

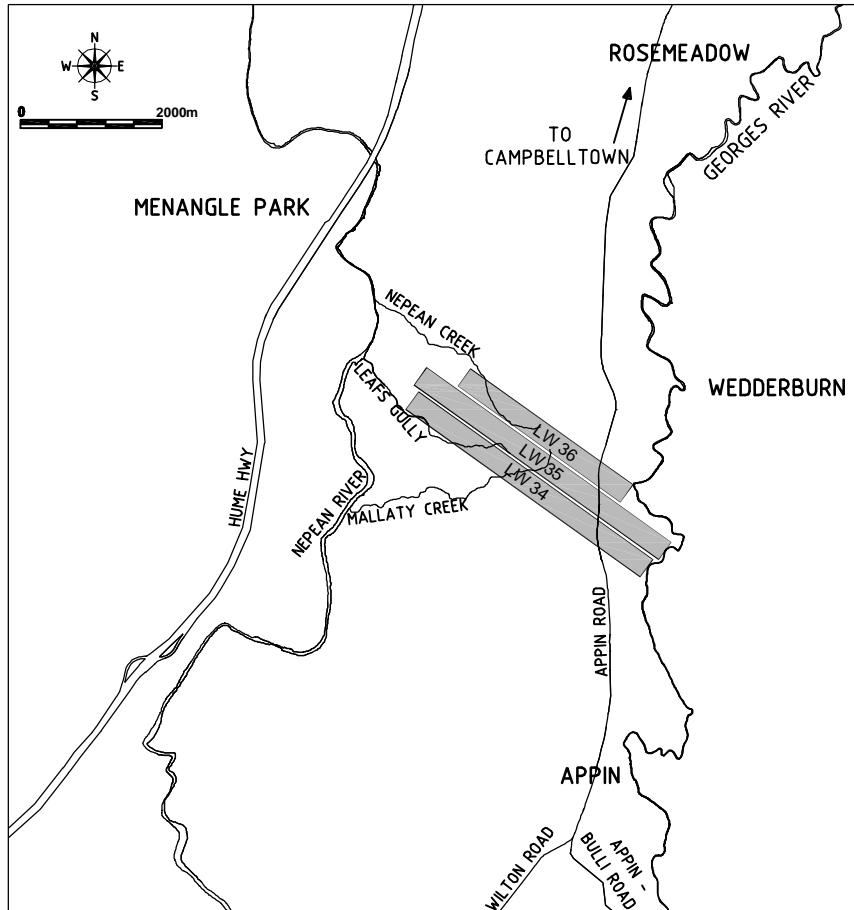


# ILLAWARRA COAL

## West Cliff Area 5 Subsidence Management Plan Application

Illawarra Coal is currently preparing a Subsidence Management Plan (SMP) to accompany an application to the Department of Primary Industries (Minerals) for longwall extraction in West Cliff Area 5.

This area will be serviced by existing West Cliff mine surface infrastructure, located 3km south-east of Appin, and is required to ensure continuity of coal supply to customers.



After submission of the SMP to the Department of Primary Industries, there will be an advertised exhibition period when the documents may be reviewed by the public and submissions may be made.

Submissions regarding the SMP can be sent to:

Director Environment,  
Department of Primary Industries  
PO Box 344, Hunter Region Mail Centre, NSW 2310

OR

Manager Mining Approvals, Illawarra Coal,  
PO Box 514, Unanderra, NSW 2526.

For any information please contact:  
[Gary.M.Brassington@BHPBilliton.com](mailto:Gary.M.Brassington@BHPBilliton.com)  
or Ph (02) 4255 3313, Fax (02) 42553204

# Minutes

Illawarra Coal Holdings Pty Ltd  
BHP Billiton  
Carbon Steel Materials

SUBJECT: Appin Area Community Working Group

LOCATION: Appin Community Office

DATE: 16 October 2007

ATTENDEES: Pat Durman  
Barry Durman  
Gary Osgood  
Christine Towndrow  
Robert Wheeler  
Cr Norman Jew (Wollondilly Shire Council)  
Rebecca Gordon (facilitator)  
Zina Ainsworth (Illawarra Coal)  
Gary Brassington (Illawarra Coal)  
Joanne Page (Illawarra Coal)  
Richard Walsh (Illawarra Coal)  
Lauren Kinloch (Illawarra Coal)

ABSENT: Michelle Imrie

<b>1</b>	<b>APOLOGIES</b>
	Carole Kerr
<b>2</b>	<b>AGENDA</b>
	<ul style="list-style-type: none"><li>▪ Welcome and Introduction</li><li>▪ Apologies</li><li>▪ Acceptance of previous minutes</li><li>▪ Actions arising from previous minutes</li><li>▪ Operational Update – West Cliff Subsidence Management Plan presentation</li><li>▪ Community Q&amp;A and Questions on Notice</li><li>▪ Discussion Paper - review</li><li>▪ Upcoming events</li><li>▪ Close – Next meeting 20<sup>th</sup> November 2007</li></ul>
<b>3</b>	<b>WELCOME AND INTRODUCTION</b>
	Apologies presented.  Rebecca Gordon welcomed everyone and was looking forward to her first meeting as facilitator of the AACWG. She is thankful for the time spent with AACWG members prior to the meeting so she could understand a little more of the background and aims of the Group's members.
<b>4</b>	<b>ACCEPTANCE OF PREVIOUS MINUTES</b>
	A motion was passed by Pat Durman and seconded by Barry Durman that the September minutes would be accepted.
<b>5</b>	<b>ACTIONS ARISING</b>
	<b>COPY OF TERMS OF REFERENCE SENT TO MICHELLE IMRIE</b>  A copy of the terms of reference and the amended April minutes were sent to Michelle Imrie in August.  <b>SITE INSPECTION OF APPIN AREA 3 SCHEDULED FOR 21 OCTOBER</b>  The majority of AACWG members will be heading out to Appin Area 3 for a site inspection with Gary Brassington on Sunday 21 October

## COMMUNITY NOTICE BOARD IN DOUGLAS PARK

Christine Towndrow visited the notice board, which stands outside the Post Office/General Store in Douglas Park. Christine confirmed the AACWG would be allowed to post notices and minutes from their meetings in the notice board. The group will now look into cleaning or replacing the perspex before use.

## CHANGE OF TIME FOR MEETING

It is not possible to currently move the AACWG meeting from the third Tuesday of the month, due to other commitments of group members. Consideration to changing the frequency of the meeting, and potentially the time was considered in the Discussion Paper (prepared in October) and once feedback is received from all members, this will be discussed later in the year.

## PRESENTATION ON BRENNAN'S CREEK DAM

After discussions raised at the August AACWG meeting, a presentation on Brennan's Creek Dam has been scheduled for the November AACWG meeting (20<sup>th</sup> November) by Illawarra Coal's Mark Beale.

## 6 OPERATIONAL UPDATE

### WEST CLIFF SUBSIDENCE MANAGEMENT PLAN PRESENTATION

A presentation on the West Cliff Subsidence Management Plan being put together by Illawarra Coal was given by Manager Environment Gary Brassington. West Cliff Area 5 includes the extracted longwalls LW5A1-5A4, and 29-31 as well as the approved longwalls 32-33 and new SMP area LWs 34-36.

Part of Area 5, namely LW5A1-5A4, LW29-30 and LW31-33 was approved under the older section 138. Other areas are now covered by the newer SMP approvals process.

Question: How close has mining occurred to the river?

Answer: LW31 is 30m from the river, LW32 is 5m away, and LW33 is 30m from the river. This mining is occurring near a flatter section of the Georges River, where there are longer pools.

#### Mining Under Georges River

LW5A4 was the last longwall to mine under the Georges River. Mining went under Marhnyes Waterhole (Pool 15) down to Pool 21 – approximately 2km of the river was mined under.

Mining under MH occurred in September 2002. Impacts occurred to approximately one half of the pools.

After mining occurred underneath Marhnyes Hole, Marhnyes was 1½ - 2m lower in water level than it was prior to mining. The pool, however, never fully lost water.

Water flow is significantly better now. The 1½ megalitres of flow through the damaged rockbar after mining has been reduced to 0-0.2 megalitres after rehabilitation. This shows that the rockbar has been sealed and rehabilitated so that there is no water loss from the upstream pool.

#### Integrated Mine Planning Process

Following completion of LW5A4, the decision was made to not mine under the Georges River for the next set of longwalls. This decision was made since not mining under rivers significantly reduces impacts on river systems, and the fact that there is a delay between when the impacts actually occur and when they can be successfully rehabilitated. This gap between impacts and rehabilitation was not acceptable within Illawarra Coal's plans for mining in sensitive areas.

Question: At what depth is longwall mining occurring in the Appin area?

Answer: At a depth of 500m.

A group member raised a concern about the impacts of mining when mining is occurring 500m underground and only 5m buffer from the river. Illawarra Coal stated there would be impacts from

mining, but these impacts will be much less if you do not mine under and past the river.

Marhnyes Waterhole was closely monitored throughout the mining process. The maximum impacts noted were when the longwall went under the river and extended for a further 100m past Marhnyes Hole.

Monitoring of LW29 and LW31 have shown there are no observable impacts there.

### **Anticipated Subsidence Movements and Impacts**

In LW31, no impacts have been noted.

Monitoring tells us if you don't mine under the river, you considerably reduce impacts.

Question: Is what is proposed for the West Cliff longwalls the same process for the Nepean:

Answer: When designing the Area 7 mining near the Nepean occurred, the key design parameter was to reduce rock falls from the cliff lines – The design was more about where the cliff lines lie, rather than how close the mining was to the river. We have mined directly under the Nepean River with only minor impacts.

Question: What is classified as a cliff?

Answer: As defined by Government planning agencies, anything with more than a 1 in 2 gradient is considered a cliff, and a 1 in 3 gradient is steep slope. In each SMP, all cliffs and slopes are included in the study area.

Question: Is the Department of Planning land on Campbelltown Appin Rd considered a cliff?

Answer: Yes.

LW31, LW32 and LW33 had Section 138 approval in 2002. The SMP approval was in 2005.

### **Impact Assessments**

Within the study area, various assessments in preparing a SMP are considered. This includes threatened flora and fauna, historical and cultural sites, landscapes and vegetation.

Aboriginal sites are concentrated around streams – shelters with art, and shelters with deposits are all close to water and overhangs.

None of the archaeological sites that are located on the Georges River have been impacted upon by mining.

On overhangs, around 90% have not been impacted by mining.

When designing the mine plan, assessors look at the whole mining domain and determine the maximum mining footprint. It is important to cover the entire study area. Subsidence assessments are conducted. All these individual studies contribute to the mine planning decisions to allow a detailed assessment to finalise any decisions on what the mine plan will look like.

On the northern side of the Georges River, there is a fault that limits mining.

When assessing the rare and endangered flora species on a site, the area where the full extent of mining could go is examined, and then a 10km radius is created around this area and also examined. Various databases are then consulted to see what species could be impacted upon.

The endangered flora study shows there is a fairly large number of species in the entire area (including 10km radius), but only a few occur in the actual planned mining area.

The vegetation mapping is very relevant to the impact assessments. It examines the rare and endangered species, and all vegetation species found in the area – This mapping is conducted where the subsidence movements are predicted.

Impacts to terrestrial flora are rarely seen. While it has been noted in the Cataract, because of gas releases, Illawarra Coal is not expecting any major impacts to terrestrial flora in this study area.

Endangered fauna studies are conducted in the same way as endangered flora studies, by creating a 10km radius around the proposed mining area and listing all species.

Terrestrial fauna are susceptible to some elements of subsidence, such as rock falls, but these impacts are considered minor.

An assessment of the aquatic ecology has also been done in the study area. This has included an assessment of the aquatic habitat condition. AusRivAS and qualitative macroinvertebrate monitoring, a fish survey and water quality assessment.

While the study found no likely significant habitat for any listed threatened aquatic species of flora and fauna, a group member raised that when a platypus survey was done around five years ago there was evidence that the Georges River provided a home to the Macquarie Perch. Tom Grant will be contacted by the AACWG and asked for report details to provide to Illawarra Coal.

Following any mining, monitoring will continue for a year once all mining has been completed.

### **Subsidence Assessments**

Subsidence assessments are well advanced and take into account the maximum footprint for mining along with topographical considerations such as the slope of the river.

Question: How public is this information on subsidence assessments?

Answer: All the information presented to the AACWG meeting will be attached to the SMP application and will be made public.

AACWG members raised concern about other members of the public seeing the diagrams that show the maximum mining footprint that looks as though mining will occur under the Georges River, despite the fact that Illawarra Coal is not planning to mine under the Georges River.

The AACWG wants Illawarra Coal to make clear on those diagrams that mining is not occurring under the river and that the diagram that shows mining occurring under the river is just the study area, and not the area that is planned on being mined.

Suggestions put forward by AACWG members to make this distinction clear include shading of the area that is actually planned on being mined, or text within the longwall block that defines the area only as the study area.

It was also raised by the AACWG that maps presented by Illawarra Coal need to be clearer as they are considered too technical. Additions suggested including plotting common points of reference such as roads or significant features.

The driver of impacts from longwall mining is the occurrence of closure across the valley, with large forces acting on rock bars.

To help understand and prepare for any impacts from mining, Illawarra Coal has developed a methodology that combines observed impacts with predicted criteria that would cause an impact. The 'Observed Impacts to Natural Features to Subsidence' model that allows any mining impact to be plotted on the graph. This includes no impacts, gas releases, minor impacts and significant impacts.

This model can be used to optimise the mine plan to keep any impacts to the Georges River from mining focused on the lower impacts side of the model. This design model is newly developed and was first publicly aired at the Southern Coalfields Mining Inquiry in September 2007.

The model allows Illawarra Coal to determine classification on impacts. It is a more sophisticated way of linking observed impacts to subsidence models. It allows Illawarra Coal to optimise reductions in impacts with coal extraction.

Illawarra Coal made the point that movement does not necessarily mean impact.

Question: What is the company's definition of 'impact'?

Answer: Impacts do vary, but as an example, something such as water loss.

Question: What is the significance of this model?

Answer: It helps Illawarra Coal design a mining plan that avoids significant impacts.

While Illawarra Coal is putting significant effort into planning to ensure significant impacts do not occur, the company reconfirmed that if their predictions were incorrect, and significant impacts did occur because of mining, the company has committed to applying mitigation techniques.

Question: Why does the model use the phrase 'predicted'?

Answer: When Illawarra Coal has a mining plan with predicted impacts, the company can put these forthcoming readings into the chart to compare the predicted movement/upsidence of the proposed mining plan with previous impacts from mining in other areas.

The model was described as a planning tool, where the future can be compared with the past.

Some AACWG members felt there was some confusion around the use of the phrases 'predicted' and 'observed'. It was requested that more explanation of the graph and model be provided for further classification. It was also suggested that the phrase "historical observed impacts" could be better wording and provide further clarification on the graph, rather than "observed impacts".

For Illawarra Coal, the model has further helped define the key design criteria for the subsidence management plan. These criteria involve maintaining a closure of less than 200mm to avoid water loss in the Georges River. This closure of 200mm has been determined through the Observed Impacts to Natural Features to Subsidence model by looking at previous impacts from mining.

Question: Will Illawarra Coal be mining under the cliff at Blackburn Rd?

Answer: Illawarra Coal hasn't received the full assessment yet.

Illawarra Coal believes it is unlikely that there will sufficient fracturing in the base of the river, so no water loss will occur. If water loss does occur, however, mitigation, such as grouting, will occur.

Minor fracturing and gas releases are likely to occur. These impacts are similar to other areas where mining has occurred up to but not under rivers.

Question: Are all sites accessible for rehabilitation if it is necessary, and are the rehabilitation strategies practical?

Answer: Sites are accessible for rehabilitation, usually through firetrails, and where this is not possible, rehabilitation can be assisted with crews and equipment being flown in by helicopter.. Rehabilitation and mitigation strategies are described in the SMP. This includes how the rehabilitation and mitigation will be undertaken.

Illawarra Coal made the point that rehabilitation is a contingency plan. However, Illawarra Coal is committed to any rehabilitation that would need to occur as part of its own responsibility and commitment under its licence obligations which is enforced by government.

AACWG members raised concerns that particular previous occurrences of closure are on the borderline of 200mm. Illawarra Coal stated that this mine plan and the limit of 200mm in closure allows the company to maximise the extraction of the resource with a small chance of impact. Illawarra Coal is not saying there will be no impacts.

An AACWG member asked what would happen if Illawarra Coal lessened the limit to 180mm closure. For Illawarra Coal, if the limit was set at 180mm, the walls would need to be further away from the river, so it would greatly impact on mining plans.

Illawarra Coal stated that if cracking occurred such that there was water loss when planning for 200mm

	<p>closure, it would be the first time this has occurred in the Southern Coalfields.</p> <p>Illawarra Coal feel this SMP is a fair and reasonable compromise to extract the product and minimize river impacts.</p> <p>Question: Can Illawarra Coal talk to the people in Wedderburn to let them know what's happening? Answer: Yes, this could be organised.</p> <p>Question: Was the grouting in Cataract successful? Answer: At what is often called 'Bubble Pool', it is difficult to determine how successful the grouting was, because there was no information to say how much water flowed through and over the rockbar prior to mining. With grouting and natural sealing, there has been a drop from 3.5 megalitres to 1.2 megalitres of flow through the rockbar. The rockbar is not 100% sealed now, however, Illawarra Coal believes it was unlikely that it was sealed completely prior to mining occurring.</p> <p>Grouting on the surface will be exposed to the elements, however, other grouting occurred under water, away from the surface and the elements.</p> <p>Question: Was there a site inspection of Cataract? Answer: Yes, some AACWG members (Michelle Imrie, Caroline Graham, Naomi Sheil, Robyn Helm) were taken on a site inspection, however other planned trips have been cancelled for various reasons.</p> <p>Illawarra Coal still monitors the Cataract. Plans to assess the impact of mining on the whole river are currently on hold because water needs to be released from Broughton's Pass weir to measure river health, but this is currently not possible because of the drought.</p> <p>Question: Can the Cataract be topped up from the dam? Answer: Yes, however, the government defines the minimum flow, and so more water can only be released when there is excess water in the water harvesting system. More than 95% of flow that should be going down the river is being harvested.</p> <p>Illawarra Coal wanted to point out that they have also been meeting with landholders within the areas impacted by mining. There are about 15 homes in the area. Illawarra Coal will meet with them again before the SMP is submitted. A new house was also built within the area with Campbelltown Council approval, but was not assessed by the MSB prior to a certificate of occupancy being granted so discussions with the homeowners are currently underway, since the MSB is refusing to pay for any repairs that may be required.</p> <p>Question: What is the safety factor of the SMP? Answer: The safety factor is inbuilt to the model. Some of the AACWG felt that this safety factor needs to be qualified on the graph, however Illawarra Coal believe that if you apply the knowledge learnt through mining impacts such as those noted at Marhnyes Waterhole, the safety factor can be quantified, although it was agreed that a probability could not be given to the factor of safety.</p> <p>Some AACWG members were concerned that certain terminologies were being mixed, when describing safety factors and minimising impacts. This was noted.</p> <p>Question: Where is Dwyer's Crossing in relation to the longwalls? Answer: It is near the corner of LW33.</p>
<b>7</b>	<b>COMMUNITY Q&amp;A AND QUESTIONS-ON-NOTICE</b>
	<p>Questions were invited from community members prior to the meeting to address any issues or concerns. The following questions were raised.</p> <p>Question: Is West Cliff using more water than five years ago? Answer: Illawarra Coal presented water usage figures from 2002 to 2007:</p> <ul style="list-style-type: none"> <li>- 2002 – 990 megalitres</li> <li>- 2003 – 1157 megalitres</li> <li>- 2004 – 1442 megalitres</li> <li>- 2005 – 1087 megalitres</li> </ul>

- 2006 – 1143 megalitres
- 2007 (Jan-July) – 516 megalitres

75% of that water has gone to the coal preparation plant, and the remaining 25% is used underground.

Brennan's Creek is part of that loop. When the dam is full, there has been discharge and overflows.

The AACWG raised the issue that there is less water coming down into Wedderburn from Appin. The main source of blame for this is felt to be the amount of water coming out of Brennan's Creek. It was asked if anything can be done about this?

Illawarra Coal stated there are different figures to the ones provided above for the water loss from the system. It was suggested that questions such as these are best directed towards Mark Beale, who can cover such information in his presentation on Brennan's Creek at the November meeting.

Illawarra Coal releases three megalitres of water down the Georges, and most of that is coming from the overflow from Brennan's Creek. Illawarra Coal has a licence from the EPA for this discharge. There are water quality issues, namely elevated salinity, elevated pH levels and 'fines', which all have an impact on the water quality.

Illawarra Coal believe that during the drought, there is more flow now than if the Brennan's Creek dam wasn't there.

Some AACWG members wanted the point made clear that they would like to see more water in the Georges River and this water should be clean.

#### **Information About Simpson's Creek**

LW408 commenced in September 2005 (At the Western end, heading East) – Completed July 2006.

Mining occurred under Simpson's Creek at the very end of mining, some time between June and July 2006.

Mine plans for LW408 do exist and a copy will be provided to community member Julie Sheppard.

LW406-408 received approval under Section 138 in December 2003. It was one of the last mine plans to be covered under this section. The impacts predicted in this plan included cracking. Illawarra Coal noted that the plans under Section 138 are not as detailed as SMPs.

There is no provision in the approval to rehabilitate. However, Illawarra Coal is still monitoring, and if work needs to occur, it would be completed.

From pictorial evidence supplied by a member of the AACWG, some suggested that remediation of Simpson's Creek is necessary. Illawarra Coal does monitor Simpson's Creek and it was suggested that there are many factors that play a role in making that decision.

Illawarra Coal stated there were no significant permanent pools that would retain water above the Simpson's Creek aquaduct and prior to mining, there was no water in Simpson's Creek. There was only water downstream to the aquaduct, where the canal goes across, and this was due to a leak.

Illawarra Coal is determining if there is long term flow loss through continual monitoring.

While Illawarra Coal has the lease, any impacts that require remediation will be undertaken.

Through one of the AACWG members, Julie Sheppard spoke to the owners of Elladale Cottage, who claimed that they used to swim in Simpson's Creek. This was a point of contention with both some AACWG members and Illawarra Coal.

Gas pipeline mitigation work was done in 2003. In preparing for the work, it was predicted that there would be movements. It was decided that the pipelines would be uncovered. Now that the area has successfully subsided, it is being considered whether the pipelines will be covered over.

Question: Why was LW408 not shown to those who went on the LW409 visit last year?

Answer: Illawarra Coal has an access agreement with the people who own the land. They particularly requested that Illawarra Coal limit the number of people on their property – The group who went out on the visit went to Simpson's Creek at the aquaduct (where Illawarra Coal was going to mine) and Simpson's Creek at the gas pipelines.



<b>8</b>	<b>DISCUSSION PAPER</b>
	<p>It was asked if all AACWG members received their copy of the discussion paper, which was developed through discussions with all AACWG members. It was highlighted that the paper is just a draft and comments are needed and would be welcomed.</p> <p>AACWG members were asked that the checklist provided and any comments be sent through by mid-November so that the findings can be consolidated and a short presentation on next steps can be provided.</p> <p>Comments about the phrasing 'partnership' and 'Coakes Consulting' were both mentioned and will be edited and/or removed in the final paper.</p>
<b>9</b>	<b>GENERAL BUSINESS</b>
	<p><b>BRENNAN'S CREEK DAM PRESENTATION</b></p> <p>Mark Beale from Illawarra Coal will be making a presentation on Brennan's Creek Dam at the November meeting. He has asked AACWG members to suggest any specific issues or questions they would like covered in his presentation.</p> <p>If any members have examples of questions or issues they would like Mark to answer, please email them through to Rebecca (<a href="mailto:rebeccagordon@turnstoneprojects.com">rebeccagordon@turnstoneprojects.com</a>).</p> <p><b>APPIN VILLAGE NEWS ENTRY</b></p> <p>The group felt that Illawarra Coal's presentation on the Subsidence Management Plan, their assessment on the mining area and the fact they are not mining under the Georges River should be the main focus of the Appin Village News entry.</p> <p><b>AACWG MEDIA RELEASE</b></p> <p>It was requested that any points raised at the October meeting that AACWG members wish to release to other groups be emailed between group members. A press release will then be formulated by Rebecca.</p>
<b>10</b>	<b>ACTIONS ARISING</b>
	<p>Rebecca Gordon to confirm numbers with Illawarra Coal for Appin Area 3 inspection.</p> <p>Investigation into cleaning or replacing perspex on Douglas Park notice board to occur.</p> <p>AACWG to ask Tom Grant to provide his source for information about aquatic ecology study in Georges River.</p> <p>Further explanation of Illawarra Coal's Observed Impacts to Natural Features to Subsidence model to be provided to AACWG members at their request.</p> <p>Illawarra Coal to organise a talk with Wedderburn residents about West Cliff Subsidence Management Plan.</p> <p>Zina or Jo to take mine plan for LW408 to Julie Sheppard.</p> <p>AACWG members to send through checklist and any comments about AACWG discussion paper to Rebecca Gordon by mid-November.</p> <p>AACWG members to send through any specific issues or questions about Brennan's Creek Dam to Rebecca Gordon to be passed onto Mark Beale (Illawarra Coal).</p> <p>Entry to be placed into next edition of Appin Village News about Illawarra Coal's West Cliff SMP and plans to not mine under the Georges River.</p> <p>AACWG members to email between the group any issues from October meeting they wish to raise outside of the AACWG – A news release will be formulated with this information.</p>
<b>11</b>	<b>NEXT MEETING</b>

20<sup>th</sup> November 2007

**12 CLOSE OF MEETING**

Meeting closed at 8.50pm

**Thank you all for attending.**

If you do not wish to receive these minutes please contact Wendy Gray-Spence on Ph: 4255 3313 or email [Wendy.E.Gray-Spence@bhpbilliton.com](mailto:Wendy.E.Gray-Spence@bhpbilliton.com).