

# SMARTDITCH REPLACES FAILED PLASTIC LINER

TO CORRECT LONG-STANDING EROSION AND FLOW DIRECTION PROBLEM AT ALASKAN ZINC MINE

## Problem

In the past, Red Dog Mine, used thin plastic sheeting liners to maintain its drainage ditches. Located in Northwest Alaska, Red Dog is a zinc-lead mine, and one of the world's largest producers of zinc concentrate. In all there was over 20,000 LF of drainage channels throughout the mine... and every foot of it needed to be relined.

Given the harsh climate, frozen terrain and elevation changes, not only is plastic sheeting expensive to install, it is exceptionally tedious and difficult to maintain. Subsequently, soil erosion and flow direction management were an ongoing problem. If a permanent repair was not found, the mine would continue to lose valuable top soil from ongoing slope erosion.

## Solution

Seeking a permanent solution, the mine owner's Engineering Department scoured the internet looking for a better option. SmartDitch kept popping up and one of the Engineers contacted SmartDitch headquarters to learn more about the system. Given the outstanding engineering and physical properties of SmartDitch, the Engineer requested a design recommendation and cost proposal. It should be noted that the channel system is made from HDPE, has excellent corrosion resistance, and can withstand extreme temperature conditions. Upon reviewing the proposal, it was determined SmartDitch could be installed easier and last longer than the plastic sheet liners used in the past. Ultimately 15,000 LF of 12", and 5,400 LF of 24" SmartDitch were specified and approved for the job.

**Installation Not Without It's Challenges.** Timing was critical. The order was placed in December, but delivering the SmartDitch materials to a remote location above the Arctic Circle was challenging. Additionally, the installation needed to be completed before the spring thaw, which meant it needed to be done between January and March, when the ground was still frozen and average daily temperature was below zero. With expert on-site guidance from SmartDitch Engineer Mark Maederer, the ditch construction crew was able to complete the task before the spring melt. Early on, however, the speed of installation had become a concern. Initially, anchoring the system 30" deep into the frozen Alaskan tundra was slow work. However a few modifications made to the drilling and anchoring tools significantly sped up the process, and the crew was back on track in no time.



Over 20,000LF of SmartDitch was installed to correct erosion and drainage problems at Red Dog Mine in Alaska.

## Quick Facts

- ◆ **PROJECT:** Red Dog Mine near Kotzebue, Alaska (Zinc-lead mine)
- ◆ **PROBLEM:** Failed Plastic line drainage ditch causing erosion, loss of topsoil
- ◆ **SOLUTION:** 15,000 LF 12" SmartDitch, 5,400 LF 24" SmartDitch
- ◆ **DESIGN ENGINEER:** Co-Designed by SmartDitch & Project Owner
- ◆ **SMARTDITCH DISTRIBUTOR:** Alaska Garden & Pet Supply  
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After a slow start to anchoring SmartDitch into the frozen ground, minor modifications were made to speed up the process.



Sub-zero temperatures presented a challenge during the installation.

SmartDitch is manufactured in the USA. It is a safe, economical, long-lasting, and environmentally sound irrigation channel lining solution. For more information on the SmartDitch and the MegaDitch HDPE Channel Lining Systems contact:



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