



# CONSTRUCTION EQUIPMENT

729089 PRINCE VOLVO L90H 626545 - DIESEL ENGINE



**Sample No:** VCP449744  
**Oil Type:** VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3  
**Job No:** 729089 PRINCE



## SAMPLE INFORMATION

Sample Number	<b>VCP449744</b>	VCP417715	VCP417705	VCP398517
Sample Date	<b>08 Jun 2024</b>	20 Oct 2023	07 Jul 2023	10 Apr 2023
Machine Hours	<b>2846</b>	1583	988	449
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>Changed</b>	Changed	Changed	Changed
Sample Status	<b>ABNORMAL</b>	NORMAL	NORMAL	NORMAL

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## OIL CONDITION

Visc @ 100°C	cSt	<b>13.4</b>	12.9	12.9	12.7
Base Number (BN)	mg KOH/g	<b>9.8</b>	10.4	10.3	8.6
Oxidation (PA)	%	<b>84</b>	84	83	70

## CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	NEG
Soot %	%	<b>0.3</b>	0.2	0.2	0.1
Nitration (PA)	%	<b>71</b>	61	60	50
Sulfation (PA)	%	<b>61</b>	61	62	54
Glycol	%	<b>NEG</b>	NEG	NEG	NEG
Fuel	%	<b>&lt;1.0</b>	<1.0	<1.0	<1.0
Silicon	ppm	<b>▲ 23</b>	13	10	3
Sodium	ppm	<b>0</b>	3	2	4
Potassium	ppm	<b>3</b>	0	0	1

## Diagnosis

We advise that you check the air filter, air induction system, and any areas where dirt may enter the component. 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. Elemental levels of silicon (Si) and aluminum (Al) indicate alumina-silicate (coarse dirt) ingress. 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.

## WEAR METALS

Iron	ppm	<b>15</b>	9	10	21
Copper	ppm	<b>1</b>	<1	2	2
Lead	ppm	<b>&lt;1</b>	0	0	2
Tin	ppm	<b>1</b>	<1	1	<1
Aluminum	ppm	<b>● 5</b>	2	4	4
Chromium	ppm	<b>2</b>	1	1	<1
Molybdenum	ppm	<b>45</b>	41	40	68
Nickel	ppm	<b>&lt;1</b>	0	0	0
Titanium	ppm	<b>&lt;1</b>	0	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>&lt;1</b>	<1	<1	1
Vanadium	ppm	<b>0</b>	0	<1	0

## ADDITIVES

Calcium	ppm	<b>1631</b>	1756	1621	1193
Magnesium	ppm	<b>578</b>	540	494	898
Zinc	ppm	<b>1165</b>	1201	1046	1237
Phosphorus	ppm	<b>900</b>	864	861	1030
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>29</b>	32	34	14

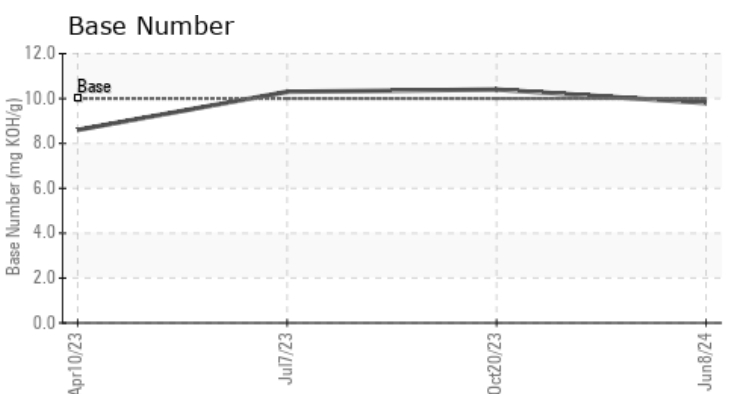
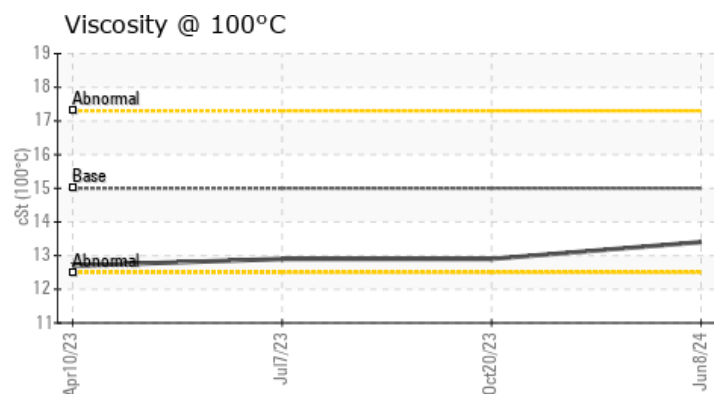
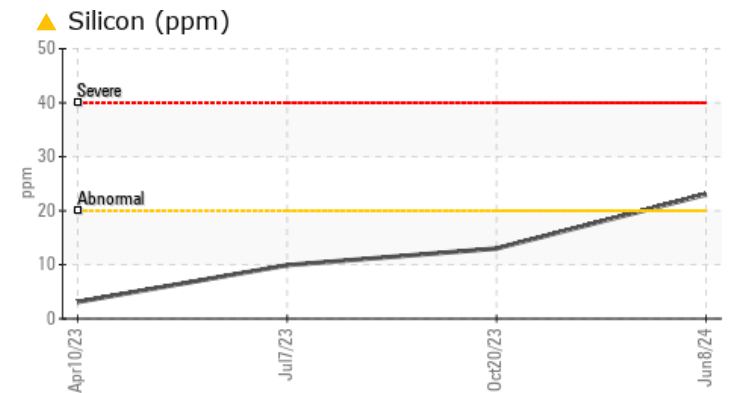
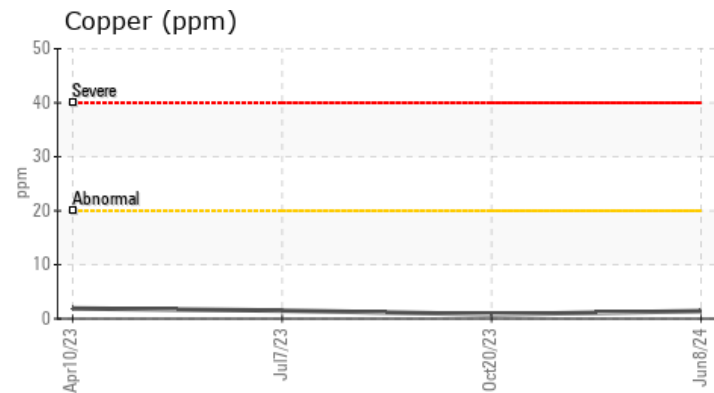
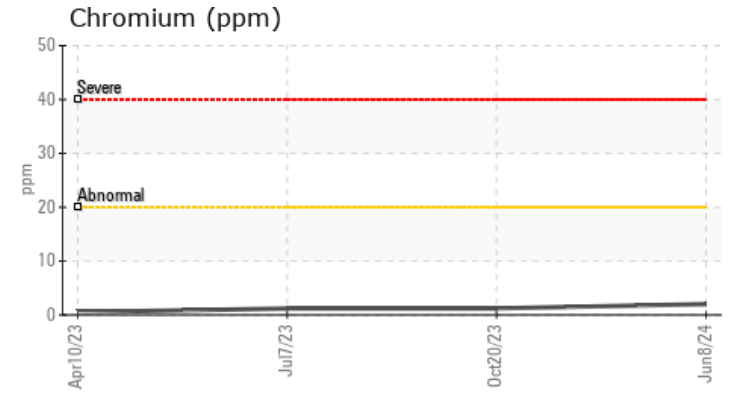
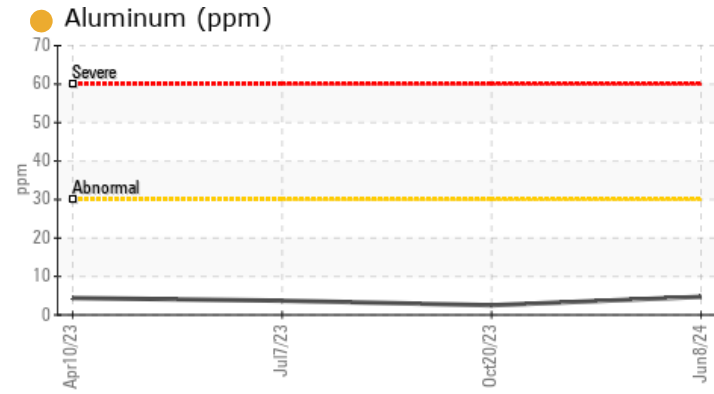
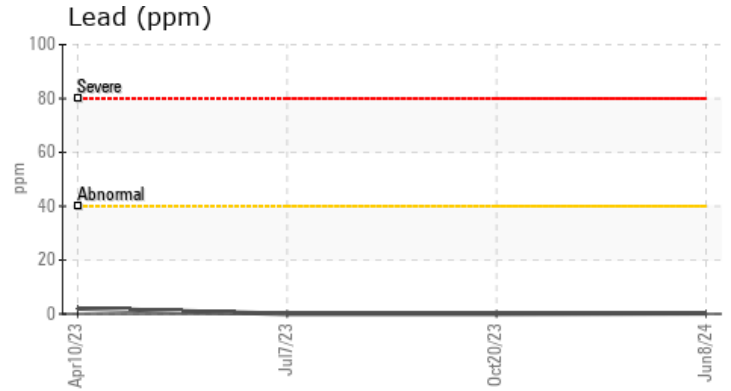
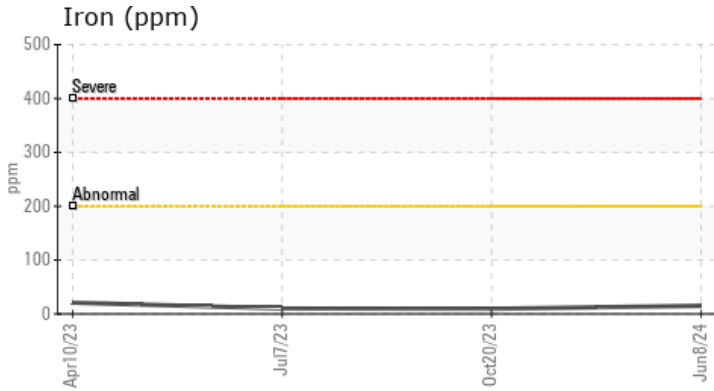
**Depot:** VOLVO0096  
**Unique No:** 11077120  
**Signed:** Don Baldrige  
**Report Date:** 17 Jun 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS





# CONSTRUCTION EQUIPMENT

## 729089 PRINCE VOLVO L90H 626545 - TRANSMISSION (AUTO)



**Sample No:** VCP451285  
**Oil Type:** VOLVO AUTOMATIC TRANSMISSION FLUID AT102  
**Job No:** 729089 PRINCE



### SAMPLE INFORMATION

Sample Number	<b>VCP451285</b>	VCP438967	VCP432669	VCP417712
Sample Date	<b>08 Jun 2024</b>	16 Jan 2024	20 Oct 2023	07 Jul 2023
Machine Hours	<b>2846</b>	2003	1583	988
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>Not Chngd</b>	Not Chngd	Not Chngd	Not Chngd
Sample Status	<b>ABNORMAL</b>	NORMAL	ABNORMAL	ABNORMAL

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### OIL CONDITION

Visc @ 40°C	cSt	<b>27.5</b>	28.0	27.8	28.1
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### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	<b>11</b>	5	13	10
Sodium	ppm	<b>4</b>	3	5	4
Potassium	ppm	<b>3</b>	0	2	0

### Diagnosis

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



### WEAR METALS

Iron	ppm	<b>421</b>	26	244	165
Copper	ppm	<b>13</b>	3	10	5
Lead	ppm	<b>&lt;1</b>	0	0	0
Tin	ppm	<b>0</b>	<1	0	0
Aluminum	ppm	<b>3</b>	5	1	1
Chromium	ppm	<b>&lt;1</b>	0	<1	<1
Molybdenum	ppm	<b>&lt;1</b>	0	0	<1
Nickel	ppm	<b>&lt;1</b>	0	<1	0
Titanium	ppm	<b>0</b>	0	0	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>12</b>	2	11	8
Vanadium	ppm	<b>0</b>	0	0	0



### ADDITIVES

Calcium	ppm	<b>72</b>	76	71	68
Magnesium	ppm	<b>2</b>	0	0	0
Zinc	ppm	<b>45</b>	8	26	27
Phosphorus	ppm	<b>202</b>	184	185	189
Barium	ppm	<b>2</b>	2	<1	0
Boron	ppm	<b>70</b>	86	63	70

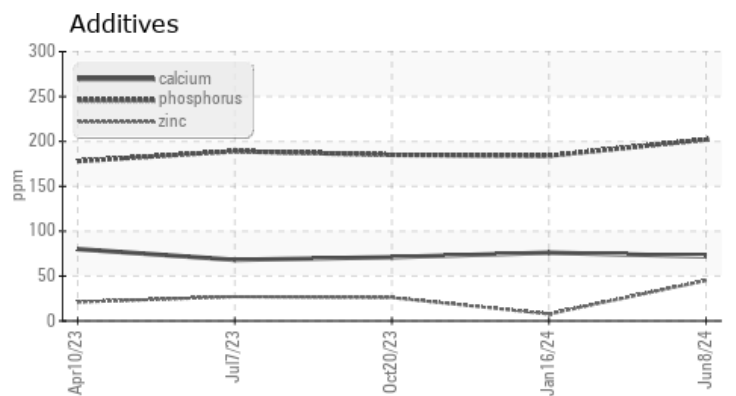
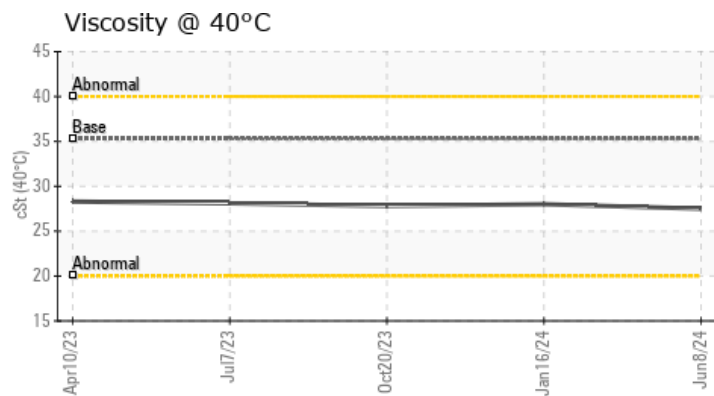
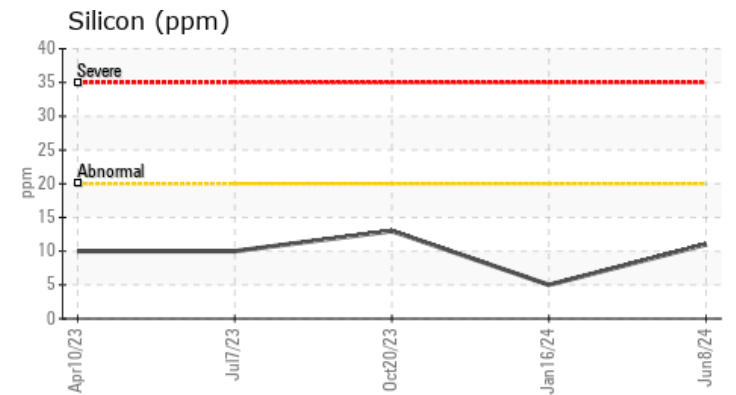
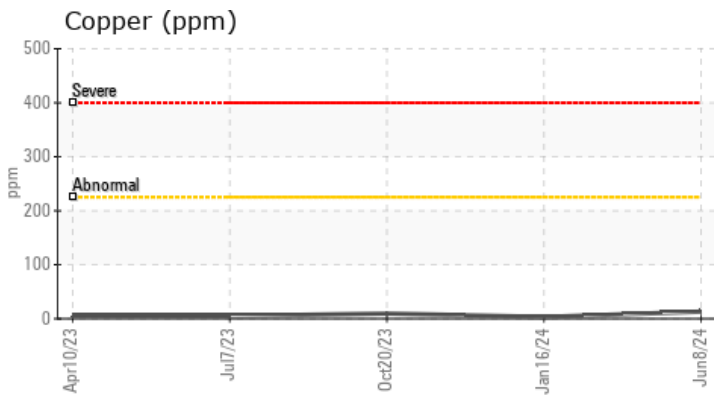
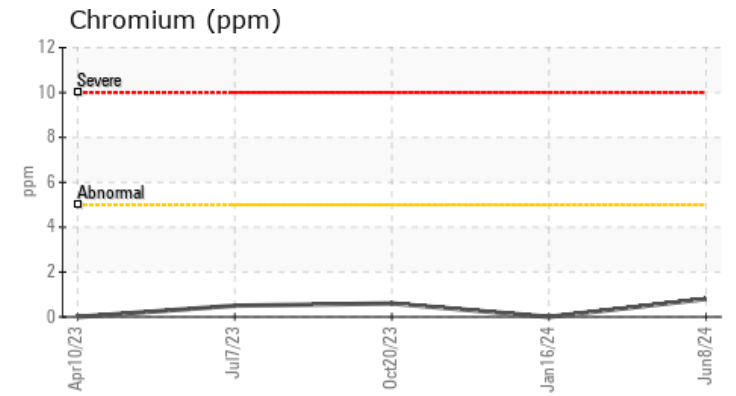
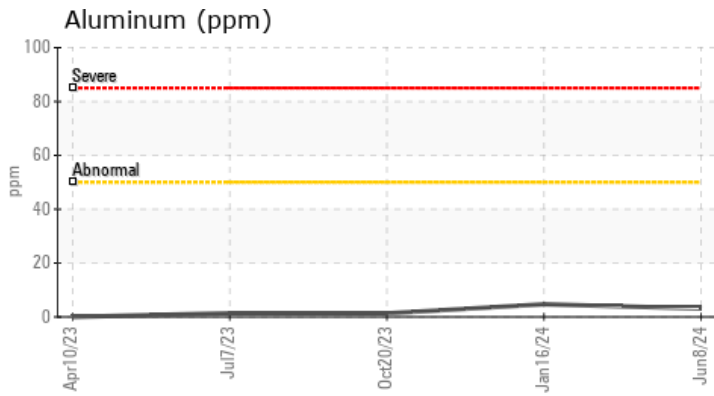
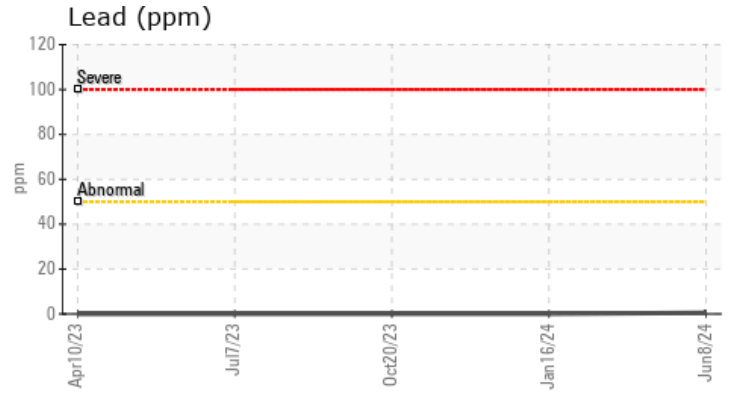
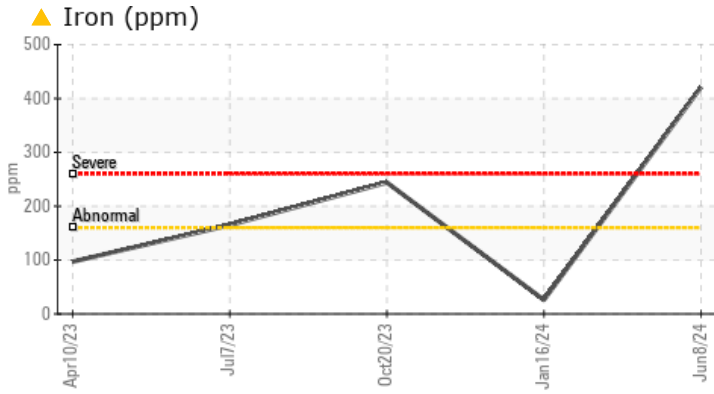
**Depot:** VOLVO0096  
**Unique No:** 11083479  
**Signed:** Angela Borella  
**Report Date:** 17 Jun 2024



# CONSTRUCTION EQUIPMENT



## VOLVO GRAPHS





# CONSTRUCTION EQUIPMENT

## 660450 PRINCE VOLVO L90H 626545 - HYDRAULIC SYSTEM



**Sample No:** VCP437464  
**Oil Type:** VOLVO SUPER HYDRAULIC OIL 46  
**Job No:** 660450 PRINCE



### SAMPLE INFORMATION

Sample Number	<b>VCP437464</b>	VCP440715	VCP417678	---
Sample Date	<b>16 Jan 2024</b>	20 Oct 2023	07 Jul 2023	---
Machine Hours	<b>2003</b>	1583	988	---
Oil Hours	<b>0</b>	0	0	---
Oil Changed	<b>Not Chngd</b>	Not Chngd	Not Chngd	---
Sample Status	<b>ATTENTION</b>	NORMAL	NORMAL	---

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### OIL CONDITION

Visc @ 40°C	cSt	<b>44.4</b>	42.3	43.2	---
Acid Number (AN)	mg KOH/g	<b>0.41</b>	0.38	0.40	---



### CONTAMINATION

Water	%	<b>NEG</b>	NEG	NEG	---
Particles >4µm		<b>5775</b>	3206	2222	---
Particles >6µm		<b>922</b>	585	319	---
Particles >14µm		<b>33</b>	32	15	---
ISO 4406:1999 (c)		<b>20/17/12</b>	19/16/12	18/15/11	---
Silicon	ppm	<b>2</b>	4	3	---
Sodium	ppm	<b>0</b>	0	<1	---
Potassium	ppm	<b>2</b>	2	0	---

### Diagnosis

We recommend you service the filters on this component. Resample at the next service interval to monitor. All component wear rates are normal. There is a light amount of silt (particulates < 14 microns in size) present in the oil. The AN level is acceptable for this fluid. The condition of the oil is suitable for further service.



### WEAR METALS

Iron	ppm	<b>4</b>	6	3	---
Copper	ppm	<b>2</b>	2	2	---
Lead	ppm	<b>3</b>	2	<1	---
Tin	ppm	<b>1</b>	0	0	---
Aluminum	ppm	<b>2</b>	2	<1	---
Chromium	ppm	<b>&lt;1</b>	<1	0	---
Molybdenum	ppm	<b>2</b>	<1	<1	---
Nickel	ppm	<b>&lt;1</b>	0	0	---
Titanium	ppm	<b>&lt;1</b>	<1	0	---
Silver	ppm	<b>0</b>	0	0	---
Manganese	ppm	<b>&lt;1</b>	0	0	---
Vanadium	ppm	<b>&lt;1</b>	0	<1	---



### ADDITIVES

Calcium	ppm	<b>68</b>	66	64	---
Magnesium	ppm	<b>3</b>	3	2	---
Zinc	ppm	<b>472</b>	428	430	---
Phosphorus	ppm	<b>324</b>	334	341	---
Barium	ppm	<b>&lt;1</b>	3	0	---
Boron	ppm	<b>0</b>	0	0	---

**Depot:** VOLVO0096  
**Unique No:** 10845005  
**Signed:** Wes Davis  
**Report Date:** 24 Jan 2024

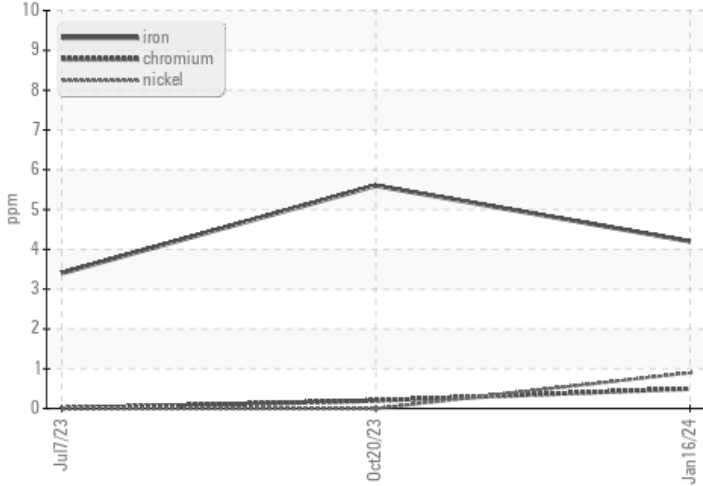


# CONSTRUCTION EQUIPMENT

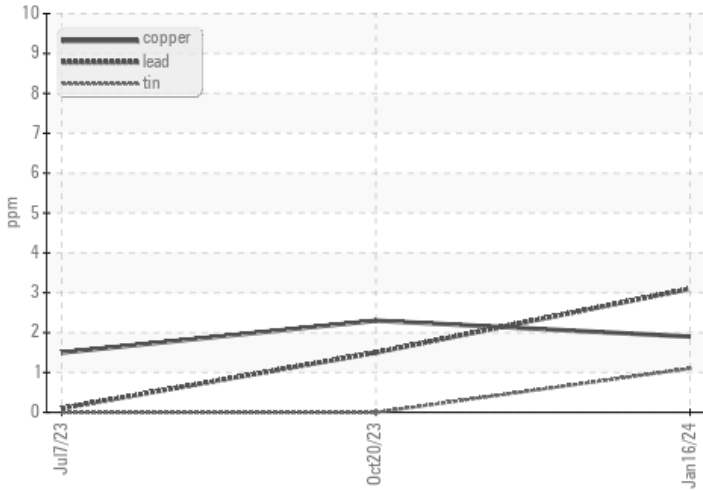


## VOLVO GRAPHS

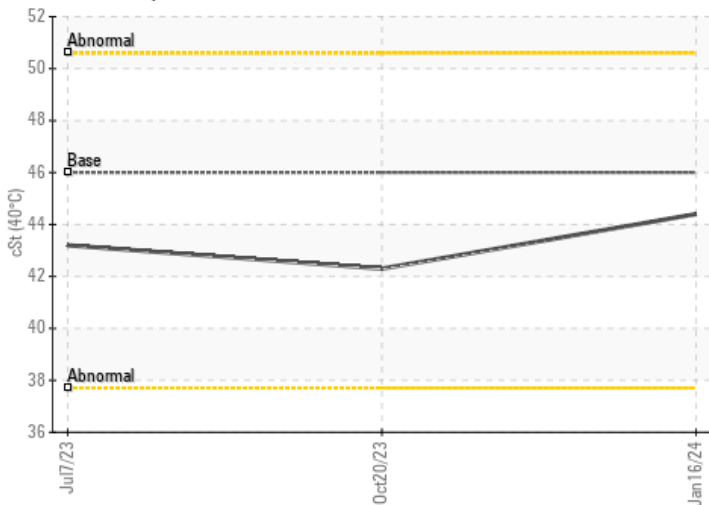
### Ferrous Alloys



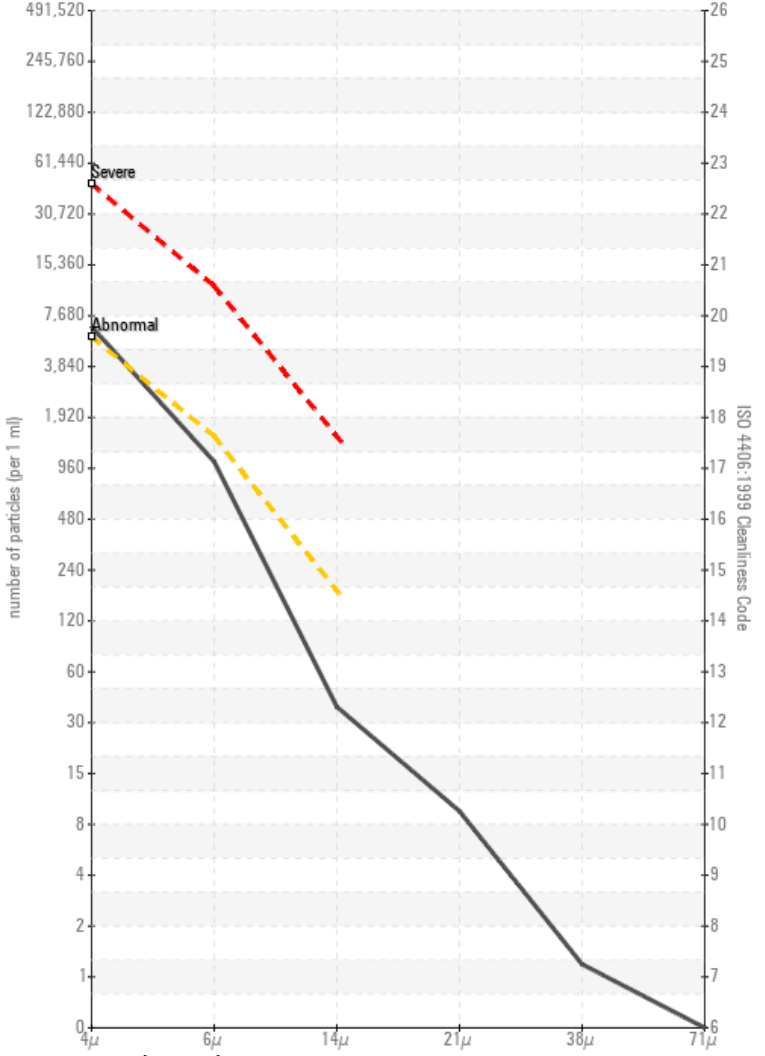
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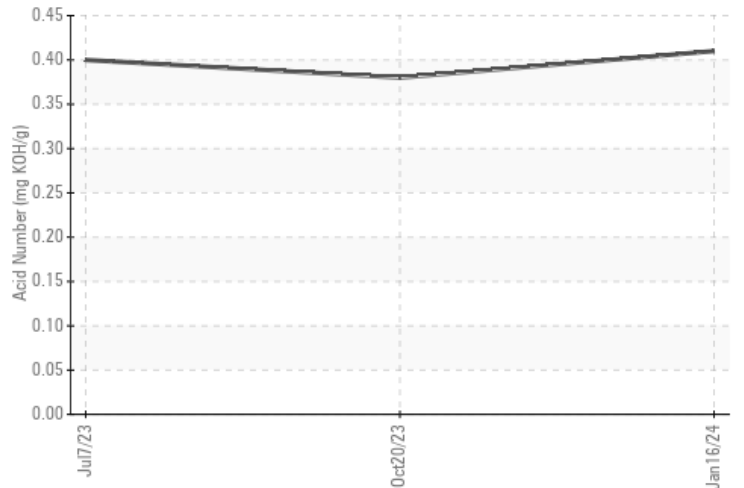
### Viscosity @ 40°C



### Particle Count



### Acid Number





# CONSTRUCTION EQUIPMENT

PRINCE VOLVO L90H 626545 - FRONT AXLE



**Sample No:** VCP454938  
**Oil Type:** VOLVO WB 102  
**Job No:** PRINCE



## SAMPLE INFORMATION

Sample Number	<b>VCP454938</b>	VCP438296	VCP440385	VCP417677
Sample Date	<b>08 Jun 2024</b>	16 Jan 2024	20 Oct 2023	07 Jul 2023
Machine Hours	<b>2846</b>	2003	1583	988
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>Changed</b>	Changed	Changed	Not Changd
Sample Status	<b>NORMAL</b>	ABNORMAL	NORMAL	NORMAL

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## OIL CONDITION

Visc @ 40°C	cSt	<b>43.2</b>	43.6	40.5	40.8
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## CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	<b>14</b>	▲ 153	18	14
Sodium	ppm	<b>0</b>	6	11	10
Potassium	ppm	<b>2</b>	8	<1	0

## 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 condition of the oil is acceptable for the time in service.



## WEAR METALS

Iron	ppm	<b>36</b>	178	81	61
Copper	ppm	<b>&lt;1</b>	<1	<1	0
Lead	ppm	<b>&lt;1</b>	0	0	0
Tin	ppm	<b>0</b>	<1	<1	0
Aluminum	ppm	<b>1</b>	● 26	1	1
Chromium	ppm	<b>2</b>	3	4	3
Molybdenum	ppm	<b>4</b>	4	17	17
Nickel	ppm	<b>&lt;1</b>	<1	<1	0
Titanium	ppm	<b>&lt;1</b>	1	<1	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>3</b>	4	11	8
Vanadium	ppm	<b>0</b>	<1	0	0



## ADDITIVES

Calcium	ppm	<b>4157</b>	3751	3786	3946
Magnesium	ppm	<b>15</b>	32	12	10
Zinc	ppm	<b>1635</b>	1470	1586	1651
Phosphorus	ppm	<b>1266</b>	1219	1279	1330
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>133</b>	121	124	131

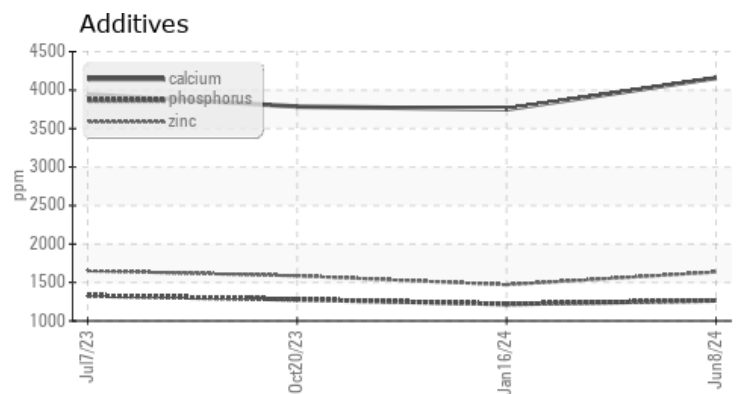
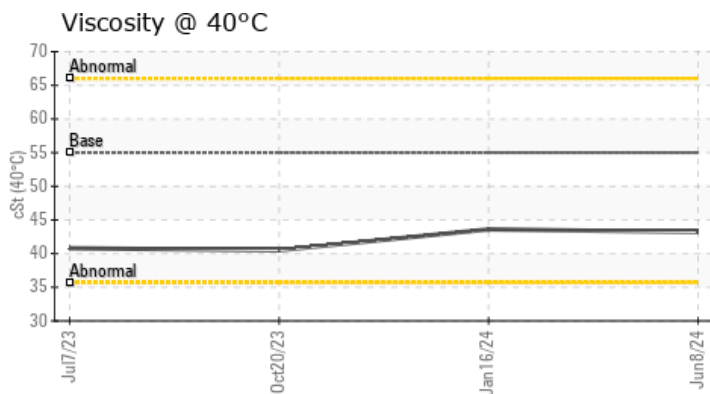
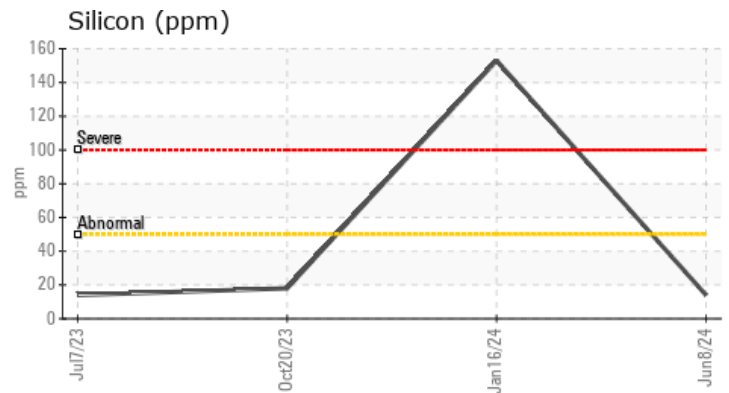
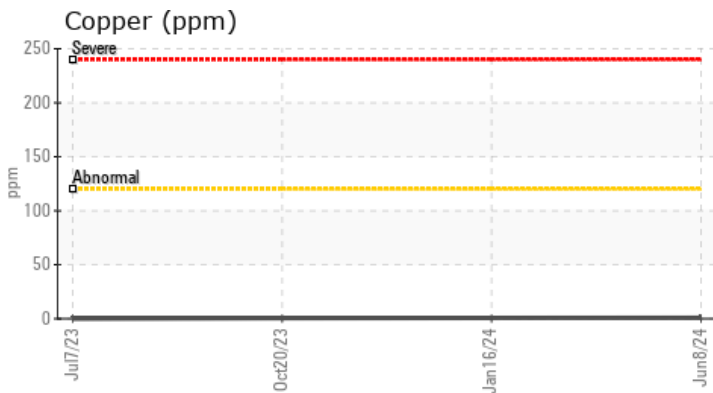
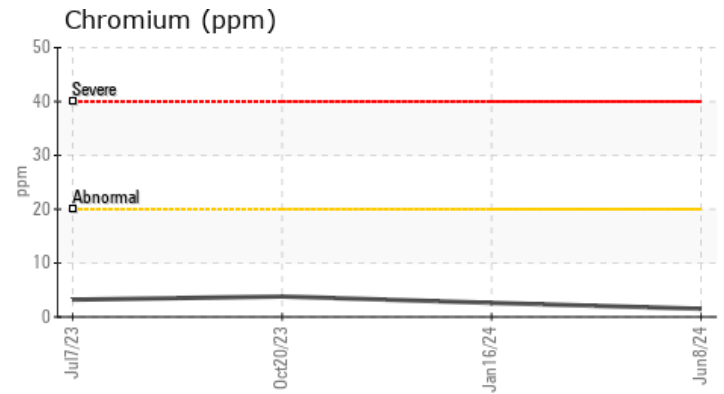
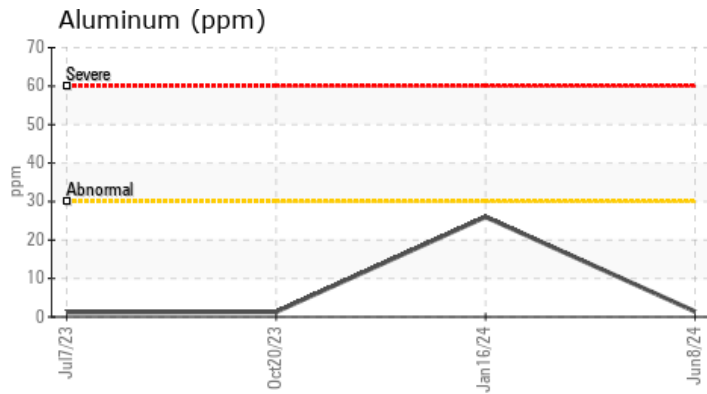
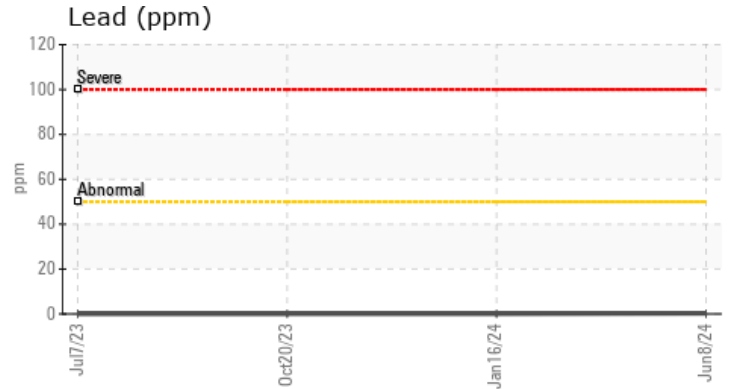
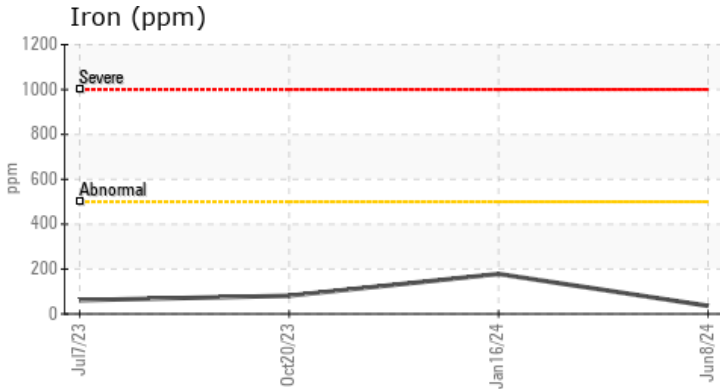
**Depot:** VOLVO0096  
**Unique No:** 11083373  
**Signed:** Wes Davis  
**Report Date:** 17 Jun 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS







# CONSTRUCTION EQUIPMENT

## PRINCE VOLVO L90H 626545 - REAR AXLE



**Sample No:** VCP451292  
**Oil Type:** VOLVO WB 102  
**Job No:** PRINCE



### SAMPLE INFORMATION

Sample Number	<b>VCP451292</b>	VCP438299	VCP440384	VCP417672
Sample Date	<b>08 Jun 2024</b>	16 Jan 2024	20 Oct 2023	07 Jul 2023
Machine Hours	<b>2846</b>	2003	1583	988
Oil Hours	<b>0</b>	0	0	0
Oil Changed	<b>Changed</b>	Changed	Changed	Not Changd
Sample Status	<b>NORMAL</b>	NORMAL	NORMAL	NORMAL

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### OIL CONDITION

Visc @ 40°C	cSt	<b>43.1</b>	44.7	41.1	41.0
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### CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Silicon	ppm	<b>15</b>	15	21	19
Sodium	ppm	<b>&lt;1</b>	2	11	10
Potassium	ppm	<b>2</b>	0	2	0

### 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 condition of the oil is acceptable for the time in service.



### WEAR METALS

Iron	ppm	<b>43</b>	46	70	56
Copper	ppm	<b>6</b>	<1	24	19
Lead	ppm	<b>&lt;1</b>	<1	<1	0
Tin	ppm	<b>&lt;1</b>	<1	3	<1
Aluminum	ppm	<b>1</b>	<1	1	1
Chromium	ppm	<b>2</b>	1	4	3
Molybdenum	ppm	<b>1</b>	4	2	4
Nickel	ppm	<b>&lt;1</b>	0	<1	0
Titanium	ppm	<b>&lt;1</b>	<1	<1	0
Silver	ppm	<b>0</b>	0	0	0
Manganese	ppm	<b>2</b>	2	7	5
Vanadium	ppm	<b>0</b>	<1	0	0



### ADDITIVES

Calcium	ppm	<b>4270</b>	3723	3816	3928
Magnesium	ppm	<b>16</b>	28	14	11
Zinc	ppm	<b>1704</b>	1455	1584	1653
Phosphorus	ppm	<b>1305</b>	1213	1284	1324
Barium	ppm	<b>0</b>	0	0	0
Boron	ppm	<b>132</b>	121	125	132

**Depot:** VOLVO0096  
**Unique No:** 11083374  
**Signed:** Wes Davis  
**Report Date:** 17 Jun 2024



# CONSTRUCTION EQUIPMENT



## GRAPHS

