



MET COAL EOF PLAN 2020 & ROAD MAP TO 2024

January 2020





Overview

- EoF Journey to Date
- 2019 Safety Performance Review
- 2020 EoF Strategy
- Safety Excellence in Teams - Moving to Resilience
- 2020 to 2024 Road Map
- Appendix
 - 1 – 2020 EoF Plan By Focus Area
 - 2 - Safety Leadership Practices
 - 3- Met Coal Technology For Safety Projects



METCOAL EOF JOURNEY TO DATE



<u>EoF element</u>	<u><2015</u>	<u>2015-2017</u>	<u>2018-2019</u>
Leadership	EoF framework developed. Safety expectations set for our managers and leaders.	Deep dive culture surveys. Safety Leadership Day Stage 2&3. Manage operations during divestment. CEO lead MetCoal Leaders, EOF Planning and Contractor focus meetings.	Pockets of 'safety excellence'. Safety leadership focused on ownership at all levels (SLP & Accountability Model). SLP gap analysis commenced. CEO lead EOF 2020 Plan with GMs and SHE Managers.
Caring culture	Mates look after mates.	Mental health focus. Hygienist introduction at site. Respirable dust mitigation controls. Community Liaison Officers.	Mental health first aider training Heart of Australia Health checks Major Sponsor QLD Health & Safety Conference Donate to QMRS Emergency Winder
Planning & scheduling	Schedules in place but planning not consistent. Use of MOS as a planning tool.	Planning and scheduling management via MOS embedded in UGs. AAOM work management decision and roll out commitment.	Contractor Management Standard reviewed and supported Group Std. CM implemented at all Open Cuts. AAOM rollout commenced. Surface Zoning for UG Ops
Risk & change management	ORM Layer 1 and 2 implementation (Baselines PUE Bowties and critical controls). Change Management at sites.	Rationalisation of OC CCs, but divestment halted progression to UG. ORM CCs managed at individual operations but no alignment. MoC focused on major change.	Participation in Group Parent BTAs. UG & OC ORM Alignment with risk owners to facilitate implementation of Group FRC, minimum mandated CCs and improvement with ORM maturity. MoC focus at planning and task level.
Monitoring & assurance	We are doing a lot of audits and use AFRS extensively.	CC monitoring focus and Enablon action close out. ORAs every 3 years.	Group EoF site reviews and actions. ICTA action implementation. Implementation of 5yr Audit program.
Learning organisation	Lots of HPis reported with high frequency of repeats. Monthly SITC review forum to share lessons and apply learnings more effectively.	All parts of the business in the feedback and sharing sessions. HPI reporting alignment. Golden Rules rules (re)launch.	Safety performance analysis. SITC & HPI Reviews focused on EOF and prevention of recurrence. Our Values in Action 365 launch.

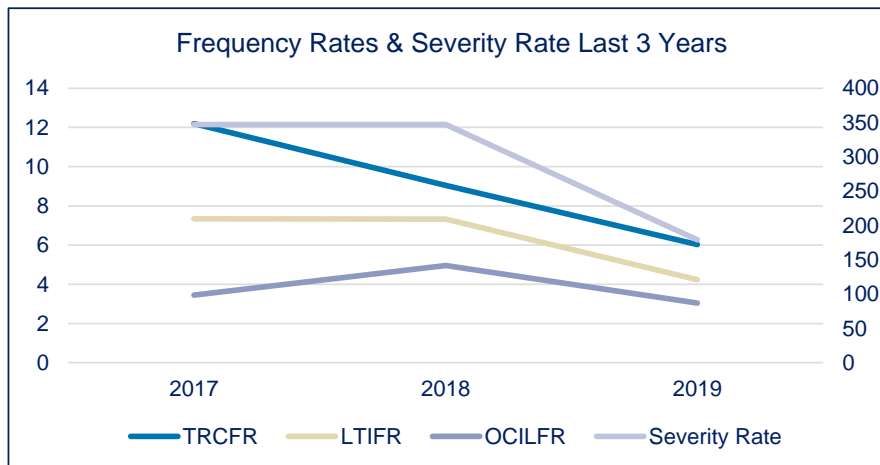
MET COAL 2019 SAFETY PERFORMANCE REVIEW

Indicators



Loss of our colleague Bradley Hardwick

Indicator	Metric				Status
	Target	2019 Actual	2018 Actual	2017 Actual	
Fatality	0	1	0	0	🔴
HPI	0	12	15	9	🔴
HPH		190	156	191	🟡
TRCFR	8.36	6.03	9.04	12.19	🟢
LTIFR	6.29	4.24	7.33	7.34	🟢
OCILFR	3.13	3.04	4.95	3.45	🟢



Grasree
2019 ZERO HPIs

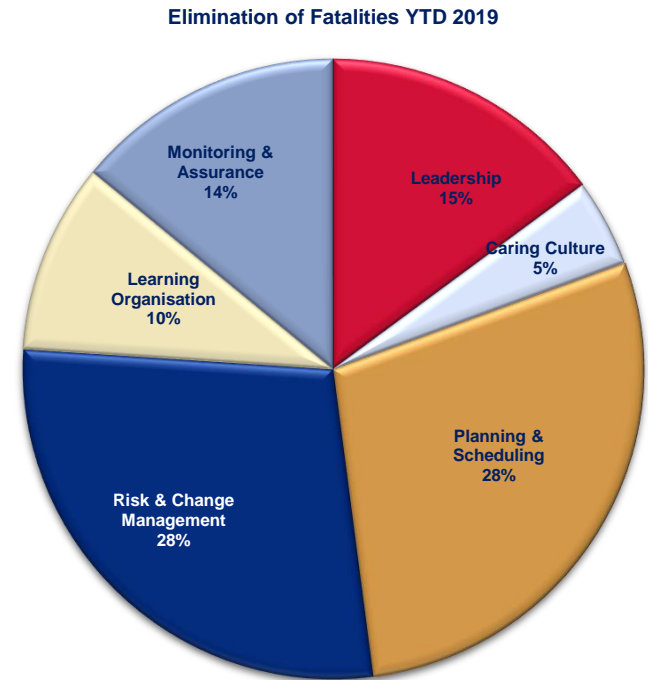
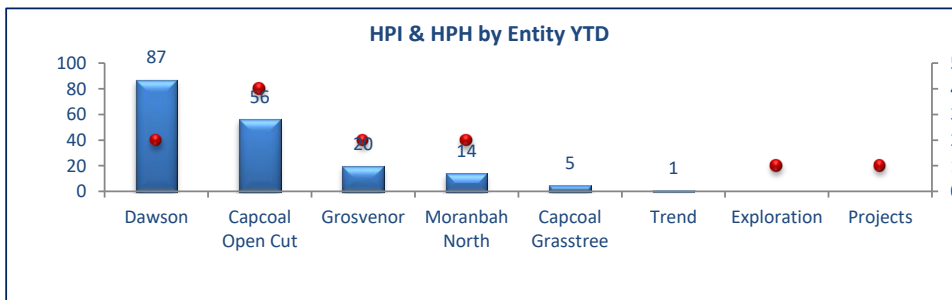
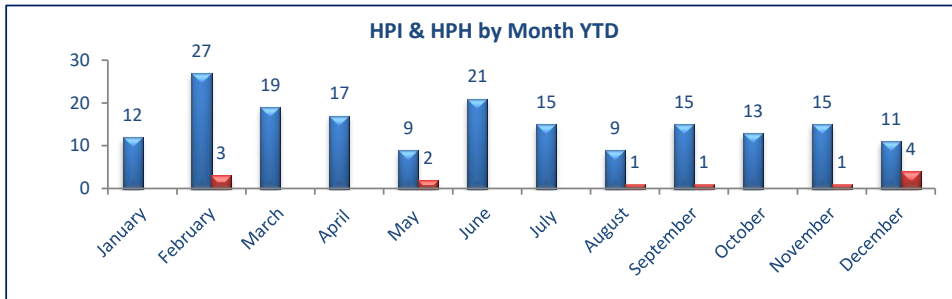
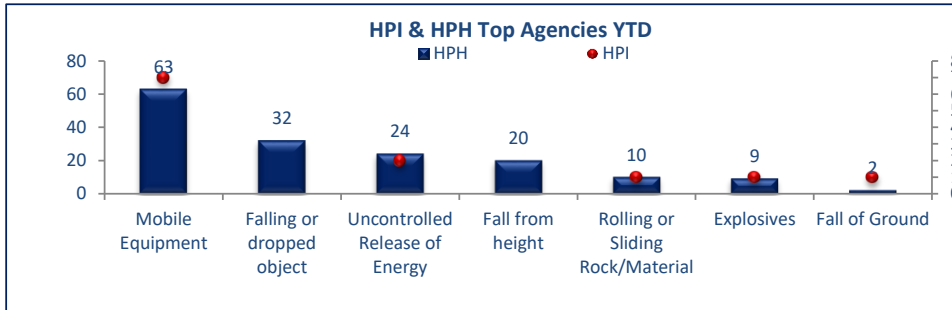
LTI Reduction 2018 -2019:
Dawson 12 > 2
Grasree 21 > 11
Grosvenor 20 > 11

2019 LTI Severity Rate down
49%

MetCoal with 5 Operating mines captured in Enablon
99,219 safety VFLs interactions with our people during 2019

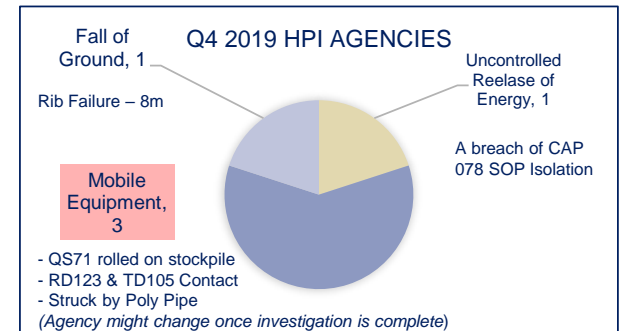
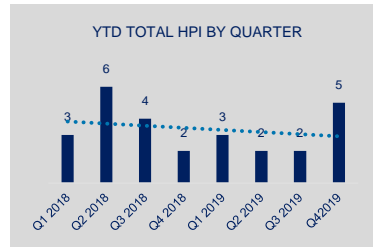
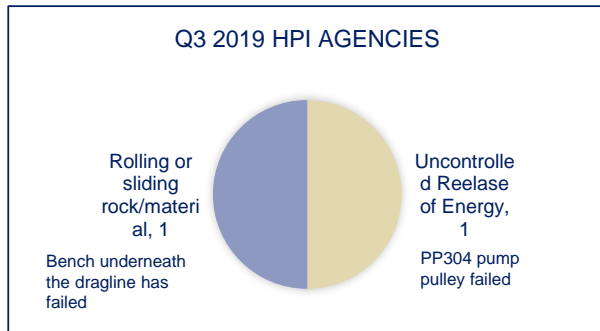


ANALYSIS OF 2019 INCIDENTS & EOF ELEMENTS

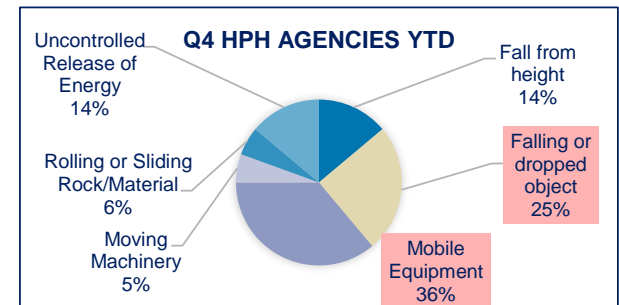
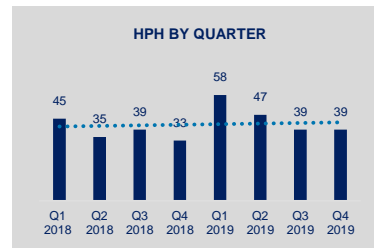
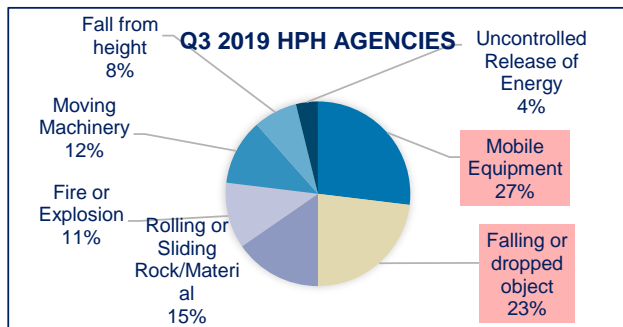


SAFETY & SUSTAINABILITY

HPI & HPH Q3 vs Q4 Analysis (Full Year)



20% less HPIs suffered in 2019 than in 2018.
 Grosvenor unfortunately suffered 2 HPIs in December after having run the rest of the year HPI free.
 The RD123 & TD105 collision at Dawson is a repeat Incident.

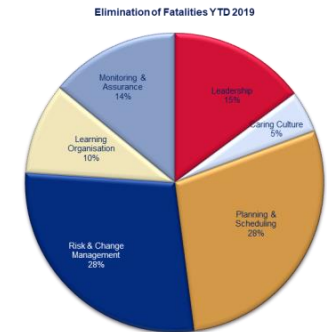


HPHs have a similar trend through the year, predominantly coming from Mobile Mining Equipment and Falling or dropped Objects Risks.
 Mobile Mining Equipment – Speeding, Not stopping at stop signs, traveling up the wrong roads, general road rules.
 Falling or dropped objects – Structural Integrity Inspections inadequate, Insufficient spillage clean up from belts, Under pans missing /inadequate



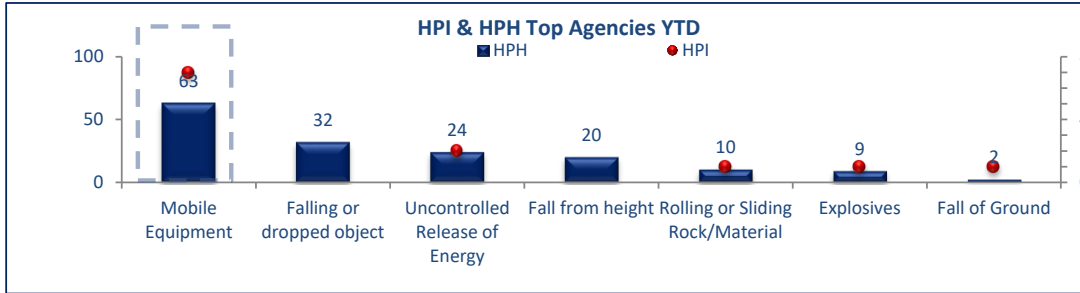
ANALYSIS OF 2019 INCIDENTS & EOF ELEMENTS

Element	Common Findings
Leadership	<ul style="list-style-type: none"> Poor communication or incorrect instruction Ineffective or no supervision on task Hazards known and ignored for long periods of time (e.g. Guarding missing for 3 years)
Caring Culture	<ul style="list-style-type: none"> Reckless driving and or at-risk behaviour Supervisor inspections not identifying hazards
Planning & Scheduling	<ul style="list-style-type: none"> Risk assessment not completed before task Inadequate Planning – Equipment, spares, tools or procedure not available Roads & Intersections not meeting Standards Equipment not in maintenance programme
Risk & Change Management	<ul style="list-style-type: none"> Non-compliance to risk assessment process Hazards not identified in Risk Assessment process and/or in workplace TARP not followed Lack of change management at task level (Especially small changes during tasks)
Monitoring & Assurance	<ul style="list-style-type: none"> Inspections inadequate or not taking place (e.g. Roads & Intersections Inspections) Lack of commissioning practices (e.g. New Electrical Panels Delivered) Parts of plants that are inaccessible and therefore not inspected Berm heights relying on operators and supervisors 'eyeballing' the correct height Equipment not in work order system
Learning Organisation	<ul style="list-style-type: none"> Repeat Incidents (e.g. trucks turning the wrong way on roads) Training material gaps in knowledge transfer CMWs not understanding procedures



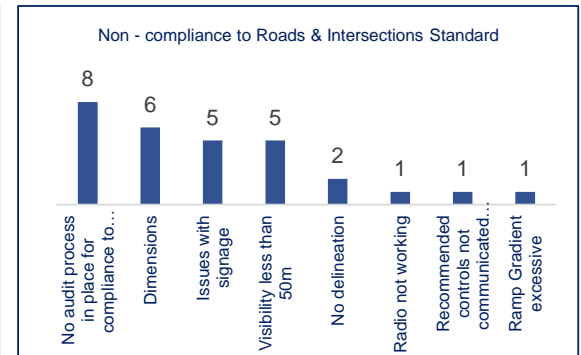
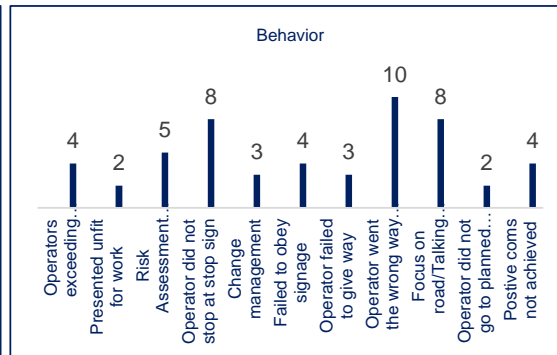
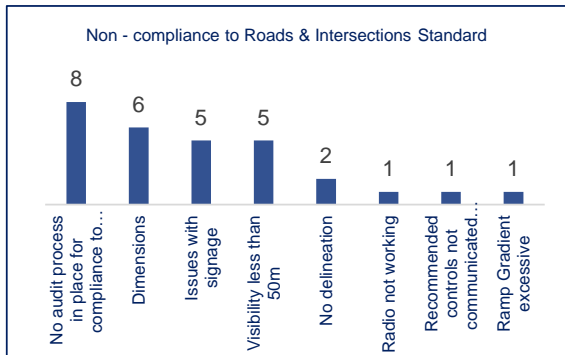
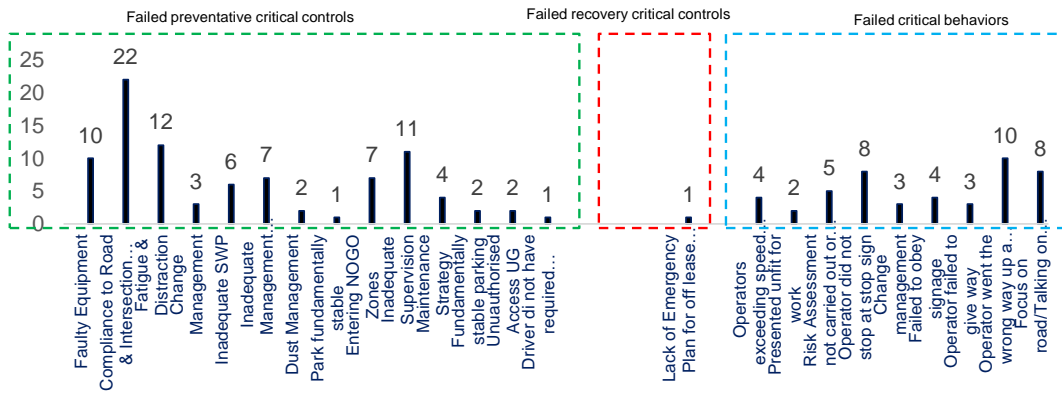


HPI & HPH ANALYSIS – MOBILE EQUIPMENT



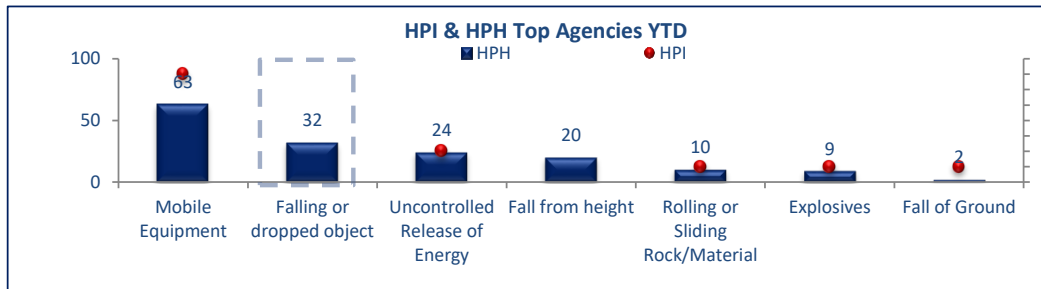
Highlights

- EoF - Non-Compliant Roads and Intersections has been a common theme through the year. Inadequate over inspections is often cited as the cause in the LFI.
- EoF – Human error has been common however normally accompanied by some form of non compliance to road & intersection compliance. (Not stopping, disobeyed signage, wrong road etc)
- EoF – There have been cases of speeding in pit.



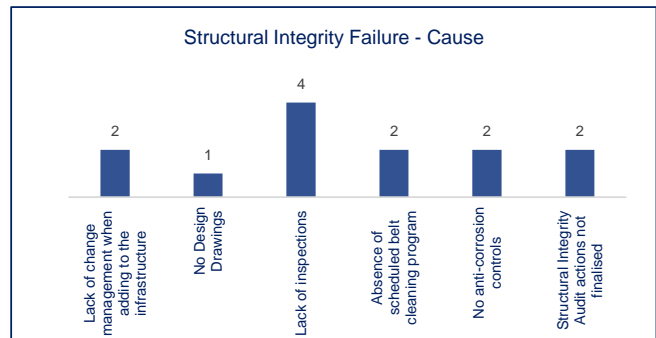
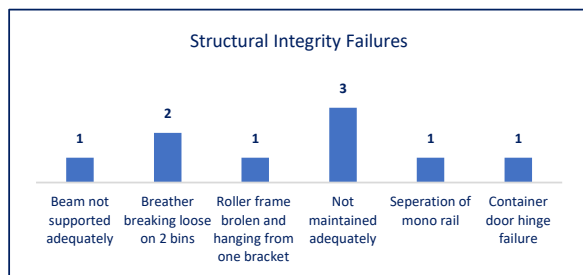
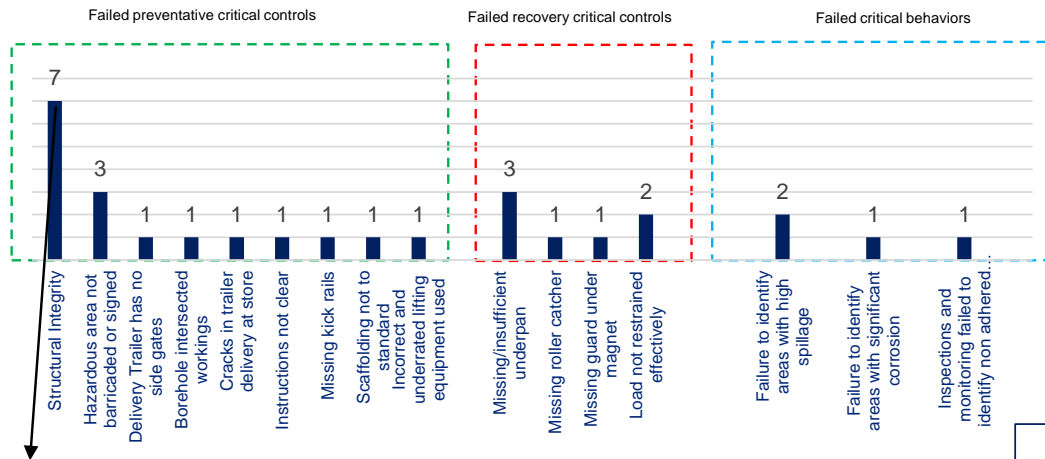


HPI & HPH ANALYSIS – FALLING OR DROPPED OBJECTS



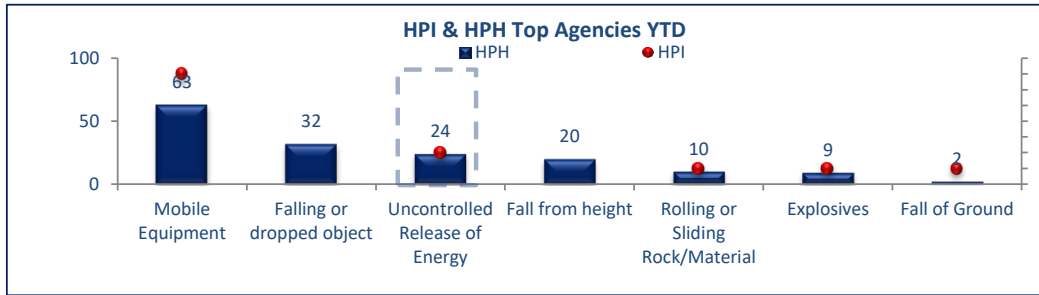
Highlights

- EoF – Lack of structured inspections for structural integrity issues
- EoF – Non compliance to change management processes leads to structures being bypassed in the maintenance & inspection schedules
- EoF – Under pans and roller catchers should form part of plant inspections and maintenance programs.
- EoF – Supervisors are not identifying structural integrity issues



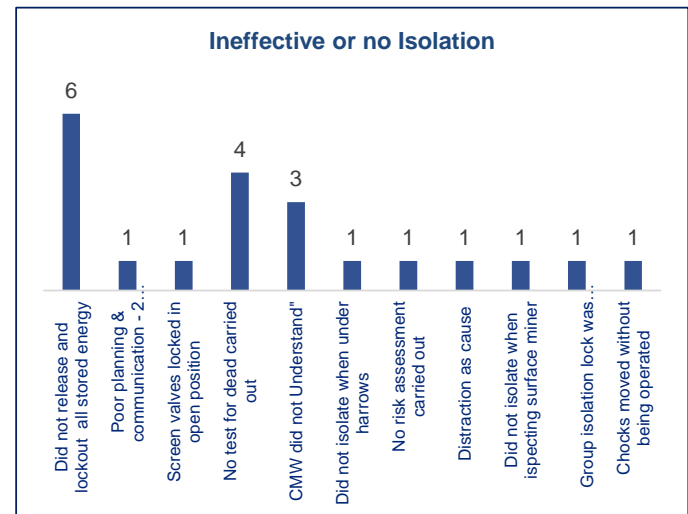
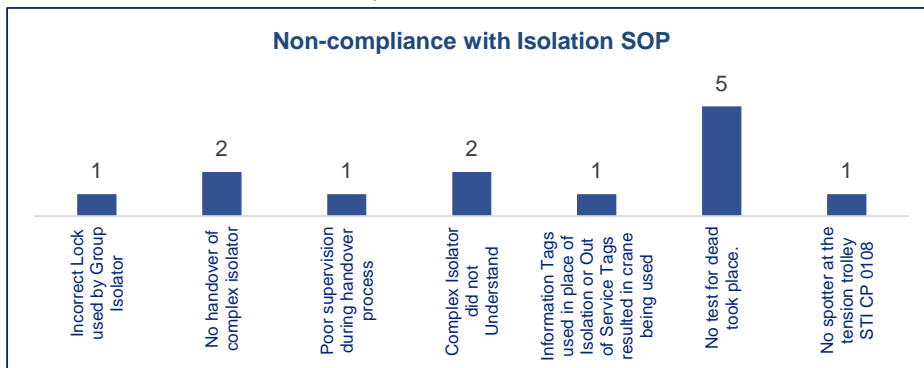
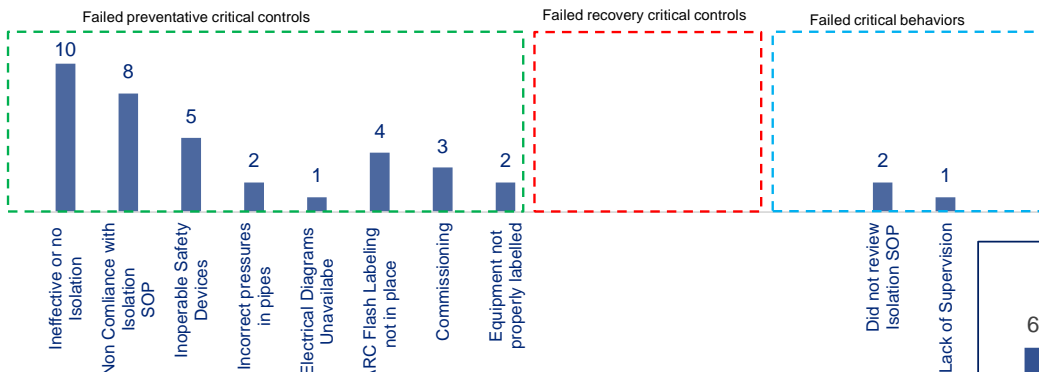


HPI & HPH ANALYSIS – UNCONTROLLED RELEASE OF ENERGY



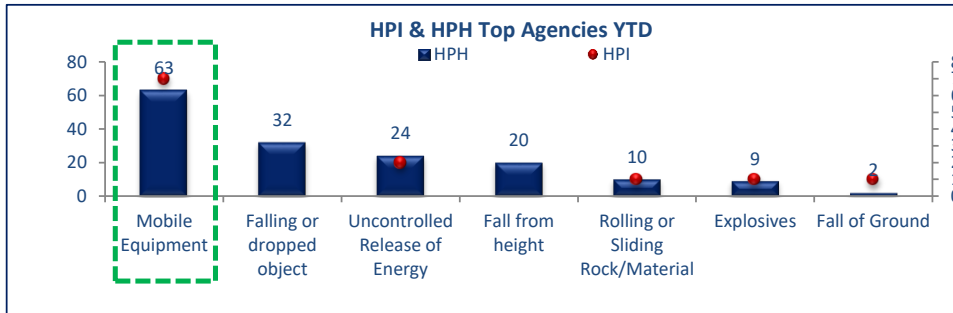
Highlights

- EoF – Processes to ensure equipment bought on site is compliant with our standards must be robust.
- EoF – The commissioning of electrical equipment after installation should have a sign off and checklist of items such as schematic diagrams.
- EoF – Any high risk electrical work should be planned, supervised and executed by technically competent and responsible people.
- EoF – Seek engineering solution for non-Compliance with Isolation SOPs by Complex Isolators.





T4S FOCUSED SOLUTIONS



Mobile Equipment Incident	Failure	Technology for Safety
Deviations to Roads and Intersection Standards	Incorrect road and intersection dimensions or placement	Drone scanning technology Mapped roadways – GPS
Fatigue related Incidents	Driving the wrong way up roads, Distracted, Fatigued	Guardvant (Onsite) SmartCap (Offsite Optional)
Equipment drives through or over bund	Bunds erode over time or are built to the wrong specification	Real Time Bund Monitoring system
Collision Incidents	Collision of equipment	OC Collision Awareness System
Dozer drives over highwall / Dozer Operator fatigue	Dozer goes over highwall, Loss of control of Dozer	Geo Fencing Remote and Semi autonomous Dozers
Entering No Go Zones	Worker interaction with machine due to being in No Go Zone	UG Proximity Detection



CRITICAL CONTROL IMPROVEMENT JOURNEY



Underground Final	PUE (Before Alignment)	Critical Controls (Before Alignment)	PUE (After Alignment)	Aligned Critical Controls
Grosvenor	35	182	28	117
Moranbah	28	247	28	117
Grasstree	31	138	28 (+ 1 GTM Winder)	117 (+ 3 Winder CCs)
Underground Total	94	567	65	351

(This is a count of existing Critical Controls, Aquila currently excluded. However are included in the development and implementation of new controls and monitoring activities)

Opencut (After alignment of controls but before final workshop)	PUE (Before Alignment)	Critical Controls (Before Alignment)	PUE (After Alignment)	Aligned Critical Controls
Capcoal	20	55	21	87
Dawson	18	104	21	87

40% Decrease in CCs. As our knowledge and maturity with CCs has advanced in 2019 – many previous CCs have been identified and captured as Supporting Factors to a CC and covered in the CCMA specification. Resulting in aligned & improved focus on what is a CC.

Capcoal increase was largely due to Met Coal alignment & implementation of Group FRC and minimum mandated CCs not previously covered by its CCs

NEXT STEPS – 2020:

- Final OC CCMA Specification workshop scheduled for **30th & 31st January**.
- UG ORM Change Implementation workshop scheduled for **06th February** for site leads at Moranbah Regional Office *(Replicated for OCs)*
- Operational change management and implementation of aligned CCs & CCMA*s to commence at each operation from February.
- ORM & AAOM integration and implementation of WEDs & PTOs at the frontline inclusive of CC requirements
- Focus on the integrity of control effectiveness is confirmed by technology for 20% of critical controls



2020 EOF STRATEGY



ELIMINATION OF FATALITIES 2020 PLAN– MET COAL

LEADERSHIP	Warwick Jones
<p>2020 Actions</p> <ul style="list-style-type: none"> ✓ Implement Leadership Capability Assessment across Supervisors ✓ Safety Leadership Practices (behavioural safety) implemented across operations, and/or existing programmes integrated with SLP ✓ Safety Leadership Practices implemented through AAOM 	
	
PLANNING AND SCHEDULING	Glen Britton
<p>2020 Actions</p> <ul style="list-style-type: none"> ✓ All open cuts have fully scheduled plans capturing all onsite activities ✓ All site have AAOM in place and operational ✓ Field Mobility Program pilot and implementation to digitise work orders, statutory reporting and safety documents and integration with UG Tablets 	
	
LEARNING ORGANISATION	Adriaan Esterhuizen
<p>2020 Actions</p> <ul style="list-style-type: none"> ✓ Identify gaps in SHE MS records management and implement solutions ✓ Implementation of Learn+ e-learning LFI modules and practical skills development programme ✓ Source and implement communication technologies that improve opportunities for learning from incidents 	
	

CARING CULTURE	Glen Robinson
<p>2020 Actions</p> <ul style="list-style-type: none"> ✓ Review results from 2019 survey and implement a contractor focus for inclusion ✓ From results of “Heart of Australia” assessment, determine health initiative to target highest risk group at each site ✓ Consequence Management & Accountability Model implemented and applied consistently to demonstrate a just and fair safety culture 	
	
RISK AND CHANGE MANAGEMENT	Hans Hayes
<p>2020 Actions</p> <ul style="list-style-type: none"> ✓ Change management tool across all operations ✓ Technology solutions implemented to control high risk areas – mobile mining equipment, fatigue awareness and other technologies ✓ Learn+ e-learning A Series risk management modules developed and implemented to support Met Coal RII legal risk competency requirements 	
	
MONITORING AND ASSURANCE	Carlos Davila
<p>2020 Actions</p> <ul style="list-style-type: none"> ✓ The integrity of control effectiveness is confirmed by technology for 20% of critical controls ✓ 5 year deep dive audit program implemented for critical & high risk hazards ✓ Talent development through cross site auditing exposure participation 	
	

2020 EoF STRATEGY & KEY FOCUS AREAS

Met Coal

2019 Performance

- Fatality at Moranbah North Mine, Bradley Hardwick, difficult and traumatic
- Remainder of year was a strong performance with significant improvements
- Positive EoF review results and learnings from SLP/SSB/Safety Resets
- **EoF 2020 Strategy**
- Single clear plan for 2020 - Alignment with Bulks and all Met Coal operations
- Specific actions developed and tracked through Enablon for accurate metric performance tracking

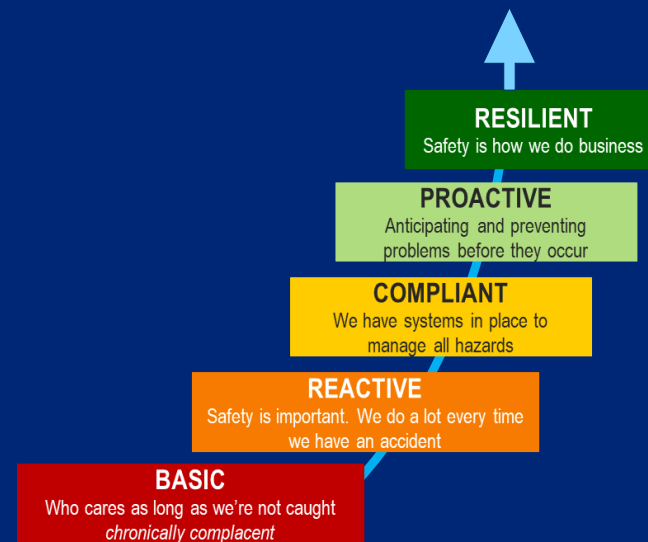


Key Focus Areas 2020

- **Leadership & Caring Culture**- SLP Implementation & Actions from SLP/SSB/EoF/Safety Resets
- **Planning & Scheduling** – AAOM implementation & Contractor Management
- **Monitoring & Assurance** – CC monitoring (T4S focused) and Digitalised JRAs WEDs
- **Risk & Change Management** – CC alignment embedded to frontline and CC T4S innovations
- **Learning Organisation** – LFI actions that are focused on prevention of recurrence, and consistent application of accountability model when human factors are contributing factors



MET COAL SAFETY EXCELLENCE IN TEAMS MOVING TO RESILIENCE



GROUP EoF TASKFORCE ASSESSMENTS

Summary	REACTIVE	RATIONAL	RESILIENT
1. Leadership			
2. Integration			
3. Behaviour			
4. Analysis			
5. Systems			
6. Risk Control			
Overall			
	BASIC	INTERMEDIATE	ADVANCED

Anglo
 Copper
 Kumba
 Platinum
 DeBeers
 Coal SA
 Met Coal
 Top Companies

SAFETY LEADERSHIP PRACTICES (SLP)

SLP Model = Ownership & Accountability for Safety at all levels

OUR SAFETY LEADERSHIP PRACTICES



The sets of Safety Leadership Practices support each other through common themes across three types of employees



RESILIENCE & SAFETY EXCELLENCE IN TEAMS

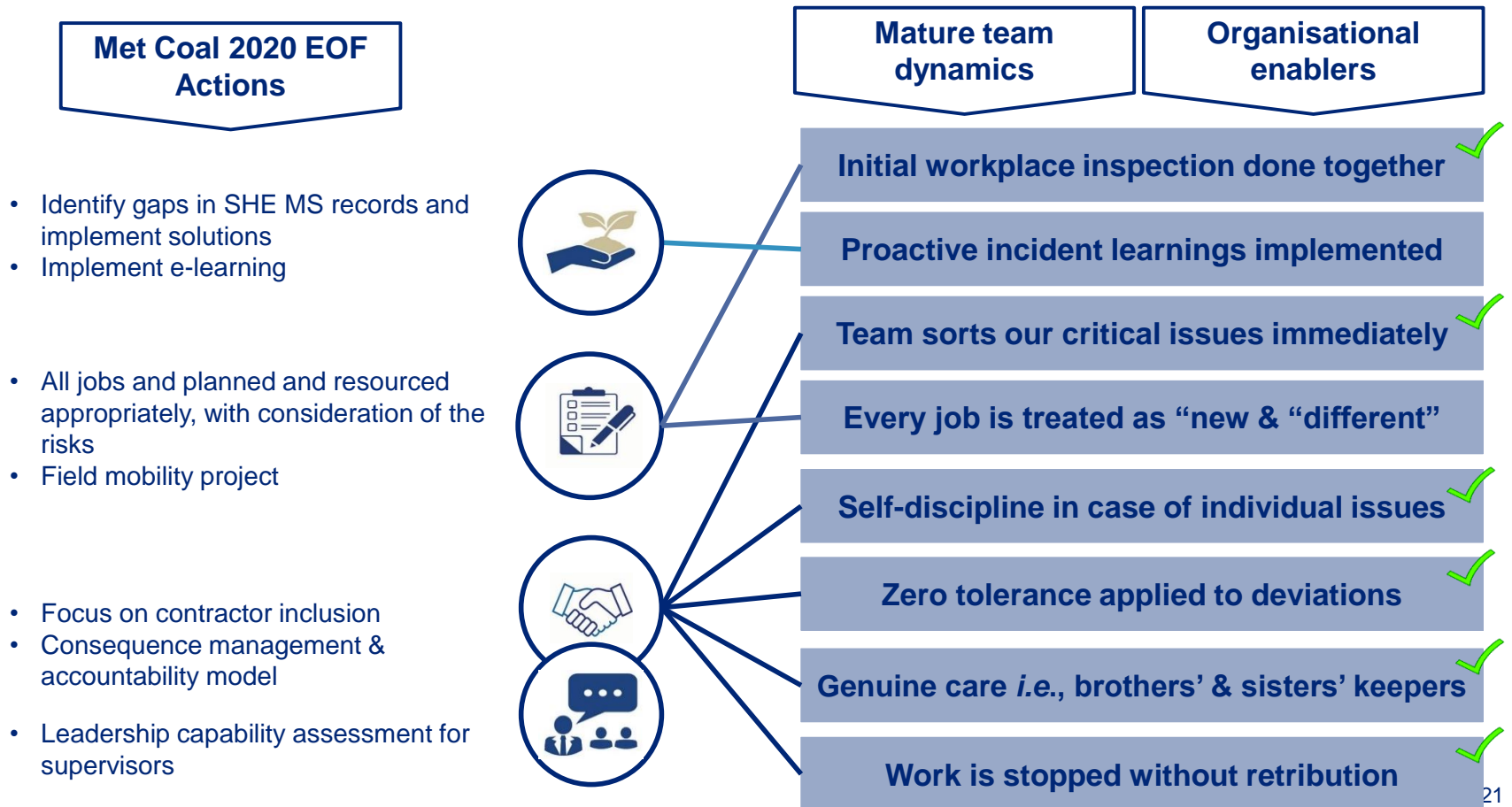
Bulks & Met Coal EOF plan Alignment (1 of 2)



RESILIENCE & SAFETY EXCELLENCE IN TEAMS

Bulks & Met Coal EOF Plan Alignment (2 of 2)

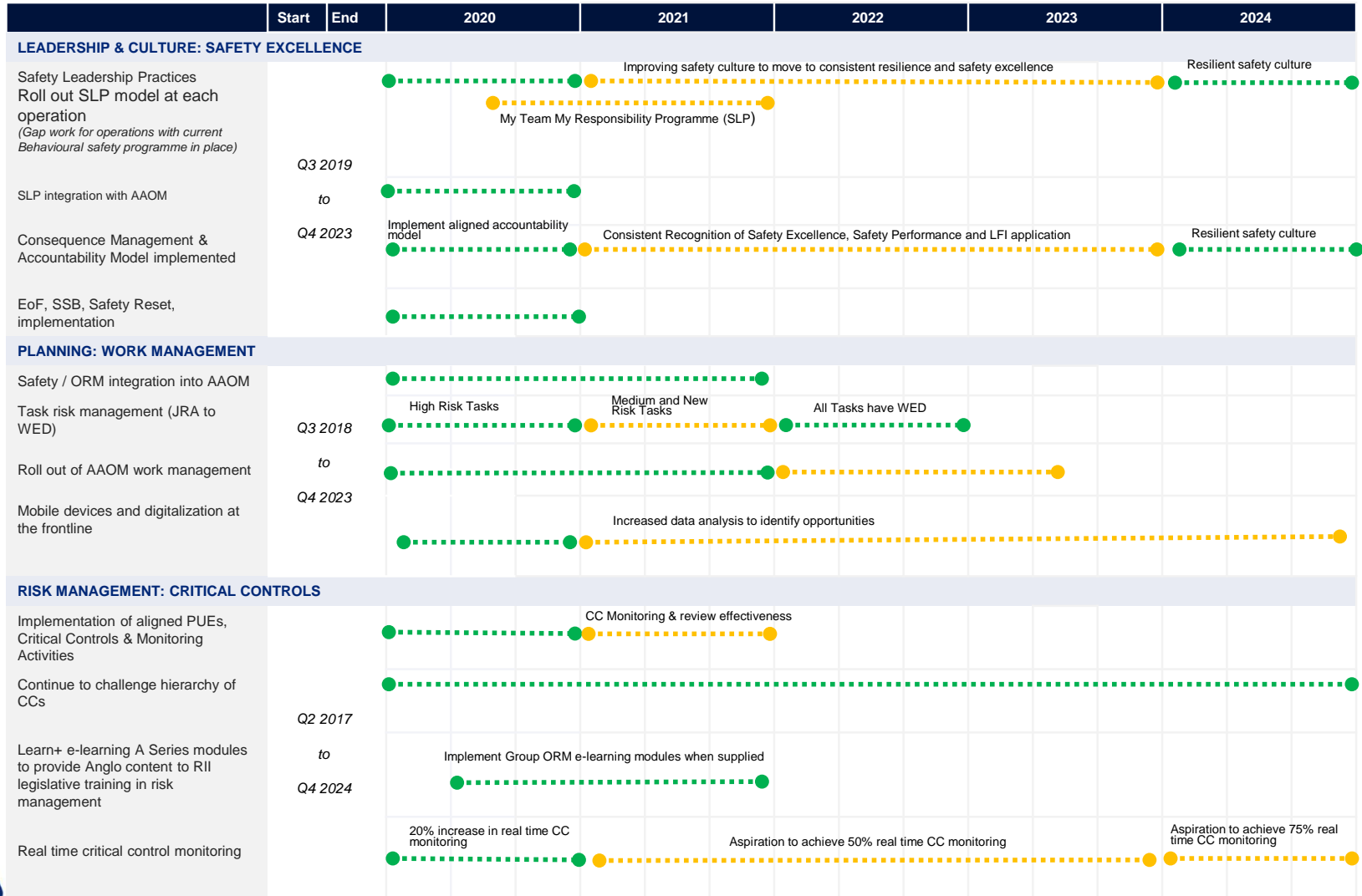
The 4 cardinal foundations & 16 features of safety excellence





2020 TO 2024 ROAD MAP

EOF ROAD MAP



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2020-24 KEY FOCUS AREAS

FOCUS AREA	KEY ONGOING & NEXT STEPS
<p>AAOM Work Management with safety/ORM/SLP integrated</p>	<ul style="list-style-type: none"> • AAOM work management – All work is planned and scheduled • All high risk tasks have a JRA (digitized WEDs with CC information) • Digitalisation and mobility devices available in field • Work management implementation and integrated with SLP
<p>Critical Controls</p>	<ul style="list-style-type: none"> • ORM Layer 1 & 2 Alignment of CCs implemented and managed from Manager, Supervisor and Worker level • Relevant critical control information is available with the frontline and embedded into every document (execution, oversight, assurance) • Challenge the level of application of the hierarchy of control to CCs • Harness technologies and digital solutions to enable real time CC monitoring
<p>Management of Change</p>	<ul style="list-style-type: none"> • MoC review • Improvement plan implementation • Post-implementation review • Management of change process enhancements
<p>Technology for Safety</p>	<ul style="list-style-type: none"> • T4S forums set up and active participation in frequently held sessions • Priority solutions identified and implemented • Opportunities for acceleration of roll out considered vs. vulnerability/exposure • Value for safety projects / pilots identified • Long term T4S pipeline / road map developed



THE END



APPENDIX 1

2020 EOF PLAN BY FOCUS AREA



LEADERSHIP

MCLT Element Owner – Warwick Jones

End State Goals

- ✓ Leaders display drive, accountability and passion for safety at all times
- ✓ Safety leaders coach and influence on an ongoing basis across all levels
- ✓ Met Coal leaders are acknowledged within the Mining sector for safety innovation and expertise



2020 Actions



Implement Leadership Capability Assessment across Supervisors



Safety Leadership Practices (behavioural safety) implemented across operations, and/or existing programmes integrated with SLP



Safety Leadership Practices implemented through AAOM



METALLURGICAL COAL

CARING CULTURE

MCLT Element Owner – Glen Robinson

End State Goals

- ✓ Commitment to care for each other all the time
- ✓ Safety mindset across all aspects of daily life – inside and outside the gate
- ✓ Constantly monitoring, sharing and improving working conditions



2020 Actions



Review results from 2019 survey and implement a contractor focus for inclusion



From results from “Heart of Australia” assessment, determine health initiative to target highest risk group at each site



Consequence Management & Accountability Model implemented and applied consistently to demonstrate a just and fair safety culture



METALLURGICAL COAL

PLANNING AND SCHEDULING

MCLT Element Owner – Glen Britton

End State Goals

- ✓ Robust and challenged plans that encompass whole of mine
- ✓ Plans and schedules resourced appropriately for level of activity required
- ✓ Competent and capable supervision of tasks and team members



2020 Actions



All open cuts have fully scheduled plans capturing all onsite activities



All site have AAOM in place and operational



Field Mobility Program pilot and implementation to digitise work orders, statutory reporting and safety documents and integration with UG Tablets



RISK AND CHANGE MANAGEMENT

MCLT Element Owner – Hans Hayes

End State Goals

- ✓ Risks are appropriately assessed at all levels
- ✓ Controls are commensurate with the risk are identified, and are applied, monitored and regularly improved
- ✓ Critical Controls are established for all high risk activities and suitability of controls are regularly challenged
- ✓ Change management is integrated into all process



2020 Actions



Change management tool across all operations



Technology solutions implemented to control high risk areas – mobile mining equipment, fatigue awareness and other technologies



Learn+ e-learning A Series risk management modules developed and implemented to support Met Coal RII legal risk competency requirements



METALLURGICAL COAL

MONITORING AND ASSURANCE

MCLT Element Owner – Carlos Davila

End State Goals

- ✓ Integrity of controls for high level risk management are maintained 100%
- ✓ Internal and external assurance for critical & high risk hazards is routine
- ✓ Met Coal appropriately resourced with regulatory compliances embedded



2020 Actions



Determine critical controls that can be monitored by technology and implement to ensure integrity of critical controls is at 100%



5 year deep dive audit program implemented for critical & high risk hazards



Talent development through cross site auditing exposure participation



METALLURGICAL COAL

LEARNING ORGANISATION

MCLT Element Owner – Adriaan Esterhuizen

End State Goals

- ✓ Proactively seek and implement opportunities for improvement
- ✓ Sharing is inherent in safety culture
- ✓ Use of high level control hierarchy is fundamental to approach for managing risk
- ✓ Benchmarking activities constantly increase performance



2020 Actions



Identify gaps in SHE MS records management and implement solutions



Implementation of Learn+ e-learning LFI modules and practical skills development programme



Source and implement communication technologies that improve opportunities for learning from incidents



APPENDIX 2

SLP

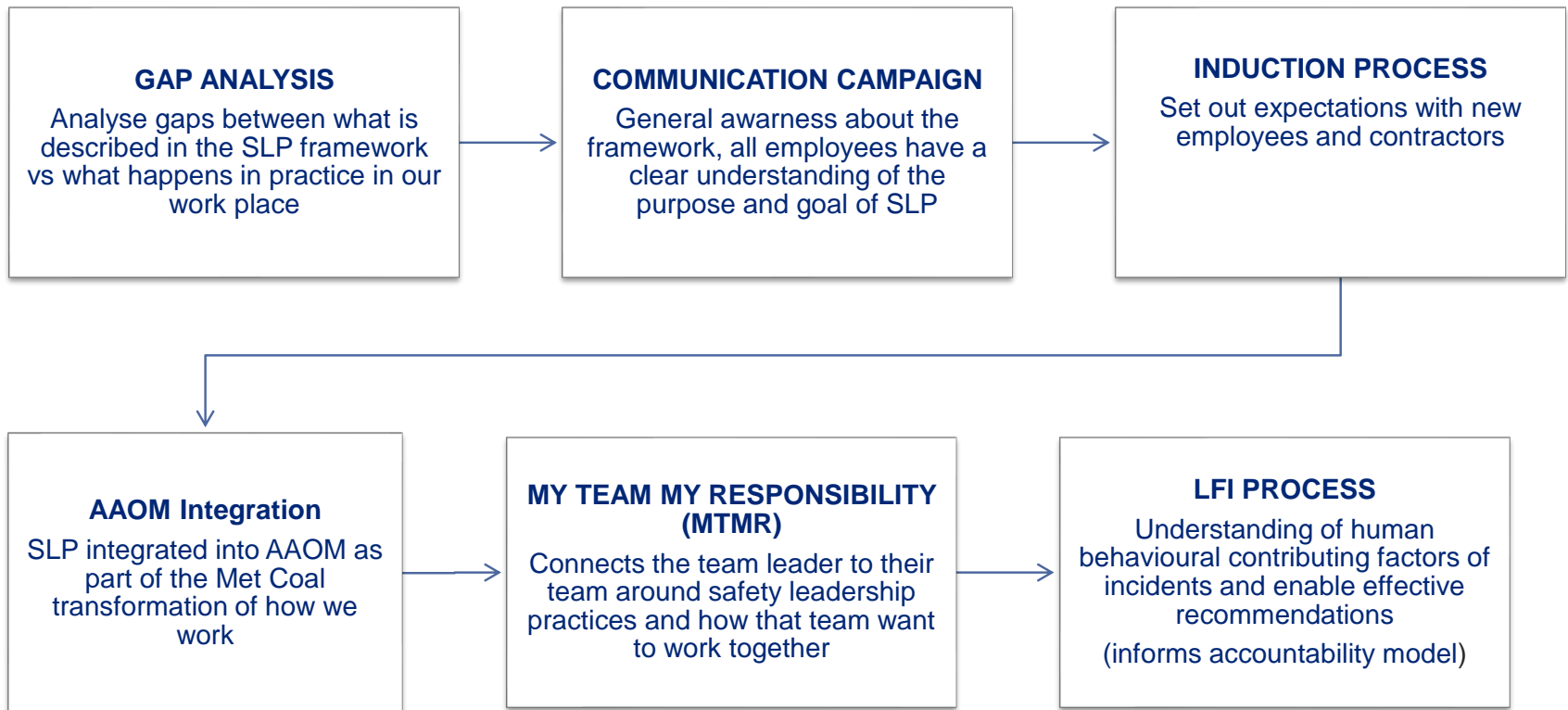
SAFETY LEADERSHIP PRACTICES (SLP)

Moving to Resilience with SLP

- **Eliminate fatalities** and make our aspiration of Zero Harm a reality we are always working to manage our safety risks and continually improve our operations and processes.
- **Success depends on our people** demonstrating safety leadership practices that promote a strong safety culture so that our systems can work.
- The effort to improve **safety culture focuses on safety leadership practices** because we can define, observe and reinforce the positive practices **that foster a safe responsible culture.**
- **SLP defines the leadership practices** and thinking style **required from all our people to support a safe responsible culture and safety excellence in teams.**
- **It is Not a stand alone programme but integrated into management systems:**
 - *Current safety behavioural programs (Dawson, Grosvenor & Grasstree)*
 - *SHE and HR managements system*
 - *AAOM and becomes part of day-to-day activities*

SAFETY LEADERSHIP PRACTICES (SLP)

Implementation Process





APPENDIX 2 MET COAL T4S

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