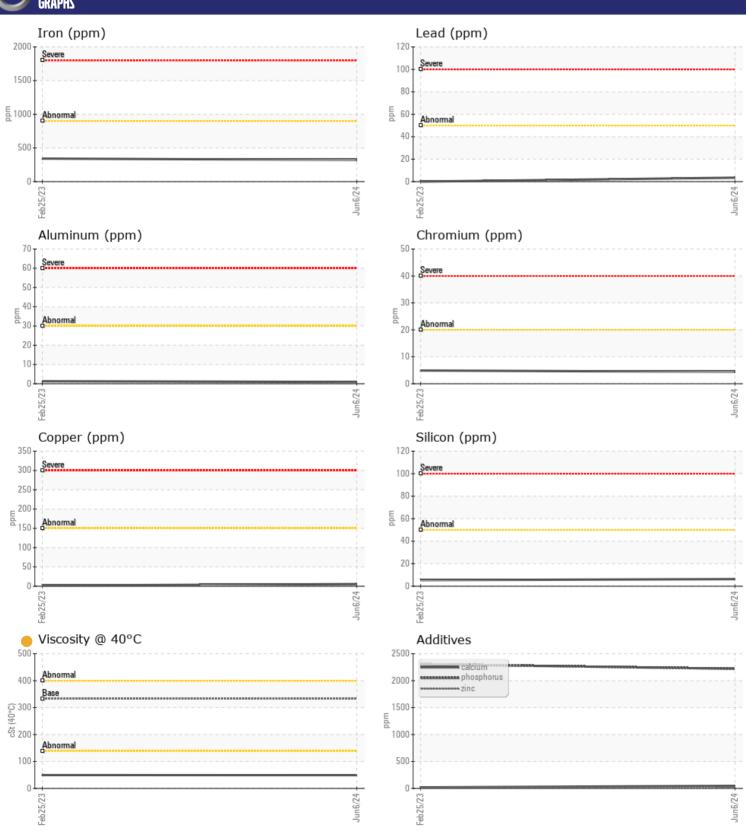
Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. Confirm oil type.

Depot:VOLVO0090Unique No:11074366Signed:Don BaldridgeReport Date:13 Jun 2024











# CONSTRUCTION EQUIPMENT - BOGIE/CENTER AXLE



Sample No: VCP455242

Oil Type: VOLVO PREMIUM GEAR OIL 85W-140 GL-5

Job No:

SAMPLE	INFORMATION			
Sample Number		VCP455242	VCP395827	 
Sample Date		06 Jun 2024	08 Mar 2023	 
Machine Hours		4000	2203	 
Oil Hours		0	1000	 
Oil Changed		Changed	Not Changd	 
Sample Status		ATTENTION	NORMAL	
Sample Status		ATTENTION	NORIVIAL	 
VOLVO				
OIL CON	DITION			
Visc @ 40°C	cSt	49.0	49.5	 
VOLVO	IINATION			
_	IINATION			
Water	%	NEG	NEG	 
Silicon	ppm	<b>6</b>	<b>4</b>	 
Sodium	ppm	■3	<b>2</b>	 
Potassium	ppm	<b>■7</b>	<b>3</b>	 
WEAR M	IFTAI S			
_				
Iron	ppm	■379	205	 
Copper	ppm	<u>5</u>	2	 
Lead	ppm	■3	0	 
Tin	ppm	■1	0	 
Aluminum	ppm	<b>■</b> <1	<b>-</b> <1	 
Chromium	ppm	<b>□</b> 5	<b>3</b>	 
Molybdenum	ppm	■8	<b>4</b>	 
Nickel	ppm	■1	<b></b> <1	 
Titanium	ppm	0	0	 
Silver	ppm	0	0	 
Manganese	ppm	■15	<b>1</b> 0	 
Vanadium	ppm	0	0	 
ADDITIV	ES			
Calcium	_	<b>54</b>	□16	 
	ppm	■ 54 ■ <1		 
Magnesium	ppm		<b>□</b> 0	 
Zinc	ppm	<b>31</b>	11	 
Phosphorus	ppm	<b>2272</b>	2264	 
Barium	ppm	<b>0</b>	0	 
Boron	ppm	<b>169</b>	<b>123</b>	 



#### **ALTA EQUIPMENT COMPANY**

5151 DR MARTIN LUTHER KING BLVD FORT MYERS, FL US 33905 Contact: TODD LARK tlark@altaequipfl.com

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### Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the oil. The oil viscosity is lower than normal. Confirm oil type.

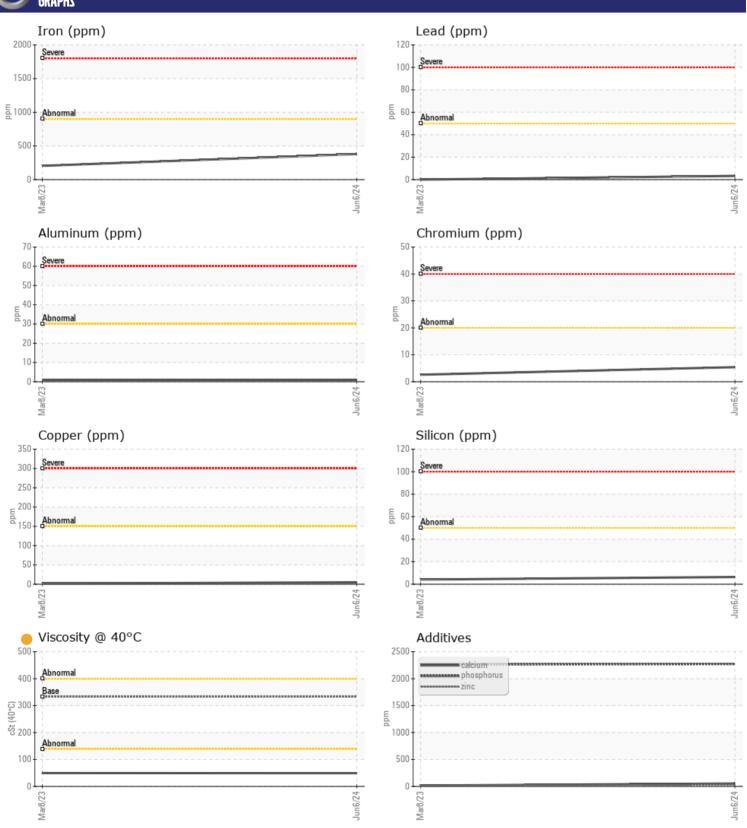
Depot:VOLVO0090Unique No:11074368Signed:Don BaldridgeReport Date:13 Jun 2024







#### GRAPHS





## CONSTRUCTION EQUIPMENT - REAR AXLE



Sample No: VCP437578

Oil Type: VOLVO PREMIUM GEAR OIL 85W-140 GL-5

Job No:

SAMPLE	INFORMATIO	N		
Sample Number		VCP437578	VCP395762	 
Sample Date		06 Jun 2024	08 Mar 2023	 
Machine Hours		4000	2203	 
Oil Hours		0	1000	 
Oil Changed		Changed	Not Changd	 
Sample Status		ABNORMAL	NORMAL	 
		ADNORIVIAL	NORWAL	 
VOLVO				
OIL CON	DITION			
Visc @ 40°C	cSt	49.5	49.2	 
VOLVO	MINATION			
_				
Water	%	<b>△</b> 0.324	NEG	 
Silicon	ppm	<u> </u>	<b>4</b>	 
Sodium	ppm	■3	□3	 
Potassium	ppm	■9	<b>3</b>	 
VOLVO				
WEAR N	AFTALS			
Iron		<b>□</b> 659	<b>□</b> 201	 
Copper	ppm	<b>■</b> 22	2	 
Lead	ppm	<b>4</b>	0	 
Tin	ppm	<b>2</b>	0	 
Aluminum	ppm	17	<1	 
Chromium	ррт	<b>6</b>	2	 
Molybdenum	ppm	<b>8</b>	<b>1</b> 5	 
Nickel		<b>3</b>	<1	 
Titanium	ppm	<1	0	 
Silver	ppm	0	0	 
Manganese		<b>■15</b>	<b>□</b> 10	 
Vanadium	ppm	0	0	 
variauluili	ppm	U	U	 
VOLVO				
ADDITIN	/ES			
Calcium	ppm	<b>236</b>	<b>2</b> 0	 
Magnesium	ppm	<b>41</b>	0	 
Zinc	ppm	<b>64</b>	□12	 
Phosphorus	ppm	2124	2345	 
Barium	ppm	<b>0</b>	<b>0</b>	 
Boron	ppm	■88	115	 
			_	



#### **ALTA EQUIPMENT COMPANY**

5151 DR MARTIN LUTHER KING BLVD FORT MYERS, FL US 33905 Contact: TODD LARK tlark@altaequipfl.com

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### Diagnosis

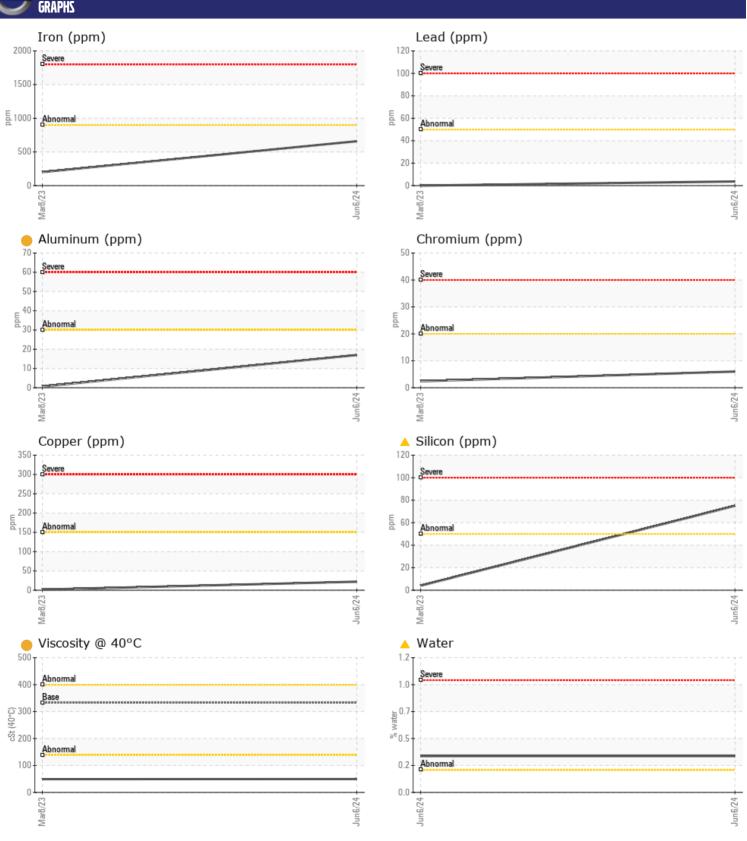
We advise that you check all areas where dirt can enter the system. The oil change at the time of sampling has been noted. Resample at the next service interval to monitor.All component wear rates are normal. There is a light concentration of water present in the oil. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. The oil viscosity is lower than normal. Confirm oil type.

Depot:VOLVO0090Unique No:11074373Signed:Don BaldridgeReport Date:13 Jun 2024











## CONSTRUCTION EQUIPMENT - DROP BOX



Sample No: VCP455340

Oil Type: VOLVO PREMIUM GEAR OIL 85W-140 GL-5

Job No:

SAMPLE	INFORMATIO	N		
Sample Number		VCP455340	VCP395763	 
Sample Date		06 Jun 2024	25 Feb 2023	 
Machine Hours		4000	2203	 
Oil Hours		0	1000	 
Oil Changed		Changed	Not Changd	 
Sample Status		ABNORMAL	NORMAL	 
		71511011111111	TYOTHIN LE	
VOLVO				
OIL CON	DITION			
Visc @ 40°C	cSt	<b>50.0</b>	49.3	 
CONTAN	MINATION			
_		NEC	NEC	
Water	%	NEG	NEG	 
Silicon	ppm	■33	<b>6</b>	 
Sodium	ppm	<b>■11</b>	<b>3</b>	 
Potassium	ppm	■8	<b>3</b>	 
VOLVO				
WEAR N	METALS			
Iron	ppm	<b>□</b> 355	<b>□</b> 366	 
Copper	ppm	<b>42</b>	2	 
Lead	ppm	<b>4</b>	0	 
Tin	ppm	<u> </u>	0	 
Aluminum	ppm	1	<b>1</b>	 
Chromium	ppm	<b>4</b>	5	 
Molybdenum	ppm	<b>19</b>	<b>7</b>	 
Nickel	ppm	<b>1</b>	<b>-</b> <1	 
Titanium	ppm	0	0	 
Silver	ppm	0	0	 
Manganese	ppm	<b>12</b>	<b>1</b> 4	 
Vanadium	ppm	0	0	 
ADDITIV	IES			
Calcium		<b>7</b> 9	<u> </u>	 
Magnesium	ppm	<b>1</b> 7	0	 
Zinc	ppm	<b>160</b>	<b>1</b> 9	 
Phosphorus	ppm	2030	2295	 
Barium	ppm	■0	0	 
Boron		■116	123	 
DOTOIT	ppm	<b>II</b> 110	123	 



#### **ALTA EQUIPMENT COMPANY**

5151 DR MARTIN LUTHER KING BLVD FORT MYERS, FL US 33905 Contact: TODD LARK tlark@altaequipfl.com

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### Diagnosis

The oil change at the time of sampling has been noted. Resample at the next service interval to monitor. The copper level is abnormal. All other component wear rates are normal. Moderate concentration of visible dirt/debris present in the oil. The oil viscosity is lower than normal. Confirm oil type.

Depot:VOLVO0090Unique No:11074364Signed:Don BaldridgeReport Date:13 Jun 2024







