



CONSTRUCTION EQUIPMENT

621497-01 VOLVO 6157 - DIESEL ENGINE



Sample No: VCP135324
Oil Type: VOLVO ULTRA DIESEL ENGINE OIL 15W40 VDS-3
Job No: 621497-01



SAMPLE INFORMATION

Sample Number	VCP135324	VCP123030	VCP112078	VCP076958
Sample Date	01 Feb 2013	09 Dec 2011	31 Aug 2011	21 Mar 2011
Machine Hours	7506	5932	5493	5000
Oil Hours	500	0	500	500
Oil Changed	Changed	Changed	Changed	Changed
Sample Status	NORMAL	NORMAL	NORMAL	NORMAL

RIDEAU BULK TERMINALS
 6960 4TH LINE ROAD,, OLD HWY 16
 KEMPTVILLE, ON
 CA K0G 1J0
 Contact: Mark Yelle
 myelle@rideaubulk.com
 T: (613)489-1440
 F: (613)489-1428



OIL CONDITION

Visc @ 100°C	cSt	14.9	14.6	14.6	15.0
Oxidation (PA)	%	82	84	89	82



CONTAMINATION

Water	%	NEG	NEG	NEG	NEG
Soot %	%	0.4	0.4	0.5	0.2
Nitration (PA)	%	90	91	94	84
Sulfation (PA)	%	84	77	78	67
Glycol	%	NEG	NEG	NEG	NEG
Fuel	%	<1.0	<1.0	<1.0	<1.0
Silicon	ppm	2	4	3	3
Sodium	ppm	4	7	10	7
Potassium	ppm	1	2	0	<1

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	8	12	17	11
Copper	ppm	2	12	13	28
Lead	ppm	3	5	10	3
Tin	ppm	<1	<1	1	<1
Aluminum	ppm	1	2	2	2
Chromium	ppm	<1	<1	<1	<1
Molybdenum	ppm	35	38	43	44
Nickel	ppm	<1	<1	1	1
Titanium	ppm	21	19	26	21
Silver	ppm	0	0	0	0
Manganese	ppm	0	<1	<1	<1
Vanadium	ppm	<1	0	0	<1



ADDITIVES

Calcium	ppm	1372	1548	1816	1620
Magnesium	ppm	708	709	824	795
Zinc	ppm	1164	1138	1322	1365
Phosphorus	ppm	908	874	972	1077
Barium	ppm	0	0	0	0
Boron	ppm	38	31	31	41

Depot: RIDNOR
Unique No: 3663622
Signed: Bill Quesnel
Report Date: 21 Feb 2013

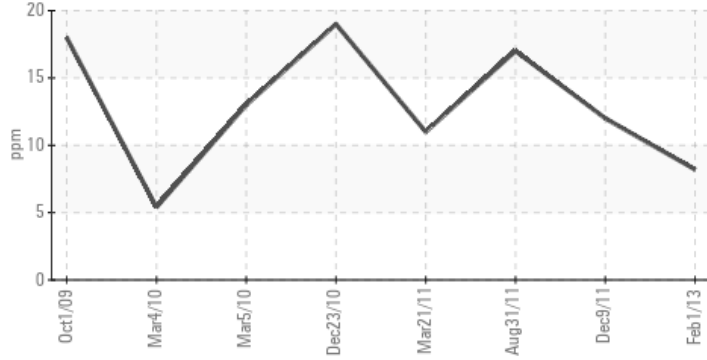


CONSTRUCTION EQUIPMENT

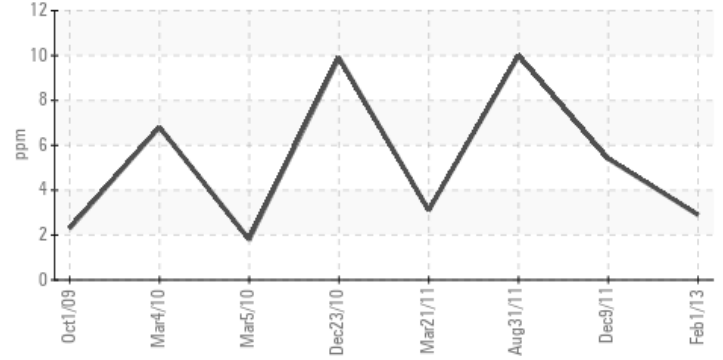


GRAPHS

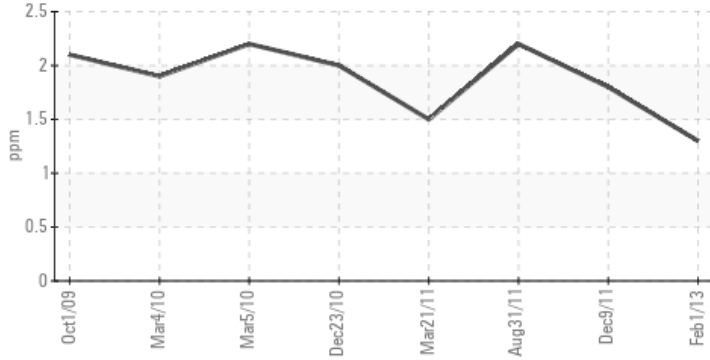
Iron (ppm)



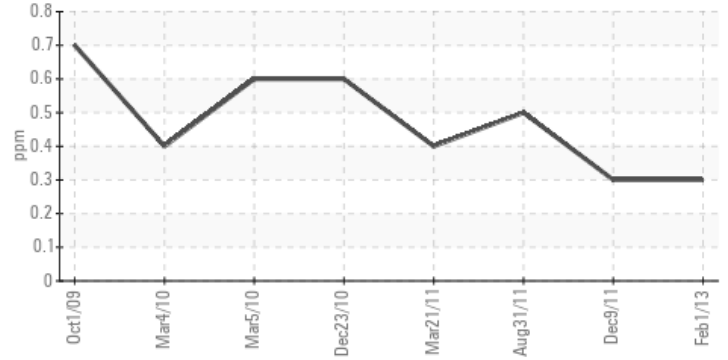
Lead (ppm)



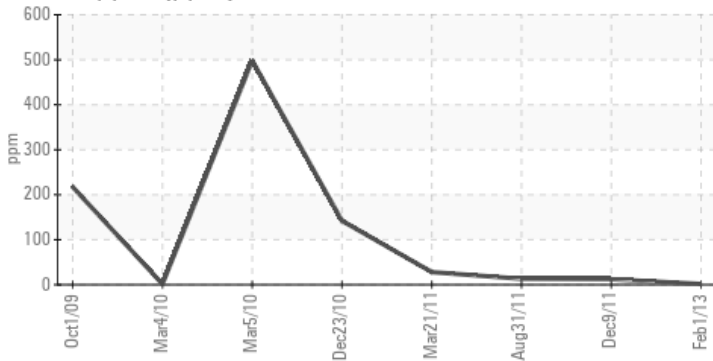
Aluminum (ppm)



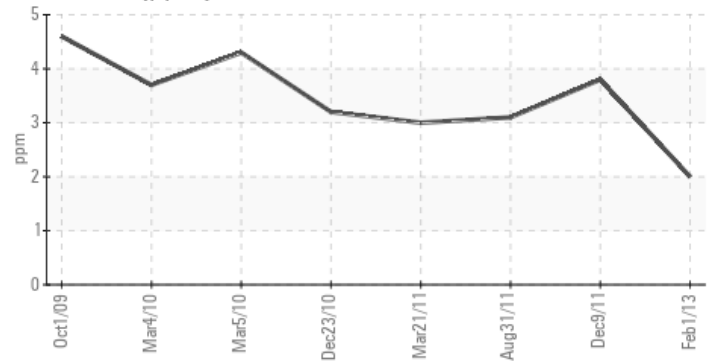
Chromium (ppm)



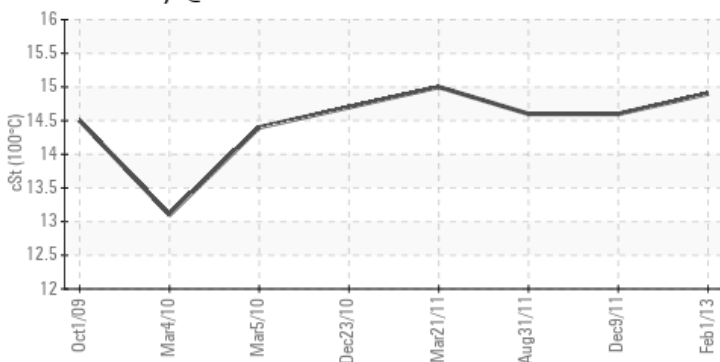
Copper (ppm)



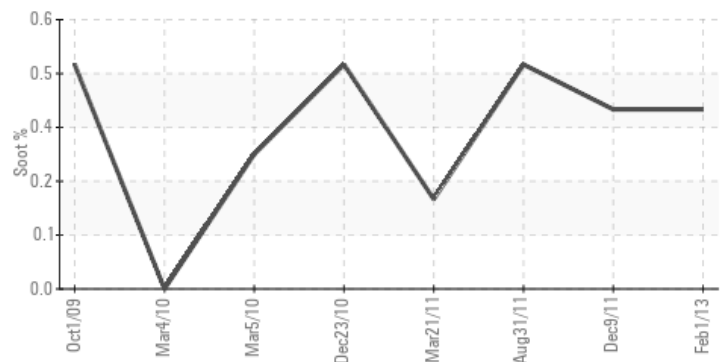
Silicon (ppm)



Viscosity @ 100°C



Soot %





CONSTRUCTION EQUIPMENT

636308-01 VOLVO 6157 - TRANSMISSION (AUTO)



Sample No: VCE187703
Oil Type: VOLVO AUTOMATIC TRANSMISSION FLUID AT102
Job No: 636308-01



SAMPLE INFORMATION

Sample Number	VCE187703	VCP123024	---	---
Sample Date	19 Jun 2013	09 Dec 2011	---	---
Machine Hours	8157	5932	---	---
Oil Hours	0	0	---	---
Oil Changed	Changed	Changed	---	---
Sample Status	NORMAL	NORMAL	---	---

RIDEAU BULK TERMINALS
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 Contact: Mark Yelle
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 F: (613)489-1428



OIL CONDITION

Visc @ 40°C	cSt	27.9	23.2	---	---
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CONTAMINATION

Water	%	NEG	NEG	---	---
Silicon	ppm	4	9	---	---
Sodium	ppm	6	9	---	---
Potassium	ppm	0	2	---	---

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	31	60	---	---
Copper	ppm	5	10	---	---
Lead	ppm	<1	<1	---	---
Tin	ppm	0	0	---	---
Aluminum	ppm	<1	<1	---	---
Chromium	ppm	<1	<1	---	---
Molybdenum	ppm	0	<1	---	---
Nickel	ppm	0	<1	---	---
Titanium	ppm	0	0	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	<1	1	---	---
Vanadium	ppm	0	0	---	---



ADDITIVES

Calcium	ppm	151	231	---	---
Magnesium	ppm	3	3	---	---
Zinc	ppm	24	52	---	---
Phosphorus	ppm	279	420	---	---
Barium	ppm	<1	0	---	---
Boron	ppm	102	96	---	---

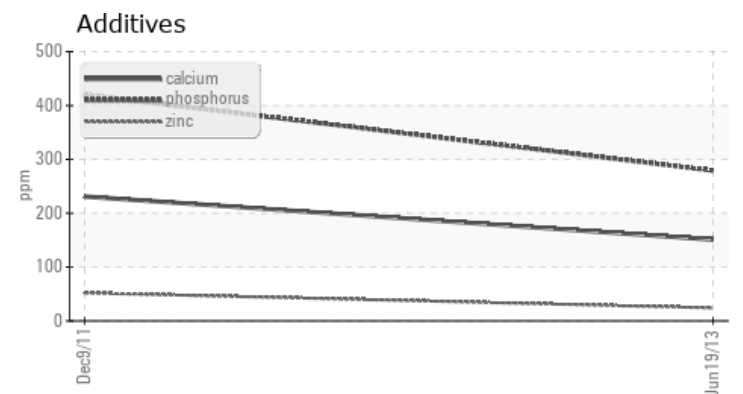
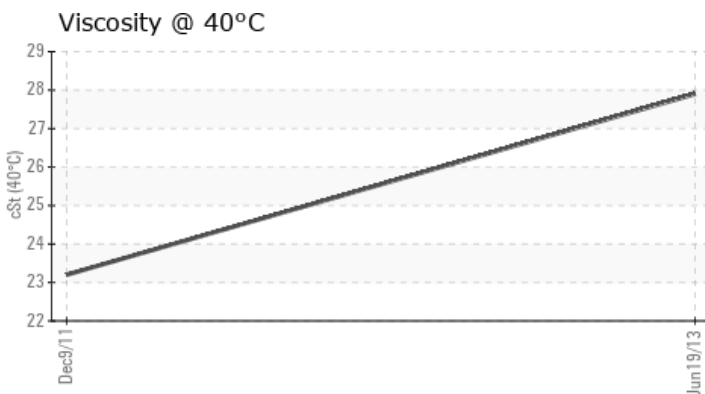
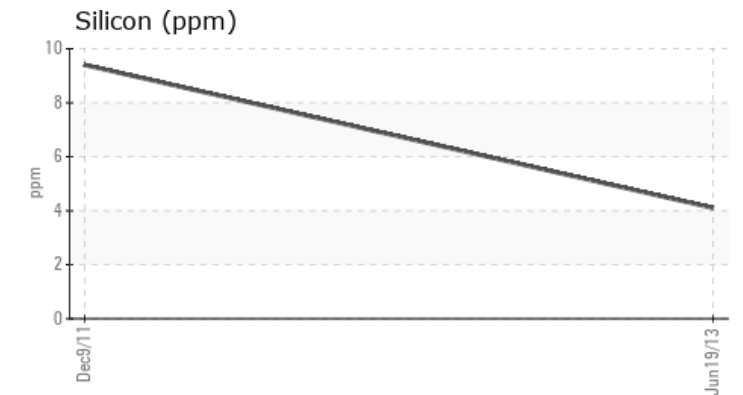
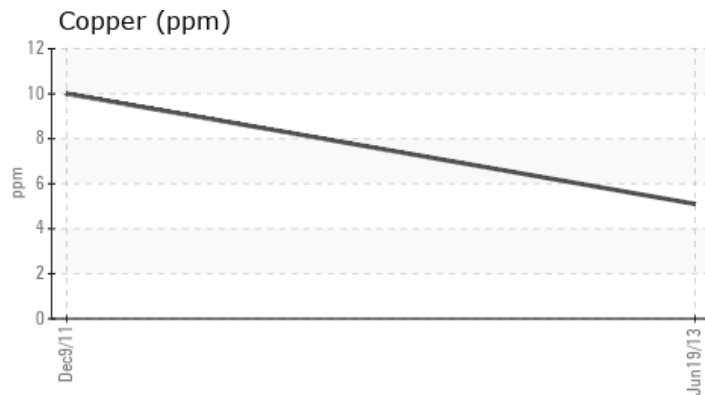
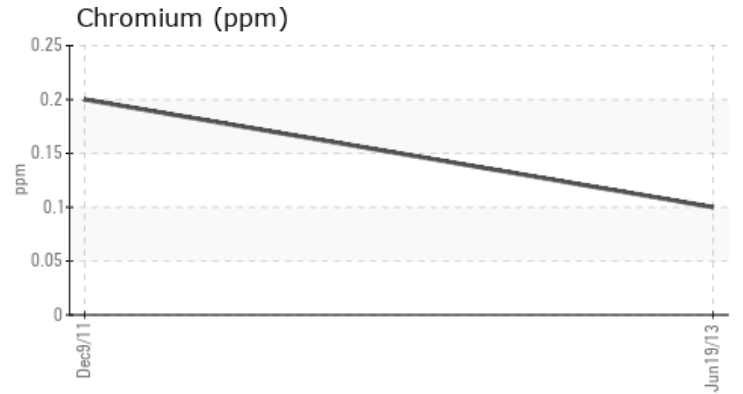
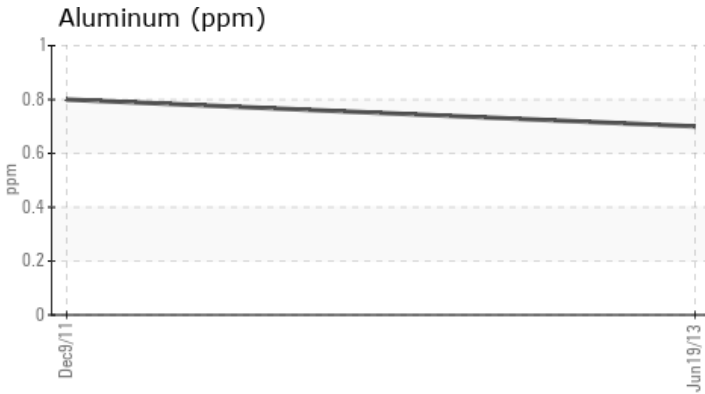
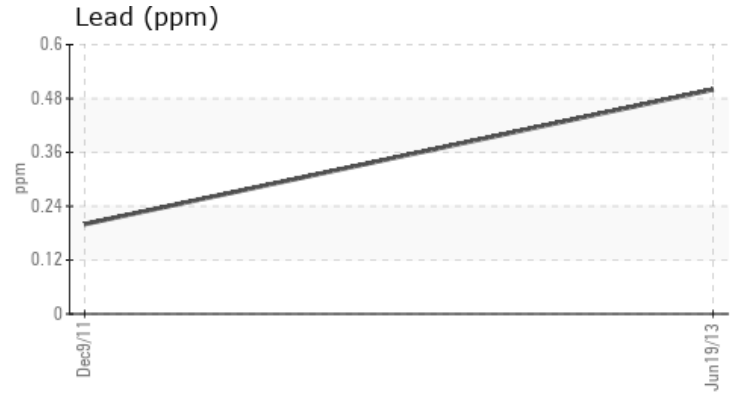
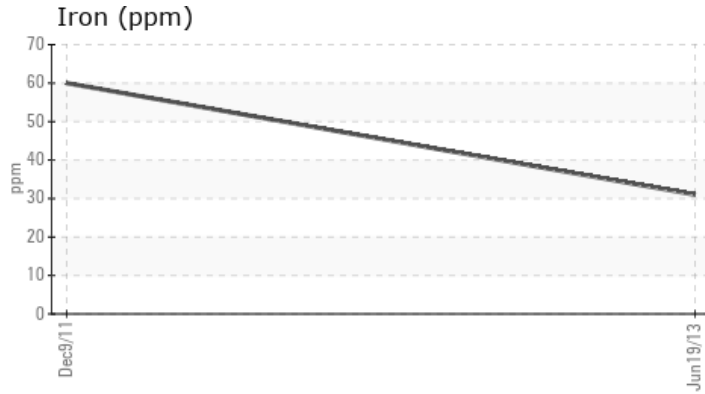
Depot: RIDNOR
Unique No: 3739241
Signed: Wes Davis
Report Date: 21 Jun 2013



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

636308-01 VOLVO 6157 - HYDRAULIC SYSTEM



Sample No: VCE187702
Oil Type: VOLVO SUPER HYDRAULIC OIL 46
Job No: 636308-01



SAMPLE INFORMATION

Sample Number	VCE187702	VCP123037	---	---
Sample Date	19 Jun 2013	09 Dec 2011	---	---
Machine Hours	8157	5932	---	---
Oil Hours	0	0	---	---
Oil Changed	Not Chngd	Not Chngd	---	---
Sample Status	ABNORMAL	ABNORMAL	---	---

RIDEAU BULK TERMINALS

6960 4TH LINE ROAD,, OLD HWY 16
 KEMPTVILLE, ON
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 Contact: Mark Yelle
 myelle@rideaubulk.com
 T: (613)489-1440
 F: (613)489-1428



OIL CONDITION

Visc @ 40°C	cSt	▲ 32.8	▲ 34.9	---	---
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CONTAMINATION

Water	%	NEG	NEG	---	---
Particles >4µm		8690	7778	---	---
Particles >6µm		■ 1468	■ 1716	---	---
Particles >14µm		■ 34	▲ 184	---	---
ISO 4406:1999 (c)		20/18/12	20/18/15	---	---
Silicon	ppm	■ 4	■ 3	---	---
Sodium	ppm	■ 19	■ 11	---	---
Potassium	ppm	■ 0	■ 2	---	---

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. Viscosity of sample indicates oil is within ISO 32 range, advise investigate. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	■ 6	■ 5	---	---
Copper	ppm	■ 2	■ 2	---	---
Lead	ppm	■ <1	■ <1	---	---
Tin	ppm	■ 0	■ 0	---	---
Aluminum	ppm	■ <1	■ <1	---	---
Chromium	ppm	■ <1	■ <1	---	---
Molybdenum	ppm	■ 1	■ <1	---	---
Nickel	ppm	■ 0	■ 0	---	---
Titanium	ppm	2	<1	---	---
Silver	ppm	0	0	---	---
Manganese	ppm	■ 0	■ 0	---	---
Vanadium	ppm	0	0	---	---



ADDITIVES

Calcium	ppm	■ 196	■ 111	---	---
Magnesium	ppm	■ 4	■ 11	---	---
Zinc	ppm	■ 450	■ 397	---	---
Phosphorus	ppm	■ 365	■ 312	---	---
Barium	ppm	■ <1	■ 0	---	---
Boron	ppm	■ 6	■ 2	---	---

Depot: RIDNOR
Unique No: 3739228
Signed: Bill Quesnel
Report Date: 25 Jun 2013

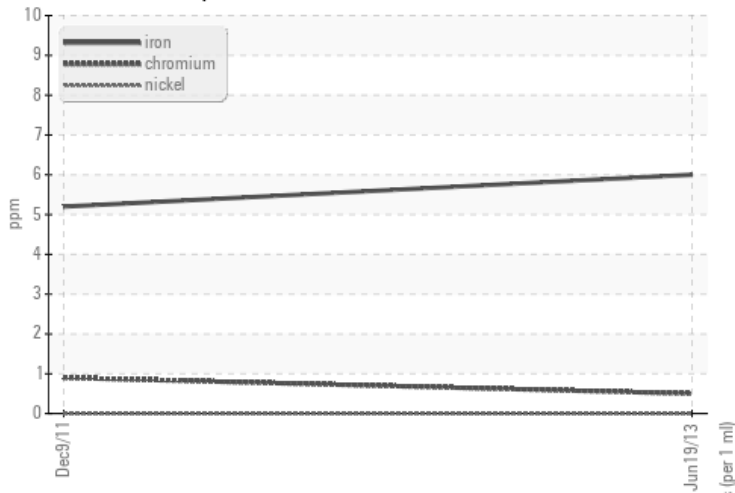


CONSTRUCTION EQUIPMENT

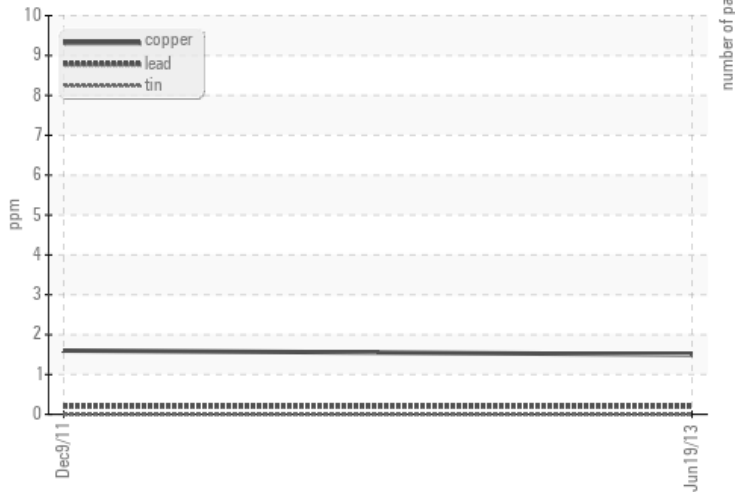


VOLVO GRAPHS

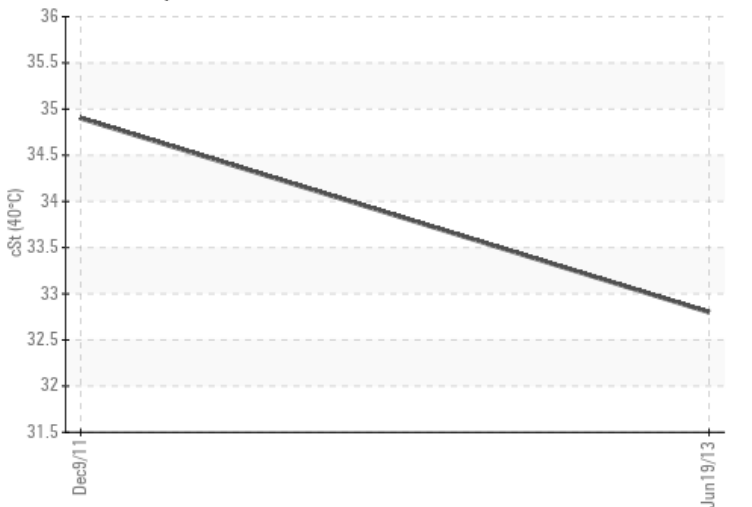
Ferrous Alloys



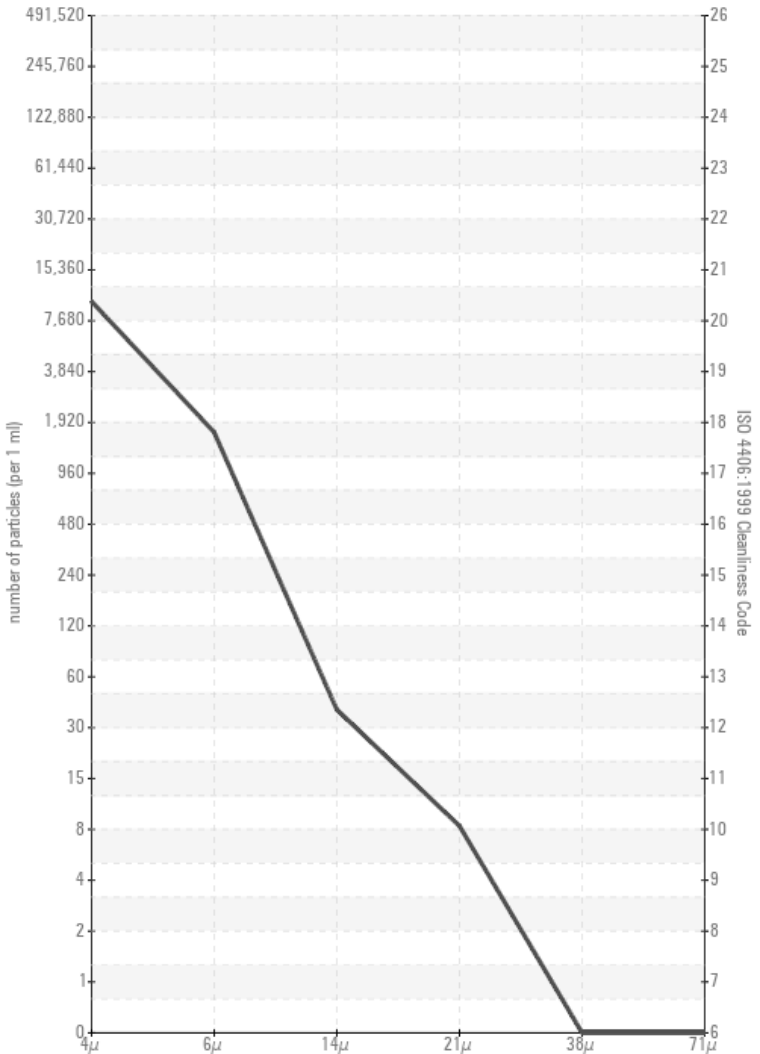
Non-ferrous Metals



▲ Viscosity @ 40°C



Particle Count





CONSTRUCTION EQUIPMENT

636308-01 VOLVO 6157 - FRONT AXLE



Sample No: VCE187701
Oil Type: VOLVO SUPER WET BRAKE TRANSAXLE OIL WB102
Job No: 636308-01



SAMPLE INFORMATION

Sample Number	VCE187701	VCP123028	VCP114054	---
Sample Date	19 Jun 2013	09 Dec 2011	21 Mar 2011	---
Machine Hours	8157	5932	5000	---
Oil Hours	0	0	1000	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

RIDEAU BULK TERMINALS
 6960 4TH LINE ROAD,, OLD HWY 16
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 F: (613)489-1428



OIL CONDITION

Visc @ 40°C	cSt	41.6	54.3	53.1	---
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CONTAMINATION

Water	%	NEG	NEG	NEG	---
Silicon	ppm	11	15	13	---
Sodium	ppm	2	0	3	---
Potassium	ppm	<1	1	<1	---

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	28	62	91	---
Copper	ppm	<1	<1	<1	---
Lead	ppm	<1	0	0	---
Tin	ppm	0	0	0	---
Aluminum	ppm	<1	<1	<1	---
Chromium	ppm	<1	<1	2	---
Molybdenum	ppm	0	<1	<1	---
Nickel	ppm	0	0	<1	---
Titanium	ppm	0	<1	0	---
Silver	ppm	0	0	0	---
Manganese	ppm	<1	1	1	---
Vanadium	ppm	0	0	0	---



ADDITIVES

Calcium	ppm	4023	3852	3744	---
Magnesium	ppm	13	14	14	---
Zinc	ppm	1706	1437	1575	---
Phosphorus	ppm	1380	1084	1301	---
Barium	ppm	<1	0	0	---
Boron	ppm	114	99	108	---

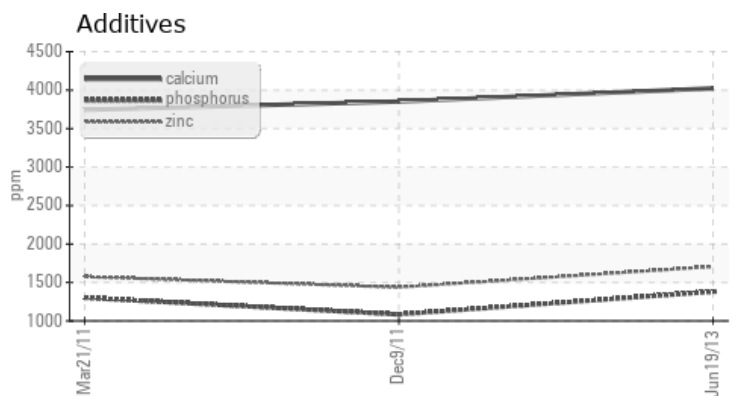
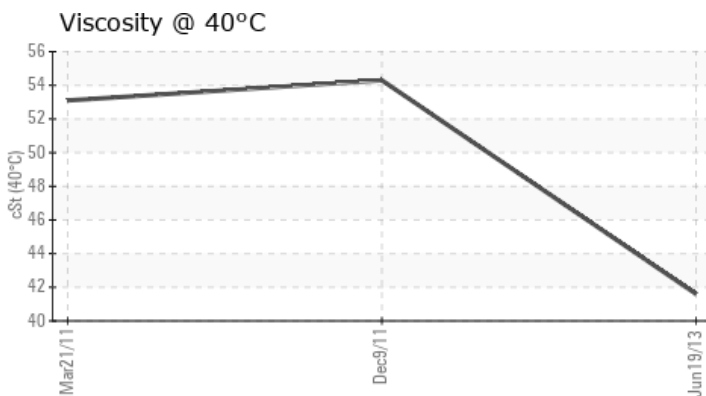
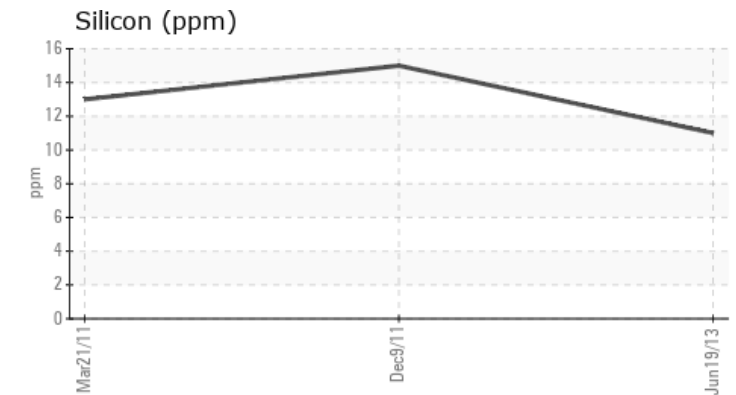
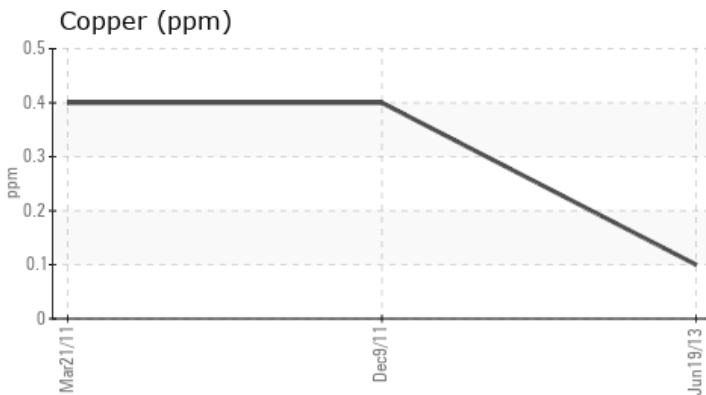
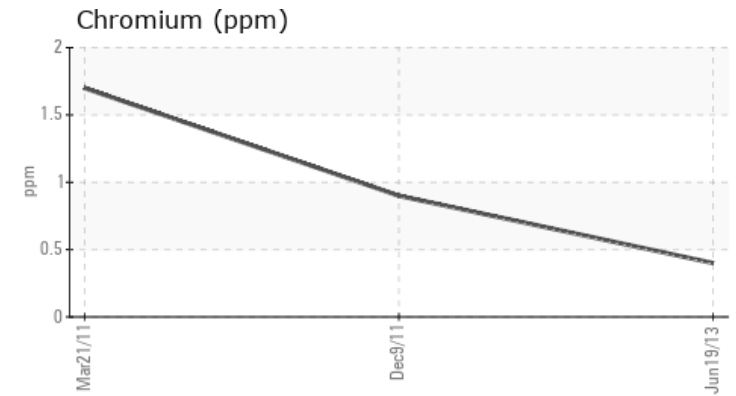
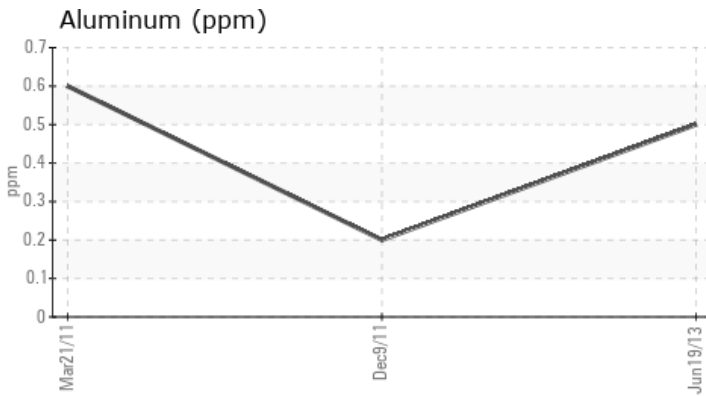
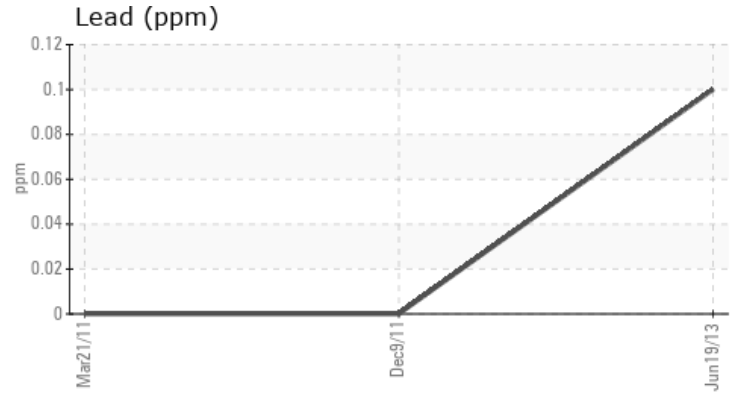
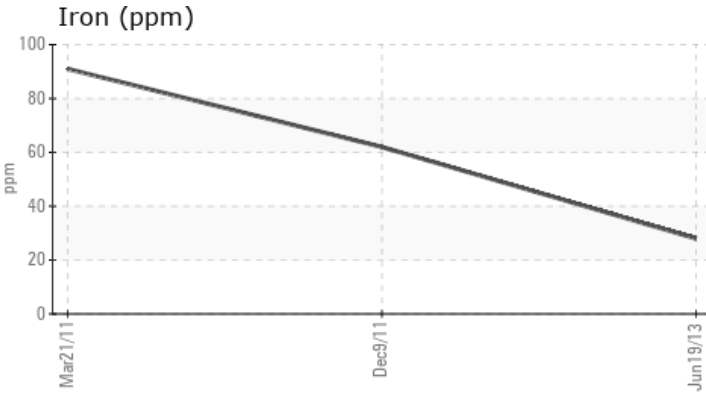
Depot: RIDNOR
Unique No: 3739276
Signed: Wes Davis
Report Date: 21 Jun 2013



CONSTRUCTION EQUIPMENT



GRAPHS





CONSTRUCTION EQUIPMENT

636308-01 VOLVO 6157 - REAR AXLE



Sample No: VCE187696
Oil Type: VOLVO SUPER WET BRAKE TRANSAXLE OIL WB102
Job No: 636308-01



SAMPLE INFORMATION

Sample Number	VCE187696	VCP123023	VCP076970	---
Sample Date	19 Jun 2013	09 Dec 2011	21 Mar 2011	---
Machine Hours	8157	5932	5000	---
Oil Hours	0	0	1000	---
Oil Changed	Changed	Changed	Changed	---
Sample Status	NORMAL	NORMAL	NORMAL	---

RIDEAU BULK TERMINALS

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 Contact: Mark Yelle
 myelle@rideaubulk.com
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 F: (613)489-1428



OIL CONDITION

Visc @ 40°C	cSt	42.2	52.8	54.4	---
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CONTAMINATION

Water	%	NEG	NEG	NEG	---
Silicon	ppm	12	16	15	---
Sodium	ppm	2	2	3	---
Potassium	ppm	0	<1	1	---

Diagnosis

Resample at the next service interval to monitor. All component wear rates are normal. There is no indication of any contamination in the component. The condition of the oil is acceptable for the time in service.



WEAR METALS

Iron	ppm	42	73	109	---
Copper	ppm	<1	<1	<1	---
Lead	ppm	0	0	0	---
Tin	ppm	0	0	0	---
Aluminum	ppm	<1	<1	<1	---
Chromium	ppm	<1	1	2	---
Molybdenum	ppm	0	<1	<1	---
Nickel	ppm	0	<1	<1	---
Titanium	ppm	0	<1	0	---
Silver	ppm	0	<1	0	---
Manganese	ppm	<1	<1	2	---
Vanadium	ppm	0	0	0	---



ADDITIVES

Calcium	ppm	4232	3757	3844	---
Magnesium	ppm	14	13	15	---
Zinc	ppm	1790	1401	1594	---
Phosphorus	ppm	1436	1106	1321	---
Barium	ppm	<1	0	0	---
Boron	ppm	121	102	110	---

Depot: RIDNOR
Unique No: 3739277
Signed: Wes Davis
Report Date: 21 Jun 2013

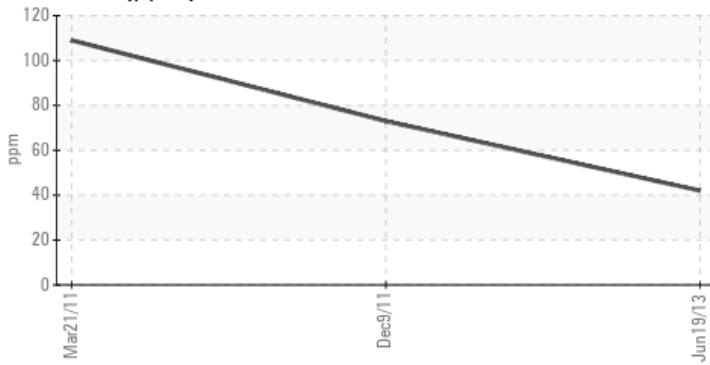


CONSTRUCTION EQUIPMENT



GRAPHS

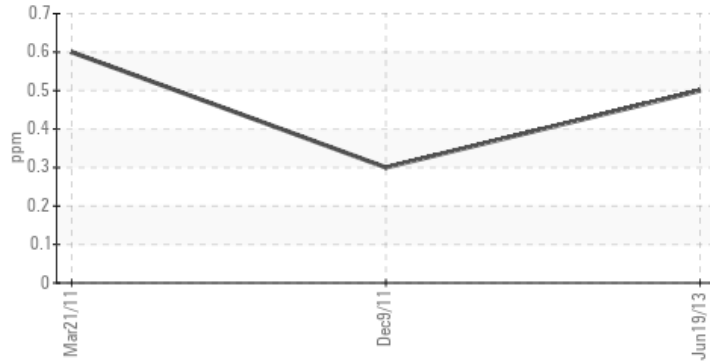
Iron (ppm)



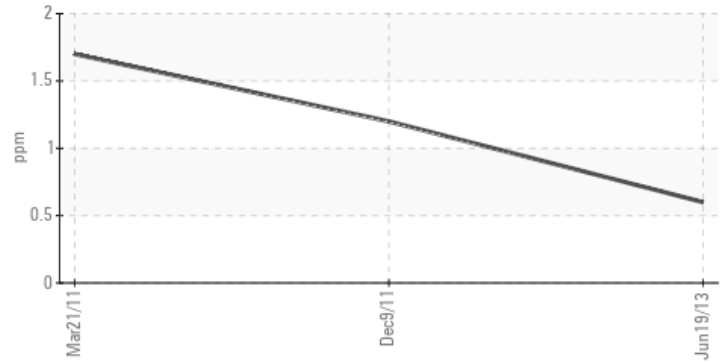
Lead (ppm)



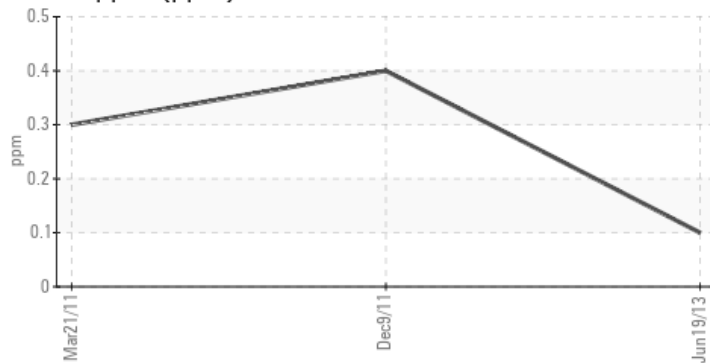
Aluminum (ppm)



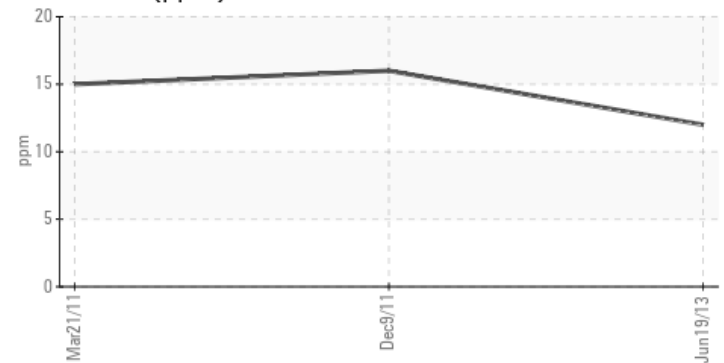
Chromium (ppm)



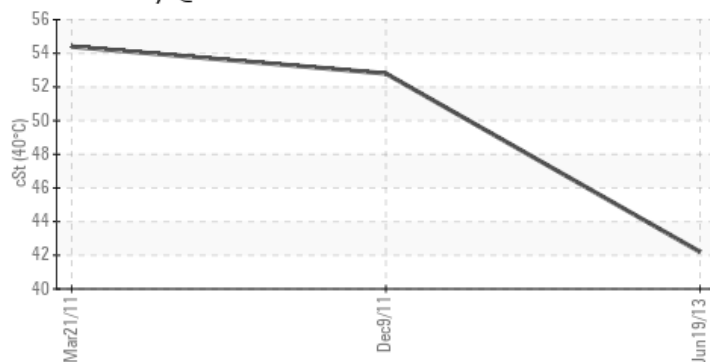
Copper (ppm)



Silicon (ppm)



Viscosity @ 40°C



Additives

