



BHP Billiton Mitsubishi Alliance

BMA – Gregory Crinum
Risk & Hazard ID Management Program

Gregory Crinum Mine



BHP Billiton Mitsubishi Alliance



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Gregory Crinum Mine



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- *Open cut operational since 1979*
- *Underground commissioned 1997*

- *Total of 330 employees*
- *Produces 5.5 million tonnes of coking coal per annum*

The problem



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- *Risk management process was not consolidated*
- *Root cause of incidents identified as poor recognition of hazards and control of risks*
- *No defined team structure for risk assessments*
- *No defined process for authorisation and escalation of risk assessments*

The Process



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- *Team*
 - *Safety Manager*
 - *2 x Safety Advisors*
 - *5 x Site Safety and Health Representatives*
- *Assigned task*
 - *Develop a risk management standard for site*
 - *Develop all tools/forms required*
 - *Develop training and assessment packages*
 - *Roll out training*
- *Developed specific for the site by site personnel*

- *Risk Management Standard*
 - *Clear, concise*
 - *Kept simple and practical*
 - *Used known matrix and consequence tables*
 - *Risk based decision process for*
 - *Determining RA team make up*
 - *Authorisation / sign off*
 - *Escalation to higher level risk assessment*
 - *Training and Competency requirements*
 - *Written assessment*
 - *Practical components to prove competence*

Flowchart



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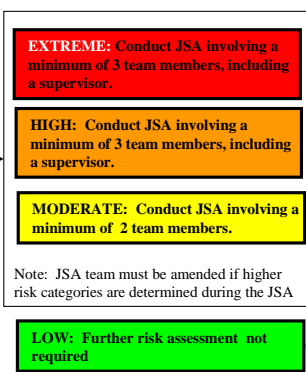
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GREGORY CRINUM RISK MANAGEMENT PROCESS OVERVIEW

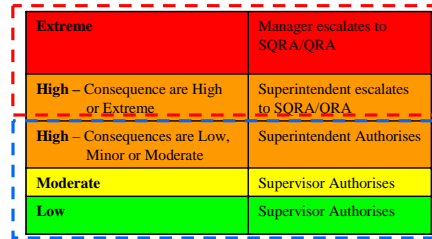
Risk Category



JSA Team requirements determined by Risk Category



Authorisation and escalation level determined by highest Residual Risk Category following JSA

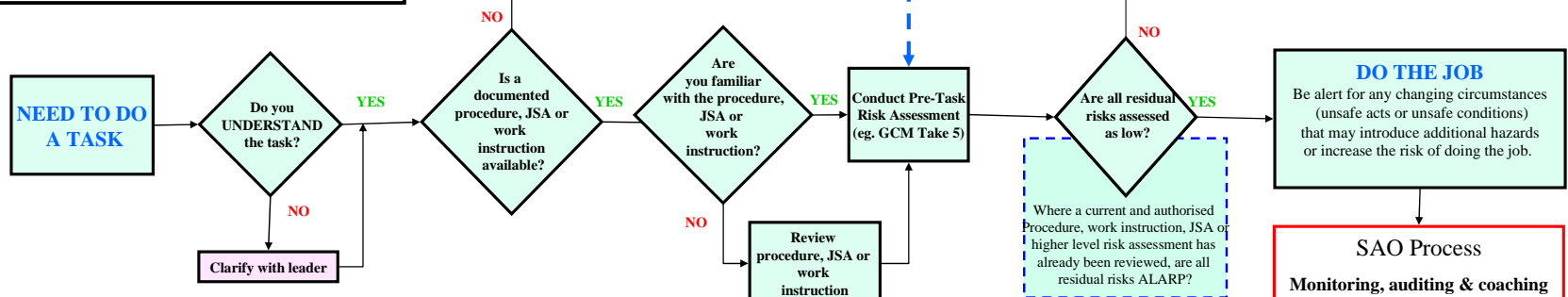
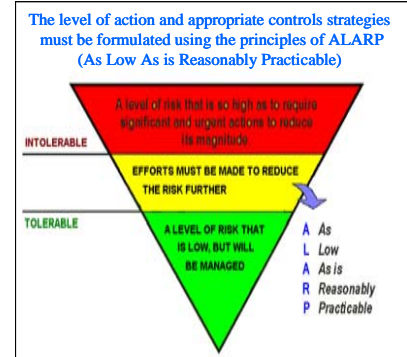


Authorisation and level determined by highest Residual Risk Category following SORA or QRA



Perform an estimation of risk to determine the highest risk category associated with the task (use risk matrix)?

		CONSEQUENCE				
		1	2	3	4	5
PROBABILITY	A	H	H	E	E	E
	B	M	H	H	E	E
	C	L	M	H	E	E
	D	L	L	M	H	E
	E	L	L	M	H	H



Outcomes of team



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- *Pre – task risk assessment (Take 5)*
 - *Simple prompts*
 - *Key questions to focus on identifying hazards*
 - *'On the spot' hazard ID & risk assessment*
 - *Built in escalation process*

- *Training includes practice at identifying*
 - *Obvious*
 - *Hidden*
 - *Developing and*
 - *Unquantified hazards.*

Outcomes of team



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- *Revised Job Step Assessment (JSA) format*
 - *Defined team requirements*
 - *Record of who was involved*
 - *Approval process built in*
 - *Non-consensus provision*
 - *Compulsory sign-off by team*
 - *Authorisation level defined based on residual risk.*

JSA – Minimum Team Requirements



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JSA Team requirements determined
by Risk Category

EXTREME: Conduct JSA involving a minimum of 3 team members, including a supervisor.

HIGH: Conduct JSA involving a minimum of 3 team members, including a supervisor.

MODERATE: Conduct JSA involving a minimum of 2 team members.

Note: JSA team must be amended if higher risk categories are determined during the JSA

All JSA teams must involve at least one content expert

LOW: Further risk assessment not required

JSA Authorisation & Escalation

Authorisation and escalation level determined by highest Residual Risk Category following JSA

Extreme	Manager escalates to SQRA/QRA
High – Consequences are major or critical	Superintendent escalates to SQRA/QRA
High – Consequences are low, minor or moderate	Superintendent Authorises
Moderate	Supervisor Authorises
Low	Supervisor Authorises

Authorisation and level determined by highest Residual Risk Category following SQRA or QRA

Extreme	SSE Authorises
High – Consequences are major or critical	Manager Authorises

Outcomes of team



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- *Hazard Reporting process*
 - *Simple one page written report*
 - *Sign off required by individual and supervisor*
 - *Escalation built in for high risk hazards*
 - *Data entered into reporting database*

- *Four distinct modules*
 - *Risk Management Overview – Why? How? What? When?*
 - *Hazard Identification*
 - *Obvious, hidden, developing, unquantified*
 - *Pre-task Risk Assessment (Take 5)*
 - *Job Step Analysis*

- *Focus on training for competency not compliance*
 - *Limited sessions to a maximum of 15*
 - *Each session opened by GM or Production Manager*
 - *Session took as long as required, production stopped if needed*
 - *Average session approximately 6 hours*
 - *Longest 11 Hours*
 - *Shortest 4 hours*
- *Assessment included theory and practical exercises for*
 - *Hazard Identification*
 - *Pre-task risk assessment (Take 5)*
 - *JSA process*

➤ *Outcomes*

- *Increasing regular use of pre-task risk and JSA tools*
- *Increased hazard reporting (2000+ since implementation)*
- *900+ JSA developed, documented and authorised*
- *Clear understanding of requirements for escalation and authorisation of risk assessments*

Results - Training Exit Survey



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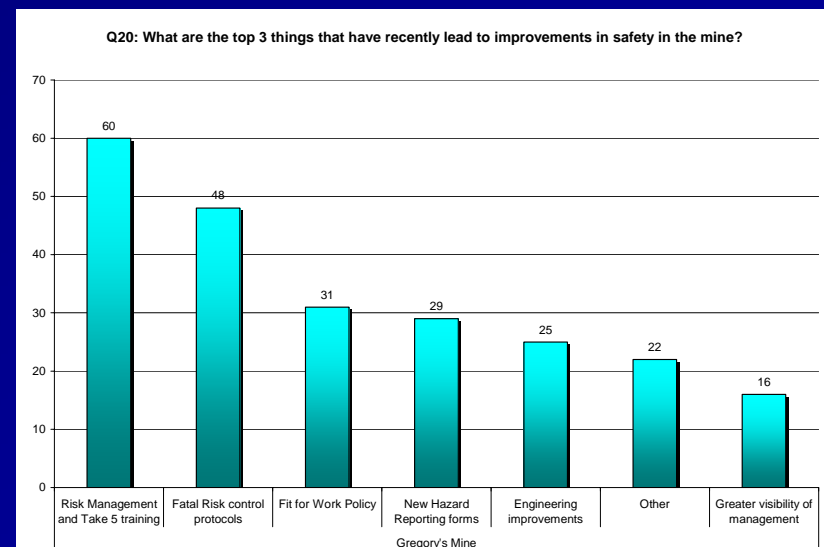
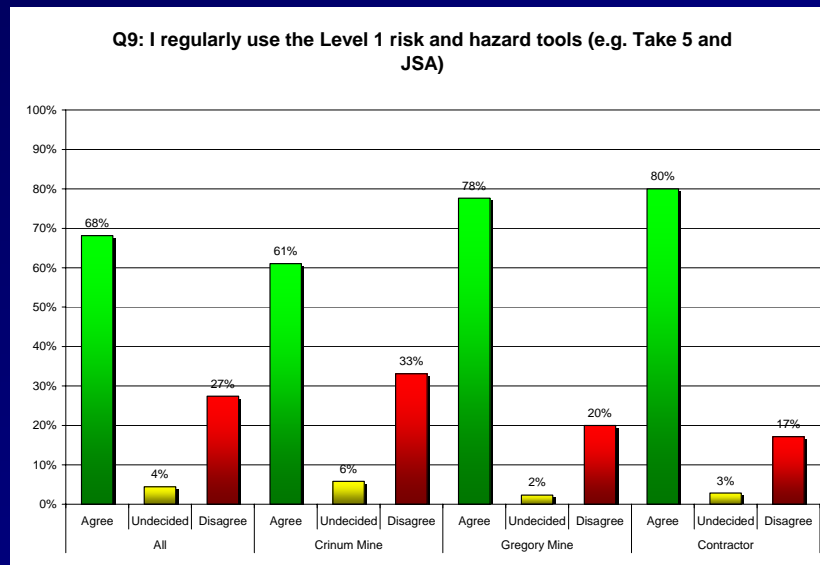
- ▶ 82% agree they have a clear understanding of the RA policy
- ▶ 86% understand the concept of obvious, hidden, developing and unquantified hazards
- ▶ 89% agree they are confident that they could complete a Take 5 effectively
- ▶ 85% understand the JSA process including authorisation and escalation requirements
- ▶ 81% of attendees believe the training improved their ability to identify hazards and assess risk

Results – Safe Day Survey (April 2006)



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- 68% of respondents regularly used the Take 5 and JSA tools
- Greater acceptance and regular use of tools by contractors
- Risk & Hazard ID program identified as a major contributor to safety improvement



Challenges



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- *Culture – acceptance of risk as part of industry*
- *Workforce 'acceptance' of the process*
- *Interruptions to production*
- *Data entry*
- *Flow on effect (actions & follow up)*
- *Maintaining the quality & consistency of training*

Next Steps



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- *Refresher training in Risk Management (all personnel)*
- *Supervisor training – what needs to be covered before authorising a JSA*

- *Work continuing on identifying the 'Barriers to Zero Harm'*



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Thank you