

Saskatoon – August 23, 2016

Attendees

SRC:

- Joe Muldoon - Vice-President, Environment
- Ian Wilson - Manager, Environmental Remediation
- Chris Reid - Project Manager, Gunnar Tailings Project
- Skye Ketilson - Project Manager, Gunnar Other Aspects Project
- Mark Calette - Senior Advisor, Community and Aboriginal Engagement
- Alexey Klyashtorin - Senior Environmental Scientist
- Tara Stratton - Executive Assistant
- Pete Brad - GIS Technician
- Mikaela Kilcup - Summer Student Assistant
- Joanne Durocher - Summer Student Assistant

Athabasca Basin Community Members:

- Chief Rudy Adam - Fond du Lac First Nation
- Kevin Mercredi - Fond du Lac First Nation
- Louie Mercredi - Fond du Lac First Nation
- Councillor George McDonald - Fond du Lac First Nation
- Councillor John Toutsaint - Black Lake First Nation
- Trevor Boneleye - Black Lake First Nation
- Delbert Bouvier - Black Lake First Nation
- Curtis Fiss - Métis Nation-Saskatchewan, Stony Rapids
- Allen Augier - Métis Nation-Saskatchewan, Uranium City
- Tiffany Toutsaint - Fond du Lac First Nation
- Monique Thomas - Hatchet Lake First Nation
- Daniel Powder - Stony Rapids Mayor
- Don Deranger - Fond du Lac First Nation

Other:

- Mark Liskowich - SRK Consulting
- Ann Coxworth - Saskatchewan Environmental Society
- Peter Prebble - Saskatchewan Environmental Society



Agenda

13:00 Welcome

13:03 Opening prayer by Elder

13:05 Introductions

13:10 Safety review and housekeeping items

13:15 Review of program

13:20 Presentation of Gunnar Other Site Aspects

14:45 Break

15:00 Q&A about Gunnar Other Site Aspects

15:30 Closing prayer by Elder

Discussion:

Q. There's 4.4 million cubic meters of tailings, 2.7 million cubic meters of waste rock. Where is the measurement for the contaminated waste rock?

A. Portions of waste rock do have elevated levels of uranium because of its natural state, not because of mining or processing. During the remediation process, SRC has done gamma surveys so we know where the material with elevated uranium is. This waste rock will be buried under the tailings cover first to shield gamma radiation.

Q. Wood and steel can absorb uranium - what about that waste? In Rabbit Lake, anything that was in the mine is considered contaminated.

A. Anything that exceeds Saskatchewan Ministry of Environment guidelines for non-hazardous waste will be incorporated into the contaminated waste landfill. The mill waste was classified using our guidelines and the key distinction between Gunnar and today's modern mines is the ore grade in modern mines is significantly greater. Therefore, the potential for uranium contamination at Rabbit Lake is much greater than it is at Gunnar.

Q. Where the tank farm used to be, will that rock be used for the cover? That waste rock is sloping into the bay, it doesn't seem like we pay much attention to that?

A. Waste rock from that area will not be used for tailings cover. Soil with hydrocarbon contamination has been identified and it will be buried in the contaminated landfill. The rest of the waste rock pile will be graded so the slope is not as steep and so it doesn't continue to fall into the bay.

Q. Where the fuel farm used to be, has anything been done to look for diesel contamination?

A. Yes, it was investigated during the Environmental Impact Statement (EIS). Drilling and test pitting was done to determine the impacted area. There are areas on the site that have been located and we have the coordinates for them. These impacted areas will be incorporated into the contaminated landfill.

Q. Where they used to park the trucks at pumping stations, was that area investigated?

A. Yes, that area was identified and investigated.

Q. As your gathering contaminated material, are you going to contain it right away or wait until you have all the Gunnar Mine contaminated material?

A. We now have an idea of the volumes of waste, so the most effective way is to design the landfill base, build the landfill and then move the waste as it is uncovered. It is the most effective and cost-efficient way to move the waste.

Q. I am concerned because when you bring asbestos together, the wind will move it around. As aboriginal people, we survive off of berries and wildlife. I wish you wouldn't go off assumptions and you would contain the asbestos as you go along.

A. SRC abated all asbestos on site and stockpiled it in 2011. Friable asbestos is double bagged and barricaded in the dock warehouse and non-friable asbestos was placed in super sacs and is located in two tarped waste piles. The process to move the asbestos will take 1-2 weeks. Asbestos will be placed in the bottom of the landfill and then covered with soil before more waste is put on top.

People berry picking and in the surrounding area will be safe. SRC and the contractor have a health and safety management system to keep people on and off the site safe. In this management system, there is also environmental protection and environmental management. During remediation you never know what you are going to find. We need to ensure we are doing more good than harm. This management system will be signed off by us, the contractor and the regulators. This robust management system will protect the environment, the people working there and the people living adjacent to the area.

Q. Gunnar was based on solid rock. How do you contain waste? Fuel and other contaminants will have drained down the rock and downstream. How do manage the contaminants in the environment?

A. Fuel was spilled over 50 years ago; it has either migrated towards or away from the lake, depending on the bedrock surfaces. We keep the contaminated landfill contained by excavating to the bedrock and then grouting or sealing drill holes and cracks. Grading will be used so that it gradually drains into the pit. All the waste will be drained into the pit and on top of that a cover will be placed to keep any rainwater or snowmelt from infiltrating. That contains the waste in its own little pocket, like a burrito or sleeping bag.

Q. SRC said they were going to put the steel from the acid plant and mill on the side without a contaminated area (in the non-contaminated landfill). Will radiation eventually go back into the environment?

A. Steel debris is not considered to be a hazardous material, and as such, it is not required to be buried in the hazardous material landfill.

Q. What will be done with the friable asbestos? Incinerated?

A. All asbestos on site will be buried in the deepest part of the non-hazardous landfill.

Q. When deciding on cover choices, how will very heavy rainfall events, like Fort McMurray had last month, be dealt with in the future? 200 or 300 years down the line, how are you considering climate change? Will the cover sustain those rainfall events and how will SRC plan for a 200-300 year cover life?

A. SRK has considered erosion scenarios and how climate change will effect that in the future. Low slopes will be used to decrease the energy of the water coming off the cover. As well as slope, revegetation will be used to combat erosion. The thicker the cover, the more burrow material we need, which affects pristine untouched areas. A 200-300 year scope is the most difficult question because there is so much unforeseen. We can model for 300 years, but our model is only as good as the information we have now. The 100-200 year cover life we are comfortable with. We will revegetate the cover as quickly as possible to increase erosion control. The cover will be monitored after completion and will be maintained.

Q. How big of an area needs to be covered?

A. A couple of football fields.

Q. Why not use concrete to cover instead of waste rock?

A. Waste rock will last longer than concrete and do the same thing.

Q. We know the contaminants have been moving for the past 50 years into Zeemel Creek. How do we know the final fate of the uranium and radium? Is it in the sediment or algae, and how long will it remain there?

A. There are different physical forms of uranium. Some of them migrate as suspensions or colloid solution. They are not very stable in the lake water so they precipitate very quickly and add the uranium in the sediments. Most of this uranium becomes inert and in fact stops participating in ion exchange. We could say the uranium is semi-encapsulated in the sediments. If we stop or considerably limit uranium from coming to Zeemel Creek and Langley Bay, then the clean material will cover and add to the sediments, isolating the uranium from the lake water. Soluble uranium will continue to exist in the lake water, but we know from our monitoring program that mixing occurs very quickly, so water 10 meters away from the shore is within the Saskatchewan regulatory guidelines for uranium.

Q. At Rabbit Lake, the sediments are beginning to emit radiation. Could that happen at Gunnar?

A. We can only tell you what we are observing. At the Gunnar Mine this is not occurring. We have a very detailed monitoring program that will continue after the remediation is complete.

Q. We are always talking about uranium. What about the other chemicals that were used for the extraction and leaching? Once we put pressure on the tailings by placing the cover, the other chemicals will be squished out.

A. Many chemicals were used to extract uranium and they are present in the tailings. The main leaching agent was sulfuric acid. When the tailings were first released they created a very acidic environment. However, now they have self-neutralized to neutral pH. Sodium chloride, commonly known as table salt, was also used in the extraction process. Now the concentrations of sodium chloride are very low so it is not harmful to the environment. The concentrations of arsenic and selenium are low, therefore radium and uranium are the only two contaminants we are concerned with at Gunnar.

Q. How much solid rock and how much sandstone are we talking about? I think all 600 m of the mine is solid rock.

A. All of the examples of the pit walls collapsing are hard rock. The pit walls are not as stable as they look.

Q. How much of the cavities are backfilled?

A. Some of them cavities are backfilled but we don't know to what extent.

Q. Could you put tailings into the pit so that they would flow more fluidly into the mine workings?

A. They would, but putting the tailings into the pit could change the chemical properties. Right now the acidity is neutral, but if we put them in the pit this could change.

Q. Water in the pit seeps into St. Mary's channel - what can be done to contain it in the pit?

A. Rain water and snow melt flow into the pit and seep out into St. Mary's. Reducing the contaminant loadings from other areas of the site will decrease the contaminants going into the pit and into St. Mary's Channel.

Q. Will the pit stay as contaminated as it is now?

A. The chemical concentration is stable and that is because of the absence of mixing in the pit. Diffusion into Lake Athabasca is very slow and minimal. We know that diffusion takes place because the water level of the pit is higher than Lake Athabasca.

Q. Why is long-term monitoring only five years?

A. When SRC says long-term monitoring it is meant in SRC's management life cycle. CNSC will likely require more than five years of long-term monitoring. Once the regulatory bodies are satisfied with the results, the site will be transferred into the Institutional Control Program and will continue to be monitored there.

Q. Was employment and personal criteria put in the tender?

A. Yes, metrics were used for the Gunnar tender. These were increased from the Lorado Project. There were criteria for basin equipment, employment and training programs. We would rather teach people skills and training so that the employees can use those skills again later.



General Comments

- We recognize we need to avoid re-suspending solids in the pit.
- There are seven communities in the Basin, and there needs to be fair treatment among all of them.
- SRC works hard to get funding to clean up areas in the lake. Covering the tailings to keep dust down is the right way to do it. Re-suspending solids is not the right way. Let's get the job done. Give the young people training and jobs.
- We are doing all this for our youth and we thank SRC.
- Overall, everyone appreciated all the effort that SRC put into the workshop and the Gunnar Pit is much better understood.