

Webinar: Mine water management		
Question Details		
#	Question	Answer
1	is the recording available later?	live answered The recording will be available on our website post the webinar
2	I work at a smelter which suffers from significant groundwater contamination. Many of our groundwater extraction systems, predominantly the pumps suffer from scale. Have you had any success in reducing scaling within your pumping systems?	I work at a smelter which suffers from significant groundwater contamination. Many of our groundwater extraction systems, predominantly the pumps suffer from scale. Have you had any success in reducing scaling within your pumping systems?
3	what is NVP?	what is NVP?
3		live answered
3		net present value
4	How do you mitigate the impact of sediment during diversion?	How do you mitigate the impact of sediment during diversion?
5	what is creek capture	what is creek capture
5		live answered
6	What are the advantages of using a low flow channel?	
7	would be useful to explain acronyms eg OSA?	overburden storage area
7		ARI
7		Average Recurrence Interval
7	would be useful to explain acronyms eg OSA?	ARI - average recurrence interval. http://www.bom.gov.au/water/awid/id-704.shtml
		Thanks
		Thanks all, its a group effort! :-)
8	How to avoid the impacts to the groundwater table when you have two giant pit along the new water channel?	Pits will be dewatered during operation (if the the natural water level is above the floor of the pit). On closure the groundwater level will be allowed to recover - either into a lake or into in pit back fill. Largely independent of the ephemeral water running over the and bridge.
9	The Land Bridge which was shown did not seem to include geomorph considerations in it's design, is that a temporary diversion and/or will BHP go back and adjust the routing/shape of the channel at closure?	live answered
10	I assume you are limited to using materials nearby so it can be hard to get good materials to use for constructing a good bund or levee etc	I assume you are limited to using materials nearby so it can be hard to get good materials to use for constructing a good bund or levee etc
11	On slide 5 - what modelling is used for flood immunity?	On slide 5 - what modelling is used for flood immunity?
12	Another question is how to provide fish passage design in the bund construction?	live answered
13	How do you manage risk or assess risk to the bunds from burrowing animals? Is compaction enough to mitigate this risk sufficiently from experience? Is this considered in the design assumptions when sizing the bunds?	live answered
14	In doing the hydrology for those parts of Australia, what kind of initial loss and continuing losses do you consider?	
15	Do you initiate vegetation growth or leave it to nature?	both are options. Natural is preferred where there is a good seed source (such as flood flows from upstream)
15	Do you initiate vegetation growth or leave it to nature?	How do you avoid weeds when using natural approach?
16	There was slide stating: "There is no point constructing a bund to the elevation of a 10,000 year Ari event if it will be eroded away within 100 years". I am not sure if this is correct. A structure has a design life (usually less than 100 years), and yet it can require a 1 in 10,000 AEP flood immunity which basically mean 0.001% chance of flooding every year during the design life. Please clarify if possible.	live answered
17	If I recall correctly ANCOLDA sets the PMP be used to size emergency spillways. Have there been recent studies on the effects of climate change on previously derived PMPs?	*ANCOLD https://newsroom.unsw.edu.au/news/science-tech/dam-safety-study-indicates-probable-maximum-flood-events-will-significantly?utm_source=linkedin&utm_medium=social Thanks Federico! This is quite worrisome. Agreed!
18	Are you facing problems with hypersaline ground water? If so, how do you manage them to not affect surface water with the dewatering?	In this area the groundwater is good quality - almost fresh. There are many areas where the groundwater and surface water are naturally in connection.
19	How long does it take for groundwater to recover?	It has only been modelled so far - not measured. Many 10's to 100+years are the predictions.
20	How do you design a diversion? Landform modelling? Is 0.4% slope leading practice (at least for BHP?)	How do you design a diversion? Landform modelling? Is 0.4% slope leading practice (at least for BHP?)
21	was this drone footage 7 years after construction ?	was this drone footage 7 years after construction ?
22	When lowering the groundwater/dewatering, what considerations go into deciding where to pump dewatering water to?	When lowering the groundwater/dewatering, what considerations go into deciding where to pump dewatering water to?
22	When lowering the groundwater/dewatering, what considerations go into deciding where to pump dewatering water to?	The mining depth and rate of mine advance primarily. Pit slope drainage and depressurisation as a second factor. Fundamentally - the groundwater level must be below the lowest mine bench.
23	as you say groundwater takes 10s to 100s of years to recover, how does this effect the ability of ground water dependant river systems and ecosystems to recover and re-establish?	The aim is to isolate the creek ecohydrological environment from orebody groundwater system.

24	Do you have an estimate for the cost of Mariliana diversion? How many Mt of ore was retrieved during the process (I.e. how much ore was below the existing creek)	
25	would the whole valley have been covered in that denseness of trees ?	
26	Any roughening elements placed in the lowflow to help with fish passage? And what time frame do you start to see fish using the diversions?	Any roughening elements placed in the lowflow to help with fish passage? And what time frame do you start to see fish using the diversions?
27	How much of the newly established vegetation is natural species and how much are weeds?	live answered
28	What magnitude event was the diversion constructed for?	live answered
29	The low flow channel in your design appears to follow the same alignment and hence is the same length as the overall floodplain diversion. Typically, low flow channels are much more sinuous, which allows for increased length and hence flatter overall gradient. Additionally, low flow channels can be designed to incorporate pools and riffles, whereby pools are created along the channel length, creating habitat areas. Any comments why the low flow channel doesn't include sinuous curvature and pools along its length?	
30	Have there been any subsidence issues observed either in the overblast/backfilled creek alluvium or the landbridge situation that might impact creek bed morphology?	
31	Do you do pre and post sediment transport analysis comparing natural creek v diversion cumulative impacts?	
32	Could you recommend softwares that can model the channel flow dynamically and also considering mine drainage water quality?	We use TUFLOW for hydraulic, hydrodynamic and water quality modelling in mining for flood planning, risk assessment through to water quality in mine void lakes post closure. https://www.tuflow.com/
32	Could you recommend softwares that can model the channel flow dynamically and also considering mine drainage water quality?	Out of curiosity, can TUFLOW do dam break analysis considering a slurry?
32	Could you recommend softwares that can model the channel flow dynamically and also considering mine drainage water quality?	Thank you Louise, I will look forward the software
33	What are the things to be considered when choosing a remediation method for groundwater contamination by mining?	
34	What eco-toxicants do you need to plan for when catchment includes disturbed land?	
35	is there any management around the erosion on the upstream left bank, does the sediment stay in the diversion or enter the natural creek?	
36	What is the difference in pre to post mined (current) populations of migratory birds such as the red necked stint that you mentioned?	
37	Could you please put up the web address for the papers etc again?	
38	Is it meaning the bund is not just for river/channel protection, also to avoid the mining pit get flooded?	
39	Do we got the certificate after finishing the webinar?	live answered
39	Do we got the certificate after finishing the webinar?	Yes we will send to you in a few days' time! :-)
40	most questions have not been answered, which is disappointing.	
41	What is the guitar music played during the countdown? Great music.	