



## VUL-FRM-16-05 Drill & Blast Design Assessment

| Date | Designer | Design Location / Type | Site |
|------|----------|------------------------|------|
|      |          |                        |      |

| Purpose                                                                                                                                                         | Application                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Ensure drill and blast designs are compliant to procedures to ensure the health and safety of coal mine workers and persons affected by coal mining operations. | All areas within the mining operation |

### Guidance Notes

Objective of the assessment is to ensure that all issued initial designs are compliant to procedures and all known information is utilised to develop the design. Where non-compliance is identified, risk assessment and approval process to be implemented (eg JHA, Geotechnical appraisal, Risk Assessment). Minor adjustments to approved design can be conducted without additional assessment as long as overarching design criteria are not adjusted (eg registering to survey data, touch coal adjustment). Prior to issuing drill design, initial loading design required before pattern can be approved and signed off.

### Assessment Criteria

A - Nil, Minor change or deviation in design from procedures or geological information.

B - Moderate change or deviation in design from procedures or geological information, mining interaction. Peer review required and controls documented for implementation into Mine plan.

C - Elevated change or deviation in design from procedures or geological information, mining interaction. Technical Services Superintendent Review Required and controls documented for implementation into mine plan

| Standard                                                                                                                                                | C | NC | N/A | Comments / Completed Actions                                                                    | Assessment |
|---------------------------------------------------------------------------------------------------------------------------------------------------------|---|----|-----|-------------------------------------------------------------------------------------------------|------------|
| Drill Design Assessment                                                                                                                                 |   |    |     |                                                                                                 |            |
| Were there any known Geotech hazards in previous strip or design. Have controls from these hazards been implemented into new design?                    |   |    |     |                                                                                                 |            |
| Are there any known faults in the area from either the model or the touch coal surface. Do exploration holes need to be drilled prior to issued design? |   |    |     | Prompt for Geotech review of highwall and approval from Technical Services Superintendent       |            |
| Is the highwall design compliant to the PHMP Geotech criteria?                                                                                          |   |    |     |                                                                                                 |            |
| Has face burdens been checked for compliance utilising latest scan?                                                                                     |   |    |     |                                                                                                 |            |
| Has face burden and spacing been checked for offset to previously blasted toe position?                                                                 |   |    |     | Prompt for review of previous strip design and inclusion of blasted toe into design layer       |            |
| Has burden and spacing orientation been considered in relation to firing direction / sequence?                                                          |   |    |     | Prompt for consideration of tie-in design prior to drilling so as not to introduce false burden |            |
| Have hole bearings and locations been checked for potential intersection with surrounding holes or previous blast bench / patterns?                     |   |    |     |                                                                                                 |            |
| Is the shot MIC constrained? Loading design required prior to signoff of drill pattern                                                                  |   |    |     |                                                                                                 |            |



| <i>Standard</i>                                                                                                             | <i>C</i> | <i>NC</i> | <i>N/A</i> | <i>Comments / Completed Actions</i>                                                     | <i>Assessment</i> |
|-----------------------------------------------------------------------------------------------------------------------------|----------|-----------|------------|-----------------------------------------------------------------------------------------|-------------------|
| <b>Loading Design Assessment</b>                                                                                            |          |           |            |                                                                                         |                   |
| Are there any anomalies in the drilling data or non-compliance to drill design?                                             |          |           |            | Prompt to check for unidentified faults or cavities in the ground and geotech appraisal |                   |
| Are there any hard bands visible in the face or documented in drilling data?<br>Does load design to target these locations? |          |           |            | Prompt to check face scan or imagery                                                    |                   |
| Have approved standoffs to design surface been utilised? Was there any coal loss previous strip?                            |          |           |            | Prompt to check coal survey versus design coal edge                                     |                   |
| Have designs considered MIC or overpressure criteria and APP compliance.                                                    |          |           |            |                                                                                         |                   |
| Has interaction with mining operations been considered for loading limits?                                                  |          |           |            |                                                                                         |                   |
| Has previous blast results been reviewed for fragmentation and incorporated into load plan?                                 |          |           |            |                                                                                         |                   |
| Has product selection been considered for insitu conditions and sleep duration?                                             |          |           |            |                                                                                         |                   |
| Are there any hazards on the bench that will impact loading. Has a VUL-FRM-16-04-DB Pad Checklist been completed.           |          |           |            |                                                                                         |                   |

| Controls as a result of this assessment to be included into the Mine plan and communicated to the Mining Superintendent & Tech Services Superintendent |                                                                        |                              |                                   |                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------|-----------------------------------|--------------------------|
| No.                                                                                                                                                    | Controls Required for Acceptance of Design and Inclusion the Mine Plan |                              |                                   | Action Assignee          |
|                                                                                                                                                        |                                                                        |                              |                                   |                          |
| Sign off                                                                                                                                               |                                                                        |                              |                                   |                          |
| Date                                                                                                                                                   | Designer                                                               | Peer Review (where required) | Technical Services Superintendent | Final Assessment (A/B/C) |
|                                                                                                                                                        |                                                                        |                              |                                   |                          |