

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	08/02/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

**Site Safety & Health Reps Consulted:** sch4p4( 6) Personal informat

Today I inspected Grasstree Mine and was met and accompanied throughout by sch4p4( 6) Pe sch4p4( 6) (SSE) and sch4p4( 6) Personal info (UMM). The whole focus of the inspection and discussion were in connection with the recent inrush from the 700 seal site no7 and how the recovery effort was progressing.

sch4p4( 6) Persc explained that good progress had been made but that there had been setbacks in the last four days. In summary the water level behind the 700 bulkhead is continuing to drop, but seal leakage is still making its way to East Mains. Efforts are focussed on continuing to pump 700s, trap and pump leakage and dewater East Mains.

### Inspection

The following points were noted

- Leakage at No2 bulkhead at the right hand side top interface between the strata and seal was of concern suggesting that the bulkhead to surrounding strata interface had, in part, washed out. Measurements of leakage suggest that the amount of leakage has stabilised over the last 48 hours. Bulkhead No 3 leakage has halved over the same period. The water level at bulkhead seal 1 has dropped from 10.8m to 8.5. The bulkhead is under continuous examination to ensure that there is no rapid deterioration. There is correlation between 18ct borehole and seal 1 water level indicating that there are no further potential damming issues behind the seals.
- Work was in progress to commission an electric pump to be sited to capture the leakage from 2/3 bulkheads.
- The facility to pump out of the mine from 45c/t had been lost and will take several days to rectify.

- Consequently the flooding in the inbye end of East Mains which had been reducing had increased. Pumping from the East mains, during the day, was redirected to 41c/t. The situation in the East Mains will only be recovered by preventing ingress from the 700 seal area.
- The aftermath of the inrush has left very wet and muddy conditions in many roads. Extra personnel have been deployed to assist with vehicle maintenance. Ponding of water over 140m of conveyor 005 has made inspections difficult and a risk assessment was in progress to identify the extra controls required to ensure risk is at an acceptable level.
- The priority of the mine is to ensure first that all necessary resources are deployed to deal with the aftermath of the inrush.
- I discussed in detail all of the points above with sch4p4( 6) Personal info (ISHR) who was engaged with the risk assessment mentioned above.
- It is my opinion that Grasstree is still in a very difficult position in regard to maintaining the fabric of the mine whilst wrestling with controlling the water ingress. In normal circumstances I would not consider that some of the travel roadways are in an acceptable state of repair in regard to mud and water. Further, I would not normally accept that CV005 could operate in such conditions. However given the difficult situation that exists, to prohibit vehicles travelling in such conditions will prevent the recovery work taking place and could threaten the future of the mine. CV 005 is critical in allowing the Longwall 805 to continue retreating to avoid strata control problems which themselves could pose a greater risk to mineworkers. In the situation I observed at the Mine it is my opinion that risk can be maintained at an acceptable level whilst recovery work continues.

### Close-out Meeting

Prior to leaving the mine I discussed the points above with sch4p4( 6) Pers and sch4p4( 6) Pers who indicated that they would keep me informed of progress.

In a later telephone call (10/02/11 at 12.40pm) with Sch 4p4(6) Pers I requested that an expert opinion on the status of the leakage through bulkhead no2 be obtained.

**Richard Gouldstone**  
**Inspector of Mines**  
**Central Region**

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	10/02/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

Sch4p4(6) Personal Information

However I was not aware that at 6m level the current hydraulic seal that exists would be no longer in place thus raising the potential for ingress of fresh-air into, and flammable and/or noxious gases out of, the 700s mains. This clearly requires careful control in balancing the need to lower the water to reduce in-flow to the mine and effect repairs weighed against the potential consequences of removing the hydraulic seal.

I am aware of the work in progress to complete seals at sites 7 & 8 and the activity to prepare the Tomlinson Boiler for use. We discussed the potential for an uncontrolled event and I referred to the need for a carefully considered plan to ensure that coal mining operations do not reach an unacceptable level of risk as detailed in Section 166 Directive to reduce risk CMSHA 1999.

It is for that reason I give a directive for preventative action to be taken to avoid risk reaching an unacceptable level (see directive below).

### Number

### Directive

### Due Date

1

Pursuant to section 166 of the Coal Mining Safety and Health Act 1999  
**Control of water management and the potential for ventilation problems associated with lowering water level in 700s Mains**

**14/02/2011**

Mine management are required to formulate a plan which will ensure that risk is maintained at an acceptable level whilst the water in 700s is lowered to a level that repair to bulkheads can be effected. During this period the risk of ventilation problems arising out of 700s hydraulic seal

being breached must be controlled.

***Please provide a written status report on each Directive together with the actions taken to address each item by their due dates***

**Richard Gouldstone**  
**Inspector of Mines**  
**Central Region**

Released by RSHQ  
RTI Act 2009

Release

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	14/02/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

### Introduction

I have given two directives, dated 31/01/11 and 10/02/11 regarding the current situation associated with the water inrush to Grasstree Mine from 700s seal site No7. This MRE has been generated following discussions since the inrush incident, with sch4p4( 6) Personal info (UMM) and sch4p4( 6) Personal info (SSE), to provide clarification for mine management in how to address the requirements of both directives.

### HPI – Inrush

There is a requirement under Section 201 CMSHA 1999 to produce a report, within one month of the incident, into the causes and provide recommendations to prevent a recurrence and provide a copy of that report to the inspector.

The Inrush itself and the sealing of 700s mains are intimately linked and I would expect the report to cover at least the following matters.

- **Review the Existing Plan** -What was the original plan to control water levels in 700 mains?

Did the plan include management of relevant surface accumulations as well as provision of underground pumping facilities? What were the proposals for establishing measuring and monitoring regimes with redundancy and contingency plans to deal with fluctuations in water-make? What Trigger Action Response Plans were in place to address the risks that such an accumulation might present?

- **Proposals - In the Aftermath of the Inrush**

What are the short, medium and long term proposals for the control of the risk presented by the make of water in 700s Mains? This includes proposals for:-

Pump capacity, monitoring, installation, maintenance, redundancy

Tarps

Records and trends

Relationship with 600s

Seal inspection, rating and repair

Communication to workforce

- **700s sealing**

It is known that once the water level behind No1 bulkhead reaches 6m then a ventilation circuit in the 700 Mains is created. Work is in progress to coordinate the 700 sealing so that it is achieved before this level is reached. The revised sealing plan needs to consider the consequences of denying access to the rear of all seals and bulkheads as it is already known that remedial work is necessary to at least Nos 2 & 3 seals at present.

The dates given for compliance with the directives can be reviewed. I am able to give further clarification of the details of this MRE if required. I am aware that the situation at the mine is still demanding substantial close attention from management to deal with the immediate issues.

**Richard Gouldstone**  
**Inspector of Mines**  
**Central Region**

Release

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	20/01/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

### Site Safety & Health Reps Consulted:

Sch4p4(6) Personal Inform

Today I, and Inspector Andrew Fynn, attended Grasstree Mine principally as a follow-up investigation after the frictional ignition which occurred in 806 MG development, B heading on 22 November 2010. We were received by Sch4p4( 6) Personal (SSE), Sch4p4( 6) Personal in (Technical Services Manager), Sch4p4( 6) Personal inf (VO) and Sch4p4( 6) Personal in (UMM) who later accompanied us throughout the underground inspection. Before moving underground we discussed two major topics, the frictional ignition findings and the recent water management problems encountered after the major rainfall event which affected much of central and east Queensland.

### 1.0 Pre-inspection Briefing

#### 1.1 Frictional Ignition

I referred to the initial findings regarding the incident from the mine, with which I substantially agreed, and are detailed in my inspection MRE, 23 November 2010. I also made reference to the ICAM Report (facilitated by Sch4p4( 6) Personal infor), provided by Sch4p4( 6) Pe and The Investigation Report, led by Sch4p4(6) Personal Informa which comprehensively but concisely identified root cause and produced a series of actions short medium and long term.

The actions are detailed in the report (extract below) and have been widely communicated with the workforce.

#### "RECOMMENDATIONS TO PREVENT THE INCIDENT HAPPENING AGAIN

The following recommendations will be adopted to prevent the incident from happening again:

Immediate:



- .. Reinforce and lift standards in pit in relation to stone dusting, roads and water, housekeeping and stowage
- .. Complete a review of the Frictional Ignition Standard Operating Procedure and Safe Working Procedure
- .. Review development panel sequencing
- .. Develop a management plan to address Mine Record Entry issues raised
- .. Conduct a geological assessment of the hard lens anomaly and associated area
- .. The MSOs are to review and countersign the in-seam bore hole intersection history form until 31/12/2010
- .. Review the Bore Hole Intersection History Form so that it requires authorisation by the CM operator and the ERZ Controller
- .. Take development crews through the frictional ignition and borehole intersection procedures

Medium term:

- .. Implement a plan to update all Safety and Health Management System procedures
- .. Review initiation of Incident Management Team
- .. Investigate the viability of introducing "wet head" technologies
- .. Review pick design options
- .. Review the configuration of existing CM with respect to FI potential (eg drum speed)
- .. Introduce individual UIS drainage hole monitoring
- .. Investigate the viability of sealing boreholes
- .. Investigate options of roadway geometry including cutting less roof and more floor
- .. Research other mines recent experience with frictional ignition incidents
- .. Develop a Grasstree Fire Fighting training ground."

We were brought up to date with progress with most of the short/medium term items already addressed. However the aspects associated with cutting head design, pick speed, angle of attack and design will take a considerable time before there can be a breakthrough in terms of an alternative cutting head configuration. We indicated that the inspection would concentrate upon the changes actioned in regard to on site standards and practices in 806 MG.

## 1.2 Water Management

sch4p4( 6) P briefed us on the water management problems caused by recent very heavy rain.

- 700 seals were complete with the exception of no7 & 8. It was originally intended to place them to seal 700s series and the mine had received acknowledgement of the proposed sealing plan. However the water make in 700s has increased to such a level that the water is now overflowing into Grasstree Mine through the proposed no 7 & 8 seal sites. sch4p  
sch4p4( 6) P had already alerted Mr Mike Walker (District Inspector of Mines) by telephone earlier that week, that the sealing plan would have to be substantially re-designed
- The increase is making its way to 700 via ground fractures between the sealed longwalls and a large body of surface water overlaying them in a void created by open cut mining of the Aquila seam at German Creek OC.
- The void has been reported as clay sealed but the water level has now lifted above the alleged sealed zone and is feeding into the sealed 700s workings, 80m below.
- sch4p4( 6) P explained the action in place to increase, and in part to rationalise the water management capability giving primary consideration to the safety of the underground activity. The plan included, extra surface pumping capacity to lower the surface void, holding 600s water behind the existing bulkheads, increase underground pumping capacity and take maximum advantage of surface storage. Properly managed, the surface facilities will neither present a problem with leakage back into the mine nor create discharge



exceedences.

- The problems created by the extra make include:-

Pressure on 1&2 bulkheads 700s is creating leakage through the surrounding strata. This was a source of concern voiced by mineworkers at the pre-noonshift briefing session attended by me and [sch4p4( 6) ] when we returned to the surface, post-inspection.

Overflowing water is ponding along the conveyor road making it difficult to inspect and with knock-on wet conditions on the coal clearance system.

800 mains developments have been halted because of the water ingress.

If the make continues to exceed the newly established pumping capacity then the area of influence will grow with attendant access and travel complications.

In summary, it appears that the time taken from a rain event to appearance at 700s is two weeks and if the remedial work as planned is effective, it will take the same period for the water to recede. Significant management time and resources are focussed on the issue and we asked that [sch4p4( 6) Pers] keep us informed on progress to address the problem.

## 2.0 Inspection

We were accompanied by [sch4p4( 6) Personal in] (SSHR) who introduced us to [sch4p4( 6) Personal in] (ERZ Controller) at 806 MG. We carried out a thorough inspection of,

- Ventilation
- Methane Hole positions and CH4 make
- Pick condition
- Shift FI checklist
- Stonedusting standard
- Mineworker FI awareness and their role/responsibility
- General conditions

There were no items in dispute and the key aspect of mineworker awareness appears to have been addressed. However we asked [sch4p4( 6) Pers] to consider adopting sealing all boreholes as soon as practicable after they are breached to fix its position and then to prevent CH4 seepage into the ventilation stream. It also guarantees that as a retreating panel is progressively sealed no CH4 boreholes remain open to goaf.

There were no items in dispute.

**Richard Gouldstone**  
Inspector of Mines  
Central Region

**Andrew Fynn**  
Inspector of Mines  
Central Region

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	21/01/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

**Site Safety & Health Reps Consulted:** Sch4p4(6) Personal Informa

Today I attended Grasstree Mine following a telephone call from sch4p4( 6) Personal inf (UMM) at 7.00pm last night 20th January 2011.

sch4p4( 6) Perso informed me that the mine had been evacuated under emergency circumstances and that all mineworkers were accounted for. The reason for the evacuation was a significant uncontrolled inflow of water from seal site number 7 of the 700s. The inflow had been noticed by a mine official and the message circulated to warn mineworkers as it occurred. It has been established that the wavefront generated made its way by gravity past 700 seal positions, down F heading and then across at 12c/t to A and B headings in the east mains. Mineworkers, in east mains developments, alerted to the approaching water, managed to make their way to B51 cut through before the water reached the continuous miner they were working on. The wall of water was described as 1m high by witnesses.

The mine was evacuated promptly and sch4p4( 6) Perso informed me that information was being collected to establish the next course of action.

Earlier that day I had carried out an inspection at the mine with Mr Andrew Fynn, and prior to going underground to inspect 806MG developments we were briefed by Sch4p4(6) Pe (SSE) regarding water management problems associated with 700s series and the action in progress to deal with the matter. The details are included in the MRE dated 20th January 2011 and its content is relevant to the incident which occurred later that day.

On arrival at the mine today I was met by sch4p4( 6) Perso and briefed initially and subsequently throughout the day by him and other Grasstree personnel including,

[sch4p4( 6) Personal info] – Operations Manager  
[sch4p4( 6) Personal info] – Technical Services Manager  
[sch4p4( 6) Personal info] – Engineering Maintenance Manager  
[sch4p4( 6) Personal info] – Undermanager  
[sch4p4( 6) Personal info] – SSHR  
[sch4p4( 6) Personal info] – Mining Superintendent

[sch4p4( 6) Personal info] (ISHR) and [sch4p4( 6) Personal info] (Head of Operations Anglo Coal) have also been in attendance throughout.

The mine was inspected, following a risk assessment in the aftermath of the incident which revealed the details given above. A further risk assessment has been carried out involving [sch4p4( 6) Personal info], officials and mineworkers to carry out a further inspection via Grasstree shaft, to establish what is required to open the mine giving access to remediation work and supplementing pumping capacity. The risk assessment included recognition that a second means of egress is not available as it is anticipated that water level in C heading will prevent vehicular passage. The findings of the risk assessment were shared with myself and [sch4p4( 6) Personal info]. At the time writing this MRE we were awaiting results from surveyors measurements of water levels at the 700 seal positions.

Separate, but related activity, is progressing to begin dewatering activity at Oaky Creek open cut which is believed to be the primary source of the water ingress to 700 series. Recent major rain events have elevated the water level significantly and it is known there is hydraulic continuity between it and the German Creek workings 80m below.

Investigations are continuing into the full root cause and associated remedial action. It is likely that the re-entry and recovery will take at least a few days.

Further MREs will be generated and progress recorded.

I left the mine at and requested that I was informed as the agreed plan progressed.

**Richard Gouldstone**  
**Inspector of Mines**  
**Central Region**

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	22/02/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

### CONSENT TO REMAIN IN OR ENTER THE MINE

#### AFTER SEALING A PART OF THE MINE KNOWN AS 700s Main Panel

[Pursuant to CMS&H Regulation 330]

*{Regulation 330: Evacuating mine after sealing*

*A person must not, without an inspector's written consent, enter or remain in an underground mine after the mine, or part of it, has been sealed}*

The Underground Mine Manager has shown that an acceptable level of risk has been achieved with respect to the sealing of the part of the mine stated above and consequently consent is given, pursuant to Regulation 330, for persons to remain in or to re-enter the underground mine.

An acceptable level of risk has been achieved by:-

1. Implementing a "Sealing Management Plan" that was developed using risk assessment and in consultation with a cross-section of mineworkers in similar manner to that required for the development of a ***Standard Operating Procedure***.

NOTE: The Plan was acknowledged, pursuant to Reg.327(1)(b), in a Mine Record Entry dated **29/10/10** allowing the sealing to proceed.

2. Including in the "Sealing Management Plan":-

- Comprehensive sealed area monitoring that ensures adequate and accurate data on which competent decisions can be made and appropriate Trigger Action Response Plan and
- A comprehensive ***Sealing Management Plan checklist*** that is designed to verify that all aspects of the plan have in fact been progressively completed by those responsible.

Release

3. Providing a copy of the *Sealing Management Plan Checklist* , signed off by the Underground Mine Manager, verifying that everything has been done according to the Plan.

**Richard Gouldstone**  
**Inspector of Mines**  
**Central Region**

Released by RSHQ  
RTI Act 2009

Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	24/01/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

I arrived today, unannounced, at Grasstree intending to obtain an update on the progress made with regard to control of water inflow into the Mine. I was met by sch4p4( 6) Personal in (SSE), sch4p4( 6) Personal in (Underground Operations Manager Anglo Coal), sch4p4( 6) Personal in (Technical Services Manager) and sch4p4( 6) Personal in (ISHR) all of whom had just returned to the surface after an underground inspection of the 700 seal sites.

We visited the two Legra pumps now installed and pumping water from the open cut void created by Oaky Creek OC activity. There was clear evidence that the depth of water is now falling and surveyors results are awaited to quantify the actual figures.

I was briefed in regard to progress:-

- Surface accumulation is diminishing, with progress still to quantify
- Water level at No1 bulkhead now slowly falling, dam at 7 seal holding
- Secondary support at seal sites completed
- Capacity to pump from east mains increased with further pumping facility planned
- Second means of egress now secured
- 600s series remains isolated from 700s
- V-notches installed to measure local flows in the vicinity of the seals

sch4p4( 6) Per confirmed that an ICAM process will be followed in regard to the incident and outlined the likely medium and long term review and controls that will become part of the on-going controls to manage the inflow in the future. It was agreed that there is a need for a comprehensive plan, designed to ensure that risk is maintained at an acceptable level, before

consideration could be given to a return to normal mining operations.

I was present when [sch4p4( 6) Per] discussed the findings of his inspection with [sch4p4( 6) Personal info]  
[sch4p4( 6)] (UMM).

It was agreed that I would be informed of any significant changes in circumstances as had been the case since the original evacuation arose on 20th January 2011.

**Richard Gouldstone**  
Inspector of Mines  
Central Region



Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Grasstree Mine	MI01459	Anglo Coal (Capcoal Management) Pty Ltd		Central	31/01/2011

Vision: Our Industries Free of Safety and Health Incidents

## Mine Record Entry

***This report forms part of the Mine Record under s68 of the Coal Mining Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.***

***Note that inspection or audit activities conducted by the Mines Inspectorate are based upon sample techniques. It remains the primary responsibility of Mine Personnel to identify hazards, and risks associated with Operations and ensure those risks are at an acceptable level.***

The intrush which occurred at Grasstree Mine, at approximately 6pm 21 January 2011, has left the mine with many problems to deal with. I attended the incident 22 January, 25th January and have throughout been fully briefed by Capcoal management on the progress to recover the situation. The initial response to the incident was to ensure the safety of all personnel, which has been followed by a systematic re-entry inspection and recovery plan which is still underway. The process has at all times been risk assessed and involved a representative cross-section of the mineworkers at Grasstree.

I am aware that many related safety and health management items are under review as are short, medium and long term water management plans. Nevertheless I give the directive below, (ref Section 168 of Coal Mining Safety and Health Act 1999) , formally requiring the safety and health management system for the mine is reviewed to make it effective.

### Number

### Directive

### Due Date

1

**Review of safety and health management system**

**28/02/2011**

To review the safety and health management system

***Please provide a written status report on each Directive together with the actions taken to address each item by their due dates***

**Richard Gouldstone**  
Inspector of Mines  
Central Region