

THOMSON Vicki

From: Emma Peebles <Emma.Peebles@glencore.com.au>
Sent: Wednesday, 18 November 2015 7:13 AM
To: MIR-Administration; MIR-MtIsa; Emma.Peebles@glencore.com.au
Subject: Completed Mining incident report No. 133294 (30 - High potential no lost time [nmsf: 35])

Type of incident

Incident report number: 133294

Recipients: Emma.Peebles@glencore.com.au and miradministration@dnrm.qld.gov.au

1 **Incident type:** 30 - High potential no lost time [nmsf: 35]

Medical Treatment injury: No

2 **Summary/title of incident**

During routine diamond drilling of the 20C N592-N593 infill expansion project, an unplanned breakthrough occurred at the O59 workshop. An operator was in the workshop at the time, but was unharmed.

Incident Classification:

Code: 124 - Drill / power shovel incident [nmsf: 3811]

Breakdown:

Code: Machinery and (mainly) fixed plant [nmsf: 2836]

Sub-Breakdown:

Code: Other plant and machinery [nmsf: 2853]

Breakdown Class:

Code: Other and not specified production line type of plant or stand alone machinery [nmsf: 2949]

Detailed Classification:

Code: Other and not specified production line type of plant or stand alone machinery [nmsf: 3357]

Compensation ID: 999999

Mechanism:

Code: Being hit by moving objects [nmsf: 2786]

Sub-Mechanism:

Code: Being hit by moving objects [nmsf: 3769]

3 **Previously notified:** Yes

Date: 13/10/2015

Mine details

4 **Mine/quarry name** Mt Isa - Isa Copper Mine

Code: M00806

Old Code:

5 **Mine type:** Metalliferous underground

6 **Company contact:** Simon Pope

Phone: 47 (6) Personal information

7 **Where in the mine did the incident occur?** 19L O59 Workshop - drilling for N592-N593 infill project

Code: 553 - Development face-vertical [nmsf: 27]

Surface or underground? underground

Incident details

- 8 **Date of incident:** 13/10/2015
- 9 **Time of incident:** 12 50 (24 hr clock)
- 10 **Time shift started:** 19 30
- Shift duration:** 12 00
- No. of complete shifts/day worked prior to accident:** 2
- No. of days in shift cycle:** 8
- No. of days rostered off prior to starting current shift cycle:** 4
- Total hrs worked in 24 hr period prior to accident, inc travel time:** 12
- Travel Hours:** 0
- Rostered Travel Hours:** 0
- Roster Pattern:** 4 on 4 off
- 11 **Date of first full working day lost:**
- 12 **Primary equipment/tool involved in incident:** Diamond Drill **Code:** 171 - Drilling rig [nmsf: 3892]
- 13 **Describe exactly how did the incident occur:**
- The drill hole was designed with an unidentified intersection with the 059 workshop.
- 14 **What hazards have been identified from this incident:**
- â€¢ Ineffective use of the diamond drill design software to identify breakthrough potential â€¢ Incorrect application of the underground diamond drill proposal guideline and checklist. â€¢ Failure to fully implement, and enforce compliance with, the underground diamond drill proposal guideline. â€¢ When completing underground diamond drill proposals, the team developed a â€˜habitâ€™ of favouring decisions based on the knowledge and experience gained from informal peer on peer training over process discipline and compliance with system requirements.
- Code:** 122 - Moving vehicles/equipment

Injured person details

- 15-21 Questions 15 through 22 not required for 'High potential no lost time' incidents
- 23 **Description of personal damage:**
- Nil
- Is this a permanent incapacity?** No

Incident causes

- 24 **What happened leading up to the injury/incident/disease?**

Organisational

Procedures - Failure to fully implement, and enforce compliance with, the underground diamond drill proposal guideline.

Procedures - When completing underground diamond drill proposals, the team developed a â€˜habitâ€™ of favouring decisions based on the knowledge and experience gained from informal peer on peer training over process discipline and compliance with system requirements. Communication process - Insufficient clarity on the location and content of the system documentation applicable to the Geology team.

Codes 109 - Procedures

100 - Communication

121 - Other org. factor

Task/environment conditions

Codes 308 - Procedures

Release

Awareness of procedures - People completing the development and review of the drill proposal guideline had an incomplete understanding of the requirements of the underground diamond proposal guideline and were unaware of the diamond drill proposal checklist. Awareness of procedures - System documentation used by the Geology team is stored in multiple locations outside of the version controlled information location. This contributes to the failure to understand and apply the correct system requirements. Adequacy of the risk management approach - Underground diamond drill proposals do not follow the same submission and peer review and approval process as other mine design processes. This contributed to the failure to identify the breakthrough potential in the drill proposal related to this event.

303 - Electricity

Individual/team actions

Identify hazards - Ineffective use of the diamond drill design software to identify breakthrough potential: *â€¢* Use of *â€˜*view by layerTM rather than *â€˜*view by volumeTM resulted in a design error when the workshop layer was not viewed during the design process. *â€¢* This error resulted in the failure to identify the intersection of the drill hole with the workshop. *â€¢* This failure resulted in the drill hole being planned to intersect the workshop. Follow procedures - Incorrect application of the underground diamond drill proposal guideline and checklist: *â€¢* Failure to identify breakthrough potential by completing an accurate void check. *â€¢* The diamond drill proposal checklist was not used to verify that the requirements of the underground diamond drill proposal guideline were met. Specifically, confirming that breakthrough potential was identified through an accurate void check.

Codes 202 - Awareness
208 - Teamwork

303 - Communication

Absent or failed defenses

Adequacy of task instructions - Compliance with the underground diamond drill proposal guideline and diamond drill proposal checklist was not established as mandatory within the team. Adequacy of task instructions - The requirement to accurately complete void checks by using the *â€˜*view by volumeTM function in the drill design software, rather than using *â€˜*view by layerTM was not established in the underground diamond drill proposal guideline or by informal peer to peer training practices. Adequacy of resource allocation - Unplanned absentees in the Geology department resulted in significantly increased workloads, competing production priorities and associated pressure. This contributed to the insufficient rigor around the void checks in the diamond drill proposal, as a result of: *â€¢* The drill proposal being assigned to a person with limited knowledge and experience in the process; *â€¢* Accountability for the review and approval of the drill proposal and associated documentation never being appropriately established.

Codes 401 - Design defects

Preventative action

25 Give details of any control measures/actions being considered and/or implemented to prevent recurrences

Update the underground diamond drill proposal guideline, template and related documentation to include: *â€¢* Integration of the diamond drill proposal checklist in the proposal template. *â€¢* Requirement to use *â€˜*view by volumeTM to identify breakthrough potential. *â€¢* Aligning the submission, review and approval process with all other mine design processes. *â€¢* Clearly defined accountabilities for reviewing and approving underground diamond drill proposals. Specifically: *o* Inclusion of clear descriptions of the activities required to verify correct completion of the proposal in the checklist. *o* Requirement to verify voids checks and the use of *â€˜*view by volumeTM in mine sight prior to approving the proposal. Develop and implement a *â€˜*view by volumeTM minesight SWI and update related procedures and process. Audit minesight usage, identify areas of uncertainty or inadequate practices and develop a standardised approach to these issues. Review effectiveness of the critical documentation familiarisation process within Technical Services and provide Technical Services Manager with recommendations. Develop and implement process maps showing key processes and related system documentation for Technical Services department. Review effectiveness of changes to diamond drilling proposal.

Release

Date: 18/11/2015

Your full name: Emma Peebles

Position: Safety Advisor

Email: Emma.Peebles@glencore.com.au

Office use

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Inspector/inspection officer: _____

Signed: _____

Entered by: _____

User IP address: s.73

User agent: Mozilla/5.0 (compatible; MSIE 10.0; Windows NT 6.1; WOW64; Trident/6.0)

Email address: Emma.Peebles@glencore.com.au

Submitted Date/Time: 18/11/2015 06:26:45

RTI DL RELEASE - DNRM

THOMSON Vicki

From: CASEY Phillip
Sent: Wednesday, 14 October 2015 2:32 PM
To: SUR Asok; LEE Damian; FASCHING Hermann; COGLAN James; ORMONDE Katie; CASEY Phillip; THOMSON Vicki; SATTLER Hans
Subject: Incident Notification: Mt Isa - Isa Copper Mine (13/10/2015)

The following is a transcript of the Incident Notification:

MINE / EVENT, NOTIFICATION & RECEIVER DETAILS

Name of Mine/Quarry: Mt Isa - Isa Copper Mine
Name of Owner / Operator: Mount Isa Mines Ltd
Mine Type: Metalliferous Mine - Underground
Mine File No: 2893
Notifier's Name: Simon Pope
Notifier's Position / Title: Underground Manager
Notifier's Contact Number:
Notification Received on: 13/10/2015 at 2:15:00 PM
Notification Received By: Phillip Casey

INCIDENT DETAILS

Event Date: 13/10/2015
Event Time: 12:45:00 PM
Location: Underground, Enterprise, 19 Level, O59 Workshop
Equipment Involved: Diamond Drill
Concise Description: Unplanned breakthrough of a diamond drill into the floor of a workshop cribroom. No Injury

Actions Taken By Mine / Operator:

To open this Incident click on the following docLink >>> [\[Link\]](#)

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Release

From: simon.pope@glencore.com.au [simon.pope@glencore.com.au]
Sent: Wednesday, 14 October 2015 10:46 AM
To: CASEY Phillip; COGHLAN James
CC: compliance@glencore.com.au
Subject: High Potential Incident - Unplanned Diamond Drill Breakthrough
Attachments: IMG_1128.jpg; IMG_1133.jpg; High Potential Incident Notification - Unplanned Diamond Drill Breakthro....pdf

Phil,

As discussed by phone, please find attached notification of yesterday's high potential incident.

I have also attached some photos of the breakthrough for your reference.

Regards,

Simon Pope
Mining Manager - MICO
Mount Isa Mines
Copper Assets Australia

Tel. + 61 7 4744 2084 (6) Personal information
Mob. + 61 7 4744 2084 (6) Personal information
Fax. + 61 7 4744 2084

E. simon.pope@glencore.com.au
www.mountisamines.com.au

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If you have received this electronic communication in error please notify the sender by replying to this electronic communication inserting the word "misdirected" as the subject and delete this communication from your system.

RT/DL RELEASE - DNRM



Wednesday, 14 October 2015

Mr Phil Casey
District Inspector Of Mines
Department of Natural Resources and Mines
PO Box 334
MOUNT ISA QLD 4825
Fax (07) 47437165

RE: Notification of Serious Accident, High Potential Incident, Lost Time Injury or Reportable Incident.

Dear Sir / Madam,

In accordance with s195.(1) of the *Mining and Quarrying Safety and Health Act 1999*, I hereby advise that a High Potential Incident has occurred at the 19L O59 W/S on ML 8058. This location forms part of the Mount Isa Mines Ltd - Copper Mine and is under the control of Mike Westerman as the Site Senior Executive.

This incident has been reported in our internal system – Incident Number INC-0142531 and notification has been sent to the HSEC Department in order for the QLD Mining Industry Incident Report Form to be initiated in addition to our internal reporting requirements.

Details of the incident are included on the following page.

Yours sincerely,

sch4p4(6) Personal information

Simon Pope
MANAGER MINING

FRM-111101 Ver 9.0

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A GLENCORE COMPANY

File A

Mount Isa Mines Limited ABN 87 009 661



Mine Name	Mine ID	Operator	Activity Type	Region	Activity Date
Mt Isa - Isa Copper Mine	MI00806	Mount Isa Mines Ltd	Subject Audit or Specific System Audit	Northern	09/02/2016

Vision: Our Industries Free of Safety and Health Incidents

Mine Record Entry

This report forms part of the Mine Record under s59 of the Mining and Quarrying Safety and Health Act 1999. It must be placed in the Mine Record and displayed on Safety Notice Boards.

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

Today I conducted an Audit of the Mine Planning process for production and Mr Asok Sur, Inspector of Mines conducted an audit of Mine Planning for development. An introductory meeting was held with Mr Alastair Grubb, MICO Technical Services Manager, Ms Rhonda O'Sullivan Geology Superintendent and Mr Simon Jackson, Mine Planning Superintendent.

Mr Grubb said Mr Max Lee, Consultant Geotechnical Engineer recently reviewed the rock mechanics slope note template and conducted a workshop on mine planning strategies.

We discussed the mine planning process, the barricade breach incident on 25A (where there was a rock fall in the crown of I712) and the diamond drill O59 workshop breakthrough incident.

I further discussed the diamond drill incident with Ms O'Sullivan and am satisfied a process is in place that would prevent such an incident occurring again. There is a diamond drill hole guideline which describes the diamond drill hole checklist and diamond drill hole plan requirements. The diamond drill guideline and related documents are in the final stages of review and should be finalised this month. It is very comprehensive process and clearly dictates that someone other than the drill hole 'proposer' must review the drill holes electronically. The procedure now ensures a 'view by volume' process is completed for the relevant section and (assuming the correct volume dimensions are selected) all necessary items (voids etc) will be presented on the screen. A step by step process of how to do a view by volume has been written (Data retrieval from the DSS for design checking PRO-450-368).

I was assisted by Mr Alan Marshall, Senior Planning Engineer who is very familiar with the production mine design process. Mr Marshall was competent and knowledgeable. I reviewed the production design for T645 and reviewed the approval process for V432, Q356, Y627 and I700.

T645 had several references to considering the effect of a mass blast on S63 OP (two large blasts) and referred to additional monitoring of S63. I reviewed the pickups for S63 OP with Mr Steve Andrews, Senior Surveyor. Access had been difficult as the pass was full. A request for a survey of S63 had been made a BSAFE action number was assigned to it which acts as the prompt for the engineer who requested the pick up to review the information. Ten probe holes

were drilled on Jan 16 2016, into S63 from 29A and all broke through at the expected lengths except for one which was only 0.7m short so it appears the blasting of T645 has not had a detrimental effect on S63. It is noted that could be an opportunity for improvement here. While the probe holes were drilled likely as in place of additional extensometers that were not able to be installed, the process appeared to rely on individuals making the right decisions and remembering what needs to be done and when a system relies on people remembering what do alone it is bound to fail, so, it is suggested that consideration be given to having some sort of final summary list of the safety (and operational) critical points on what needs to be done for a given stope and then that is signed off / recorded as being completed. As the stope notes are often created 12 months out from production this summary sheet while not forgoing the need to know the whole stope note may ensure nothing is missed. The final sign off sheet is in some part used this way where comments are made but there is no way of recording and ensuring that the comment has been considered.

A final sign off sheet was not located for I700 stope or for Y627 stope. It was established that the peer review had occurred for Y627 but the sign off sheet was not filed. It was established that the peer review for I700 was undertaken but the sign off was not distributed because it wasn't deemed necessary as the design was so similar to the stope next to it that. Although the ground conditions / ventilation / tipping points etc may be similar it is recommended that even when a full stope note is not deemed necessary a sign off sheet should still be distributed and that someone specifically checks the design in minesight. Mr Grubb said he would ensure this is undertaken.

It was not clear who specifically checks a production design, by checked I mean who actually pulls the design (e.g. stope shape / winze location / blast holes etc) up on the screen and checks the actual design both technically and against voids etc. No sub-standard condition or Directive item has been raised because it appeared several people look at the design and it is assumed it is only a matter of not specifically delegating and recording who specifically checks the design. Mr Grubb and Mr Jackson said they would ensure someone specifically looks at the design in minesight (three-dimensionally on the screen) and that person signs off as having checked the design. The reference for checking work quality is s98 MQSHR. Many of the people who currently sign off on the design are either checking an aspect of the design (ventilation, schedule, geology, rock mechanics etc) or approving the design rather than actually checking it.

In summary Mr Grubb said he would ensure the following is undertaken:

- Someone specifically checks every production design in minesight and signs off as having done so
- There is a sign off sheet for every stope (even if a full stope note is not deemed necessary), sign offs for firing alone is not comprehensive and maybe too late to easily rectify a design error.
- The TDRs for S63 OP on 29E are checked to ensure they are working properly (as the readings looked abnormally level)
- There is some way of ensuring and recording that all comments / recommended changes to a design are addressed - as the process currently stands the final sign off pages have spaces for comments and there is no way of seeing that the comments have each been addressed.

Release

Katie Ormonde
Inspector of Mines
Northern Region

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MICO. Mrs Phg 3/2/16.
Malt Alastair Grubb

MICO Tech Serv. Mgr,
 Rhonda O'Sullivan
 Geology Supt, Simon
 Jackson, Mine Physist
 25A HPI, Rockfall in a
 slope Crown I702,
 J712 not I712 → still
 has dries. - access break
 RE occurred in a slope
 area. Auditing all the
 signs put up → chain +
 signs → d-shackle +
 combing - no mixup
 clips ~ 650 + signs.
 PDD #1709 per 4 PDD.
 + Slope closure.
 Revised PDD - H706/H709
 + PPD #3386 -
 Cable best Intersection
 of H709, 170 RARTE.

6m cables -
 signed off in June →
 when installed PBA.
 #Hard copy stored in
 PDD folder - sticker on
 PDD completed - gives
 plug eng. to check →
 * Check 6m sufficient,
 Re - under the pump.
 * Review PDD Guideline.
 - expect to specify change
 View by volume - step
 by step process.
 There is a Diamond
 Drill Proposal Checklist
 Doc mt + DD Program
 (cover document)
 + DDH Guideline
 checklist / program →

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Release

- ① DDing a/c.
 - ② DD Program which incl a DDM checklist which
 - ③ also incl. a DD Hole plan for the diller.
- The DDM checklist component of the DDH Program includes ref to specific checking of the work steps

* Data Retrieval from the ass for design Chg. PRO-450-368.

* Proposer/Supvr Geo
Reviewing geologist
* Technical Review *
sign off.
That will all be

Analysed by mid Feb.

* Follow up on how the sign off clearly depicts that you're signing to say the design has been physically checked.

* Include Ops - in peer review mtg. MICO Prg Guideline.

Alan Marshall, ^{stet.}

Sm Phg Eng, 7 typ, B. Eng, my tag, 7645 final design note s/et.

* S63 OP wrs 7. mans
fring of 7645 ~ 29E

* Stoppe NOT 12 months in advance - so fring note the final opportunity to formally check - a well

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Release

before.

* No final design sign off
sheet for 4627.

~~Max Lee~~ long mining
Max Lee reviewed the
RM scope note template
& conducted a workshop to
Apt + A9 to discuss
mine pho strategies.

④ X41 V432 - 18B - online.
X41 @ 356 - sign off sheet
signed + comments addressed
& communicated signed off.

④ ENT - I700 → no there
S63 o/p scan → sign off
27/8/15 →
30/7/15 →
4 scans over 2 months
→ 1 scan.

26B - extd. 117

T645 - 30/5/15 - fencing

29E → T645 - extd 5 on

29E → b/l/f - mud pit m/B.

Steve Andrews, Sr Surveyor.

MICO. Showed pup's of
S63.

19/6/14. S63. 25A.

- CMS inspection Chablin

BSAFE Action assigned to
et.

④ 29E - S63 EXO2 - exo 1/12

no change → will investigate

as soon as possible &

can't immer risk b/l/f

full above 29A.

no apparent mud

I700 → no sign off sheet

final design - Template is

b/c the shape is the same

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Release

as the one next to it
 so they've just done a
 peer review - RM ppt,
 Qw ppt + RM note - +
 phy section done in
 Miresight. - no s/off.
 Mig s/off - Phy Eng,
 Sm Phy Eng, Dr B Supt.
 * check order of sign
 SP signs last -> specific/
 written evidence that
 comments have been addressed
 keep the old one ->
 (P) Are extos on 29A.
 S63 TKLP. for T645 ->
 Probe holes for S63 from
 29A -> Jan 16 - prob holes,
 - all D/H to plan ->
 10 holes drilled.

Comprehensive Process +
 check list -> a lot of
 information -> Summary
 sign off checklist - AB.
 Not all signed off.
 so many people involved.
 - checking comments are
 addressed - signing off.
 Actual checking of the
 design itself -> how
 evidenced - roles, resp.
 -> RIA findings.
 -> All steps to be signed
 by all relev. appropriate
 people -> even if the
 ref for a full stop ->
 not needed

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Release

- Review -

Version control

- The order of sign-off.

Technical, Problems Appraisal
S 98, MOSTR - Checking
at quality.

Recommendations -

- order of sign-off

- evidence of who specifically
has checked the work ->
literally on the screen ->
extent of slope, angle of
drift blast holes etc.

- Slopes that have been
deemed to not require
a full slope note, still
require some form of
sign off. - Every slope
should have a signed

off by critical persons. 121

- Short/med term planners,
Signed off by. _____

s.73

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