

DEPARTMENT OF NATURAL RESOURCES AND MINES

QUEENSLAND

The Mining and Quarrying Safety and Health Act 1999

INVESTIGATING OFFICER'S REPORT

TO

THE CHIEF INSPECTOR OF MINES METALLIFEROUS

ON

**Fatal Accident to
SEAN RAYMOND SCOVELL
At MCG Quarries
Moranbah South Quarry
Tuesday 5th June 2012**

INVESTIGATING OFFICER: Kevin Clough
Inspector of Mines (Mining)
Central Region
Mackay District

DATE: 7 May 2013
FILE REF:

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1. SUMMARY

MCG Quarries operates Moranbah South Quarry situated adjacent to the Peak Downs Highway approximately 15 kilometres from Moranbah Township in Central Queensland.

A fixed crushing plant had recently been constructed on site to increase through put of processed material from the quarry and to enable mobile crushing plants to be decommissioned. Crushed and processed material is removed from the site and used in road construction etc in the region.

Sean Raymond SCOVELL aged 21 years, an employee of Moranbah South Quarry since 14 March 2012 and the authorised operator of the fixed crushing plant since 1 May 2012 was fatally injured when he was caught in an operating conveyor system at approximately 7.00 pm on Tuesday 5 June 2012.

Conveyor No. 2 delivers crushed material from conveyor No.1 jaw crusher and run of mine hopper to the surge bin of the fixed crushing plant.

A screeching or howling noise was heard from the vicinity of the gravity loop take-up of conveyor No. 2 of the fixed crushing plant.

SCOVELL was observed by several witnesses to proceed up the walkway of conveyor No. 2 of the fixed crushing plant carrying a grease gun to investigate the noise.

The conveyor was still running at this time and was not carrying any material.

SCOVELL was observed to either crouch or sit down at the gravity loop take-up position approximately half way along the conveyor gantry walkway and was observed by a witness to be pulled into the operating conveyor.

The conveyor was immediately stopped and rescue operations commenced.

During the rescue operation, rescue personnel observed severe injuries across SCOVELL's chest area.

SCOVELL was pronounced deceased after examination by the emergency services personnel when they arrived on site.

A team from the Department of Natural Resources and Mines Mackay District office consisting of Inspector of Mines and an Investigation Officer was formed to conduct an investigation into the fatal accident to determine the nature and cause and to prepare a report for the Chief Inspector of Mines.

2. PERSONAL DETAILS OF THE DECEASED

Name: Sean Raymond SCOVELL.

Date of Birth: 19 April 1991.

Age at time of Death: 21 years.

Address:

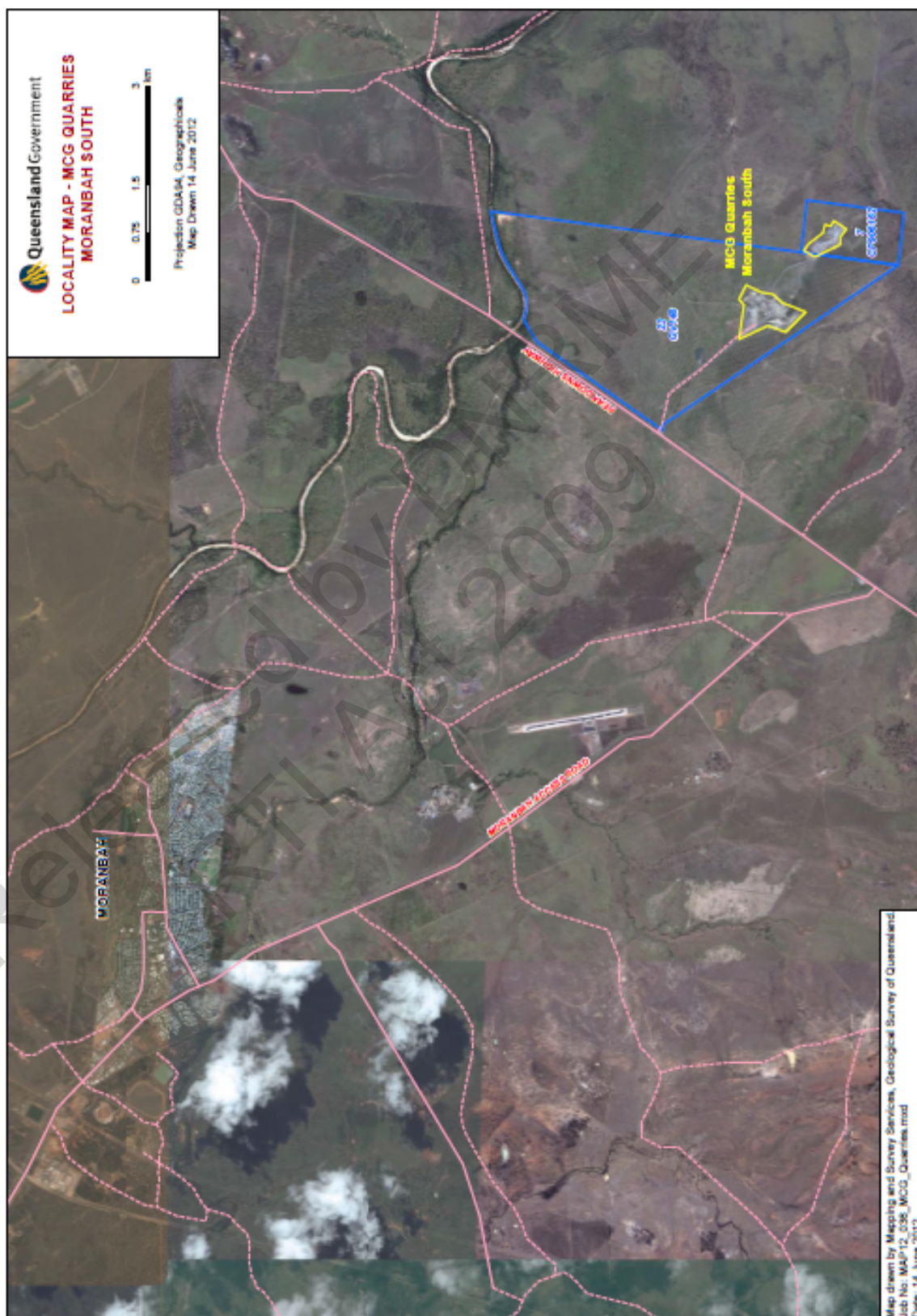
CTPI 49-Sch4

Marital Status: Single.

Next of Kin:

73(2)Irrelevant

3. MINE DETAILS



Location of MCG Quarries Moranbah South Quarry.

Investigating Officer's Report into Fatal Accident to Sean Raymond Scovell
at MCG Quarries Moranbah South Quarry.

Quarry Name	MCG Quarries Pty Ltd ¹ Moranbah South Quarry ABN: 96119739758. ACN: 119 739 758
Description of Land	Lot 23 Plan GV148, Lot 7 Plan CR906162
Location	Off the Peak Downs Highway approximately 15 km south east of Moranbah township ² .
Tenure	MCG Quarries ³ . Locked Mail Bag 1008 Moranbah. Qld. 4744
Quarry Operator	MCG Quarries Moranbah South Quarry ⁴ PO Box 751 Morningside. Qld. 4170
Site Senior Executive (Appointed 15 February 2012)	73(2)Irrelevant ⁵ CTPI 49-Sch4
Site Senior Executive (Appointed 17 October 2010 and Again 20 July 2012)	73(2)Irrelevant ⁶ CTPI 49-Sch4
Quarry Manager/SSE Delegate	73(2)Irrelevant CTPI 49-Sch4

¹ Appendix 23 MCG Quarries Mine Profile page 2, 11-20
² Investigating Officer's Report page 6
³ Appendix 23 MCG Quarries Mine Profile page 3
⁴ Appendix 23 MCG Quarries Mine Profile page 4, 7
⁵ Appendix 23 MCG Quarries Mine Profile page 5
⁶ Appendix 23 MCG Quarries Mine Profile page 4 and 6
⁷ Appendix 17 Management Structure and Competencies 73(2)Irrelevant page 18-20

4. NOTIFICATION OF SERIOUS ACCIDENT AND INITIAL RESPONSE

Mackay Central Region District Inspector of Mines, Darryl CASEY, was notified of a fatal accident that had occurred at MCG Quarries Moranbah South Quarry, at approximately 7.00 pm Tuesday 5th June 2012.

CASEY notified Inspector of Mines, Kevin CLOUGH by mobile phone at approximately 7.45 pm of the fatality and that he would arrange for Inspector of Mines Tim WATSON, to attend and secure the site.

Moranbah Police Sergeant Gavin RICHARDSON⁸, Plain Clothes Senior Constable Dean CAVANAGH⁹, Constable Michael EARNER¹⁰ and Constable Camilla ANDREWS¹¹ responded to a sudden death notification at Moranbah South Quarry and attended the site at approximately 8.15 pm to secure evidence and commence the Police investigation.

Upon arrival at the accident scene, CAVANAGH observed that a Queensland Ambulance vehicle and Queensland Fire and Rescue truck were parked near the scene and that the area around the scene had been secured by QFRS cordon tape. He also had a brief conversation with MCG Quarry employee 73(2)Irrelevant

CAVANAGH was briefed by QFRS Captain BLOOMSFIELD, Queensland Ambulance Officers PATTERSON¹² and TROUNCE¹³, that they had pronounced Sean Raymond SCOVELL as deceased and that he was in the current position upon their arrival at site at the bottom of conveyor No. 2 walkway.

⁸ Appendix 29 Queensland Police Service Statement of Witness
Acting Senior Sergeant Gavin Sydney Richardson page 17-19
⁹ Appendix 29 Queensland Police Service Statement of Witness
Plain Clothes Senior Constable Dean Cavanagh page 3-11
¹⁰ Appendix 29 Queensland Police Service Statement of Witness
Constable Michael James Earner page 12-16
¹¹ Appendix 29 Queensland Police Service Statement of Witness
Constable Camilla Jane Andrews page 20-24
¹² Appendix 27 Queensland Ambulance Service
Statutory Declaration Jason Patterson page 19-20
¹³ Appendix 27 Queensland Ambulance Service
Statutory Declaration Sally Trounce page 16-18

5. ACCIDENT INVESTIGATION PROCESS.

The accident investigation process consisted of the following activities.

5.1. Police Tuesday 5 June 2012.

Mackay Police Scenes of Crime Officer Senior Constable Siobhan PRESTON¹⁴, Mackay Scientific Officer Belinda YOUNG and Inspector of Mines Tim WATSON attended the site on Tuesday evening at approximately 10.20 pm to commence an investigation.

Police inspected the accident site at the gravity loop take-up on conveyor No. 2 of the fixed crushing plant and the surrounding areas on the ground. As part of their investigations, photographs were taken of the scene¹⁵.

Interviews of involved persons were commenced by Police (refer section 6.8) at the quarry office area.

5.2. Mines Inspectorate - Tuesday 5 June 2012.

WATSON¹⁶ was notified at approximately 8.00 pm by text from Inspector of Mines Keith BRENNAN that a fatal accident had occurred at Moranbah South Quarry. WATSON arrived on site at approximately 10.20 pm Tuesday and was provided a general briefing of the accident by Police.

WATSON secured document filing cabinets at the weighbridge. He then inspected the accident scene where he met 73(2)Irrelevant the most senior MCG Quarries official on site at the time of the incident. WATSON received a briefing from the Police.

WATSON obtained the accident primary information and assisted Police with the taking of photographs.

A verbal Directive as per the *Mining and Quarrying Safety and Health Act 1999* s164 Directive to suspend operations for unacceptable level of risk was given to 73(2)Irrelevant¹⁷.

At the site office complex WATSON secured training office, engineers' office and the site senior executive's office to preserve documentary evidence.

¹⁴ Appendix 29 Queensland Police Service Statement of Witness
Senior Constable Siobhan Patricia Preston page 25-26

¹⁵ Appendix 39 Police Photographs DVD

¹⁶ Appendix 11 Mine Record Entries dated 5/06/2012
Inspector of Mines Tim Watson page 33-34

¹⁷ Appendix 11 Mine Record Entries dated 05/06/2012
Inspector of Mines Tim Watson page 33-34

WATSON left the site and returned on Wednesday 6 June 2013 morning with Mines Inspector Kevin CLOUGH and District Workers' Representative [73(2)Irrelevant] WATSON issued a Mine Record Entry (footnote should come here).¹⁸

5.3. Mines Inspectorate - Wednesday 6 June 2012.

Inspector of Mines Kevin CLOUGH¹⁹, District Workers' Representative [73(2)Irrelevant]²⁰ and WATSON returned to the site on Wednesday and spoke to CAVANAGH who released the site to CLOUGH²¹ to continue the investigation.

CLOUGH observed that the site had been secured and that Police had guarded the site all night.

CLOUGH then received a copy of the initial Police investigation report of the accident from CAVANAGH²².

Senior Inspector of Mines (Electrical) Peter HERBERT, Inspector of Mines (Mechanical) Bruce McKINNON and Principal Investigator Andrew SMITH²³ arrived on site to support the investigation.

CLOUGH met with Moranbah South Quarry Site Senior Executive [73(2)Irrelevant] and Quarry Manager [73(2)Irrelevant] and arranged for the access road to the quarry be secured at the Peak Downs Highway intersection to restrict unauthorised entry to the site.

The Inspectorate investigation team consisting of CLOUGH, SMITH, HERBERT, McKINNON and [73(2)Irrelevant] proceeded to the accident site to continue the investigation of the fatal accident at the gravity loop take-up area on conveyor No. 2 of the fixed crushing plant.

CLOUGH photographed the accident scene and general area, while McKINNON and HERBERT inspected and photographed the fixed crushing plant; [73(2)Irrelevant] and SMITH photographed the site and general area. (Refer to section 6.7 for photography details).

[73(2)Irrelevant] informed CLOUGH that the accident had occurred on Tuesday 5 June at approximately 7.05 pm.

¹⁸ Appendix 11 Mine Record Entries dated 5/06/2012
Inspector of Mines Tim Watson page 33-34
¹⁹ Appendix 35 Investigation Team Inspector of Mines Kevin Clough page 3-6
²⁰ Appendix 11 Mine Record Entries dated 7/06/2012
District Workers Representative [73(2)Irrelevant] page 12
²¹ Appendix 11 Mine Record Entries dated 06/06/2012
Inspector of Mines Kevin Clough page 13
²² Appendix 6 Queensland Police Service Log of Events
²³ Appendix 35 Investigation Team Principal Investigator Andrew Smith page 7-23

CLOUGH and SMITH commenced interviewing persons while HERBERT, McKINNON and 73(2)Irrelevant seized documents relating to the investigation.

The investigating team again inspected the accident site at approximately 6.15 pm to observe the amount of available light and photographed the scene with various lighting plants turned on and off to establish the varying lighting conditions that may have been present at the time of the accident²⁴.

The verbal Directive issued by WATSON²⁵ on Tuesday 5 June was withdrawn by CLOUGH²⁶ who issued four (4) Directives under the *Mining and Quarrying Safety and Health Act 1999* to 73(2)Irrelevant as follows:

- s163 Directive to reduce risk,
- s164 Directive to suspend operations for unacceptable level of risk,
- s165 Directive to review safety and health management system,
- s166 Directive to suspend operations for ineffective safety and health management system.

The investigating team then left the site.

5.4. Mines Inspectorate - Thursday 7 June 2012.

The investigating team returned to site on Thursday 7 June 2012 to continue the investigation process.

CLOUGH confirmed the Directives issued to 73(2)Irrelevant on Wednesday 6 June 2012 to MCG Quarries Managing Director 73(2)Irrelevant

5.5. Mines Inspectorate - Monday 18 June 2012.

CLOUGH, SMITH and HERBERT conducted an unannounced inspection of the quarry to inspect the status of the work required to be completed by Moranbah South Quarry as specified in the Directives issued previously²⁷.

²⁴ Appendix 39 Police Photographs Contains Graphic Images.pdf
Appendix 1 Photographs
Appendix 26 Investigation Video Footage DVD Master Copy 06/06/12 Movies 7-12, MOV010.MOD, MOV011.MOD, MOV012.MOD

²⁵ Appendix 11 Mine Record Entries dated 06/06/2012
Inspector of Mines Tim Watson page 33-34

²⁶ Appendix 11 Mine Record Entries dated 06/06/2012
Inspector of Mines Kevin Clough page 13-32

²⁷ Appendix 11 Mine Record Entries dated 18/06/2012
Inspector of Mines Kevin Clough page 10-11

The Inspectors met [73(2)Irrelevant] and [73(2)Irrelevant] and notified that an inspection of the site and interviews of a number of employees would be conducted

During the inspection of the accident site, it was noted that guards had been fitted adjacent to the first and third change of direction pulleys and a remote greasing arrangement had also been fitted to the pulley bearing blocks²⁸.

HERBERT inspected the fixed crushing plant and issued three (3) substandard conditions or practice (SCP) notices for electrical defects identified. Controlled tests of conveyor No. 2 were also conducted to determine the time taken to bring the conveyor to a standstill when the emergency stop pull wire is activated. Herbert issued a MRE²⁹.

5.6. Mines Inspectorate - Friday 22 June 2012.

The Directives³⁰ issued previously by CLOUGH were formally withdrawn to allow the fixed crushing plant to recommence operation.

5.7. Photographs and Video's Taken During the Investigation.

Photographs and videos' were taken of the accident scene and surrounds by the following identities:

- CLOUGH 6 June, 18 June, 19 July and 15 August 2012³¹
- SMITH 6 June 2012³²
- SMITH video 7 June 2012³³
- [73(2)Irrelevant] 6 June and 7 June³⁴
- HERBERT 6 June 2012³⁵
- McKINNON video 6 June 2012³⁶

28 Appendix 38 Additional Accident Photographs
Kevin Clough Photographs 18 June 2012 page 153-156, 158, 160-162, 164
29 Appendix 11 Mine Record Entries dated 18/06/2012
Inspector of Mines Peter Herbert page 3-9
30 Appendix 11 Mine Record Entries dated 22/06/2012
Inspector of Mines Kevin Clough page 2
31 Department Natural Resources and Mines Safety and Health DVD
32 Department Natural Resources and Mines Safety and Health DVD
33 Appendix 26 Investigation video footage
34 Department Natural Resources and Mines Safety and Health DVD
35 Department Natural Resources and Mines Safety and Health DVD
36 Appendix 26 Investigation video footage

5.8. Individuals Interviewed or Providing Statements. *(Contents of table is by interview or statement date).*

Name of Witness	Document Reference	Involvement	Appendix Reference
73(2)Irrelevant	73(2)Irrelevant Transcript of interview dated 6 June 2012.	Witness	Appendix 2 Transcripts of Interviews, page 117-139.
73(2)Irrelevant	73(2)Irrelevant Police Transcript of Interview dated 5 June 2012		Appendix 2 Transcripts of Interviews, page 140-176
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 6 June 2012	Accident response and recovery	Appendix 2 Transcripts of Interviews, page 92-106
73(2)Irrelevant	73(2)Irrelevant Police Transcript of Interview dated 5 June 2012		Appendix 2 Transcripts of Interviews, page 107-116
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 6 June 2012		Appendix 2 Transcripts of Interviews, page 56-77
73(2)Irrelevant	73(2)Irrelevant Police Transcript of Interview dated 5 June 2012	Witness	Appendix 2 Transcripts of Interviews, page 78-91
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 6 June 2012	Accident response and recovery	Appendix 2 Transcripts of Interviews, page 37-55
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 6 June 2012	Witness	Appendix 2 Transcripts of Interviews, page 177-195
73(2)Irrelevant	73(2)Irrelevant Police Transcript of Interview dated 5 June 2012		Appendix 2 Transcripts Of Interviews, page 196-208
73(2)Irrelevant	73(2)Irrelevant Police Transcript of Interview dated 5 June 2012	Accident response and recovery	Appendix 2 Transcripts of Interviews, page 209-214

Investigating Officer's Report into Fatal Accident to Sean Raymond Scovell
at MCG Quarries Moranbah South Quarry.

Name of Witness	Document Reference	Involvement	Appendix Reference
73(2)Irrelevant	Transcript of Interview dated 18 June 2012	Moranbah South Quarry maintenance contractor	Appendix 2 Transcripts of Interviews, page 3-13
73(2)Irrelevant	Transcript of Interview dated 18 June 2012	Moranbah South Quarry dayshift Supervisor	Appendix 2 Transcripts of Interviews, page 14-36
John Edward MARKHAM	MARKHAM Police Statement of Witness dated 21 June 2012	Constable of Police Attending Mackay Hospital	Appendix 29 Statement of Witness page 27-28
Joshua Charles WHITE	WHITE Police Statement of Witness dated 22 June 2012	Constable of Police Scenes of Crime Officer Rockhampton Attended autopsy at Rockhampton Hospital	Appendix 29 Statement of Witness page 30-31
Jackson Leonard SOWDEN	SOWDEN Police Statement of Witness dated 25 June 2012	Constable of Police Responding officer	Appendix 29 Statement of Witness page 32-33
Alison BEITZEL	BEITZEL Transcript of Interview dated 4 July 2012	Senior Constable of Police Attended autopsy at Rockhampton Hospital	Appendix 29 Statement of Witness page 29
Camilla Jane ANDREWS	ANDREWS Police Statement of Witness dated 9 July 2012	Constable of Police responding officer	Appendix 29 Statement of Witness page 20-24
73(2)Irrelevant	Transcript of Interview dated 17 July 2012	Moranbah South Quarry fixed crushing plant operator	Appendix 2 Transcripts of Interviews, page 215-235
73(2)Irrelevant	Transcript of Interview dated 19 July 2012	HSE Advisor MCG Group	Appendix 2 Transcripts of Interviews, page 236-260
Michael James EARNER	EARNER Police Statement of Witness dated 10 August 2012	Constable of Police responding officer	Appendix 29 Statement of Witness page 12-16
73(2)Irrelevant	Transcript of Interview dated 15 August 2012	Quarry Manager MCG Group	Appendix 2 Transcripts of Interviews, page 261-274

Investigating Officer's Report into Fatal Accident to Sean Raymond Scovell
at MCG Quarries Moranbah South Quarry.

Name of Witness	Document Reference	Involvement	Appendix Reference
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 15 August 2012	Supervisor and Trainer/Assessor MCG Group	Appendix 2 Transcripts of Interviews, page 275-288
73(2)Irrelevant	Transcript of Interview dated 15 August 2012	Trainer/Assessor MCG Group	Appendix 2 Transcripts of Interviews, page 289-300
73(2)Irrelevant	Transcript of Interview dated 15 August 2012	Training Co-ordinator MCG Group	Appendix 2 Transcripts of Interviews, page 301-323
Gavin Sydney RICHARDSON	RICHARDSON Police Statement of Witness dated 18 August 2012	Acting Senior Sergeant and Officer in Charge Moranbah Police responding officer	Appendix 29 Statement of Witness page 17-19
Dean CAVANAGH	CAVANAGH Police Statement of Witness dated 31 August 2012	Plain Clothes Senior Constable of Police responding officer	Appendix 29 Statement of Witness page 3-11
Siobhan Patricia PRESTON	PRESTON Police Statement of Witness dated 12 September 2012	Senior Constable Scenes of Crime Officer Mackay forensic examination of site	Appendix 29 Statement of Witness page 25-26
Sally Elizabeth TROUNCE	TROUNCE Queensland Ambulance Service Statutory Declaration dated 20 September 2012	Moranbah Station Advanced Care Paramedic responding officer	Appendix 27 Statutory Declaration page 16-18
Jason David PATTERSON	PATTERSON Queensland Ambulance Service Statutory Declaration dated 20 September 2012	Moranbah Station Officer in Charge and Advanced Care Paramedic responding officer	Appendix 27 Statutory Declaration page 19-20

5.9. Involved Companies Interviewed or Providing Statements.

Name of Witness	Document Reference	Involvement	Appendix Reference
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 2 October 2012	Quarry Mining Services fixed crushing plant designer	Appendix 30 Quarry Mining Services pagePage 3-57
	73(2)Irrelevant Statement of 73(2)Irrelevant not dated 73(2)Irrelevant		Appendix 30 Quarry Mining Services Page 58-60
	73(2)Irrelevant Transcript of Interview dated 30 November 2012		Appendix 30 Quarry Mining Services Page 61-77
	73(2)Irrelevant Compulsion Interview dated 25 March 2013		Appendix 30 Quarry Mining Services Page 186-208
73(2)Irrelevant	73(2)Irrelevant and Transcript of Interview dated 3 September 2012	Managing Director/Director of GCS, supplier of fixed crushing plant	Appendix 32 Global Crushers and Spares Page 3-21
73(2)Irrelevant	Transcript of Interview dated 26 November 2012	Managing Director GCS, supplier of fixed crushing plant	Appendix 32 Global Crushers and Spares Page 22-45
73(2)Irrelevant	73(2)Irrelevant Transcript of Interview dated 26 November 2012	Workshop Manager GCS	Appendix 32 Global Crushers and Spares Page 46-77
73(2)Irrelevant	Transcript of Interview dated 10 December 2012	Business Development Director GCS	Appendix 32 Global Crushers and Spares Page 132-151
73(2)Irrelevant	Compulsion interview dated 10 April 2013	JAL Engineering Installer of the fixed crushing plant	Appendix 33 JAL Engineering Page 58-104
Hitech Electrical Automation	Declined to be Interviewed	Electrical installer of fixed crushing plant	Appendix 37 Hitech Electrical Automation Pty Ltd

6. INFORMATION GATHERED DURING INVESTIGATION

6.1. Inspector WATSON's Activities at the Accident Scene

WATSON arrived at Moranbah South Quarry site and met with Moranbah Police Officers CAVANAGH and two (2) scenes of crimes officers.

The filing cabinets at the weighbridge, the training, engineer's and site senior executive (SSE's) office were secured by WATSON to prevent unauthorised access and to secure evidence that may assist with the investigation process.

The deceased person had been placed on the ground at the lower end of conveyor No. 2 of the fixed crushing plant walkway. Police identified the person as Sean Raymond SCOVELL³⁷.

6.2. Inspector CLOUGH's Description of the Accident Scene.

I arrived on site at approximately 8.00 am on Wednesday 6 June 2012 with WATSON and 73(2)Irrelevant to liaise with CAVANAGH and Constable Jack SOWDEN of Moranbah Police³⁸.

CAVANAGH released the accident site which was located in the fixed crushing plant to CLOUGH at approximately 8.07 am.

6.2.1 General Description of the Fixed Crushing Plant Site.

The accident occurred in Area 3 of the quarry site on conveyor No. 2 of the 200 tonnes per hour fixed crushing plant³⁹ at the first change of direction pulley of the gravity loop take-up on the walkway side of the return side of the conveyor belt⁴⁰.

An extended area around the accident site at the fixed crushing plant⁴¹ and including access to the weighbridge area had been secured by tape barriers across the main access points.

The top (material carrying side) of conveyor belt No. 2 runs from the tail pulley at the lower end of the system supported by idler pulleys attached to the conveyor structure to the top pulley or discharge end at the surge bin or hopper. The material is discharged into the bin at this point⁴².

³⁷ Appendix 11 Mine Record Entries dated 05/06/2012
Inspector of Mines Tim Watson page 33-34
³⁸ Appendix 35 Investigation Team Statement of Witness
Inspector of Mines Kevin Clough page 3-6
³⁹ Appendix 1 Photograph 1
⁴⁰ Appendix 1 Photograph 3
⁴¹ Appendix 1 Photograph 30
⁴² Appendix 1 Photographs 3 and 4

The belt changes direction around the top pulley and runs back down supported by return idler pulleys attached to the structure to the gravity loop take-up area⁴³.

At the top of the gravity loop take-up, the belt changes direction at the first change of direction pulley as it enters the loop take-up⁴⁴. The pulley is supported by bearing blocks attached to the conveyor gantry, one of the off-side of the walkway and the other adjacent to the walkway⁴⁵. The pulley changes the direction of the return conveyor belt from travelling along the gantry to a vertical direction down to the gravity loop take-up⁴⁶.

The belt runs down and around the second change of direction pulley that is fixed in the movable slide of the gravity loop take-up and back up to the third change of direction pulley and then back to the lower or tail pulley end of the system to begin the rotation again⁴⁷. The return conveyor belt travels from the first change of direction pulley down to the second change of direction pulley that is located at the lower end of the gravity loop take-up directly above the movable weight housing. The second pulley is attached to the movable loop take-up weight⁴⁸.

The second pulley is enclosed in a frame that moves vertically within two guides either up or down depending on the tension required to keep the conveyor belt running.

Directly above this pulley attached to the frame, is a conveyor scraper held in place by brackets. The function of this scraper is to remove any material that is attached to the non-load carrying side of the conveyor belt to prevent it impacting the pulley⁴⁹. The function of the movable gravity loop take-up is to keep a constant tension on the conveyor belt so as to reduce or eliminate the chance of the conveyor belt slipping on the driving pulley⁵⁰.

A scraper mechanism was fitted to the non-carry side of the conveyor belt inside the gravity loop take-up above the second change of direction pulley.

The return conveyor belt travels from the second change of direction pulley vertically up to the third change of direction pulley.

The pulley is supported by bearing blocks attached to the conveyor gantry, one on the off-side of the walkway and the other adjacent to the walkway and the first change of direction pulley.

⁴³ Appendix 1 Photograph 5
⁴⁴ Appendix 1 Photograph 7
⁴⁵ Appendix 1 Photographs 3, 11
⁴⁶ Appendix 1 Photograph 5
⁴⁷ Appendix 1 Photographs 5 and 6
⁴⁸ Appendix 1 Photograph 5
⁴⁹ Appendix 1 Photograph 25
⁵⁰ Appendix 1 Photographs 5 and 6

The conveyor belt changes from a vertical direction from the loop take-up to travelling back along the gantry to the conveyor tail pulley at the lower end of the gantry⁵¹.

An additional scraper was fitted adjacent to the tail pulley at the lower end of the system⁵².

An accumulation of material was observed on each of the return pulleys, including the change of direction pulleys in the gravity loop take-up. There were markings on the off-walk side belt edge which indicates that the belt had been rubbing against the conveyor structure⁵³. This also indicates that the conveyor belt was running off centre of each pulley.

A scraper mechanism was not fitted on the carry side of the conveyor belt to remove wet or moist material from the conveyor belt after the load was discharged into the bin.

Access to the conveyor structure for maintenance or inspection purposes is via a walkway on the left side looking from the lower end or tail to the upper end or discharge at the bin⁵⁴.

Along the walkway side of the conveyor structure is fitted an emergency stop mechanism. This consists of a mechanically operated control box fitted to the side of the structure above the gravity loop take-up⁵⁵.

The emergency stop control box is activated by a pull wire attached to the control box. It is secured at the top or jib pulley end of the conveyor gantry by a spring attached to the top idler pulley frames and at the lower end in a similar position. The pull wire runs through eyelets attached to the top idler pulley frames and is free to run in either direction through the eyelets when pulled⁵⁶.

Both the upper and lower pull wires are attached to the operating mechanism in the control box that removes the electrical power from the conveyor when either of the pull wires is pulled.

To stop the conveyor, the pull wire can be pulled to activate the control box switch⁵⁷.

The length of time required to bring the conveyor to a stop by the application of the pull wire was determined by three pull tests with the results of 4.44 seconds, 3.57 seconds and 4.06 seconds respectively⁵⁸.

⁵¹ Appendix 1 Photograph 5
⁵² Appendix 1 Photograph 25
⁵³ Appendix 1 Photographs 24 and 25
⁵⁴ Appendix 1 Photograph 9
⁵⁵ Appendix 1 Photograph 45
⁵⁶ Appendix 1 Photographs 10 and 45
⁵⁷ Appendix 1 Photograph 9
⁵⁸ Appendix 11 Mine Record Entries dated 18/06/2012
Inspector of Mines Peter Herbert page 5

Guarding around pinch points was evident on the tail and discharge end pulleys on conveyor No. 2⁵⁹.

There were no guards fitted or provision made for guards to be fitted at the first and third change of direction pulleys on the walkway side of conveyor No. 2⁶⁰.

6.2.2 Accident Site.

The accident occurred at the first change of direction pulley on the walkway of conveyor No. 2.

An examination of the incident site surroundings identified what appeared to be an amount of dried blood and some hair on the following items of equipment and surface of the ground:

- First change of direction pulley⁶¹,
- First change of direction pulley shaft⁶²,
- First change of direction pulley bearing housing⁶³,
- At the lower end of conveyor No. 2 on the ground adjacent to the access steps where SCOVELL was placed after the rescue.
- Gantry support legs.

Dried blood was also found at the following locations:

- The conveyor belt below the first change of direction pulley.
- The walkway adjacent to the first change of direction pulley bearing housing⁶⁴,
- Inside of the gravity loop take-up on the belt scraper⁶⁵,
- The movable weight on the gravity loop take-up⁶⁶,
- The guards around the gravity loop take-up structure at ground level,
- The concrete pad and ground under the gravity loop take-up⁶⁷,

⁵⁹ Appendix 11 Mine Record Entries dated 06/06/2012
Inspector of Mines Kevin Clough page 13-15
⁶⁰ Appendix 1 Photographs 11, 12 14, 15
⁶¹ Appendix 1 Photograph 15, 16, 20, 21, 22
⁶² Appendix 1 Photograph 19
⁶³ Appendix 1 Photograph 18
⁶⁴ Appendix 1 Photographs 14 and 15
⁶⁵ Appendix 1 Photograph 28
⁶⁶ Appendix 26 Investigation Video Footage MOV004 DVD Master Copy 06/06/12 Movie
⁶⁷ Appendix 1 Photograph 27

- The damaged helmet on the ground⁶⁸
- The left rear of the loader bucket⁶⁹.

The first change of direction pulley bearing housing had signs of grease on the grease nipple and was partially covered by tufts of hair believed to be from SCOVELL's head⁷⁰.

A grease gun was lying on the conveyor walkway adjacent to the bearing housing with signs of fresh grease issuing from out of the coupling nozzle⁷¹.

An examination of the first change of direction pulley indicates excessive blood and hair deposits on the steel surface of the pulley adjacent to the walkway side. The outside diameter edge of this pulley ends in a sharp corner⁷².

Deposits of compacted quarry material were evident on the surface of the pulley. The material has come from the load carrying side of the conveyor belt and has probably caused the conveyor belt to run off centre to the opposite side of the conveyor structure from the walkway⁷³.

Deposits of hair were evident on the bearing housing, around the pulley shaft that is bolted to the end face of the pulley and on the outside diameter and edge of the pulley⁷⁴.

The third change of direction pulley bearing housing had fresh grease visible on the grease nipple⁷⁵.

There were no guards in place across the front of the first and third change of direction pulleys or the grease points of the bearing housings on the walkway side of the conveyor gantry⁷⁶.

Blood, could not be seen on the third change of direction pulley of the gravity loop take-up⁷⁷

⁶⁸ Appendix 1 Photograph 29

⁶⁹ Appendix 1 Photograph 27

⁷⁰ Appendix 1 Photograph 17 and 18

⁷¹ Appendix 39 Police Photographs [Contains Graphic Images.pdf](#)

⁷² Appendix 1 Photographs 11, 12, 14 and 15

⁷³ Appendix 1 Photograph 19 and 22

⁷⁴ Appendix 26 Investigation Video Footage MOV005 DVD Master Copy 06/06/12 Movie

⁷⁵ Appendix 1 Photographs 23 and 24

⁷⁶ Appendix 1 Photographs 15, 16, 17, 18, 19, 20, 21 and 22

⁷⁷ Appendix 26 Investigation Video Footage MOV005 DVD Master Copy 06/06/12 Movie

⁷⁸ Appendix 1 Photograph 12, 13

⁷⁹ Appendix 1 Photographs 11, 12, 13, 14 and 15

⁸⁰ Appendix 1 Photographs 11, 25

Assisted by SMITH, I took a number of measurements of the area in the conveyor structure at the first change of direction pulley where SCOVELL was allegedly found⁷⁸.

A helmet was lying on the ground adjacent to the guarded area of the gravity loop take-up below the conveyor gantry. Both the inside and the outside of the helmet had blood covering the surface. A front end loader was positioned nearby with the machines tyre marks visible on both sides of the helmet⁷⁹.

6.3. Witnesses Descriptions of the Events Leading to the Accident

A pre-start meeting was held at the commencement of the shift in which a general discussion is held with the shift personnel, identifying any safety issues that may affect the shift and the allocation of labour.

SCOVELL was in the control box operating the fixed crushing plant when 73(2)Irrelevant noticed that the water spray suppression system was not operating to control the production of airborne dust from the jaw crusher feeder chute onto conveyor No. 2⁸⁰.

A mobile lighting plant that had been placed on the opposite side of conveyor No. 2 to project lighting into the area around the jaw crusher would not stay operating. SCOVELL instructed 73(2)Irrelevant to assist loader operator 73(2)Irrelevant 73(2)Irrelevant to try to start the plant. A fitter was then contacted to repair the lighting plant⁸¹.

According to 73(2)Irrelevant and 73(2)Irrelevant there was adequate lighting around the fixed crushing plant surrounds to illuminate approximately 30 to 60 metres and the walkway, including the gravity loop take-up on conveyor No. 2 gantry to clearly observe SCOVELL on the gantry⁸².

78 Appendix 1 Photographs 31, 32, 33, 34, 35, 36, 37, 38, 39, 41, 42, 43, 44
79 Appendix 26 Investigation Video Footage MOV00C DVD Master Copy 06/06/12
Movie
80 Appendix 1 Photograph 27, 29
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
paragraph 326-354
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
paragraph 221-233, 238-243
81 Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012 paragraph 243
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 357-403
82 Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
paragraph 322-361
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012 paragraph 331-349
Appendix 1 Photographs Police 9, 10, 30
Appendix 26 Investigation Video Footage MOV011.MOD, MOV012.MOD
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 132-147, 292-307
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 53-56

73(2)Irrelev was instructed by SCOVELL to conduct bearing temperature checks on the fixed plant equipment as part of the normal activities and readings obtained were entered into a check sheet kept in the control box⁸³.

The secondary fixed crushing plant was shut down after the surge bin emptied. SCOVELL left the control box, walked downstairs to speak to 73(2)Irrelev and 73(2)Irrelevant about a squealing bearing or belt howling noise on No. 2⁸⁴.

Conveyor No. 2 belt was operating empty (with no material being carried). In the discussion between SCOVELL, 73(2)Irrelev and 73(2)Irrelevant there was conjecture whether the noise was anything major and worth calling for a fitter or something minor such as belt rubbing, a bearing lacking grease or mud on a pulley causing tracking problems with the conveyor belt allowing the belt to rub against the side structure of the gantry.

73(2)Irrelev did not agree that noise is due to mud on a pulley and suggested that a grease gun be used (add a footnote referring to 73(2)Irrelev statement).

SCOVELL obtained a grease gun and proceeded up the gantry walkway to the change of direction pulleys to grease the pulley bearings. He was seen by 73(2)Irrelevant to lay down on the walkway facing up the gantry with his head level with the first change of direction pulley, hit the side of the pulley twice with his left hand and get pulled into the conveyor⁸⁵.

73(2)Irrelev ran to the lower end of the conveyor walkway and turned off the conveyor belt at the isolation switch located at the top of the two step access ladder. 73(2)Irrelev proceeded up the walkway to render aid to SCOVELL who was pinned in the conveyor structure by his upper body in a kneeling position with his knees and feet on the walkway⁸⁶.

⁸³ Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 245

⁸⁴ Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 427-433, 496-504

Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 245

⁸⁵ Appendix 2 Transcripts of Interviews 73(2)Irrelev 6 June 2012
paragraph 239, 269-272, 280, 303-324, 389-404
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 44, 93-102, 118-122, 141-158, 168-191
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 176, 210-223

⁸⁶ Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 547-570, 582-607, 718-763
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 247, 249-263,
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 135-141
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraphs 206-216
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 105-122

6.4. Witnesses Description of the Rescue Activities

73(2)Irrelevant proceeded up the walkway to render aid to SCOVELL who was pinned in the conveyor structure by his upper body in a kneeling position with his knees and feet on the walkway⁸⁷. 73(2)Irrelevant who was in the main office at the time, received notification of the accident and immediately proceeded to the area.

73(2)Irrelevant checked for a pulse. He realised that SCOVELL was wedged in the conveyor. He released the pressure off SCOVELL's knees to relieve the pressure on SCOVELL's back.

Rescue personnel were able to reach into the conveyor system to check for signs of life as pulley guarding was not in place at the first and third change of direction pulleys on the walkway side⁸⁸.

Excessive blood loss from SCOVELL was noticed by rescue personnel on the gravity loop take-up along with some minor indentations on his back and a damaged helmet lying on the ground below⁸⁹.

73(2)Irrelevant organised a wheeled loader driven by 73(2)Irrelevant to lift the gravity loop take-up movable weight to release the tension on the conveyor belt so that SCOVELL could be recovered from the conveyor structure⁹⁰. After recovery, SCOVELL was placed face up on the conveyor walkway where 73(2)Irrelevant observed severe chest injuries and considered him to be deceased.

SCOVELL was carried to the ground level by 73(2)Irrelevant and two other employees and commenced CPR and continued until the ambulance personnel arrived. The ambulance personnel assessed SCOVELL and pronounced him deceased.

⁸⁷ Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 547-570, 582-607, 718-763
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 247, 249-263,
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 135-141
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraphs 206-216
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 105-122
⁸⁸ Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 611-616
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 195-205
⁸⁹ Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 692-717
⁹⁰ Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 617-628
Appendix 2 Transcripts of Interviews 73(2)Irrelevant 6 June 2012
Paragraph 249
Appendix 2 Transcripts of Interviews 73(2)Irrelevant Police Interview 5 June 2012
Paragraph 101-102

6.5. Video Walk-through⁹¹.

SMITH and McKINNON filmed video walk-throughs of the accident site and the general fixed crushing plant surrounds to enable visual identification of the area.

73(2)Irrelevant participated in one of the video walk-throughs of the accident site and identified the positioning of SCOVELL inside the conveyor system at the first change of direction pulley on conveyor No. 2 gantry.

73(2)Irrelevant and 73(2)Irrelevant participated in the video walk-throughs of the rescue operation and also to indicate the positions from where 73(2)Irrelevant observed the accident.

6.6. Fixed Crushing Plant Measurements.

Documents supplied by the Moranbah South Quarry indicate the following:

- The “control box” referred to by site personnel is situated adjacent to conveyor No. 2 of the fixed plant installation and is the central control position for the operation of the plant⁹².
- It is in a raised position 4.5 metres above the ground surface and contains the computer operated controls which enables the fixed crushing plant operator to control the plant. It is also fitted with large fixed window panels that allow the operator to view the fixed plant and its surrounds.
- The control box position in relation to conveyor No. 2 is 23.8 metres from the accident site and 42 metres from the tail pulley.
- The electricity generators are positioned 13.5 metres from the gravity loop take-up conveyor structure⁹³.
- The vertical height of the gravity loop take-up frame from ground level to the conveyor gantry walkway is 6.5 metres⁹⁴.
- The conveyor gantry is approximately 37 metres long. It rises from ground level at an angle of 18 degrees from the horizontal to 12.575 metres at the jib pulley.

⁹¹ Appendix 26 Investigation Video Footage

⁹² Appendix 1 Photograph 8

⁹³ Appendix 25 MCG Quarries Document Requests page 2

⁹⁴ Appendix 25 MCG Quarries Document Requests page 2

- The 900 mm wide conveyor belt is powered by 22 kilowatt electric motor driving through a reduction gearbox that is situated at the top of the conveyor gantry above the surge bin or hopper and on the opposite side of the structure to the attached walkway⁹⁵.
- The conveyor belt travels at 1.1 metres per second (3.96 km per hour)⁹⁶.
- The dimensions of the first, second and third change of direction pulleys of the gravity loop take-up are as follows:⁹⁷
 - Length: 970 mm,
 - Diameter: 455 mm,
 - Bearing Shaft: 95 mm.
- The movable weight of the gravity loop take-up weighs 1 tonne⁹⁸.

6.7. Seized and Requested Documents.

Appointment and training documents related to SCOVELL were seized by Police on the night of the accident.

A copy of the safety and health management system in use at the time of the accident was requested by HERBERT and 73(2)Irrelevant and was supplied by an employee of the Moranbah South Quarry on the 6 June 2012⁹⁹.

Document production notices pursuant to section 151 of the *Mining and Quarrying Safety and Health Act 1999* were sent to MCG Group, MCG Quarries Pty Ltd, Global Crushers and Spares, HiTech Electrical Solutions and JAL Engineering¹⁰⁰.

⁹⁵ Appendix 1 Photograph 45
⁹⁶ Appendix 25 MCG Quarries Document Requests page 4
⁹⁷ Appendix 25 MCG Quarries Document Requests page 3
⁹⁸ Appendix 25 MCG Quarries Documents Requests page 3
⁹⁹ Appendix 20 Quarry Safety, Health & Environmental Management Plan
Appendix 20 QSHEMP Standard Work Instruction 01-020
Appendix 20 QSHEMP Standard Work Instruction 021-040
Appendix 20 QSHEMP Written Procedures
¹⁰⁰ Appendix 25 MCG Quarries Document Requests
Appendix 32 Global Crushers and Spares page 78-107
Appendix 33 JAL Engineering page 4-21

6.8. Statutory Appointments.

6.8.1. Operator.

Documents supplied to Department of Natural Resources and Mines indicates that MCG Quarries Pty Ltd is the operator appointed under the provisions of *Mining and Quarrying Safety and Health Act 1999* of Moranbah South Quarry.

These documents were supplied at various times and signed by [73(2)Irrelevant] and [73(2)Irrelevant] and these documents contained the same contact phone and fax numbers and the same email address, namely, [73(2)Irrelevant]@mcg-group.com.au.

A search of the Australian Securities & Investment Commission website for Current & Historical Company Extract identifies [73(2)Irrelevant] as a Director of MCG Quarries Pty Ltd and [73(2)Irrelevant] as a Director of MCG group Pty Ltd¹⁰¹.

6.8.2. Site Senior Executives.

There have been several appointments of Site Senior Executives since the commencement of operations of the quarry.

Documents supplied to the Department indicate the following:

- [73(2)Irrelevant] appointed by [73(2)Irrelevant] on 5/11/08¹⁰².
- [73(2)Irrelevant] appointed by [73(2)Irrelevant] on 11/8/09¹⁰³.
- [73(2)Irrelevant] temporary appointment by [73(2)Irrelevant] on 5/5/10¹⁰⁴.
- [73(2)Irrelevant] appointed by [73(2)Irrelevant] on 17/11/10. This appointment was made under the *Coal Mining Safety and Health Act*¹⁰⁵.
- [73(2)Irrelevant] appointed by [73(2)Irrelevant] on 15/2/12¹⁰⁶.
- [73(2)Irrelevant] appointed by [73(2)Irrelevant] on 20/7/12¹⁰⁷.

101 Appendix 23 MCG Quarries Mine Profile
102 Appendix 23 MCG Quarries Mine Profile page 10
103 Appointment of Site Senior Executive [73(2)Irrelevant]
104 Appendix 23 MCG Quarries Mine Profile page 9
105 Appointment of Site Senior Executive [73(2)Irrelevant]
106 Appendix 23 MCG Quarries Mine Profile page 8
107 Appointment of Site Senior Executive [73(2)Irrelevant]
Appendix 23 MCG Quarries Mine Profile page 6, 7
Appointment of Site Senior Executive [73(2)Irrelevant]
Appendix 23 MCG Quarries Mine Profile page 5
Appointment of Site Senior Executive [73(2)Irrelevant]
Appendix 23 MCG Quarries Mine Profile page 4
Appointment of Site Senior Executive [73(2)Irrelevant]

6.8.3. Supervision

Documents supplied by MCG Group Moranbah South Quarry¹⁰⁸, have supervisors appointed with reference on the appointment document to "Immediate Subordinates: *Coal mine workers within their functional Section/Area of Responsibility*" and "Role Functions & Purposes: *The primary function of a Supervisor is to support the Superintendents/Senior Supervisors, Senior Contract Person/Project Manager and the Site Senior Executive to manage the operations in accordance with the requirements of the Coal Mining Safety and Health Act and Regulation and the site's HSEC System*"

This reference is to the incorrect Legislation and should be the *Mining and Quarrying Safety and Health Act* and the *Mining and Quarrying Safety and Health Regulation*. The HSE Advisor 73(2)Irrelevant was not aware that some management personnel had been appointed under the incorrect Legislation¹⁰⁹.

Shift supervisor 73(2)Irrelevant had specific duties and responsibilities allocated to him as per his appointment by 73(2)Irrelevant as a Supervisor/Team Leader on two occasions 3/4/12 and 21/6/12 with competencies in risk management¹¹⁰.

73(2)Irrelevant was at the quarry office approximately 700 metres away from the accident site and responded to the emergency call then proceeded to the site¹¹¹.

Supervisor 73(2)Irrelevant who was responsible for the fixed crushing plant area on the opposite shift to 73(2)Irrelevant was not aware of the process for training of the control box operators and was not aware if a set of operating procedures were in the control box at the time of the accident¹¹².

As part of his supervisory duties, 73(2)Irrelevant constantly walked around the fixed crushing plant, including conveyor No. 2, but did not identify any missing guards¹¹³.

¹⁰⁸ Appendix 17 Management Structure and Competencies
¹⁰⁹ Appendix 2 Transcripts of Interviews 73(2)Irrelevant page 236-260 paragraph 169-178
¹¹⁰ Appendix 17 Management Structure and Competencies 73(2)Irrelevant page 21-23
¹¹¹ Appendix 2 Transcripts of Interviews 73(2)Irrelevant part 37-55,
Paragraph 260-262, 280-292
¹¹² Appendix 2 Transcripts of Interviews 73(2)Irrelevant page 14-36,
Paragraph 169-176, 179-186, 188-192
¹¹³ Appendix 2 Transcripts of Interviews 73(2)Irrelevant page 261-274,
Paragraph 197-235

6.9. Safety and Health Management System.

A document titled "Quarry Safety, Health & Environmental Management Plan" obtained from Moranbah South Quarry indicates the document has been reviewed and approved by 73(2)Irrelevant in June 2011¹¹⁴.

The above document covers issues as identified in relevant sections as follows:

- **1.2 Occupational Health and Safety Policy**
 - *Identify, assess and manage risks and hazards to employees and sub-contractors.*
 - *Development of safe work procedures for hazardous tasks.*
 - *MCG is committed to achieving these goals by ensuring that safe work practices and procedures are adopted which comply with or exceed the requirements of management and all Acts, Regulations and other statutory provisions governing Occupational Health, Safety and Welfare. General instructions for achieving these objectives on site are supported by other documented information detailing responsibilities and procedures.*
- **2.1 Obligations of Operators**
 - *Audit and review the effectiveness and implementation of the safety and health management system to ensure the risk to persons from operations is at an acceptable level.*
- **2.8 Health and Safety Officer Responsibilities**
 - *MCG employs a full time Health and Safety Advisor whose responsibilities include:*
 - *Advising management and site personnel of the requirements of the Mining and Quarrying Health and Safety Act 1999, Mining and Quarrying Health and Safety Regulation 2001 legislation, guidelines, Codes of Practice and Standards relevant to the workplace.*
- **4 Risk management**
 - **4.1 Hazard Identification and Control**
 - **4.3 Personal Pre-Task Risk Assessment**
 - *MCG personnel shall complete a Personal Pre-Task Risk Assessment prior to commencement of each task that they conduct. The Take 5 pre-task risk assessment program is a tool for employees to identify and control previously unrecognised*

¹¹⁴

Appendix 20 Quarry Safety, Health & Environmental Management Plan

hazards. Employees are to stop, analyse the task, actively search for hazards and then apply controls to eliminate or reduce hazards prior to beginning work. The process has a ranking system to alert the employee to the level of risk involved in the task. The employee determines the risk level and then selects the response required to ensure appropriate hazard controls are implemented.

Documented evidence could not be found that SCOVELL followed this requirement prior to greasing the first and third change of direction pulleys on the date of the accident.

On the 25/04/12 a Take 5 was completed by SCOVELL for job description "fix plant maintenance" with in hazard 8 "Can I get caught on or between anything?" with NO circled. The control in place was Pos Isolation.

On the 28/05/12 a Take 5 was completed by SCOVELL for "cone" with in hazard 8 "Can I get caught in or between anything? With YES circled. The control in place was Pos Isolation¹¹⁵.

- **4.4 Behavioural/Safe Act Observations –SAO's**

A Safe Act Observation by [73(2)Irrelevant] and [73(2)Irrelevant] supplied by Moranbah South Quarry identifies [73(2)Irrelevant] as a person being observed standing near the fixed crushing plant jaw crusher while it was operating. The document identifies a safe method procedure was known but not followed by [73(2)Irrelevant]. A request was made for [73(2)Irrelevant] to complete a JSEA for clearing the jaw¹¹⁶.

- **26 Maintenance, Inspection and Testing**

MCG Group will ensure ongoing maintenance of Company facilities and equipment will be performed to acceptable safety standards. Only competent/qualified persons are authorised to carry out plant and equipment inspections, testing and modifications. All personnel have the responsibility to visually check their tools and work area for hazards prior to commencing work.

¹¹⁵

Appendix 4 Sean Scovell Risk Management Take 5 page 4-5, 12-13

¹¹⁶

Appendix 14 Safe Act Observation page 16-17

- **27 Isolation**

Each person is responsible for the effective isolation of plant and equipment prior to placing themselves in a situation which poses a risk of being injured by an uncontrolled energy source.

SCOVELL did not isolate the conveyor prior to greasing the bearings on the first and third change of direction pulleys.

- **28 Plant and Equipment**

Where relevant Australian Standards exist, the inspection, use and maintenance of the plant shall comply as the minimum standard.

Australian Standard AS 1755-2000 Conveyors-Safety requirements were not followed as the first and third change of direction pulleys was not guarded¹¹⁷.

28.1 Assessment of Plant and Equipment

A risk assessment titled: "MCG-RA-002-MSQ Fixed Plant Operations Risk Assessment" was conducted on the 18/01/12 by Facilitator 73(2)Irrelevant Pinch points are identified on Primary crushing circuit page 17 and Maintenance/servicing Pinch points page 47 of the document¹¹⁸.

28.2 Selection and Use

No plant or equipment will commence work on site without an authorised inspection signed off by the maintenance manager.

No such document was supplied by Moranbah South Quarry.

- **Design, Construction and Commissioning**

All plant repairs or modifications shall be conducted by a competent and authorised person. All modifications shall be approved by authorised personnel following a change management procedure.

A commissioning audit was not done prior to fixed crushing plant operation.

73(2)Irrelevant stated there is no formal process in place to record discussions of reviews of the safety and health management system with standard work instructions reviewed on an informal basis¹¹⁹.

¹¹⁷ Appendix 3 Australian Standard AS 1755-2000 Conveyors
5.8 Belt Conveyor Guarding of Nip Points

¹¹⁸ Appendix 28 Risk Assessment for Fixed Plant page 85-142

¹¹⁹ Appendix 2 Transcripts of Interviews 73(2)Irrelevant 19 July 2012
paragraph 62-67, 134-162, 179, 187-198

6.9.1. Standard Work Instruction¹²⁰.

The above document contains thirty nine (39) standard work instructions (SWI) with thirty eight (38) referencing the *Coal Mining Safety and Health Act 1999* and the *Coal Mining Safety and Health Regulation 2001*.

Only one (1) document refers to the *Mining and Quarrying Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Regulation 2001*.

All of these documents have been reviewed by [73(2)Irrelevant] during 2010.

During the induction process conducted for JAL Engineering, [73(2)Irrelevant] identified the SWI documents referenced the *Coal Mining Safety and Health Act 1999* not the *Mining and Quarrying Safety and Health Act 1999*. [73(2)Irrelevant] did query the Legislation but was told the quarry was on a Coal Lease¹²¹.

6.9.2. Operating Procedures¹²².

In addition, there are thirteen (13) operating procedures (OPS) with reference to the *Coal Mining Safety and Health Act 1999* and the *Coal Mining Safety and Health Regulation 2001* in all thirteen (13).

Reference is also made to open cut examiners (OCE) in five (5) of the procedures and the mention of coal in three (3).

In one document titled "OHS-OPS-2007 Grader Operating Procedure, SOP-127-004 Mine Traffic Rules is referenced. A document under this designation could not be found in the documents supplied by Moranbah South Quarry.

All of these documents have been reviewed by [73(2)Irrelevant] during 2010.

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- ¹²⁰ Appendix 20 QSHEMP Standard Work Instruction 01-020
Appendix 20 QSHEMP Standard Work Instruction 021-040
- ¹²¹ Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104
Paragraph 438-452
- ¹²² Appendix 23 MCG Quarries Mine Profile page 1-20
Appendix 20 QSHEMP Written Procedures
Operations page 3-117
Maintenance page 118-178
Plan page 179-187
Forms page 188-195

6.9.3. Maintenance.

There are seven (7) maintenance procedures (MTN) with all referencing the *Coal Mining Safety and Health Act 1999* and the *Coal Mining Safety and Health Regulation 2001*.

Reference to the open cut examiner (OCE) is made in one (1) of the procedures.

All of these documents have been reviewed by [73(2)Irrelevant] during 2010.

6.9.4. Plan.

Only one (1) plan was provided titled "OHS-PLN-26 Fatigue Management Plan. This was reviewed by [73(2)Irrelevant] in 2011 and references the *Coal Mining Safety and Health Act 1999* and the *Coal Mining Safety and Health Regulation 2001*.

Moranbah South Quarry is a metalliferous quarry and as such, falls under the *Queensland Mining and Quarrying Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Regulation 2001*.

7. Fixed crushing Plant, Design, Construction and Commissioning.

7.1. Design

The fixed crushing plant for Moranbah South Quarry was designed by Quarry & Mining Services, imported from China by Global Crushers and Spares who had contracted Greenstone Engineering Facility in Pudong Province and Haimen Fabrication Facility in Shanghai, China, to fabricate the fixed crushing plant¹²³ and installed on site by JAL Engineering and HiTech Automation¹²⁴.

Quarry & Mining Services owner [73(2)Irrelevant] who provides project management, design installations and commissioning of quarry plant and equipment was initially contacted by MCG Group during January 2011 to provide a concept design for a fixed crushing plant for Moranbah South Quarry. He has trade qualifications and is a self-taught design drafter without any formal engineering degree, but his drawings and designs are inspected and reviewed by engineers¹²⁵.

¹²³ Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview 2 October 2012 paragraph 75 page 7

¹²⁴ Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104 Paragraph 130

¹²⁵ Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview 2 October 2012 paragraph 41-57, 76-107, 375-383

73(2)Irrelevant was again contacted in June 2011 regarding the use of previous drawings that he had completed for the Fortress quarry fixed crushing plant at Wondai between 2006 and 2007¹²⁶.

The Fortress fixed crushing plant at Wondai is similar in general design but with a lower capacity to that of the plant at Moranbah South Quarry. MCG had tried to gain access to the Fortress plant drawings prior to that date without contacting 73(2)Irrelevant²⁷.

These original Fortress plant drawings did not have guarding specified on conveyor No. 2 for that plant at the first and third change of direction pulleys of the gravity loop take-up on the walkway side of the gantry. This omission was identified during the installation and commissioning stage at Wondai and guarding was fitted. However this omission was not identified in the MCG/Global Crushers and Spares redesign for the fixed crushing plant at Moranbah South Quarry¹²⁸.

During discussions in July 2011 with MCG Moranbah South Quarry representative 73(2)Irrelevant advised 73(2)Irrelevant that the Fortress fixed crushing plant drawings could be used but required considerable revision to ensure compliance with Australian Standards in regards to the guarding of conveyors and that 73(2)Irrelevant should be present during the installation of the fixed crushing plant to ensure all safety and operational criteria were met¹²⁹.

The majority of the equipment supplied to Moranbah South Quarry was imported under Global Crushers & Spares licence or import documents from Greenstone Engineering in Shanghai China where it was manufactured from drawings supplied by Global Crushers & Spares who are familiar with the Australian Standards required¹³⁰.

The initial design drawings of the Fortress fixed crushing plant at Wondai that were sent to MCG Moranbah South Quarry had 73(2)Irrelevant initials and the date of 15/08/2007 in the page title block. Other drawings sent back to 73(2)Irrelevant from China had his company title removed from the title block but 73(2)Irrelevant initials and Fortress Quarry date from 2006 still included¹³¹.

126 Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104 Paragraph 207-225

127 Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview 2 October 2012 paragraph 73-75, 122-147, 222-239, Email page 66-72

128 Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview 2 October 2012 page 6 paragraph 75, 609-796
Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104 Paragraph 130-134

129 Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview 2 October 2012 paragraph 75 page 5, paragraph 148-159, 500-501, 511-515, Email page 66, 70-71

130 Appendix 32 Global Crushers & Spares Transcript of Interview 3 September 2012 73(2)Irrelevant and 73(2)Irrelevant paragraph 72-89, 150-153,

131 Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview 2 October 2012 paragraph 75 page 11

73(2)Irrelev expressed concern about the quality of the revision of the drawings from Shanghai Greenstone Engineering and was not sure that an engineer had signed off the drawings to accept the changes. The revised drawings were sent to MCG¹³².

Another meeting was held on the 28 July 2011 at MCG Brisbane offices with 73(2)Irrelevant (JAL Engineering Pty Ltd), 73(2)Irrelevant and 73(2)Irrelevant (Global Crushers and Spares), 73(2)Irrelevant and 73(2)Irrelevant (Hitech Electrical Automation Pty Ltd), to discuss the upgrade to the original Fortress design for a higher capacity plant and to ensure the guarding changes were made. 73(2)Irrelevant objected to the short timeframe to effectively complete the redesign works and drawing revisions¹³³.

73(2)Irrelevant from Global Crushers and Spares said that GCS would take the work on¹³⁴ and would complete the redesign of conveyors one (1), two (2) and three (3) of the fixed crushing plant and provide detailed updates for the remaining conveyors and structure. Some guidance was provided by 73(2)Irrelevant during the redesign, particularly on guarding to comply with the current Australian Standards¹³⁵.

As per MCG instructions, the redesigned drawings were not reviewed by engineers in relation to Australian Standards¹³⁶.

During October 2011, 73(2)Irrelevant expressed concerns about the standard of Global Crushers and Spares revised drawings and that he could only conduct basic inspections of the revisions due to his workload on the other conveyors of the fixed crushing plant¹³⁷.

¹³² Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview
2 October 2012 paragraph 316-347, 428-475, Email page 78-88

¹³³ Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview
2 October 2012 page 6 paragraph 75, 160-221, 240-297, 416-427
Email page 66, 73-77

Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104
Paragraph 113-121, 130-134

¹³⁴ Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview
2 October 2012 paragraph 75 page 6, paragraph 160-221, 240-297, 416-427, Email
page 66, 73-77
Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104
Paragraph 177

¹³⁵ Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview
2 October 2012 paragraph 75 page 6, paragraph 386-405, 500-501
Appendix 3 Australian Standard AS 1755-2000 Conveyors
Appendix 30 Global Crushers and Spares Transcript of Interview 26 November 2012
73(2)Irrelevant paragraph 127-143

¹³⁶ Appendix 31 Australian Standard AS 4024.1601-2006 Safety of machinery
Appendix 30 Quarry Mining Services 73(2)Irrelevant Transcript of Interview
2 October 2012 paragraph 406-415

¹³⁷ Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104
Paragraph 122-142

7.2. Construction

Global Crushers & Spares did not check every single aspect of the drawings supplied by Quarry and Mining Services to ensure the specifications met Australian Standards. [73(2)Irrelevant] attended three inspections of the structure in Shanghai between September 2011 and January 2012 but relied on [73(2)Irrelevant] MCG representative [73(2)Irrelevant] and [73(2)Irrelevant] from JAL Engineering Pty Ltd to ensure the structure had been manufactured to Australian Standard¹³⁸.

[73(2)Irrelevant] conducted a number of inspections at Greenstone Engineering in Shanghai, China, to check that the fabrication of the equipment was being done correctly and in conformance with the drawings¹³⁹.

Greenstone Engineering was having problems interpreting the drawings supplied to them after fabrication of the components commenced¹⁴⁰.

[73(2)Irrelevant] had been removed by MCG from completing the inspections before all components had been fully inspected. While in Shanghai, he had inspected conveyor No. 2 that was later involved in the SCOVELL fatality and identified problems with the quality of the mesh that was to be used for guarding and arranged for the meshing to be fabricated at Global Crushers and Spares¹⁴¹.

[73(2)Irrelevant] from MCG Group terminated all Quarry Mining Services inspection work at this point and that Global Crushers and Spares had the sole responsibility for design and fabrication¹⁴².

[73(2)Irrelevant] expressed concern to [73(2)Irrelevant] about the tight time frame to construct the fixed crushing plant of approximately three (3) months and to have it operational by the end of January 2012. The Fortress plant at Wondai took nine (9) months to build and install¹⁴³.

138 Appendix 32 Global Crushers & Spares Transcript of Interview 3 September 2012
[73(2)Irrelevant] and [73(2)Irrelevant] paragraph 175-204

139 Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview
30 November 2012 paragraph 48-53

140 Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview
30 November 2012 paragraph 138-194

Appendix 30 Quarry Mining Services New Chinese CV2 dwg Set page 152-179

141 Appendix 30 Quarry Mining Services Email Correspondence page 78-119

Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview
30 November 2012 paragraph 54-64, 65-67, Email page 112

142 Appendix 30 Quarry Mining Services [73(2)Irrelevant] s Transcript of Interview
2 October 2012 paragraph 75 page 7, paragraph 478-499, 557, Email page 86-94

143 Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104
Paragraph 142-144

[73(2)Irrelevant] was applying pressure to have the fixed crushing plant operating as soon as possible due to production requirements. Various items of plant were being installed during the day while material was being processed during the night while HiTech were commissioning the electrical equipment, including the computer controls¹⁴⁴.

7.3. Commissioning

[73(2)Irrelevant] was not required at Moranbah South Quarry construction site for installation and commissioning as MCG would be performing the commissioning of the equipment themselves. Rock was being crushed and run through parts of the fixed crushing plant during construction with walkways and only some trough idler pulleys in place¹⁴⁵.

Documents have not been supplied by Moranbah South Quarry to indicate the conveyors of the fixed crushing plant had been engineer certified, but the foundations, footings and concrete slab had been. The decision, not to engineer certify the fixed crushing plant, was made during a phone call between [73(2)Irrelevant] and [73(2)Irrelevant]¹⁴⁶.

Global Crushers and Spares was involved in the fixed crushing plant commissioning process to check each piece of capital equipment that had been supplied but not installed by Global Crushers and Spares and did not conduct any conveyor guarding audit¹⁴⁷.

[73(2)Irrelevant] from Global Crushers and Spares received a sample copy of a Hitech Electrical Automation Pty Ltd commissioning report from [73(2)Irrelevant] to give [73(2)Irrelevant] an idea of what MCG required. [73(2)Irrelevant] was not on site when the request came¹⁴⁸.

[73(2)Irrelevant] describes the commissioning process for the machinery supplied by Global Crushers and Spares. During the commissioning process, there emerged a great urgency to crush rock by Moranbah South Quarry with a bypass chute being manufactured to allow this process to commence with

¹⁴⁴ Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104 Paragraph 178-195, 258-263

¹⁴⁵ Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview 2 October 2012 paragraph 75 page 8, paragraph 558-561, Email page 112, 117 Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104 Paragraph 387-392

¹⁴⁶ Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview 30 November 2012 paragraph 109-134, 195-206 Appendix 30 Quarry Mining Services Compliance Certificate for Building Design or Specification page 180-182 Appendix 30 Quarry Mining Services Email correspondence page 87-88

¹⁴⁷ Appendix 32 Global Crushers and Spares Transcript of Interview 26 November 2012 [73(2)Irrelevant] paragraph 268-323.

Appendix 32 Global Crushers and Spares Transcript of Interview [73(2)Irrelevant] paragraph 381-519, 584-589

Appendix 32 Global Crushers and Spares Equipment Commissioning Report [73(2)Irrelevant] page 108-117

¹⁴⁸ Appendix 32 Global Crushers and Spares Transcript of Interview [73(2)Irrelevant] Paragraph 81-166, 207-302

the appearance of little project control on site with [73(2)Irrelevant] pushing to crush rock¹⁴⁹.

The electrical systems were being commissioned during the night while material was being crushed¹⁵⁰.

[73(2)Irrelevant] did raise his concerns about the commissioning process with a person from JAL Engineering whose name is unknown¹⁵¹.

[73(2)Irrelevant] did not conduct any commissioning of the fixed crushing plant only track the conveyor belts to ensure efficient operation but did comment that Global Crushers and Spares did commission the primary crusher, screens, feeder and the barmac. [73(2)Irrelevant] was disengaged off site at the end of January 2012 and informed by [73(2)Irrelevant] not to contact [73(2)Irrelevant] or he would be kicked off site¹⁵².

7.4. Guarding.

Guarding was to be bolted to conveyor No. 2 structure at the tail end, head end and around the gravity loop take-up movable weight with the exception of guarding at the first and third change of direction pulleys. Holes were made in the structure to accept the bolts for the guards at the tail end, head end and around the gravity loop take-up movable weight. Australian Standards regarding guarding was not followed; [73(2)Irrelevant] was more concerned with the fabrication of the equipment¹⁵³.

Conveyor No. 2 was being run during the night in January 2012 without fixed guards in place, with the whole fixed crushing plant fenced off with star pickets and a barricade to prevent persons entering the area¹⁵⁴.

During the accident site investigation, no sign of guarding could be found, either on the ground below the site or on the conveyor gantry. There were no fixtures or holes in the conveyor side structure along conveyor No. 2 gantry at

¹⁴⁹ Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104
Paragraph 454-471, 487-493, 512-518
Appendix 32 Global Crushers and Spares Transcript of Interview
¹⁵⁰ [73(2)Irrelevant] 26 Nov 2012 paragraph 83-127, 149-162, 197-206, 214-218
Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104
Paragraph 334-344
¹⁵¹ Appendix 32 Global Crushers and Spares Transcript of Interview
[73(2)Irrelevant] paragraph 111-138, 295-321, 327-331, 333-335, 339-379,
582-583
Appendix 32 Global Crushers and Spares Transcript of Interview [73(2)Irrelevant]
Paragraph 303-314
¹⁵² Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104
Paragraph 196-203, 357-365, 393-394
¹⁵³ Appendix 30 Quarry Mining Services [73(2)Irrelevant] Transcript of Interview
30 November 2012 paragraph 72-108
¹⁵⁴ Appendix 33 JAL Engineering [73(2)Irrelevant] Compulsion Interview page 58-104
Paragraph 258-263, 312-336, 349-352

the first and third change of direction pulleys on the walkway side to enable attachment of guards¹⁵⁵.

73(2)Irrelevant is not sure if enough guards were in place before operations commenced and was not involved in the any fixed crushing plant audit to check if guards or other safety systems were in place¹⁵⁶.

73(2)Irrelevant was involved in the risk assessment for the fixed crushing plant that identified guarding requirements for fixed crushing plant operations, particularly for conveyor 2 and maintenance/servicing pinch points¹⁵⁷.

Guarding was required to be fitted to various pinch points in the document titled 'Conduct crushing and Screening Operations training manual', particularly the gravity loop take-up change of direction pulleys¹⁵⁸.

Safety and Health Management System document 'OHS-MTN-1002 Equipment Guarding Procedure' identifies in section 5 Basic Guard Design that "*Guards should be designed to Australian Standards and codes of practice with consideration for easy removal and replacement. Guards must restrict the ability to access live shafts, belts and pinch points*". Section 8 Guard Modification that "*NB. No plant or equipment will be used including test running without guards in place or adequate controls in place to eliminate entry into any danger zone*". This document also references the Coal Mining Safety and Health Act 1999 and the Coal Mining Safety and Health Regulation 2001-sec 67 and AS 4024.1 (Safeguarding of Machinery)¹⁵⁹.

Inspectors of Mines CASEY and Keith BRENNAN conducted an unannounced inspection of Moranbah South Quarry on the 29/09/2011. An inspection of the quarry was conducted accompanied by 73(2)Irrelevant 73(2)Irrelevant and 73(2)Irrelevant in which missing or damaged guarding was identified from several items of plant. A Mine Record Entry was written identifying safety issues on site and in particular the following comment to 73(2)Irrelevant "*A new fixed crushing plant is under construction, the SSE was advised to review all plans and site construction for dust suppression, guarding in accordance with AS 1755, cleaning of spillage and access and egress for cleaning and maintenance*"¹⁶⁰.

¹⁵⁵ Appendix 1 Photographs Police taken 5 June 2012 photographs 10, 11, 12
Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104
Paragraph 280-287

¹⁵⁶ Appendix 2 Transcripts of Interview 73(2)Irrelevant paragraph 199-211

¹⁵⁷ Appendix 28 Risk Assessment For Fixed Plant page 85-142
MCG-RA-002-MSQ Fixed Plant Operations Risk Assessment page 17-23, 43-50

¹⁵⁸ Appendix 19 Conduct Crushing and Screening Operations page 18, 33

¹⁵⁹ Appendix 20 QSHEMP Written Procedures,
Maintenance OHS-MTN-1002 Equipment Guarding Procedures page 138-141

¹⁶⁰ Appendix 11 Mine Record Entries date 29/09/2011 page 35-37

Design changes to the fixed crushing plant design used at the Fortress Quarry and then used to construct the fixed crushing plant at Moranbah South Quarry did not identify the missing guards on conveyor No. 2 at the first and third change of direction pulleys on the gravity loop take-up¹⁶¹.

A document supplied by Moranbah South Quarry titled: "MCG-PRO-023 Change Management Procedure" states in Section 1 Purpose "*The purpose of this procedure is to ensure that changes are controlled, the effects are known and the planning and review processes are documented*" and in Section 4 Definitions of What Constitutes a Change "*Any planned or unplanned change in the design characteristics of structures*"¹⁶²

A document titled: "OHS-SWP-03 Workplace Inspections" identifies in Hazard/Housekeeping Checklist 3.4 Mechanical Equipment, "correct guarding state of repair" as part of the supervisor daily workplace inspections. Copies of the Hazard and Housekeeping Inspection Report were not supplied by Moranbah South Quarry as part of the document requests¹⁶³.

All of the guarding required for the fixed crushing plant had not arrived on site in time for installation. Moranbah South Quarry commenced manufacturing the missing guards on site¹⁶⁴.

7.5. Electrical.

An inspection of the electrical equipment of the fixed crushing plant and weighbridge area was conducted by HERBERT on 18 June 2012.

Numerous items requiring attention were identified with three (3) Substandard Condition or Practice (SCP) notices issued relating to the fixed crushing plant. (With reference to the Mines Inspectorate Compliance Policy, a "*Substandard Condition or Practice is advice given by officers to mine operators, site senior executives and other obligation holders to manage an unacceptable level of risk*").

During the inspection of the weighbridge and administration areas, it was identified that most of the electrical appliances were past their test date. This was required to be rectified immediately.¹⁶⁵

¹⁶¹ Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104
Paragraph 306-309

¹⁶² Appendix 20 QSHEMP Standard Work Instruction 021-040 page 18-25
MCG-PRO-023 Change Management Procedure page 20

¹⁶³ Appendix 20 QSHEMP Standard Work Instructions 01-020
OHS-SWP-03 Workplace Inspections page 21-29

¹⁶⁴ Appendix 33 JAL Engineering 73(2)Irrelevant Compulsion Interview page 58-104
Paragraph 287, 366-370

¹⁶⁵ Appendix 11 Mine Record Entries Peter Herbert dated 18/06/2012 page 3-5
Appendix 38 Additional Accident Photographs
Peter Herbert 6 June 2012 page 116-152

7.6. Risk Management.

A risk assessment carried out on the 18/01/12 for the fixed crushing plant operations involved a cross-section of the workforce and JAL Contractors who constructed the plant on site. The risk assessment facilitator [73(2)Irrelevant] could not recall any names of the people involved¹⁶⁶.

The above mentioned risk assessment document references in Part 2 Overview, the *Coal Mining Safety and Health Regulation 2001* and in Part 7 Reference Material refers to both the coal mining legislation and the mining and quarrying legislation¹⁶⁷.

A risk assessment was carried out on the 20/10/11 for the fixed crushing plant assembly and construction that involved a cross-section of the workforce¹⁶⁸.

According to maintenance contractor [73(2)Irrelevant] greasing of the crusher jaws bearings and inspections of the plant were conducted while the plant was operating. It is not normal practice to have the conveyors operating while greasing the pulley bearings¹⁶⁹.

According to operator [73(2)Irrelevant] SCOVELL has observed [73(2)Irrelevant] greasing the gravity loop take-up pulleys on the conveyor gantry while the conveyor was stopped and had followed the same procedure with the operator laying or kneeling down on the walkway to observe surplus grease coming out of the inside of the pulley bearing housings¹⁷⁰.

It is accepted practice at Moranbah South Quarry that an operator remains in the fixed crushing plant at all times while the plant is operating¹⁷¹.

The risk assessment for the fixed crushing plant upgrade was carried out on the 8/05/12 involved only the HSE Manager [73(2)Irrelevant] MCG Group Quarry Manager [73(2)Irrelevant] and the Project Manager [73(2)Irrelevant]¹⁷².

¹⁶⁶ Appendix 28 Risk Assessment For Fixed Plant page 85-142
MCG-RA-002-MSQ Fixed Plant Operations Risk Assessment
Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 236-260,
Paragraph 70-129

¹⁶⁷ Appendix 28 Risk Assessment For Fixed Plant page 85-142
MCG-RA-002-MSQ Fixed Plant Operations Risk Assessment page 3 and 4

¹⁶⁸ Appendix 28 Risk Assessment For Fixed Plant page 3-43
MCG-RA-Fixed Plant 001-Assembly and Construction of the
MSQ Fixed Plant Risk Assessment

¹⁶⁹ Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 3-13
Paragraph 61-70, 117-132, 135-137, 180-185

¹⁷⁰ Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 215-235,
Paragraph 123-134, 141-155, 165, 186-190

¹⁷¹ Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 215-235,
Paragraph 61-68, 172-179

¹⁷² Appendix 28 Risk Assessment For Fixed Plant page 44-84
MCG-RA-Fixed Plant 002-Assembly and Construction of the
MSQ Fixed Plant Upgrade Risk Assessment

Confirmation of a JSA or any informal risk assessment being carried out by SCOVELL prior to greasing the bearings of the first and third change of direction pulleys on conveyor No. 2 could not be identified in the documents supplied by Moranbah South Quarry¹⁷³.

The OHS-SWP-022 Tagging and Isolation Procedure states in Section 5 General Safety Precautions

*"All equipment shall be assumed to be hazardous until all energy sources have been positively isolated, discharged or stored energy released, confirmatory tests performed and tagged"*¹⁷⁴

Section 5.2 Risk Assessment of the above document states:

*"Prior to starting any work a person is to take time to understand the hazards and energies being dealt with so the work can be performed safely. The individual shall determine the need to carry out a formal or informal risk assessment using a Job Safety Analysis worksheet or Take 5 where the activity is not routine or familiar, or where there has been a change in conditions"*¹⁷⁵.

7.7. Training - SCOVELL.

Documents supplied by Moranbah South Quarry indicate SCOVELL completed site induction on the 14 March 2012 with thirteen (13) topics trained and assessed all on this date.

A document titled "Light Vehicle Authorisation Checklist" was completed by SCOVELL and signed off by [73(2)Irrelevant] on the 14/03/14 as the witness. The sign off date is a mistake. The document has not been completed with the section "Site Familiarisation and Light Vehicle Authorisation" not signed off by a supervisor and the section "SSE Authorisation" not signed off by the SSE to allow SCOVELL authorisation to drive on site¹⁷⁶.

On the 30/4/12 he was assessed by [73(2)Irrelevant] and authorised by [73(2)Irrelevant] on the 1/5/12 to operate a dump truck after presenting evidence of prior training from an external provider¹⁷⁷.

SCOVELL spent several shifts with the fixed crushing plant operator [73(2)Irrelevant] observing the process and being trained to operate the fixed crushing plant. Supervisor [73(2)Irrelevant] continued the training while [73(2)Irrelevant] was allocated to other tasks. SCOVELL was then authorised by [73(2)Irrelevant] to operate the fixed crushing plant on 1/5/12¹⁷⁸.

¹⁷³ Appendix 20 QSHEMP Standard Work Instruction 021-040 page 128-133

¹⁷⁴ OHS-SWP-033 Risk Assessment Procedure page 132-133

¹⁷⁵ Appendix 20 QSHEMP Standard Work Instruction 021-040 page 8-17 OHS-SWP-022 Tagging and Isolation Procedure page 10

¹⁷⁶ Appendix 20 QSHEMP Standard Work Instruction 021-040 page 8-17 OHS-SWP-022 Tagging and Isolation Procedure page 11

¹⁷⁷ Appendix 9 Competencies Sean Scovell

Light Vehicle Authorisation Checklist page 11

¹⁷⁷ Appendix 9 Competencies Sean Scovell Cat 769D Dump Truck page 30-38

Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 289-300 paragraph 113-118

¹⁷⁸ Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 215-236, paragraph 82-100

73(2)Irrelevant does not have any formal qualifications to train and assess for operation of fixed crushing plant but he was used as the content expert for training persons in the plant operations. **73(2)Irrelevant** stated that there was no specific training booklet for the fixed crushing plant but only a training log that has specific steps identified in a fixed crushing plant procedure and JSA's and JSEA's for various tasks¹⁷⁹.

73(2)Irrelevant assessed SCOVELL as competent in the operation of the fixed crushing plant on the 25/4/12, but did not have any involvement in the development of risk assessments, standard work instructions or training packages for the fixed crushing plant¹⁸⁰.

Job, Safety and Environment Analysis documents supplied by Moranbah South Quarry for June 2012 indicate SCOVELL did not participate in these tasks¹⁸¹.

Control box training for operation of computer controls of the fixed crushing plant was conducted by Hitech Electrical Automation. However, from documents supplied, no evidence could be found as to who had received this training¹⁸².

A document titled: "OHS-MTN-1001 Assembly, Servicing, Maintenance and Modifying Plant and Equipment procedure"¹⁸³ states in the section

Considerations for a person who erects or installs plant:

- *When erecting or installing plant, consideration should be made to ensure that: Nothing about the way the plant is erected or installed makes it unsafe for the end user*

In the section **Fixed Plant Servicing Specific considerations:**

- *Do not work on or near any operating machinery if there is any chance whatsoever of becoming caught up and/or there is a generation of excessive dust*
- *Shut down and positively isolate equipment to be worked on.*

Documents supplied by Moranbah South Quarry indicate SCOVELL was not trained or assessed in this procedure.

¹⁷⁹ Appendix 2 Transcripts of Interviews **73(2)Irrelevant** page 215-236,
paragraph 37-50, 81-100, 109-112
Appendix 9 Competencies Sean Scovell page 39-47,
MCG-PRO-310- Fixed Crushing Plant
Appendix 15 Job, Safety and Environment Analysis
Page 85-91, 122-128

¹⁸⁰ Appendix 2 Transcripts of Interviews **73(2)Irrelevant** page 289-300
paragraph 95-102, 113-139

¹⁸¹ Appendix 15 Job, Safety and Environment Analysis

¹⁸² Appendix 37 Hitech Electrical Automation Pty Ltd
Fixed Crushing Plant Training page 73-74

¹⁸³ Appendix 20 QSHEMP Written Procedures
OHS-MTN-1001 Assembly, Servicing, maintenance and Modifying Plant and
Equipment Procedure page 118-137

7.8. Training – General

MCG Group has a training scheme titled “MCG Group Training Scheme” that had been reviewed by Training Coordinator [73(2)Irrelevant] in 2010. The document references the *Coal Mining Safety and Health Regulation 2001* s82 and s85, in the Purpose and Designated Task of the document and not until the Reference section does the *Mining and Quarrying Safety and Health Regulation 2001* be mentioned¹⁸⁴.

[73(2)Irrelevant] was involved in the training assessments, gap analysis and risk assessments for the fixed crushing plant, also the development of a training package during the construction. However, he was unsure of the existence of standard work instructions for maintenance or greasing or of any person been involved in the development of any standard work instructions. A Job Safety and Environment Analysis (JSEA) that addresses the above issues had been developed on the 1 June 2012 by [73(2)Irrelevant] and approved by supervisor [73(2)Irrelevant]. No documentary evidence of SCOVELL being trained in this JSEA could be found or supplied by Moranbah South Quarry¹⁸⁵.

The training or operating manual for the fixed crushing plant was checked fortnightly by [73(2)Irrelevant] to ensure it was available in the control box for the operators and is issued to individual operators when commencing the training process¹⁸⁶.

A document titled “MCG-Group Mine Training Scheme Trainees Manual Conduct Crushing and Screening Operations” was supplied by Moranbah South Quarry as part of the document requests. This document has not been approved for use by site management. It was noted by CLOUGH that this document on all pages except the first page, references RIIMOP301A Conduct Excavator Operations-Training Manual.¹⁸⁷

During a search of the control box by CLOUGH and SMITH on the morning of 7th June 2012, a copy of the fixed crushing plant training manual that [73(2)Irrelevant] was referring to during the Record of Interview on 15 August 2013 could not be found in the control box¹⁸⁸.

[73(2)Irrelevant] does not have any formal qualifications to train and assess for operation of fixed crushing plant but he was used as the content expert for training persons in the plant operations. [73(2)Irrelevant] stated that there was no specific training booklet for the fixed crushing plant but only a training log that has specific steps identified in a fixed crushing plant procedure and JSEA's

184 Appendix 18 MCG Group Training Scheme
185 Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 301-323
paragraph 156-182, 276-279, 370-383
Appendix 15 Job, Safety and Environment Analysis page 84-90
General Maintenance in the Fixed Plant Area “greasing”
186 Appendix 2 Transcripts of Interviews [73(2)Irrelevant] page 301-323
Paragraph 205-210
187 Appendix 19 Conduct Crushing and Screening Operations
188 Appendix 26 Investigation Video footage DVD Master Copy 07/06/12
Movies MOV001 Control Room.MOD

titled "General maintenance in the fixed plant area "Greasing" and "General maintenance in the fixed plant (clean return rollers)"¹⁸⁹

73(2)Irrelevant a maintenance contractor employee who was employed as a fixed crushing plant fitter by Moranbah South quarry since September 2011 had not been involved in commissioning of the fixed crushing plant at anytime. He has breakdown and maintenance duties at the fixed crushing plant. He is not familiar with and did not receive any specific training in relation to any standard work instructions except on the computer system in the control box of the fixed crushing plant.¹⁹⁰

73(2)Irrelevant is aware of and received training in operating, safety procedures and standard work instructions for the commissioning of the fixed crushing plant from Hitech and JAL but is not aware of any standard work instructions for maintenance of the fixed crushing plant and stated that procedures are in place for greasing of the conveyor pulleys as part of the operators training package¹⁹¹.

73(2)Irrelevant from Global Crushers and Spares did not receive any site induction when he arrived at Moranbah South Quarry in January 2012 to commission the plant installed by Global Crushers and Spares. He was taken directly to the fixed crushing plant site by 73(2)Irrelevant to commence the commissioning process¹⁹².

¹⁸⁹ Appendix 2 Transcripts of Interviews 73(2)Irrelevant page 215-236,
paragraph 37-50, 81-100, 109-112
Appendix 9 Competencies Sean Scovell page 39-47,
MCG-PRO-310- Fixed Crushing Plant
¹⁹⁰ Appendix 15 Job, Safety and Environment Analysis page 85-91, 122-128
Appendix 2 Transcripts of Interviews 73(2)Irrelevant age 3-13,
paragraph 61-70, 117-132, 135-137, 180-185
¹⁹¹ Appendix 2 Transcripts of Interviews 73(2)Irrelevant page 261-274,
Paragraph 115-140
¹⁹² Appendix 32 Global Crushers and Spares Transcript of Interview
73(2)Irrelevant 26 Nov. 2012 page 46-77 paragraph 139-145, 157-194

7.9. Fitness for Work.

MCG Group Fitness For Duty Procedure OHS-SWP-034 supplied by Moranbah South Quarry has been reviewed by [73(2)Irrelevant] in August 2010. The document references the *Coal Mining Safety and Health Act 1999* and the *Coal Mining Safety and Health Regulation 2001* s39-43, not the *Mining and Quarrying Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Regulation 2001* s84-87¹⁹³.

Blood Alcohol Test Record sheets supplied by Moranbah South Quarry for the period 28/4/12 to 2/6/12 indicate SCOVELL participated in alcohol testing on the following dates with non-positive results¹⁹⁴:

- 22/5/12
- 23/5/12
- 24/5/12,

During the above period, five (5) employees tested positive for alcohol.

7.10. Environmental Factors.

Witnesses [73(2)Irrelevant] [73(2)Irrelevant] and [73(2)Irrelevant] stated that lighting around the fixed crushing plant appeared adequate with lighting fixtures on the control box and other places illuminating the area of conveyor No. 2 for approximately 50 – 60 metres¹⁹⁵.

According to [73(2)Irrelevant] a mobile lighting plant situated on the off-side of conveyor No. 2 from the control box pointing towards the jaw crusher area was not in working and was in the process of being replaced when the accident occurred¹⁹⁶.

Information obtained from the Bureau of Meteorology for June 2012 at Moranbah Airport indicates the highest wind speed of 43 km/h occurred at 13:12 (1:12 PM) with no rain recorded.

¹⁹³ Appendix 20 QSHEMP Standard Work Instruction 021-040
OHS-SWP-034 Fitness For Duty Procedure page 135-146

¹⁹⁴ Appendix 12 Drug and Alcohol Test Results page 42, 45, 50,

¹⁹⁵ Appendix 2 Transcripts of Interviews [73(2)Irrelevant] paragraph 331-350
Appendix 2 Transcripts of Interviews [73(2)Irrelevant] paragraph 132-147

Appendix 2 Transcripts of Interviews [73(2)Irrelevant] paragraph 322-362

¹⁹⁶ Appendix 2 Transcripts of Interviews [73(2)Irrelevant] paragraph 141-143

Appendix 2 Transcripts of Interviews [73(2)Irrelevant] Police Interview paragraph 72
Appendix 1 Photographs 2

7.11. Emergency Response.

Moranbah South Quarry has a document titled "MCG Group Emergency Response Procedure" OHS-SWP-019 reviewed by [73(2)Irrelevant] in 2010¹⁹⁷.

Appendix A-General Rules of the above document details the required procedures to be followed in the event of an emergency.

A phone call was made by [73(2)Irrelevant] from Moranbah South Quarry to Queensland Ambulance Service via the 000 service at approximately 7:05 pm with the ambulance arriving on site at approximately 7:22 pm¹⁹⁸.

Police were notified by Queensland Fire and Rescue Service at approximately 7:14 pm about the accident and Police officers arrived on site at approximately 8:15 pm¹⁹⁹.

WATSON arrived on site at approximately 10:30 pm with Police Scenes of Crime Officers²⁰⁰.

8. AUTOPSY RESULTS.

An autopsy was conducted on SCOVELL with the cause of death identified as an incised wound to chest dividing aorta²⁰¹.

CTPI 49-Sch4

9. IMPEDIMENTS TO INVESTIGATION.

The following persons and companies declined to participate in voluntary interviews:

- Hitech Electrical Automation Pty Ltd²⁰³.
- [73(2)Irrelevant] (his signature is on Sean SCOVELL's fixed crushing plant competency as content expert)²⁰⁴.

¹⁹⁷ Appendix 20 QSHEMP Standard Work Instruction 01-020
OHS-SWP-019 Emergency Response Procedure page 114-123
¹⁹⁸ Appendix 27 Queensland Ambulance Service page 3-15
¹⁹⁹ Appendix 6 QLD Police Service Log of Events
²⁰⁰ Appendix 11 Mine Record Entries
Inspector Tim Watson dated 05/06/2012 page 33-34
²⁰¹ Appendix 7 Autopsy
²⁰² Appendix 24 Report on Toxicology Results
²⁰³ Appendix 34 Correspondence Hitech Electrical Automation Pty Ltd page 5-6
Appendix 9 Competencies Sean Scovell Fixed crushing plant page 39-47
²⁰⁴ Appendix 34 Correspondence [73(2)Irrelevant] page 3-4

- 73(2)Irrelevant Managing Director MCG Quarries²⁰⁵.
- 73(2)Irrelevant Site Senior Executive Moranbah South Quarry²⁰⁶.
- 73(2)Irrelevant Site Senior Executive Moranbah South Quarry²⁰⁷.
- 73(2)Irrelevant Managing Director Waldie Enterprises P/L²⁰⁸

10. FINDINGS.

SCOVELL was not under direct supervision at the time of the accident.

Supervisor 73(2)Irrelevant was located in the quarry office at the time of the accident and did not have direct supervision of the inexperienced SCOVELL.

Witnesses to the accident, 73(2)Irrelevant, 73(2)Irrelevant and 73(2)Irrelevant did not insist that the conveyor be isolated prior to SCOVELL attempting to identify the noise source and allowed SCOVELL to grease the bearings of the operating conveyor.

SCOVELL had been trained in isolation and tagging during his induction training on the 14 March 2012. Authorisation to operate the fixed crushing plant was obtained on the 1 May 2012 with the training documentation clearly identifying guarding on pinch points and isolation processes. He had not been trained in maintenance procedures.

Training in general appears to be ineffective with 73(2)Irrelevant not being trained in standard work instructions and 73(2)Irrelevant not receiving site induction.

The safety and health management system in use at Moranbah South Quarry references the incorrect legislation, i.e. *Coal Mining Safety and Health Act 1999* and the *Coal Mining Safety and Health Regulation 2001* instead of the correct legislation, i.e. *Mining and Quarrying Safety and Health Act 1999* and the *Mining and Quarrying Safety and Health Regulation 2001*.

The redesigned drawings from Global Crushers and Spares were not reviewed by engineers in relation to Australian Standards.

The design of the fixed crushing plant did not specify guarding at the accident site on conveyor No. 2.

A tight time frame was imposed by 73(2)Irrelevant to have the fixed crushing plant constructed and operational by the end of January 2012.

205 Appendix 34 Correspondence 73(2)Irrelevant page 7-8
206 Appendix 34 Correspondence 73(2)Irrelevant page 7-8
207 Appendix 34 Correspondence 73(2)Irrelevant page 7-8
208 Appendix 34 Correspondence 73(2)Irrelevant page 9-10

Final commissioning audits were not done on the fixed crushing plant to identify any hazards that could have impacted on the safety of the workforce, i.e. missing guards at pinch points.

SCOVELL participated in drug and alcohol tests on a regular basis with non-positive results.

Lighting appeared adequate around the fixed crushing plant with illumination for approximately 50-60 metres.

10.1. Sequence of Events

- SCOVELL commenced work attending a pre-shift meeting.
- He then proceeded to the control box of the fixed crushing plant.
- Problems with a lighting plant on the off-side of conveyor No. 2 were observed.
- The plant was shut down leaving conveyor No. 2 still operating.
- He then left the control box and walked down the stairs to the vicinity of the gravity loop take-up.
- A noise was heard coming from the gravity loop take-up area.
- He obtained a grease gun and proceeded up the walkway of conveyor No. 2 to the first and third change of direction pulleys of the gravity loop take-up.
- He greased the first and the second change of direction pulley bearing housings.
- He then laid or crouched down on the walkway adjacent to the first change of direction pulley with his head facing up the gantry walkway.
- He was pulled into the still operating conveyor with his upper body pinned in the conveyor and his lower body still on the walkway.
- The conveyor belt was stopped by operating the emergency pull-wire switch located on the walkway side of the conveyor structure at ground level.
- Emergency response procedure was activated and rescue operations were commenced.

10.2. Possible Scenarios

Several scenarios have been examined to identify contributing causes of the accident. The elements common are:

- The conveyor belt had not been shut down and isolated prior to performing maintenance on the conveyor.
- Guards were not fitted across the front of the gravity loop take-up first and third change of direction pulleys on the walkway side of the conveyor gantry.
- A scraping mechanism had not been fitted to the material carrying side of the conveyor belt to remove material from the belt after the load had been discharged.
- SCOVELL greased the nipples on top of the third and first change of direction pulley bearing housings of the gravity loop take-up.
- SCOVELL then knelt or crouched down on the conveyor gantry walkway adjacent to the first change of direction pulley bearing housing.
- **Scenario 1.**
 - SCOVELL made an attempt to remove material that had stuck to the first change of direction pulley to allow the conveyor belt to track back into the centre of the pulley to prevent the belt rubbing on the conveyor structure.
 - His arm was caught in the operating conveyor belt and he was dragged into the system.
- **Scenario 2.**
 - SCOVELL leant in towards the conveyor structure alongside the pulley to check if the grease was coming out of the inside of the bearing housing around the pulley bearing shaft.
 - SCOVELL was caught by the hair, either on the pulley, the pulley shaft retaining bolts, the pulley bearing shaft or the conveyor belt.
 - SCOVELL made an effort to prevent being dragged into the structure by using his arm to push against the side of the pulley.
 - SCOVELL was dragged into the conveyor structure.

The evidence obtained from the investigation and Police photographs taken immediately after the accident, show conveyor belt rub marks on SCOVELL's right hand palm and thumb. The clothing covering his right arm has been damaged with marks evident on his skin. The left side of his head has evidence of rub marks and hair loss²⁰⁹.

The first change of direction pulley of the gravity loop take-up, pulley shaft and the bearing housing show a large quantity of blood and hair on the bearing housing, pulley shaft and the outside surface of the pulley.

On the evidence obtained, Scenario 2 is the most likely to have occurred.

10.3. Other Findings.

Photographs were taken by the Police and Mines Inspectorate identifying hair loss from SCOVELL on the pulley and bearing housing.

Photographs also identified what appeared to be blood on the first change of direction pulley, conveyor structure, gravity loop take-up, front end loader and on the ground surrounding the gantry support structure.

A crushed helmet was also photographed lying on the ground adjacent to the gravity loop take-up. The helmet had been crushed with what appeared to be blood covering the inner and outer surfaces.

A grease gun was photographed laying on the conveyor walkway adjacent to the first change of direction pulley for the gravity loop take-up. The grease gun may have been moved from its original position during the recovery of SCOVELL from the conveyor belt.

The connection nipple of the grease gun and the grease nipples on both the first and third change of direction pulley bearing housings show recent signs of use with fresh grease evident, i.e. the grease nipples were not covered with fine dust from the plant operation.

Fresh grease was evident on the inside of the first change of direction pulley bearing housing around the pulley shaft where the shaft comes out of the housing.

Both the first and third change of direction pulley bearing housings on the gravity loop take-up and the two pulleys did not have a guard fitted along the walkway to prevent persons from inadvertently falling or being pulled into the operating conveyor.

A guard could not be identified lying on the walkway or on the ground directly under the gravity loop take-up that would fit this area.

²⁰⁹

Appendix 39 Police Photographs Contains Graphic Images.pdf

Mounting points or brackets to attach guards could not be identified on conveyor No. 2 gantry in the area of the first or third change of direction pulleys.

A video walk through of the recovery of SCOVELL from the conveyor structure by persons involved in the rescue has indicated that SCOVELL was trapped between the conveyor belt, the first change of direction pulley and the main support structure of the conveyor gantry.

11. ANALYSIS OF THE FINDINGS.

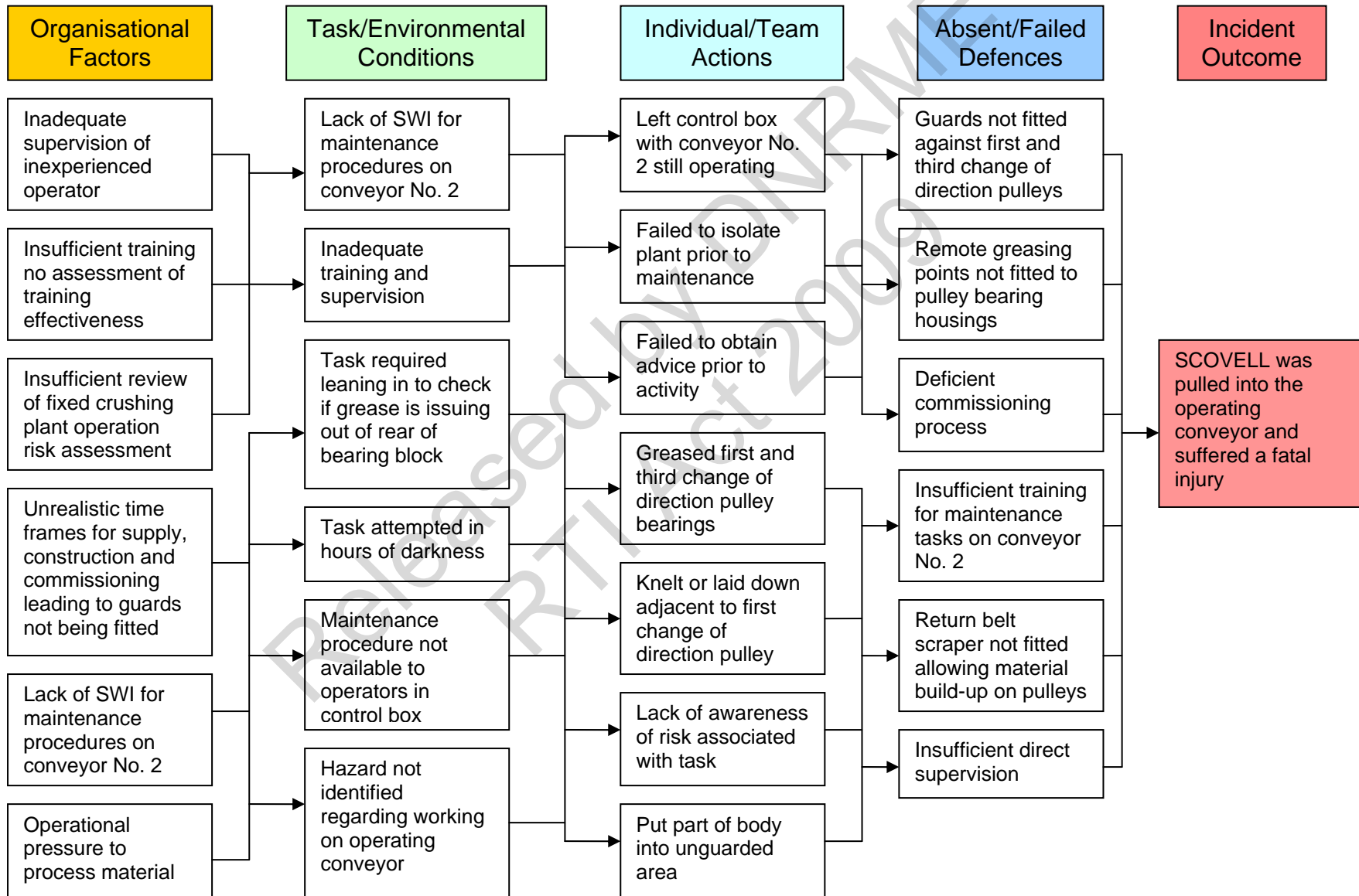
Evidence obtained from the investigation indicates that a guard had not been fitted to the gravity loop take-up at the first and third change of direction pulleys on the walkway side of conveyor No. 2, leaving open access to the rotating pulleys, shafts and the conveyor belt.

12. INCIDENT CAUSE ANALYSIS

The Incident Cause Analysis Method (ICAM) has been conducted to identify the underlying causes of the incident which are systematic in nature, e.g. related to failure in design, procedures, training, auditing or corrective action. This technique is designed to ensure that the investigation is not restricted to unsafe acts or active failures. The ICAM chart of the investigation represents the relationship of each contributory cause to the outcome of the accident.

Human involvement in incident-causing errors is not restricted to operators. The involvement of the organisation in shaping the behaviour of operators has become increasingly apparent. This leads to a distribution of errors across other members of organisations and across significant periods of time preceding the incident.

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13. CONCLUSION.

13.1. Nature.

At the time of the incident SCOVELL was a young 21 year old with limited experience in fixed crushing plant operations. He was not under direct supervision at the time of the accident.

SCOVELL had heard a noise in the vicinity of the gravity loop take-up on conveyor No. 2. He obtained a grease gun and greased the first and third change of direction pulley bearing housings of the gravity loop take-up, then knelt or crouched down on the conveyor gantry walkway adjacent to the first change of direction pulley bearing housing, leant in towards the conveyor structure alongside the pulley and was dragged into the operating conveyor system suffering fatal injuries.

13.2. Cause.

The conveyor was operating without guards in place at the first and third change of direction pulleys on the walkway side of conveyor No. 2 gantry to prevent persons from being dragged into the system.

Maintenance was being carried out on an operating conveyor.

14. ACTION TAKEN BY THE QUARRY AFTER THE ACCIDENT.

An investigation into the accident was instigated by Site Senior Executive 73(2)Irrelevant and a report titled "MCG Quarries Investigation report into the fatality of Sean Raymond Scovell at Moranbah South Quarry on 5 June 2012" and dated 6 July 2012 which included seven (7) recommendations was submitted to the Mackay office of the Mines Inspectorate on the 10 July 2012²¹⁰.

Guarding has been fitted along conveyor No. 2, particularly in the area of the gravity loop take-up first and third change of direction pulleys on the walkway side²¹¹.

The access steps at the lower end of conveyor No. 2 walkway have been repositioned to enable easier access²¹².

²¹⁰ Appendix 22 MCG Quarries Investigation Report

²¹¹ Appendix 38 Additional Accident Photographs
Kevin Clough's Photographs 18 June and 19 July 2012 page 161, 162, 175, 176, 179

²¹² Appendix 38 Additional Accident Photographs
Kevin Clough's Photographs 18 June 2012 page 163

The grease application points for the first and third change of direction pulley bearing housings have been relocated by using flexible piping and hose to ground level to enable remote greasing²¹³.

The remedial actions required in the four (4) Directives issued to the quarry by CLOUGH have been completed.

15. ACTIONS TAKEN BY THE MINES INSPECTORATE AFTER THE ACCIDENT.

The following actions were taken by the Mines Inspectorate to date.

- On Tuesday 5 June 2012 WATSON issued a verbal Directive under the *Mining and Quarrying Safety and Health Act 1999* s164 Directive to suspend operations for unacceptable level of risk to 73(2)Irrelevant
- On Wednesday 6 June 2012 CLOUGH withdrew WATSON's verbal Directive to 73(2)Irrelevant to allow the investigation to commence and then inspected the place of the accident as per the requirements of the *Mining and Quarrying Safety and Health Act 1999* s196 Place of accident must be inspected.
- An audit of the fixed crushing plant was conducted by MCKINNON and 73(2)Irrelevant as part of the fatality investigation process with missing or damaged guards identified on particular areas of the fixed crushing plant. The audit and accompanying Directive is included in the Mine Record Entry dated 06/06/2012 and signed by CLOUGH²¹⁴.
- CLOUGH issued several Directives as per the requirements of the *Mining and Quarrying Safety and Health Act 1999* to 73(2)Irrelevant as follows:
 - s163 Directive to reduce risk.
 - s164 Directive to suspend operations for unacceptable level of risk.
 - s165 Directive to review safety and health management system.
 - s166 Directive to suspend operations for ineffective safety and health management system.
- A Safety Alert prepared by CLOUGH was issued to industry on the 12 June 2012²¹⁵.

²¹³ Appendix 38 Additional Accident Photographs

Kevin Clough's Photographs 18 June 2012 page 158, 160, 161, 164

²¹⁴ Appendix 11 Mine Record Entries Mine Record Entry 06/06/2012 page 13-15

Appendix 38 Additional Accident Photographs

73(2)Irrelevant Photographs 6 and 7 June 2012

²¹⁵ Appendix 36 Safety Alert

- CLOUGH and SMITH made an unannounced inspection of the site on 18 June 2012 to check the status of the remedial work specified in the Directives and to conduct interviews of involved persons.
- CLOUGH withdrew the four (4) Directives as per the requirements of the *Mining and Quarrying Safety and Health Act 1999* s171 Directives (5) (c)²¹⁶.

16. RECOMMENDATIONS.

- All sites are to review operating procedures to ensure that conveyors are isolated correctly and securely before any tasks are undertaken on them in unguarded areas.
- Suitable guards are fitted to or adjacent to rotating or moving pieces of equipment to prevent persons from coming into contact with the particular piece of equipment. Reference Australian Standards AS 1755-2000 Conveyor Safety requirements and the *Mining and Quarrying Safety and Health Regulation 2001* Part 10 Plant generally.
- Ensure remote lubrication points are established away from moving parts or pinch points to enable lubrication tasks to be carried out without endangering persons.
- Ensure employees are fully trained and assessed as competent to conduct activities on plant as per the requirements of the *Mining and Quarrying Safety and Health Regulation 2001* Part 9 Persons on site, Division 2 Training and Assessment.
- Conduct a full review of safety and health management systems to identify any deficiencies in isolation procedures, training and assessment competencies. Ensure any deficiencies are immediately rectified.
- Ensure adequate supervision of inexperienced persons is available at all times.
- Ensure risk assessments of plant are carried out to identify hazards and to put controls in place so that risk to persons is within acceptable levels and as low as reasonably achievable.
- Ensure all employees are correctly appointed to statutory and supervisory positions under the *Mining and Quarrying Safety and Health Act 1999* Division 2 Management of mines.

²¹⁶

Appendix 11 Mine Record Entries Mine Record Entry 22/06/2012 page 2

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- Conduct a full review of the safety and health management system to ensure it is current and applicable to the site and is referenced to the correct Legislation required for that site.

Released by DNRME
RTI Act 2009