Mine Tailings Disclosure Table

Overview question:
Please
a) Provide an overview of your tailngs management system, and how you manage risk
b) Confirm whether your approach to tailings management has changed or will change in light of the recent tailings disasters at Brumadinho, Mariana, Mt Polley and others. Have you, for example, reviewed all tailings storage facilities with upstream dam construction, and taken steps necessary to protect local communities and the environment e.g. buttressing, evacuation?

Overview answer)
a) Risk is managed at all locations using a series of processes:
- at very detailed and granular levels for individual components of the tailings facilities (including ancillary infrastructure)
- each business unit (operating division) must implement an Environmental Management System (EMS) certified to the ISO 14001 st andard – the standard requires completion of risk assessment associated with the organization's environmental impacts
- the company also has an enterprise risk management system which rolls up the results of the above two processes into a corpor ate level view of company risk
b) Our approach to tailings management has evolved recently. We have drawn from updated guidance contained in the Mining Association of Canada's *Guide to the Management of Tailings Facilities* (and associated additional documents) to implement and/or expand internal governance and independent peer review processes. The focus of these processes has included assessment of risks in light of emerging be st practices, such as addressing potential concerns associated with upstream dam construction and protection of our local people and the environmen t.

TSM scores can be found on Hudbay's website at: https://www.hudbayminerals.com/English/Responsibility/Reports/TSM-Table/default.aspx

Instructions to support

1. "Tailings Dam" Name/identifier	2. Location	3. Ownership	4. Status	5. Date of initial operation	6. Is the Dam currently operated or closed as per currently approved design?	7. Raising method	8. Current Maximum Height	9. Current Tailings Storage Impoundment Volume	10. Planned Tailings Storage Impoundment Volume in 5 years time.	11.Most recent Independent Expert Review	12. Do you have full and complete relevant engineering records including design, construction, operation, maintenance and/or closure.	13. What is your hazard categorisation of this facility, based on consequence of failure?	14. What guideline do you follow for the classification system?	15. Has this facility, at any point in its history, failed to be confirmed or certified as stable, or experienced notable stability concerns, as identified by an independent engineer (even if later certified as stable by the same or a different firm).	16. Do you have internal/in house engineering specialist oversight of this facility? Or do you have external engineering support for this purpose?	17. Has a formal analysis of the downstream impact on communities, ecosystems and critical infrastructure in the event of catastrophic failure been undertaken and to reflect final conditions? If so, when did this assessment take place?	18. Is there a) a closure plan in place for this dam, and b) does it include long term monitoring?	19. Have you, or do you plan to assess your tailings facilities against the impact of more regular extreme weather events as a result of climate change, e.g. over the next two years?	20. Any other relevant information and supporting documentation. Please state if you have omitted any other exposure to tailings facilities through any joint ventures you may have.
Anderson TIA One dam	54.855099° -99.973959°	100% owned and operated	Active	1979	Yes	Downstream	5 m	9.375 million m^3	~2,500,000m^3 predicted in the next 5 years, resulting in 11.875 million m^3	January 30, 2019 Next scheduled site visit: June 10-14, 2019	Yes	Very high (this classification is currently under review by our Engineer of Record)	Canadian Dam Association	No	Both – primary support from the external engineer	No An inundation study for the facility will be completed in 2019	Yes The dam raise currently underway has necessitated an update. We intend to include long-term monitoring in the update.	Yes - TMF design uses probabilistic parameters which correspond to extreme weather conditions laid out by the most recent and available modelling analysis which takes climate change into account	This facility uses the sub-aqueous method of disposal – the one dam is constructed to maintain adequate water levels in the lake to maintain cover over the tailings. The first ever raise (using downstream construction) on the dam is currently underway. AA performer in MAC TSM Tailings Management protcol since 2011
Birch Lake TDF Two dams	54.901791° -100.017601°	100% owned (acquired in 2015)	Inactive	The facility was operated by others between 1949 and 1958; and 1995 and 2005 No plans to re-activate this facility	Yes	Not applicable – no raises are planned	10 m	6.75 million m^3	0 predicted in the next 5 years, resulting in maintaining 6.75 million m^3	The IPRB has been briefed on this facility regarding overall stability and operation. No further review has been necessary as no changes are planned and monitoring has not identified any issues.	Yes. Along with the records acquired during the purchase of the property our Engineer of Record initiated a stability investigation of the various structures. No action was required as a result of the investigation. The care and maintenance of the facility has continued without incident since the change in ownership.	High (assigned by the original Designer, has not been re-evaluated by our Engineer of Record)	Canadian Dam Association	No	Both – primary support from the external engineer	No An inundation study for the facility will commence in Q3 2019. The facility was not identified as a priority because of the care and maintenance status.	Yes Not currently. When the plan gets updated, it will include long term monitoring.	Yes - TMF design uses probabilistic parameters which correspond to extreme weather conditions laid out by the most recent and available modelling analysis which takes climate change into account	AA performer in Tailings TSM (included in assessment for Manitoba Business Unit)
Flin Flon TIS Multiple dams (18 in total)	54.771931° -101.905826°	100% owned and operated	Active	1929	Yes	All water retaining structures – downstream Non-water retaining structures – upstream (see question #20 in final column for more detail)	21 m	78.75 million m^3	3.426 million m^3 predicted in the next 5 years, resulting in 82.176 million m^3	January 30, 2019 Next scheduled site visit: June 10-14, 2019	Yes	11 dams are classified as either high or very high, the other 7 have been screened as below "high", but the exact level is being reviewed	Canadian Dam Association	No	Both – primary support from the external engineer	Yes (partially) An inundation study for structures at the North end of the FFTIS was completed in 2009 and maps were updated in 2015. Inundation studies for other areas of the facility are currently in progress.	Yes Yes	Yes - TMF design uses probabilistic parameters which correspond to extreme weather conditions laid out by the most recent and available modelling analysis which takes climate change into account	The FFTIS has been in service for decades, and part of the dam has been constructed using the upstream method. Since the middle of last decade, as we've expanded the dam to the north and west, those expansions have been constructed using the downstream method. It should also be noted that Flin Flon isn't prone to seismic activity, and the terrain is relatively flat. We began some upgrade work on the Flin Flon facility prior to the incident in Brazil and plan further work in 2019 that will increase the safety factor, particularly of the areas previously constructed using the upstream method. AA performer in Tailings TSM since 2011
Constancia TMF One dam	-14.45 ° -71.783°	100% owned and operated	Active	2014	Yes	Downstream	97 m	85.1 million m^3	96 million m^3 predicted in the next 5 years, resulting in 181.1 million m^3	March 19, 2019 Next teleconference July 8, 2019 Next site visit October 14 - 21, 2019	Yes	Extreme	Canadian Dam Association	No	Both – primary support from the external engineer	Yes, currently in draft so not yet finalized	Yes Yes	Yes - TMF design uses probabilistic parameters which correspond to extreme weather conditions laid out by the most recent and available modelling analysis which takes climate change into account	"A" level performer in Tailings TSM since 2017