

**Appendix 2**  
**2014 Inspection of Diversion Channel**



September 30, 2014

Oscar Paulson  
Sweetwater Uranium Facility  
Kennecott Uranium Company  
P.O. Box 1500  
Rawlins, WY 82301-1500

RE: 2014 INSPECTION OF DIVERSION CHANNEL

Dear Oscar:

**Overview and Objective.** On June 27, 2014, I inspected the Sweetwater Uranium Project diversion channel, located east of the tailings impoundment. The diversion channel was designed to divert Battle Spring Draw runoff around the impoundment during facility operations and standby. It will be modified, or a new channel constructed, during site reclamation to divert Probable Maximum Precipitation runoff around the tailings. The objective of the annual inspection is to assess whether the channel is performing as designed and whether any maintenance is required to allow the channel to continue functioning as designed. The attached Figure 1 is an aerial image from Global Mapper from August 2009, depicting the location of the diversion channel relative to the tailings impoundment.

The discussion below is organized by five channel reaches (Reaches 1 through 5, from up to downstream) observed to have formed since its construction in 1980. The berm located to the west of the channel is comprised of soil material excavated from the channel. The berm is a stable feature—erosion from the sides of the berm is negligible and native vegetation is growing across the entire berm.

**Reach 1.** This most upstream reach is about 350 feet in length and is characterized by the deposition of sand derived from headcutting that has occurred at the entrance to the channel. The amount of headcutting appears similar to that presented in photographs from 2012 and 2013. The banks of the channel in this reach, with the exception of the entrance itself, are stable. The top of the channel still appears to capture the flow, as designed. Photographs 1 and 2 were taken in the area of Reach 1.

**Reach 2.** The second reach is approximately 150 feet in length. It has a shallow, definable, channel that meanders across the channel bottom (Photograph 2). Outside of the definable flow channel this reach has more vegetation on the bed than the first reach, which provides some control against erosion. The banks in this reach exhibit only minor erosion.

**Reach 3.** Reach 3 is approximately 470 feet long, has the greatest percentage of channel bed covered by vegetation, and has no observable low flow channel. The banks of this reach have several locations where water enters the channel from the side, creating some rill erosion with consequent deposition of bank sediments. These localized influences have no impact on the overall functionality of the channel. The lack of a flow channel is seen in Photograph 4.

**Reach 4.** Reach 4 is about 460 feet in length. This reach has experienced some rill erosion along the banks where local runoff enters the channel, as in Reach 3. It has less bed vegetation than Reaches 2 and 3, and has a shallow low flow channel. Examples of rills are shown in Photographs 5 and 6.

**Reach 5.** This most downstream reach, about 470 feet in length, begins near the location of an isolated sandstone outcrop (Photograph 7). This outcrop acts as an erosional benchmark; if it were to be covered with sediment this would be evidence of deposition, and if it were to become more exposed this would be evidence of scour. The outcrop remains little changed from previous observations. Reach 5 downstream of the outcrop has more grass in its bed and little evidence of a low flow channel. The banks are shorter in this reach, and exhibit localized, minor rill erosion.

**Bank Erosion.** Bank erosion throughout the length of the diversion channel occurs as localized rilling where runoff flows into the channel (Photographs 5, 6). Broader, lateral migration from flows within the channel is not occurring.

**Conclusion.** Based on review of prior inspection photos, the channel's form is similar both in terms of vertical adjustment of the channel bed and lateral movement of the channel's banks. The diversion channel's capacity does not appear to have decreased, and the channel is expected to continue to operate as designed. No maintenance is required at this time to improve function of the channel.

Thank you for the opportunity to assist you with this work. If you have any questions, please do not hesitate to contact me.

Best regards,

***Telesto Solutions, Inc.***



Adam Hoffman  
Associate, Senior Engineer

Attachments

**Attachment 1**

**Photographs**



**Photograph 1 Reach 1, June 2014**



**Photograph 2 Channel entry, June 2014**



**Photograph 3    Reach 2, June 2014**



**Photograph 4    Reach 3, June 2014.**



**Photograph 5** Reach 4, embankment rills, June 2014



**Photograph 6** Embankment rills, Reach 4/5, June 2014

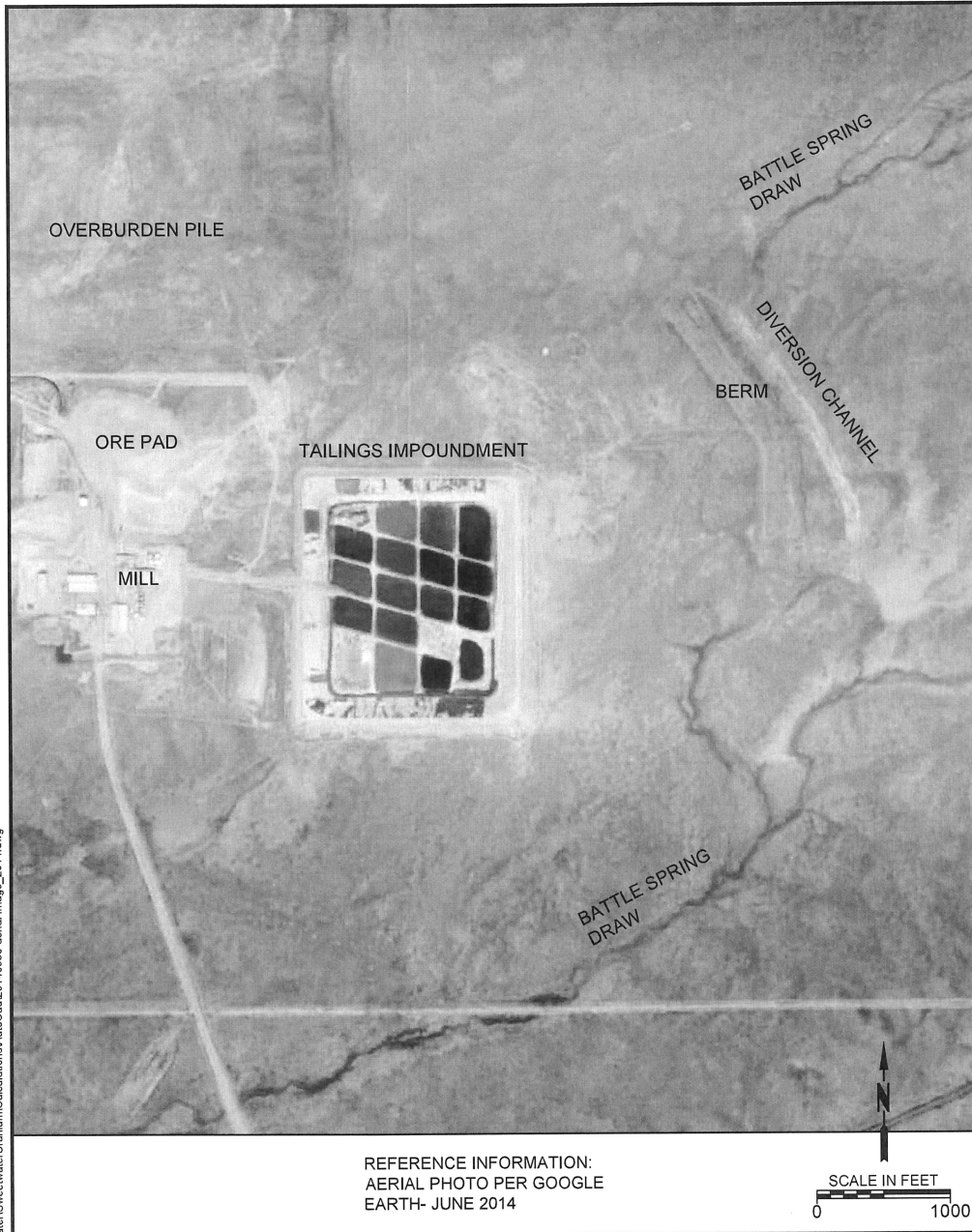


**Photograph 7 Bedrock outcrop, Reach 5, June 2014**

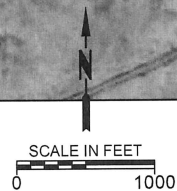


**Attachment 2**

**Figure 1**



REFERENCE INFORMATION:  
 AERIAL PHOTO PER GOOGLE  
 EARTH- JUNE 2014



9/30/2014 R:\Sweetwater\Uranium\Calculations\AutoCad\20140930-aerial image\_2014.dwg

PROJECT: 451101	TASK: -
PREPARED BY: <b>TELESTO</b> SOLUTIONS INCORPORATED	

**FIGURE 1**  
**AERIAL IMAGE OF FACILITY (6/2014)**

PREPARED FOR:  
 SWEETWATER  
 URANIUM  
 FACILITY