

**Australian Drilling Associates**  
**Level 5, Rialto North Tower**  
**525 Collins St**  
**Melbourne, Victoria, 3000**

## **West Seahorse 3**

## **Post Job Report**

**Prepared for Rajiv Tikkoo**  
**Thursday, 29 May 2008**

**Submitted by Andrew Stobie**  
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Thursday, 29 May 2008

Rajiv Tikkoo  
Australian Drilling Associates  
Level 5, Rialto North Tower  
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Rajiv,

**Re: West Seahorse 3**

Included for your review is a copy of the Post Job Report of the West Seahorse 3 cementing operations. The PJR includes the programs, job logs, and lab reports.

I trust this PJR meets the requirements of ADA and with insight and reflection provides sufficient detail for future reference.

Yours sincerely,

Andrew Stobie  
Technical Professional

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## 1.0 Summary of operations

Cementation on West Seahorse#3 well was completed as follows

- 30" Conductor casing was cemented on the 25<sup>th</sup> of April 2008
- 13 3/8" Surface Casing was cemented on the 29<sup>th</sup> of April 2008
- Plug and abandonment of the well was completed on the 7<sup>th</sup> May 2008.

### 1.1 Lessons Learnt

SSR plugset didn't not work as designed. Releasing pressures were not definitively witnessed. Top plug pressure was recorded on the Martin Decker but not the digital recorder. Weight on BHA, cement returns when running to bottom and long drill out times are also additional problems witnessed with this job. Going forward the following items have been addressed

- Bottom plug off SSR set has been removed
- Diameters of balls we had offshore have been confirmed as correct
- Dart has been confirmed as correct
- The recording frequency of the on board computer is one sample per second. This is the highest sample rate. During the job the sample rate must be set lower in order to record the whole job. When a laptop computer is connected it records at one sample per second in real time. The sensitivity can be modified to display 5 readings per second.
- Operators need to set the correct date and time to allow for easier cross referencing of data after the event.
- The dart should be landed with less than 1bpm rate. It took a higher rate to actually launch the dart out of the head. This rate was then maintained (>6bpm) so it was hard/impossible to see the shear pressure on the digital recorder
- Chase up rig for dims and inspect landing string components for irregularities.

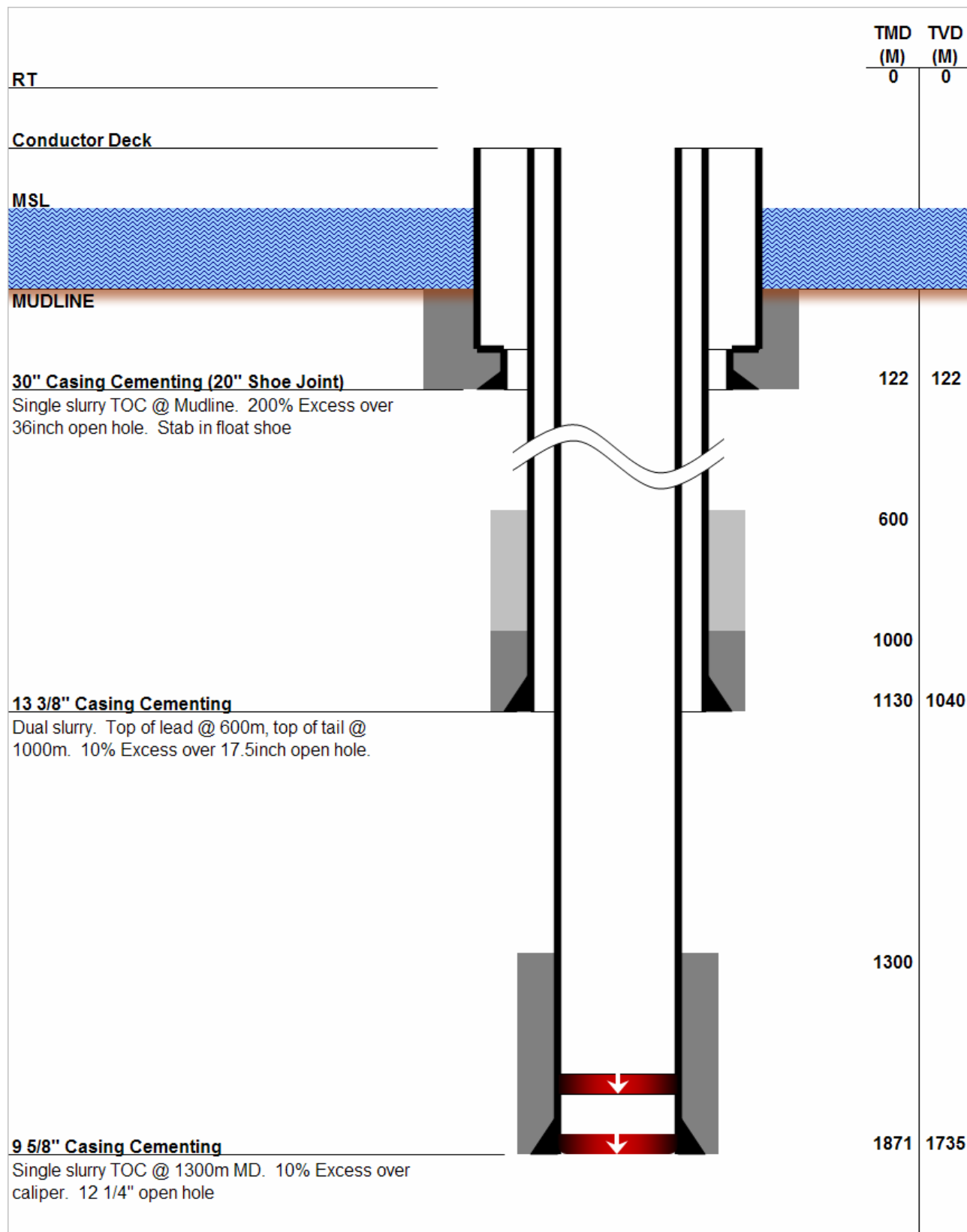
## 2.0 Cement Programs

The following program illustrates the cementation of 30in, 13 3/8in and 9 5/8in casings on West Seahorse-3 followed by P&A program.

### Revision History

Draft 1	21 <sup>st</sup> December 2007	Initial program
Revision 1	28 <sup>th</sup> February 2008	Changed Casing depths
Revision 2	16 <sup>th</sup> April 2008	SSR plug shear pressures and Sugar pill recipe is add
Revision 3	22 <sup>nd</sup> of April 2008	Removed sugar pill. Don't open ports at MSL on 13 3/8" job. Reduce TOC on 13 3/8" to 600m. Reduce TOC on 9 5/8" Job to 1300m.
Revision 4	24 <sup>th</sup> of April 2008	Fluid loss control additive removed from the tail on the 13 3/8" CSG

## 2.1 Schematic



## 2.2 30 inch Casing Detail

### JOB PARAMETERS

Casing measured depth:	132m	BHST temperature:	20°C
True vertical depth:	132m	BHCT temperature:	17°C
Depth to top cement:	74m	Drilling mud type:	SW&HVBS
		Drilling mud density:	8.60ppg

### WELLBORE

#### Casing/Tubing (Inner string job)

0-132m	5 1/2in 24.7ppf Tubing
0-120m	30in 309.7ppf Casing (X-52 D60/MT)
120-132m	20in 169ppf Casing

#### Annulus

0-74m	RKB-ML
74-132m	36in open hole (200% excess)

### SPACERS

#### Spacer #1 - 100.0bbl Seawater at 8.55ppg

Seawater	42.00 gal/bbl	(12m OH annular fill / 13min contact time)
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#### Spacer #2 - 20.0bbl Seawater + Dye at 8.57ppg

Seawater	41.98 gal/bbl	(2m OH annular fill / 3min contact time)
Fluorescein Dye	0.20 lb/bbl	

Contact times are based on the displacement rate.

### CEMENT

#### Composition

Adelaide Brighton Class G	
Calcium Chloride 1%	1.00 %BWOC
Seawater	5.16 gal/sk
NF-6	0.25 gal/10bblMF

#### Properties

Surface density:	15.90 ppg
Surface yield:	1.17 ft <sup>3</sup> /sk
Total mixing fluid:	5.20 gal/sk
Thickening time (70 Bc):	3:30
Free water vert at 17°C:	<1 %
Comp strength at 19°C	50 psi in 4 hrs
Comp strength at 19°C	500 psi in 6 hrs
Comp strength at 19°C	2,000 psi in 24 hrs

Note that %BWOC are based on a 94 lb sack

### VOLUME CALCULATIONS

#### Cement

30in Casing / 36in hole volume	46 m x 1.2620 bbl/m	58.1 bbl
30in Casing / 36in hole excess	2.00 x 58.1 bbl	116.1 bbl
20in Casing / 36in hole volume	12 m x 2.8555 bbl/m	34.3 bbl
20in Casing / 36in hole excess	2.00 x 34.3 bbl	68.5 bbl

**Total slurry volume = 277.0 bbl**

Quantity of cement	277.0 bbl x 5.6146 / 1.17 ft <sup>3</sup> /sk	1329 sks
Quantity of mix fluid	1329 sks x 5.20 gal/sk	164.5 bbl

**Displacement**

5 1/2in Tubing volume 132 m x 0.0695 bbl/m 9.2 bbl  
**Total displacement volume =9.2 bbl**

**PUMPING SCHEDULE & TIMES**

	<b>Volume (bbl)</b>	<b>Rate (bbl/min)</b>	<b>Time (min)</b>
Make up lines & pressure test:	N/A	N/A	30
Circulate 1.5 x Casing volume:	13.8	10.0	1
Pump spacers:	120.0	10.0	12
Mix & pump cement:	277.0	6.0	46
Release dart/top plug:	N/A	N/A	5
Pump displacement:	9.2	8.0	1
<b>Total job time (including circulation):</b>			<b>95 min 1hr 35min</b>
<b>Minimum cement thickening time (with 2hr safety factor):</b>			<b>172 min 2hr 52min</b>

**MINIMUM MATERIAL REQUIREMENTS (Double for loadout)****Spacer #1 - Seawater**

Seawater 100 bbl

**Spacer #2 - Seawater + Dye**

Seawater 20 bbl

Fluorescein Dye 4 lb

**Cement**

Adelaide Brighton Class G 57 MT(1,337 ft³)

Calcium Chloride 1% 1,249 lbs

Seawater 163.3 bbl

NF-6 5 gals

*These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.*

**2.2.1 30in Casing Job Procedure**

- 1) Run 30" casing to TD with innerstring pipe.
- 2) Rig up surface equipment including a releasing tool for the latch in dart if one is required
- 3) Rig up surface equipment
- 4) Establish circulation
- 5) Test lines to 3000psi
- 6) Pump 100bbls Seawater
- 7) Pump 20bbls Seawater with Fluorescein Dye
- 8) Mix and pump 277bbls of 15.9ppg cement or until returns are evident on the seafloor
- 9) Drop top plug/latch in plug if one is being used
- 10) Displace with 9.2bbls of MUD
- 11) Slow pump rate down and bump plug 500psi over and hold for 10mins. Bleed back and check floats



## 2.3 13 3/8 inch Casing Details

### JOB PARAMETERS

Casing measured depth:	1,129m	BHST temperature:	55°C
True vertical depth:	1,040m	BHCT temperature:	38°C
Depth to top lead:	600m	Drilling mud type:	EZ-MUD
Depth to top tail:	1,000m	Drilling mud density:	9.60ppg

### WELLBORE

#### Casing/Tubing

0-1,129m 13 3/8in 68ppf Casing (N-80 BTC)

#### Annulus

0-132m 20in 169ppf casing (18.376in ID)  
 132-1,000m 17.5in open hole (10% excess)  
 1,000-1,129m 17.5in open hole (10% excess)

### SPACERS

#### Spacer #1 - 70.0bbl Seawater at 8.55ppg

Seawater 42.00 gal/bbl (157m OH annular fill / 9min contact time)

#### Spacer #2 - 30.0bbl Tuned Spacer E+ at 11.00ppg

Freshwater 37.31 gal/bbl (67m OH annular fill / 4min contact time)  
 Tuned Spacer 16.80 lb/bbl  
 Barite 133.78 lb/bbl

Contact times are based on the displacement rate.

### LEAD CEMENT

#### Composition

Adelaide Brighton Class G  
 Econolite Liquid 15.00 gal/10bblMF  
 Seawater 12.41 gal/sk  
 NF-6 0.25 gal/10bblMF

#### Properties

Surface density: 12.50 ppg  
 Surface yield: 2.19 ft³/sk  
 Total mixing fluid: 12.88 gal/sk  
 Thickening time (70 Bc): 6:30  
 Free water dev at 38°C: Trace %  
 Comp strength at 38°C: 50 psi in 8 hrs  
 Comp strength at 38°C: 500 psi in 24 hrs

### TAIL CEMENT

#### Composition

Adelaide Brighton Class G  
 CFR-3L 3.00 gal/10bblMF  
 SCR-100L 1.00 gal/10bblMF  
 Freshwater 5.06 gal/sk  
 NF-6 0.25 gal/10bblMF

#### Properties

Surface density: 15.80 ppg  
 Surface yield: 1.16 ft³/sk  
 Total mixing fluid: 5.12 gal/sk  
 Thickening time (70 Bc): 4:30  
 Free water vert at 38°C: Trace %  
 Fluid loss at 38°C: <100 cc/30min  
 Comp strength at 49°C: 50 psi in 5 hrs  
 Comp strength at 49°C: 500 psi in 7 hrs  
 Comp strength at 49°C: 2,000 psi in 24 hrs

**VOLUME CALCULATIONS****Lead Cement**

13 3/8in Casing / 17.5in hole volume	400 m x 0.4059 bbl/m	162.4 bbl
13 3/8in Casing / 17.5in hole excess	0.10 x 162.4 bbl	16.2 bbl
<i><b>Total lead slurry volume =178.6 bbl</b></i>		

Quantity of lead cement	178.6 bbl x 5.6146 / 2.19 ft <sup>3</sup> /sk	458 sacks
Quantity of lead mix fluid	458 sacks x 12.88 gal/sk	140.5 bbl

**Tail Cement**

13 3/8in Casing / 17.5in hole volume	129 m x 0.4059 bbl/m	52.4 bbl
13 3/8in Casing / 17.5in hole excess	0.10 x 52.4 bbl	5.2 bbl
Shoe track volume	12 m x 0.4912 bbl/m	5.9 bbl
<i><b>Total tail slurry volume =63.5 bbl</b></i>		

Quantity of tail cement	63.5 bbl x 5.6146 / 1.16 ft <sup>3</sup> /sk	307 sks
Quantity of tail mix fluid	307 sks x 5.12 gal/sk	37.4 bbl

**Displacement**

13 3/8in Casing volume	1,117 m x 0.4912 bbl/m	548.7 bbl
<i><b>Total displacement volume =548.7 bbl</b></i>		

**PUMPING SCHEDULE & TIMES**

	<b>Volume (bbl)</b>	<b>Rate (bbl/min)</b>	<b>Time (min)</b>
Make up lines & pressure test:	N/A	N/A	30
Circulate 1.5 x Casing volume:	831.9	10.0	83
Pump spacers:	100.0	10.0	10
Mix & pump lead cement:	178.6	6.0	30
Mix & pump tail cement:	63.5	5.0	13
Release dart/top plug:	N/A	N/A	5
Pump displacement:	548.7	8.0	69

<i><b>Total job time (including circulation):</b></i>	<i><b>240 min</b></i>	<i><b>4hr 00min</b></i>
<i><b>Minimum lead cement thickening time (with 2hr safety factor):</b></i>	<i><b>237 min</b></i>	<i><b>3hr 57min</b></i>
<i><b>Minimum tail cement thickening time (with 2hr safety factor):</b></i>	<i><b>207 min</b></i>	<i><b>3hr 27min</b></i>

**MINIMUM MATERIAL REQUIREMENTS (Double for loadout)****Spacer #1 - Seawater**

Seawater	70 bbl
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**Spacer #2 - Tuned Spacer E+**

Freshwater	26.6 bbl
Tuned Spacer	504 lb
Barite	4,013 lb

**Lead Cement**

Adelaide Brighton Class G	20 MT(469 ft <sup>3</sup> )
Econolite Liquid	211 gals
Seawater	135.3 bbl
NF-6	4 gals

**Tail Cement**

Adelaide Brighton Class G	13 MT(305 ft <sup>3</sup> )
CFR-3L	11 gals
SCR-100L	4 gals
Freshwater	37 bbl
NF-6	1 gals

*These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.*

**2.3.1 13 3/8in casing Job Procedure**

- 12) Establish circulation
- 13) Test lines to 3000psi
- 14) Pump 70bbls Seawater
- 15) Pump 30bbls of Tuned Spacer E+
- 16) Drop weighted plastic ball to lands on a seal in the bottom plug ID.
- 17) Apply  $1100 \pm 500$ psi to shear the pins and releases bottom plug. (Apply  $1550 \pm 500$ psi to by pass the bottom plug when it lands on the collar
- 18) Pump 179bbls of Lead cement
- 19) Pump 64bbls of Tail cement
- 20) Drop releasing dart on the releasing sleeve and apply about  $2500 \pm 500$ psi to release the top plug.
- 21) Pump 10bbls of fresh water
- 22) Displace with 548.7bbls of mud. Use calliper volumes if possible
- 23) Slow pump rate down for final 10bbls. Bump plug 500psi over and hold for 10mins. Bleed back and check floats
- 24) End job

## 2.4 9 5/8 inch Casing

### JOB PARAMETERS

Casing measured depth:	1,872m	BHST temperature:	80°C
True vertical depth:	1,735m	BHCT temperature:	49°C
Depth to top cement:	1,300m	Drilling mud type:	EZ-MUD
		Drilling mud density:	9.60ppg

### WELLBORE

#### Casing/Tubing

0-1,872m 9 5/8in 47ppf Casing (L-80 MTC)

#### Annulus

0-1,129m 13 3/8in 68ppf casing (12.415in ID)  
1,129-1,872m 12.25in open hole (10% excess)

### SPACERS

#### Spacer #1 - 80.0bbl Seawater at 8.55ppg

Seawater 42.00 gal/bbl (397m OH annular fill / 10min contact time)

#### Spacer #2 - 30.0bbl Tuned Spacer at 11.00ppg

Freshwater 37.31 gal/bbl (149m OH annular fill / 4min contact time)  
Barite 133.78 lb/bbl Estimated Pv: 22cP  
Tuned Spacer E+ 16.80 lb/bbl Estimated Yp: 22lbs/100ft²

Contact times are based on the displacement rate.

### CEMENT

#### Composition

Adelaide Brighton Class G  
Halad -413L 30.00 gal/10bblMF  
CFR-3L 3.00 gal/10bblMF  
SCR-100L 1.00 gal/10bblMF  
Freshwater 4.74 gal/sk  
NF-6 0.25 gal/10bblMF

#### Properties

Surface density: 15.80 ppg  
Surface yield: 1.16 ft³/sk  
Total mixing fluid: 5.16 gal/sk  
Thickening time (70 Bc): 3:30  
Free water vert at 49°C: Trace %  
Fluid loss at 49°C: <50 cc/30min  
Comp strength at 70°C 50 psi in 4 hrs  
Comp strength at 70°C 500 psi in 5 hrs  
Comp strength at 70°C 2,000 psi in 24 hrs

**VOLUME CALCULATIONS****Cement**

9 5/8in Casing / 12.25in hole volume	572 m x 0.1830 bbl/m	104.7 bbl
9 5/8in Casing / 12.25in hole excess	0.10 x 104.7 bbl	10.5 bbl
Shoe track volume	24 m x 0.2402 bbl/m	5.8 bbl

**Total slurry volume =120.9 bbl**

Quantity of cement	120.9 bbl x 5.6146 / 1.16 ft <sup>3</sup> /sk	585 sks
Quantity of mix fluid	585 sks x 5.16 gal/sk	71.9 bbl

**Displacement**

9 5/8in Casing volume	1,848 m x 0.2402 bbl/m	443.8 bbl
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**Total displacement volume =443.8 bbl****PUMPING SCHEDULE & TIMES**

	<b>Volume (bbl)</b>	<b>Rate (bbl/min)</b>	<b>Time (min)</b>
Make up lines & pressure test:	N/A	N/A	30
Circulate 1.5 x Casing volume:	674.3	10.0	67
Pump spacers:	110.0	10.0	11
Release ball/bottom plug:	N/A	N/A	5
Mix & pump cement:	120.9	5.0	24
Release dart/top plug:	N/A	N/A	5
Pump displacement:	443.8	8.0	55

**Total job time (including circulation): 197 min 3hr 17min****Minimum cement thickening time (with 2hr safety factor): 204 min 3hr 24min****MINIMUM MATERIAL REQUIREMENTS (Double for loadout)****Spacer #1 - Seawater (Including 10.0 bbl pit loss)**

Seawater	90 bbl
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**Spacer #2 - Tuned Spacer (Including 10.0 bbl pit loss)**

Freshwater	35.5 bbl
Barite	5,351 lb
Tuned Spacer E+	672 lb

**Cement**

Adelaide Brighton Class G	25 MT(586 ft <sup>3</sup> )
Halad -413L	216 gals
CFR-3L	22 gals
SCR-100L	7 gals
Freshwater	66 bbl
NF-6	2 gals

*These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.*

**2.4.1 9 5/8in Casing Job Procedure**

- 25) Establish circulation
- 26) Test lines to 3000psi
- 27) Pump 80bbls Seawater
- 28) Pump 30bbls Tuned spacer
- 29) Drop bottom plug
- 30) Mix and pump 121bbls of cement slurry
- 31) Drop top plug
- 32) Pump 10bbls of fresh water
- 33) Displace with 444bbls of mud. Use calliper volumes if possible
- 34) Slow pump rate down for final 10bbls. Bump plug 500psi over and hold for 10mins. Bleed back and check floats

**2.4.2 Guidelines for Preparation of Tuned Spacer E+**

*Note: A clean pit is required to mix the tuned spacer.*

- 35) Load appropriate amount of freshwater in a clean pit
  - 36) Add Tuned spacer E+ Blend and agitate
  - 37) Wait 45-60 mins to allow Tuned spacer E+ to yield before adding Barite
  - 38) Add Barite (continue to agitate and circulate until spacer is homogeneous. Approximately 30mins)
- Check density with mud balance, ~11ppg.

## 2.5 Plug #1 Details

### JOB PARAMETERS

Plug bottom MD:	1,568m	BHST temperature:	71°C
Plug bottom TVD:	1,435m	BHCT temperature:	57°C
Plug top MD:	1,518m	Drilling mud type:	WBM
Plug length:	50m	Drilling mud density:	9.60ppg
Plug length with DP in:	53m		

### WELLBORE

#### Work string

0-1,568m                      4in 14ppf tubing

#### Annulus

0-1,568m                      9 5/8in 47ppf casing (8.681in ID)

### SPACERS

#### Spacer - Freshwater at 8.33ppg

Freshwater                      42.00 gal/bbl                      20.0bbl ahead and 3.8bbl behind to balance  
(106m annular fill / 3min contact time)

*Contact times are based on the displacement rate.*

### CEMENT SLURRY

#### Composition

Adelaide Brighton Class G	
SCR-100L	1.00 gal/10bblMF
CFR-3L	3.00 gal/10bblMF
Freshwater	5.06 gal/sk
NF-6	0.25 gal/10bblMF

#### Properties

Surface density:	15.80 ppg
Surface yield:	1.16 ft³/sk
Total mixing fluid:	5.12 gal/sk
Thickening time (70 Bc):	3:00
Comp strength at 66°C	50 psi in 4 hrs
Comp strength at 66°C	500 psi in 6 hrs
Comp strength at 66°C	2,500 psi in 24 hrs

### VOLUME CALCULATIONS

#### Cement

9 5/8in casing volume                      50 m x 0.2402 bbl/m                      12.0 bbl  
*Slurry volume =12.0 bbl*

Quantity of cement                      12.0 bbl x 5.6146 / 1.16 ft³/sk                      58 sacks

Quantity of mix fluid                      58 sacks x 5.12 gal/sk                      7.1 bbl

#### Displacement

4in tubing volume                      1,409 m x 0.0356 bbl/m                      50.1 bbl  
*Total displacement volume =50.1 bbl*



**PUMPING SCHEDULE & TIMES**

	<b>Volume (bbl)</b>	<b>Rate (bbl/min)</b>	<b>Time (min)</b>
Make up lines & pressure test:	N/A	N/A	30
Circulate 1 x bottoms up:	296.6	6.0	49
Pump spacers ahead:	20.0	6.0	3
Mix & pump cement:	12.0	5.0	2
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	3.8	6.0	1
Pump displacement:	50.1	6.0	8
Pull workstring 27 m above TOC:	77m	9.0m/min	9
Circulate workstring clean:	53.0	6.0	9

<i>Total job time (including circulation):</i>	<b>116 min</b>	<b>1hr 56min</b>
<i>Minimum cement thickening time (with 2hr safety factor):</i>	<b>154 min</b>	<b>2hr 34min</b>

**MINIMUM MATERIAL REQUIREMENTS (Double for loadout)****Spacer - Freshwater**

Freshwater 23.8 bbl

**Cement**

Adelaide Brighton Class G 2 MT(47 ft<sup>3</sup>)  
 SCR-100L 1 gals  
 CFR-3L 2 gals  
 Freshwater 7 bbl  
 NF-6 1 gals

*These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.*

**2.5.1 Plug #1 Job Procedure**

- 39) RIH with 4" drill pipe
- 40) Rig up surface lines, circulate hole to clean fluid
- 41) Establish circulation by pumping 10bbl Fresh water
- 42) Pressure test lines to 2000psi
- 43) Pump 10bbls freshwater
- 44) Pump 12.00bbls of 15.8ppg slurry
- 45) Pump 3.8bbls of freshwater behind to balance
- 46) Displace with 50bbls of well fluid
- 47) POOH slowly one stand above top of plug. Reverse circulate 2 tubing volumes clean

## 2.6 Plug # 2 Details

### JOB PARAMETERS

Plug bottom MD:	179m	BHST temperature:	30°C
Plug bottom TVD:	179m	BHCT temperature:	24°C
Plug top MD:	119m	Drilling mud type:	seawater
Plug length:	60m	Drilling mud density:	8.55ppg
Plug length with DP in:	64m		

### WELLBORE

#### Workstring

0-179m 4in 14ppf tubing

#### Annulus

0-179m 9 5/8in 47ppf casing (8.681in ID)

### SPACERS

#### Spacer - Seawater at 8.55ppg

Seawater 42.00 gal/bbl 10.0bbl ahead and 1.9bbl behind to balance  
(53m annular fill / 2min contact time)

Contact times are based on the displacement rate.

### CEMENT SLURRY

#### Composition

Adelaide Brighton Class G	
Calcium Chloride 1%	1.00 %BWOC
Seawater	5.16 gal/sk
NF-6	0.125 gal/10bblMF

#### Properties

Surface density:	15.90 ppg
Surface yield:	1.17 ft³/sk
Total mixing fluid:	5.20 gal/sk
Thickening time (70 Bc):	2:30
Comp strength at 28°C	50 psi in 3 hrs
Comp strength at 28°C	500 psi in 6 hrs
Comp strength at 28°C	2,400 psi in 24 hrs

Note that %BWOC are based on a 94 lb sack

### VOLUME CALCULATIONS

#### Cement

9 5/8in casing volume 60 m x 0.2402 bbl/m 14.4 bbl  
**Slurry volume =14.4 bbl**

Quantity of cement 14.4 bbl x 5.6146 / 1.17 ft³/sk 69 sacks  
Quantity of mix fluid 69 sacks x 5.20 gal/sk 8.5 bbl

#### Displacement

4in tubing volume 62 m x 0.0356 bbl/m 2.2 bbl  
**Total displacement volume =2.2 bbl**

**PUMPING SCHEDULE & TIMES**

	<b>Volume (bbl)</b>	<b>Rate (bbl/min)</b>	<b>Time (min)</b>
Make up lines & pressure test:	N/A	N/A	30
Circulate 1 x bottoms up:	33.9	6.0	6
Pump spacers ahead:	10.0	6.0	2
Mix & pump cement:	14.4	5.0	3
Drop wiper ball:	N/A	N/A	5
Pump spacers behind:	1.9	6.0	0
Pump displacement:	2.2	6.0	0
Pull workstring 27 m above TOC:	87m	9.0m/min	10
Circulate workstring clean:	3.0	6.0	1

<i>Total job time (including circulation):</i>	<b>57 min</b>	<b>0hr 57min</b>
<i>Minimum cement thickening time (with 2hr safety factor):</i>	<b>139 min</b>	<b>2hr 19min</b>

**MINIMUM MATERIAL REQUIREMENTS (Double for loadout)****Spacer - Seawater**

Seawater 11.9 bbl

**Cement**

Adelaide Brighton Class G 3 MT(70 ft<sup>3</sup>)

Calcium Chloride 1% 65 lbs

Seawater 8.5 bbl

NF-6 1 gals

*These are estimates calculated on the information given. Calculations should be confirmed on the job site well in advance.*

**2.6.1 Plug #2 Job Procedure**

- 48) RIH with 4" drill pipe
- 49) Rig up surface lines, circulate hole to clean fluid
- 50) Establish circulation by pumping 10bbl sea water
- 51) Pressure test lines to 2000psi
- 52) Pump 10bbls sea water
- 53) Pump 14.5bbls of 15.9ppg slurry
- 54) Pump 2bbls of freshwater behind to balance
- 55) Displace with 2.2bbls of well fluid
- 56) POOH slowly one stand above top of plug. Reverse circulate 2 tubing volumes clean

## 3.0 LAB REPORTS

## HALLIBURTON

## CEMENT SLURRY REPORT

## JOB INFORMATION

Customer	: 3D Oil	Date	: 27/04/2008
Well Name	: West Seahorse 3	Reference	: WES-08-02A
Casing Size	: 13 3/8inch		
Job Type	: Surface Casing		
Slurry Type	: Lead		
Time to Temp	: 25min API sch9.4		

## WELL PROPERTIES

Depth(MD from RKB)	: 1129	Meters	Depth(TVD from RKB)	: 1040	Meters
Surface Temperature	: 25.00	Deg.C.	Temperature Gradient	: 2.88	Deg.C./100M
BHST	: 55.00	Deg.C.	BHCT (per API Spec 10)	: 38.00	Deg.C.
Mud Weight	: 9.60	PPG	Water Source	: Seawater	

## SLURRY PROPERTIES

ABC Class G	: 94.00	Lbs/sk	From Yard		
Econolite Liquid	: 15.00	gal/10bbl of Mix Fluid		0.460	gal/sk
NF-6	: 0.25	gal/10bbl of Mix Fluid		0.008	gal/sk
Slurry Weight	: 12.50	PPG	Slurry Yield	: 2.21	CuFt/Sack
Mixing Water	: 12.42	Gals/Sack	Total Mixing Fluid	: 12.88	Gals/Sack

## THICKENING TIME

Reading (BC)	: Initial BC	30 BC	50 BC	70 BC	2,300 psi
Time(hrs:mins)	: 18	4:23	5:33	6:08	38 Deg.C.

## COMPRESSIVE STRENGTH

UCA Summary	: 50psi	4:59	UCA Max Temp	: 50.5 Deg C
	: 500psi	14:24	UCA Pressure	: 3000 psi
	: 722psi	23:00		

Notes : The test was conducted to the specifications provided.

Lab Test Conducted By : Daniel Gibbons

Approved By : Prem kumar Salibendla/Andrew Stobie

The above report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

## HALLIBURTON

## CEMENT SLURRY REPORT

## JOB INFORMATION

<b>Customer</b>	: 3D Oil	<b>Date</b>	: 27/04/2008
<b>Well Name</b>	: West Seahorse 3	<b>Reference</b>	: WES-08-03A
<b>Casing Size</b>	: 13 3/8inch		
<b>Job Type</b>	: Surface Casing		
<b>Slurry Type</b>	: Tail		
<b>Time to Temp</b>	: 25mins API sch9.4		

## WELL PROPERTIES

<b>Depth(MD from RKB)</b>	: 1129	Meters	<b>Depth(TVD from RKB)</b>	: 1040	Meters
<b>Surface Temperature</b>	: 25.00	Deg.C.	<b>Temperature Gradient</b>	: 2.88	Deg.C./100M
<b>BHST</b>	: 55.00	Deg.C.	<b>BHCT (per API Spec 10)</b>	: 38.00	Deg.C.
<b>Mud Weight</b>	: 9.60	PPG	<b>Water Source</b>	: Seawater	

## SLURRY PROPERTIES

<b>ABC Class G</b>	: 94.00	Lbs/sk	From Yard		
<b>CFR-3L</b>	: 3.00	gal/10bbl of Mix Fluid		0.037	gal/sk
<b>HR-6L</b>	: 2.00	gal/10bbl of Mix Fluid		0.024	gal/sk
<b>NF-6</b>	: 0.25	gal/10bbl of Mix Fluid		0.003	gal/sk
<b>Slurry Weight</b>	: 15.90	PPG	<b>Slurry Yield</b>	: 1.16	CuFt/Sack
<b>Mixing Water</b>	: 5.08	Gals/Sack	<b>Total Mixing Fluid</b>	: 5.13	Gals/Sack

## THICKENING TIME

<b>Reading (BC)</b>	: Initial BC	<b>30 BC</b>	<b>50 BC</b>	<b>70 BC</b>	2,300 psi
<b>Time(hrs:mins)</b>	: 7	3:05	3:09	3:12	38 Deg.C.

## COMPRESSIVE STRENGTH

<b>UCA Summary</b>	: 50psi	4:11	<b>UCA Max Temp</b>	: 50.5 Deg C
	: 500psi	6:25	<b>UCA Pressure</b>	: 3000 psi
	: 3433psi	24:00		

**Notes** : The test was conducted to the specifications provided.

**Lab Test Conducted By** : Daniel Gibbons

**Approved By** : Prem kumar Salibendla/Andrew Stobie

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## HALLIBURTON

## CEMENT SLURRY REPORT

## JOB INFORMATION

<b>Customer</b>	: 3D Oil	<b>Date</b>	: 6/05/2008
<b>Well Name</b>	: West Seahorse-3	<b>Reference</b>	: WES-08-05B
<b>Casing Size</b>	: 12 1/4in Open Hole		
<b>Job Type</b>	: Plug-1		
<b>Slurry Type</b>	: Plug		
<b>Time to Temp</b>	: 23min		

## WELL PROPERTIES

<b>Depth(MD from RKB)</b>	: 1568	Meters	<b>Depth(TVD from RKB)</b>	: 1435	Meters
<b>Surface Temperature</b>	: 25.00	Deg.C.	<b>Temperature Gradient</b>	: 0.03	Deg.C./100M
<b>BHST</b>	: 71.00	Deg.C.	<b>BHCT (per API Spec 10)</b>	: 57.00	Deg.C.
<b>Mud Weight</b>	: 57.00	PPG	<b>Water Source</b>	: Freshwater	

## SLURRY PROPERTIES

<b>ABC Class G</b>	: 94.00	Lbs/sk	From Yard		
<b>NF-6</b>	: 0.25	gal/10bbl of Mix Fluid		0.003	gal/sk
<b>CFR-3L</b>	: 3.00	gal/10bbl of Mix Fluid		0.037	gal/sk
<b>SCR-100L</b>	: 1.00	gal/10bbl of Mix Fluid		0.012	gal/sk
<b>Slurry Weight</b>	: 15.80	PPG	<b>Slurry Yield</b>	: 1.16	CuFt/Sack
<b>Mixing Water</b>	: 5.07	Gals/Sack	<b>Total Mixing Fluid</b>	: 5.12	Gals/Sack

## THICKENING TIME

<b>Reading (BC)</b>	: Initial BC	<b>30 BC</b>	<b>50 BC</b>	<b>70 BC</b>	2,834 psi
<b>Time(hrs:mins)</b>	: 8	6:01	6:34	6:43	57 Deg.C.

## COMPRESSIVE STRENGTH

<b>UCA Summary</b>	: 50psi	4:07	<b>UCA Max Temp</b>	: 71 Deg C
	: 500psi	5:17	<b>UCA Pressure</b>	: 3000 psi
	: 2702psi	20:48		

**Notes** : The test was conducted to the specifications provided.

**Lab Test Conducted By** : Daniel Gibbons

**Approved By** : Prem kumar Salibendla/Andrew Stobie

The above report is based on sound engineering practices, but because of variable well conditions and other information which must be relied upon, Halliburton makes no warranty, express or implied, as to the accuracy of the data or any of the calculations or opinions expressed herein. You agree that Halliburton shall not be liable for any loss or damage whether due to negligence or otherwise arising out of or in connection with such data, calculations or opinions.

## 4.0 Job Summary, EJCS, Job Logs

### 4.1 30 inch Conductor Casing

#### 4.1.1 Job Summary

<b>HALLIBURTON</b>				CUSTOMER 3D Oil		SALES ORDER No. 0		DATE 25 April 2008			
<b>CEMENT/PUMPING JOB SUMMARY</b>											
WELL West Seahorse 3		LOCATION/FIELD NAME Bass Strait		COUNTRY Australia		HES REP Nigel Lucas		CUSTOMER REP Rocco Rossouw			
JOB TYPE Zonal Isolation		JOB PURPOSE CODE CEMENT CONDUCTOR CASING 14161		BDA Perth		RIG West Triton					
PERSONNEL / EXPOSURE		HRS	PERSONNEL / EXPOSURE		HRS	PERSONNEL / EXPOSURE		HRS	PERSONNEL / EXPOSURE		
126997 Nigel Lucas		18									
344450 Premkumar Salibendla		18									
<b>EQUIPMENT</b>											
SAP#		PUMPING / MIXING			HOURS		SAP#		VEHICLES / TRAILERS		
0		SKID PUMP CMT TWIN HT400 ADVANTAGE 10851913			24						
0		Electric Hydraulic Package 10851913			24						
0		4 Tank Electric CMS 109658			24						
SAP#		BULK SUPPLY / TANKS			HOURS		SAP#		OTHER EQUIPMENT		
#N/A		Rig supplied Bulk system									
<b>FLOAT EQUIPMENT AND CASING EQUIPMENT</b>											
SAP#		FLOAT EQUIPMENT			QTY		SAP#		PLUGS		
0		20 inch Drillquip Innerstring stab in shoe			1						
					1						
SAP#		CASING ATTACHMENTS			QTY		SAP#		OTHER		
<b>WELL PROFILE</b>											
NEW CASING		OPEN HOLE + EXCESS OR CALIPER DATA			PREVIOUS CASING ONE			PREVIOUS CASING TWO			
30x20in ppf		36in + 200% excess 75.5m to 124.18m									
0m to 122.18m MD, m TVD											
FOR PLUG AND LINER JOBS PLEASE INDICATE WORKSTRING 5.5in 24.7ppf S135 XT 57											
<b>CEMENT DESIGN</b>											
<b>SLURRY 1 - Single</b>											
DENSITY 15.9ppg		WATER REQ 5.16gal/sk		DENSITY		WATER REQ		DENSITY		WATER REQ	
YIELD 1.17cuft/sk		MIX FLUID REQ 5.2gal/sk		YIELD		MIX FLUID REQ		YIELD		MIX FLUID REQ	
WATER SOURCE : Sea,				WATER SOURCE :				WATER SOURCE :			
CEMENT TYPE: ABC Class 'G' @ 94 lb/sk				CEMENT TYPE: ABC Class 'G' @ 94 lb/sk				CEMENT TYPE:			
Total Cement Used 1660 sks				Total Cement Used				Total Cement Used			
Estimated TOC 77.5 m				Estimated TOC				Estimated TOC			
Additive	Concentration	Total Used		Additive	Concentration	Total Used		Additive	Concentration	Total Used	
Calcium Chloride	1 %BWOC	33 sx lbs									
NF-6	as req.										
<b>PUMPING SCHEDULE</b>											
FLUID DESCRIPTION		VOLUME bbls	DENSITY ppg	RATE bpm	FLUID DESCRIPTION		VOLUME bbls	DENSITY ppg	RATE bpm	FLUID DESCRIPTION	
1) sea water		80	8.54	6							
2) Sea water + Dye		20	8.54	6							
3) Cement		343	15.9	5							

# HALLIBURTON

## CEMENT/PUMPING JOB LOGS & DETAILS



### 4.1.3 KPI & EJCS

[illegible]

## 4.2 13 3/8" SSR CASING

## 4.2.1 Job Summary

<b>HALLIBURTON</b>				CUSTOMER 3D Oil		SALES ORDER No. 0		DATE 29 April 2008		
<b>CEMENT/PUMPING JOB SUMMARY</b>										
WELL West Seahorse 3		LOCATION/FIELD NAME Bass Strait		COUNTRY Australia		HES REP Nigel Lucas		CUSTOMER REP Shaughan Corless		
JOB TYPE Zonal Isolation		JOB PURPOSE CODE SURFACE CASING 7521				BDA Perth		RIG West Triton		
PERSONNEL / EXPOSURE		HRS	PERSONNEL / EXPOSURE		HRS	PERSONNEL / EXPOSURE		HRS	PERSONNEL / EXPOSURE	
126997 Nigel Lucas		18								
344450 Premkumar Salibendla		18								
<b>EQUIPMENT</b>										
SAP#		PUMPING / MIXING			HOURS	SAP#		VEHICLES / TRAILERS		
0		SKID PUMP CMT TWIN HT400 ADVANTAGE 10851913			24	0				
0		Electric Hydraulic Package 10851913			24	0				
0		4 Tank Electric CMS 109658			24	0				
SAP#		BULK SUPPLY / TANKS			HOURS	SAP#		OTHER EQUIPMENT		
#N/A		Rig supplied Bulk system				0				
						0				
						0				
<b>FLOAT EQUIPMENT AND CASING EQUIPMENT</b>										
SAP#		FLOAT EQUIPMENT			QTY	SAP#		PLUGS		
0		13 3/8 Float Shoe (Halliburton)			1	0		Halliburton Sub sea 13 3/8 plug set		
0		13 3/8 Float Collar (Halliburton)			1	0		Halliburton Sub sea Wiper plug release Ball		
0		13 3/8 Float Collar (Halliburton)			1	0		Halliburton sub sea Top plug dart		
SAP#		CASING ATTACHMENTS			QTY	SAP#		OTHER		
0		Halliburton 13 3/8 centraliser Bow spring				0				
						0				
						0				
<b>WELL PROFILE</b>										
NEW CASING		OPEN HOLE + EXCESS OR CALIPER DATA				PREVIOUS CASING ONE		PREVIOUS CASING TWO		
13.375in 68ppf Butt		17.5in + 10% excess 0m to 1117m				30x20in ppf Drillquip				
0m to 122.18m MD, 1117m TVD						0m to 122.18m				
FOR PLUG AND LINER JOBS PLEASE INDICATE WORKSTRING 5.5in 24.7ppf S135 XT 57										
<b>CEMENT DESIGN</b>										
SLURRY 1 - Lead				SLURRY 2 - Tail						
DENSITY	12.5ppg	WATER REQ	11.8gal/sk	DENSITY	15.9ppg	WATER REQ	5.16 gal/sk	DENSITY	WATER REQ	
YIELD	2.21cuft/sk	MIX FLUID REQ	12.2gal/sk	YIELD	1.16cuft/sk	MIX FLUID REQ	5.16 gal/sk	YIELD	MIX FLUID REQ	
WATER SOURCE : Sea,				WATER SOURCE : sea				WATER SOURCE :		
CEMENT TYPE: ABC Class 'G' @ 94 lb/sk				CEMENT TYPE: ABC Class 'G' @ 94 lb/sk				CEMENT TYPE:		
Total Cement Used 510 MT				Total Cement Used 290 sks				Total Cement Used		
Estimated TOC 600 m				Estimated TOC 1000 m				Estimated TOC		
Additive	Concentration	Total Used		Additive	Concentration	Total Used		Additive	Concentration	
Econolite	15 gal/10bbl	236 gals		CFR-3L	3 gal/10bbl	12 gals				
NF-6	as req.			HR-6L	2 gal/10bbl	8 gals				
				NF-6	as req	5 gal				

PUMPING SCHEDULE																				
FLUID DESCRIPTION				VOLUME bbls	DENSITY ppg	RATE bpm	FLUID DESCRIPTION				VOLUME bbls	DENSITY ppg	RATE bpm	FLUID DESCRIPTION				VOLUME bbls	DENSITY ppg	RATE bpm
1)	sea water			60	8.54	6	5)	sea water			12	8.54	6							
2)	Sea water + Dye			10	8.54	6														
3)	Cement			210	12.5	7														
4)	Cement			68	15.9	6														
ADDITIONAL COMMENTS																				
did not bump Plug half the shoe track volume was displaced ( 3 BBL)																				
floats held 3 bbl was flowed back,																				
final pressure after pump where shut off was 350PSI																				
13 3/8 cemet job start time 1100 hrs																				
13 3/8 cement job end time 1500 hrs																				

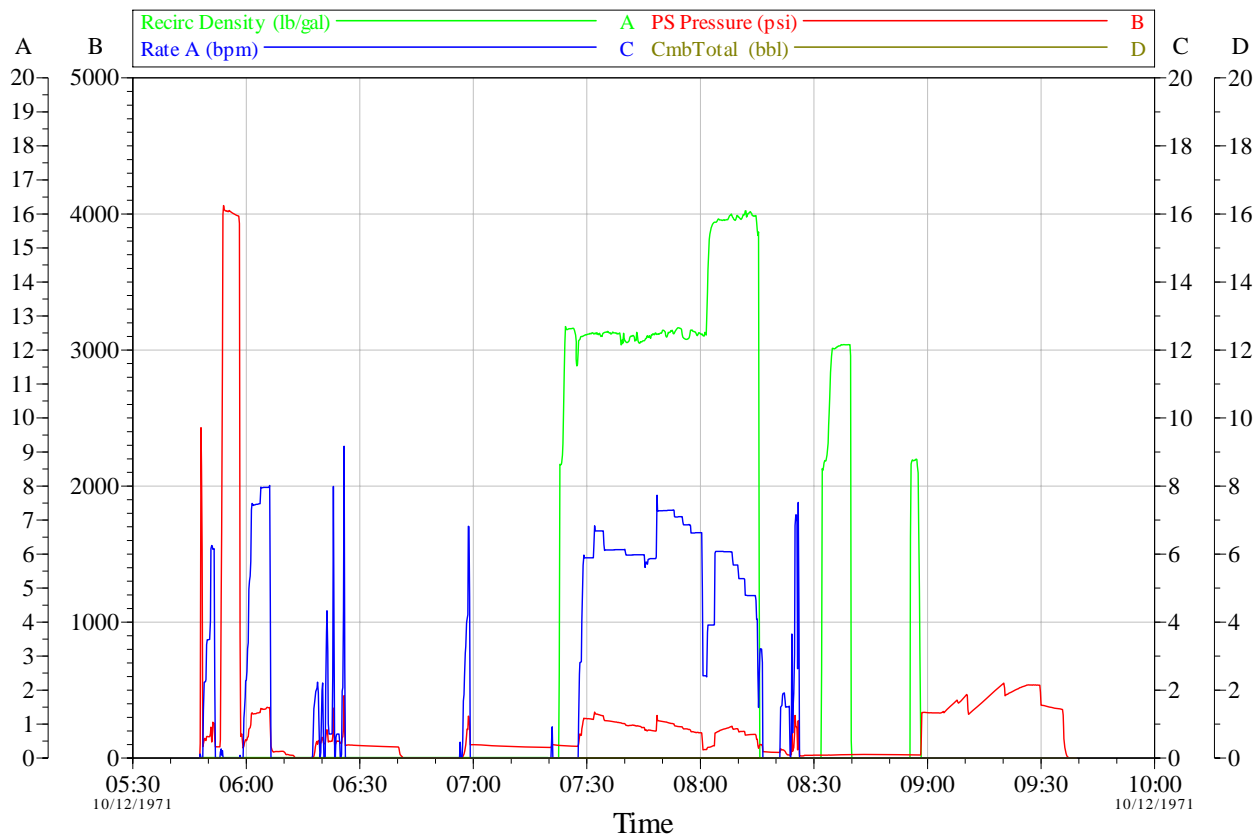
### 4.2.2 JOB LOGS

[illegible]

### 4.2.3 KPI & EJCS

HALLIBURTON			CUSTOMER 3D Oil	SALES ORDER No. 0	DATE 29-April-2008
CEMENT/PUMPING KPI & EJCS					
WELL West Seahorse 3	LOCATION/FIELD NAME Bass Strait	COUNTRY Australia	HES REP Nigel Lucas	CUSTOMER REP Shaughan Corless	WELL TYPE Exploration
JOB TYPE Zonal Isolation		JOB PURPOSE CODE SURFACE CASING 7521		BDA Perth	RIG West Triton
KEY PERFORMANCE INDICATORS					
<b>TYPE OF JOB (Cementing or Non-Cementing):</b> Select the job type (Cementing or Non-Cementing) <b>TOTAL OPERATING TIME (hrs)</b> <i>Rig up/ Pumping/ Rig Down</i> <b>HSE INCIDENT, ACCIDENT, INJURY:</b> <i>This should be recordable incidents only</i> <b>WAS THE JOB DELIVERED CORRECTLY AS PERJOB DESIGN?:</b> <i>This will be dictated by the customer</i> <b>TOTAL TIME PUMPING (hrs)</b> <i>Total number of hours pumping fluid on this job</i> <b>NON -PRODUCTIVE RIG TIME:</b> <i>As a result of Halliburton cementing PSL</i> <b>NUMBER OF JSA'S PERFORMED:</b>  <b>NUMBER OF UNPLANNED SHUTDOWNS (After starting to pump)</b>		<b>CEMENTING</b> 12.0 hrs NO YES 4 Hrs 100 mins 1 2 JACKUP			
<b>REASON FOR UNPLANNED SHUTDOWNS (After starting to pump)</b> <i>Add details in job logs</i> <b>REASON FOR NON-PRODUCTIVE RIG TIME (Cementing PSL responsibility):</b> <i>Add details in job logs</i>		<b>WAS THIS A PRIMARY CEMENT JOB (YES / NO)</b> <i>Primary cement job = Casing job, Liner Job, tie back</i> <b>DID WE RUN WIPER PLUGS?</b>  <b>WAS THIS A PLUG OR SQUEEZE JOB?</b>  <b>WAS THIS A PRIMARY OR REMEDIAL JOB?</b> <i>Remedial = Repeated attempts or corrections of initial cement job</i> <b>MIXING DENSITY OF JOB STAYED IN DESIGNED RANGE</b> <i>Density defined as +/- 0.2ppg. Calculation: Total bbls cement mixed at designed density divided by total bbls of cement multiplied by 100</i> <b>WAS AUTOMATED DENSITY CONTROL USED</b>  <b>JOB WAS PUMPED AT DESIGNED PUMP RATE</b> <i>Pump rate ranged defined as +/- bpm. Calculation : total bbls of fluid pumped at the designed rate divided by total bbls of fluid pumped multiplied by 100</i> <b>NUMBER OF REMEDIAL SQUEEZE JOBS REQUIRED - HES</b> <i>Number of remedial squeeze jobs required after primary job performed by HES</i> <b>NUMBER OF REMEDIAL SQUEEZE JOBS REQUIRED - COMPETITION</b> <i>Number of remedial squeeze jobs required after primary job performed by competition</i> <b>NUMBER OF REMEDIAL PLUG JOBS REQUIRED - HES</b> <i>Number of remedial plug jobs required after primary plug pumped by HES</i>			
EJCS / CUSTOMER COMMENTS					
Dear Customer,  We hope you were happy with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and services of a standard unmatched in the service sector of the energy industry  Please take the time to let us know if our performance met your expectations. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of Halliburton.			Please indicate your response by placing a tick in the box underneath the rating that best matches your opinion.		
Did our personnel perform the job to your satisfaction? Did our equipment perform the job to your satisfaction? Did we perform the job to the agreed upon design? Did our products and materials perform as you expected? Did we perform in a safe & careful manner? PPE, Pre/Post mtgs, JSA Did we perform in an environmentally sound manner? Spills, discharges, clean up Was the job performed as scheduled? On time, as designed/discussed Did the equipment condition & appearance meet you expectations? How well did our personnel communicate during mobilisation, rig-up and job execution?			Superior Performance (Establish new quality performance standards)  5	Exceeded Expectations (Provided more than what was expected)  4	Met expectations (Did what was expected)  3
			Below expectations (Did not do what was expected, recovery made) Create CPI  2		
			Poor (Job problems / failures occurred) Create CPI  1		
Overall, I was satisfied with Halliburton's job performance			YES <input type="checkbox"/>	NO <input type="checkbox"/>	
Customer Comments? (What can we do to improve/maintain our services?)					

## 4.2.4 Pumping Chart



Customer:	Job Date:	Ticket #:
Well Desc:	UWI:	

CemWin v1.7.2  
08-May-08 10:23

## 4.3 P&amp;A Plugs

## 4.3.1 KPI&amp;EJCS

<b>HALLIBURTON</b>		CUSTOMER	SALES ORDER No.	DATE	
		ADA	0	7 May 2008	
<b>CEMENT/PUMPING JOB SUMMARY</b>					
WELL	LOCATION/FIELD NAME	COUNTRY	HES REP	CUSTOMER REP	WELL TYPE
West Seahorse #3	Bass Strait	Australia	R.Bridgman	S.Corless	Exploration
JOB TYPE		JOB PURPOSE CODE		BDA	RIG
P&A Plugs		PLUG TO ABANDON 7528		Perth	West Triton
<b>KEY PERFORMANCE INDICATORS</b>					

TYPE OF JOB (Cementing or Non-Cementing):	<input type="text" value="Cementing"/>	WAS THIS A PRIMARY CEMENT JOB (YES / NO)	<input type="text" value="NO"/>
Select the job type (Cementing or Non-Cementing)		Primary cement job = Casing job, Liner job, tie back	
TOTAL OPERATING TIME (hrs)	<input type="text" value="5.0 hrs"/>	DID WE RUN WIPER PLUGS?	<input type="text" value="None"/>
Rig up/ Pumping/ Rig Down			
HSE INCIDENT, ACCIDENT, INJURY:	<input type="text" value="NO"/>	WAS THIS A PLUG OR SQUEEZE JOB?	<input type="text" value="Plug Job"/>
This should be recordable incidents only			
WAS THE JOB DELIVERED CORRECTLY AS PERJOB DESIGN:	<input type="text" value="YES"/>	WAS THIS A PRIMARY OR REMEDIAL JOB?	<input type="text" value="Primary"/>
This will be dictated by the customer		Remedial = Repeated attempts or corrections of initial cement job	
TOTAL TIME PUMPING (hrs)	<input type="text" value="4.0 hrs"/>	MIXING DENSITY OF JOB STAYED IN DESIGNED RANGE	<input type="text" value="100%"/>
Total number of hours pumping fluid on this job		Density defined as +/- 0.2ppg. Calculation: Total bbls cement mixed at designed density divided by total bbls of cement multiplied by 100	
NON -PRODUCTIVE RIG TIME:	<input type="text" value="0.0 hrs"/>	WAS AUTOMATED DENSITY CONTROL USED	<input type="text" value="YES"/>
As a result of Halliburton cementing PSL			
NUMBER OF JSA'S PERFORMED:	<input type="text" value="2"/>	JOB WAS PUMPED AT DESIGNED PUMP RATE	<input type="text" value="100%"/>
		Pump rate ranged defined as +/- bpm. Calculation : total bbls of fluid pumped at the designed rate divided by total bbls of fluid pumped multiplied by 100	
NUMBER OF UNPLANNED SHUTDOWNS (After starting to pump)	<input type="text" value="0"/>	NUMBER OF REMEDIAL SQUEEZE JOBS REQUIRED - HES	<input type="text" value="0"/>
		Number of remedial squeeze jobs required after primary job performed by HES	
TYPE OF RIG(CLASSIFICATION) JOB WAS PERFORMED ON:	<input type="text" value="JACKUP"/>	NUMBER OF REMEDIAL AQUEEZE JOBS REQUIRED - COMPETITION	<input type="text" value="0"/>
		Number of remedial squeeze jobs required after primary job performed by competition	
REASON FOR UNPLANNED SHUTDOWNS (After starting to pump)		NUMBER OF REMEDIAL PLUG JOBS REQUIRED - HES	<input type="text" value="0"/>
Add details in job logs		Number of remedial plug jobs required after primary plug pumped by HES	
REASON FOR NON-PRODUCTIVE RIG TIME (Cementing PSL responsibility):			
Add details in job logs			

## EJCS / CUSTOMER COMMENTS

Dear Customer,

We hope you were happy with the service quality of this job performed by Halliburton. It is the aim of our management and service personnel to deliver equipment and services of a standard unmatched in the service sector of the energy industry

Please take the time to let us know if our performance met your expectations. Please be as critical as possible to ensure we constantly improve our service. Your comments are of great value to us and are intended for the exclusive use of

Did our personnel perform the job to your satisfaction?

Did our equipment perform the job to your satisfaction?

Did we perform the job to the agreed upon design?

Did our products and materials perform as you expected?

Did we perform in a safe &amp; careful manner? PPE, Pre/Post mtgs, JSA

Did we perform in an environmentally sound manner? Spills, discharges, clean up

Was the job performed as scheduled? On time, as designed/discussed

Did the equipment condition &amp; appearance meet you expectations?

How well did our personnel communicate during mobilisation, rig up and job execution

Overall, I was satisfied with Halliburton's job performance

Customer Comments? (What can we do to improve/maintain our services?)

Please indicate your response by placing a tick in the box underneath the rating that best matches your opinion.

Standards	Superior Performance (Establish new quality performance)	Exceeded Expectations (Provided more than what was expected)	Met expectations (Did what was expected)	Below expectations (Did not do what was expected, recovery made) Create CPI	Poor (Job problems / failures occurred) Create CPI
5	4	3	2	1	
Did our personnel perform the job to your satisfaction?					
Did our equipment perform the job to your satisfaction?					
Did we perform the job to the agreed upon design?					
Did our products and materials perform as you expected?					
Did we perform in a safe & careful manner? PPE, Pre/Post mtgs, JSA					
Did we perform in an environmentally sound manner? Spills, discharges, clean up					
Was the job performed as scheduled? On time, as designed/discussed					
Did the equipment condition & appearance meet you expectations?					
How well did our personnel communicate during mobilisation, rig up and job execution					

YES NO

--	--

Customer Signature:

Date:

### 4.3.2 SUMMARY

PERSONELL																	
PERSONNEL / EXPOSURE			hrs	PERSONNEL / EXPOSURE			hrs	PERSONNEL / EXPOSURE			hrs	PERSONNEL / EXPOSURE			hrs		
386793			Robert Bridgman	12	127046			Rodney Stares	12	331198			Anthony Kelly	12			
EQUIPMENT																	
SAP#		PUMPING / MIXING				HOURS		SAP#		BULK SUPPLY / TANKS				HOURS			
10951913		SKD ADVANTAGE 25DZ2 - WEST TRITON				5											
WELL PROFILE																	
NEW CASING					OPEN HOLE + EXCESS OR CALIPER DATA					PREVIOUS CASINGS							
					12.25in, 15 percent excess, 1117m to 1780m, Caliper = 55.13bbbs					13.375in, 68ppf, 0m to 1117m							
FOR PLUG AND LINER JOBS PLEASE INDICATE WORKSTRING 5.5in 24.7ppf Drill Pipe with No Stinger																	
CEMENT DESIGN																	
Plug					Plug					Plug							
DENSITY	15.8ppg	WATER		5.07gal/sk	DENSITY	15.8ppg	WATER		5.07gal/sk	DENSITY	15.8ppg	WATER		5.07gal/sk			
YIELD	1.16cuft/ft	MIX FLUID		5.12gal/sk	YIELD	1.16cuft/ft	MIX FLUID		5.12gal/sk	YIELD	1.16cuft/ft	MIX FLUID		5.12gal/sk			
WATER SOURCE		Drillwater			WATER SOURCE		Drillwater			WATER SOURCE		Drillwater					
CEMENT TYPE		ABC Class 'G' at 94lb/sk			CEMENT TYPE		ABC Class 'G' at 94lb/sk			CEMENT TYPE		ABC Class 'G' at 94lb/sk					
Total Cement Used		358sks			Total Cement Used		377sks			Total Cement Used		315sks					
Estimated TOC		1630m			Estimated TOC		1500m			Estimated TOC		1030m					
Additive	Concentration	Total Used			Additive	Concentration	Total Used			Additive	Concentration	Total Used					
CFR-3L	3 gal/10bbl	12gals			CFR-3L	3 gal/10bbl	15gals			CFR-3L	3 gal/10bbl	12gals					
SCR-100L	1 gal/10bbl	4gals			SCR-100L	1 gal/10bbl	5gals			SCR-100L	1 gal/10bbl	4gals					
NF-6	0.25 gal/10bbl	1gals			NF-6	0.25 gal/10bbl	1gals			NF-6	0.25 gal/10bbl	1gals					
Plug																	
DENSITY	15.9ppg	WATER		5.20gal/sk													
YIELD	1.17cuft/ft	MIX FLUID		5.20gal/sk													
WATER SOURCE		Seawater															
CEMENT TYPE		ABC Class 'G' at 94lb/sk															
Total Cement Used		183sks															
Estimated TOC		130m															
Additive	Concentration	Total Used															
NF-6	0.25 gal/10bbl	1gals															

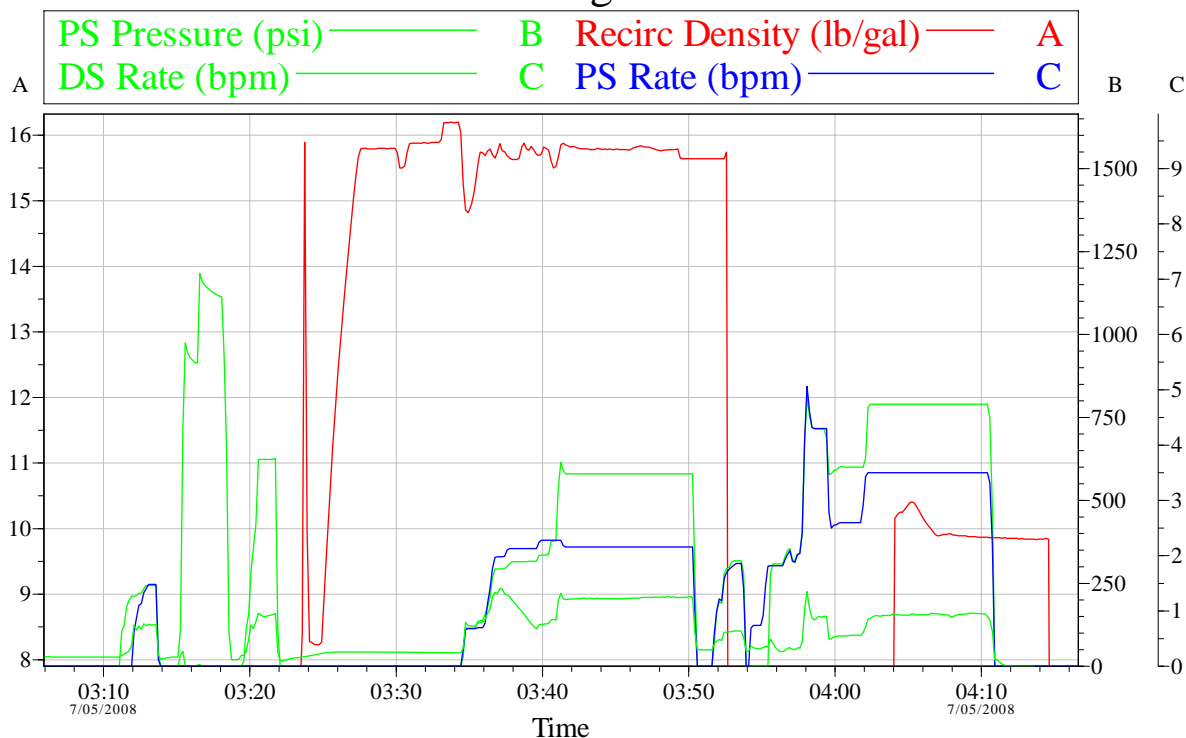


## 4.3.3 JOB LOGS

JOB LOGS						
DATE	TIME	VOLUME	PRESSURE (psi)		RATE	JOB DESCRIPTION
7/05/2008	2:50					JSA
PLUG #1A	3:10	5		177	3	Pump 5 BBL Drillwater
	3:12		1000			Test Lines
	3:15	6		231	3.5	Pump 6 BBL Drillwater
	3:25	74		241	5	Mix & Pump74 BBL 15.8 ppg Slurry
	3:52	2			2	Pump 2 BBL Drillwater
	3:53	102		180	8	Pump 102 BBL Mud
	4:08					Bleed off
PLUG #1B						
	5:57	5		180	4	Pump 5 BBL Drillwater
	5:59		1000			Test Lines
	6:05	6		217	4	Pump 6 BBL Drillwater
	6:14	78		190	5	Mix & Pump78 BBL 15.8 ppg Slurry
	6:35	2			2	Pump 2 BBL Drillwater
	6:38	90		190	10	Pump 90 BBL Mud
	6:51					Bleed off
PLUG #2						
	13:45					JSA
	14:15	5		180	4	Pump 5 BBL Drillwater
	14:18		1000			Test Lines
	14:25	6		120	4	Pump 6 BBL Drillwater
	14:28	65		190	65	Mix & Pump 65 BBL 15.8 ppg Slurry
	14:48	2			2	Pump 2 BBL Drillwater
	14:50	60		190	8.5	Pump 60 BBL Mud
	14:57					Bleed off
	22:14					Test Plug #2 1500 Psi
PLUG #3						
	23:07	5		180	4	Pump 5 BBL Seawater
	23:09		1000			Test Lines
	23:19	6			4.5	Pump 6 BBL Seawater
	23:24	38		180	5	Mix & Pump 38 BBL 15.9 ppg Slurry
	23:33	5		130	4	Pump 5 BBL Seawater
	23:39					Bleed off
						Chemicals
						45 gals CFR3-L
						15 gals SCR100L
						5 gals NF6
						Cement
						52.55 MT Class G
END OF JOB LOGS						

## 4.3.4 PUMPING CHARTS

## P&amp;A Plug 1A

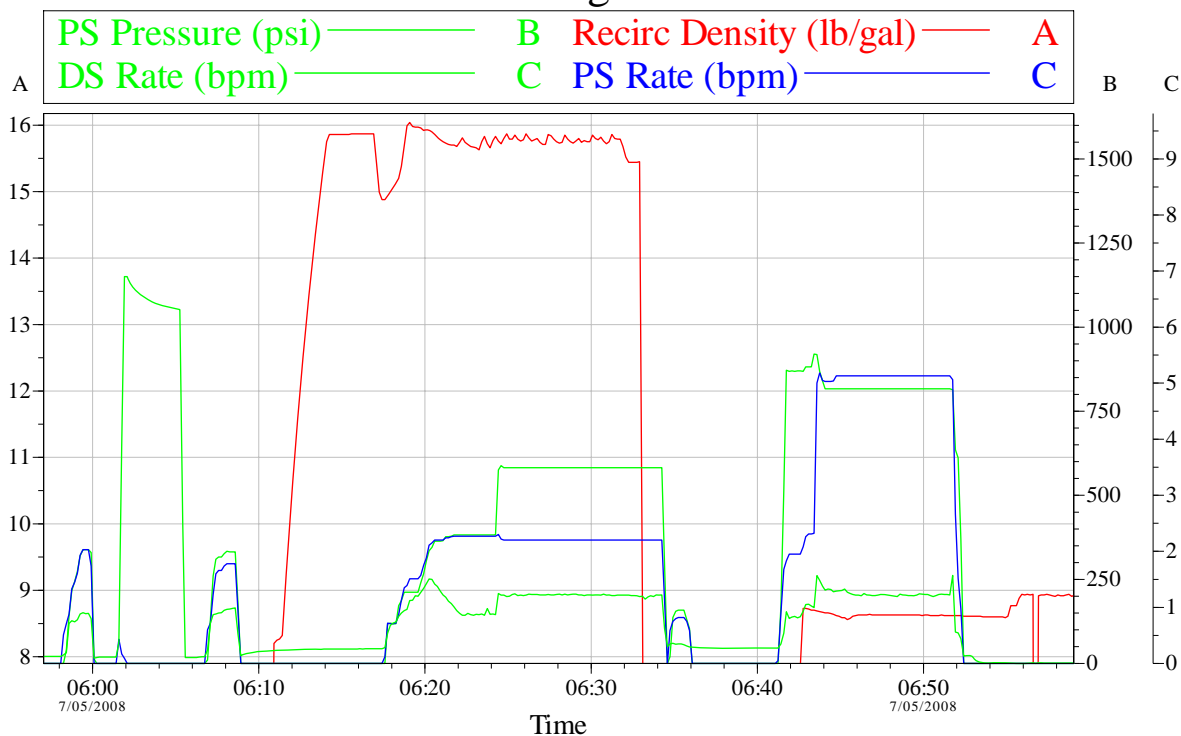


Customer: ADA  
Well Description: West Seahorse 3

Job Date: 7-5-08  
Job: P&A Plug 1A

CemWin v1.7.2  
08-May-08 13:15

## P&amp;A Plug 1B

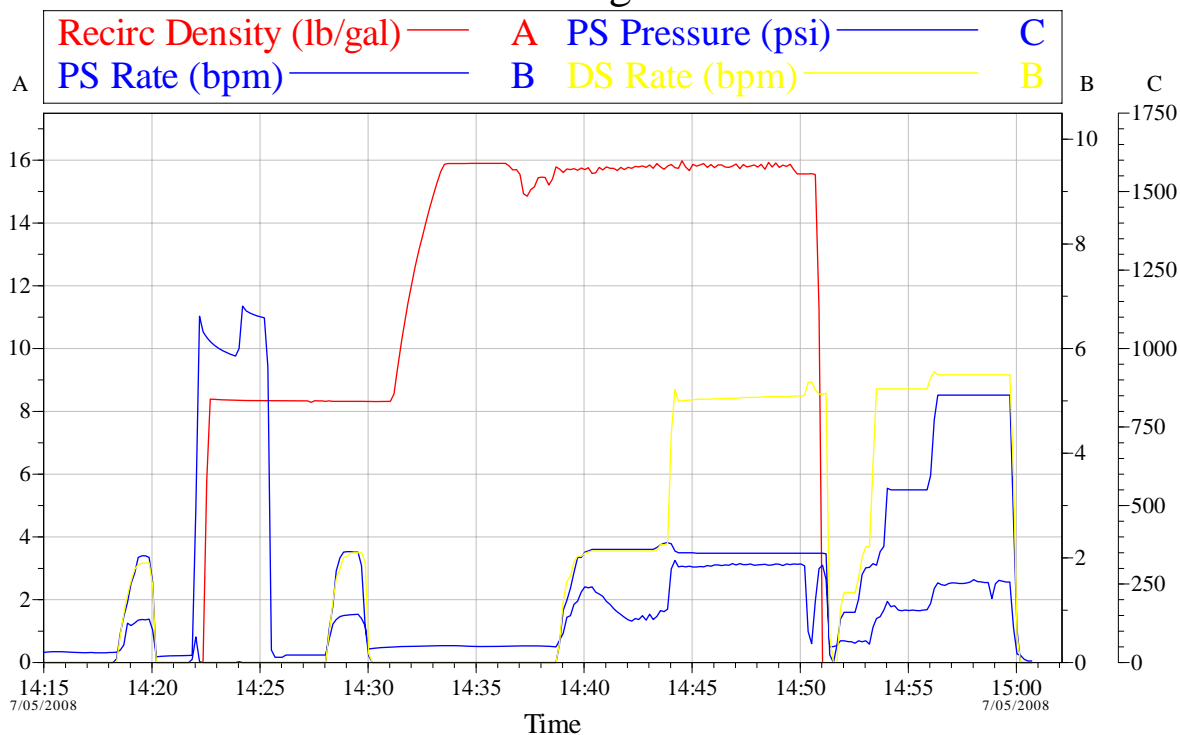


Customer: ADA  
Well Description: West Seahorse 3

Job Date: 7-5-08  
Job: P&A Plug 1B

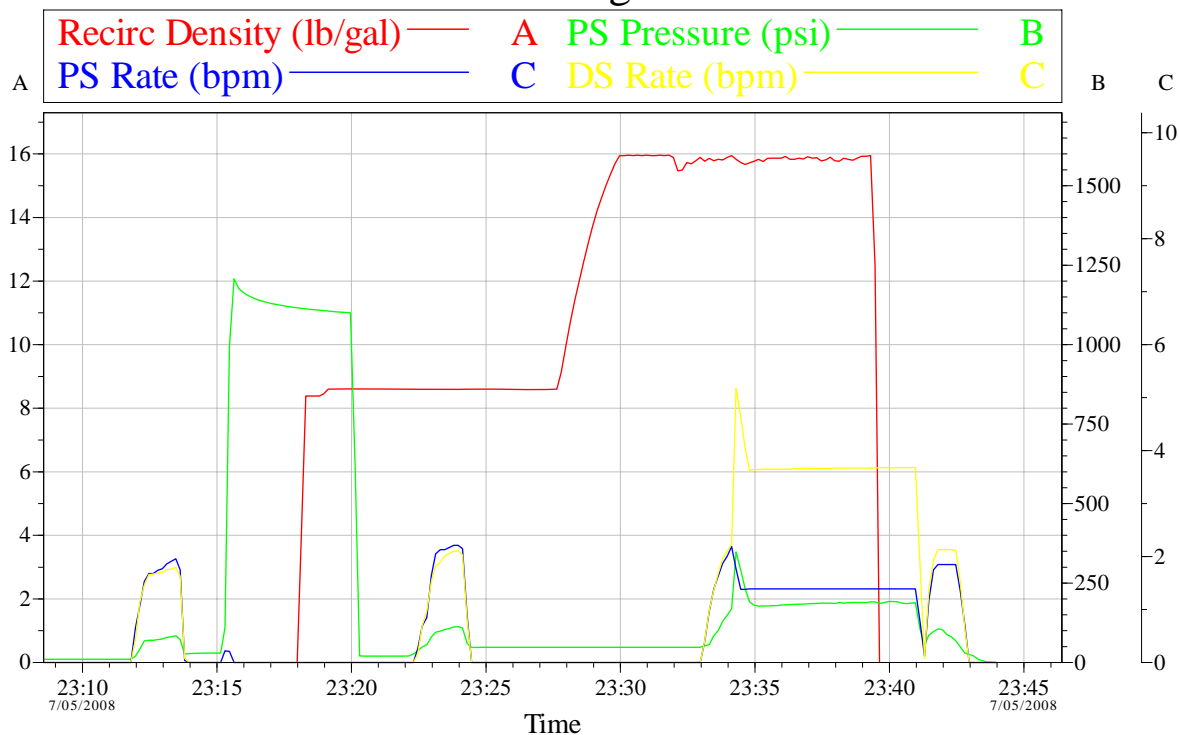
CemWin v1.7.2  
08-May-08 13:17

## P&A Plug 2



Customer: ADA	Job Date: 7-5-08	CemWin v1.7.2
Well Description: West Seahorse 3	Job: P&A Plug 2	08-May-08 13:19

## P&A Plug 3



Customer: ADA	Job Date: 7-5-08	CemWin v1.7.2
Well Description: West Seahorse 3	Job: P&A Plug 3	08-May-08 13:20