FILLFOAM
CANADA

CASE STUDY
RAILROAD CULVERT FILL

Problem

FillFoam Canada was approached by a Canadian rail company to assist with the abandonment of old culverts running under their railways. Old culverts were made of corrugated steel which had begun to fail in certain locations under the tracks. The client wished to fill these culverts to reinforce the structure ensuring the ground above them would not collapse in the future. They also needed to ensure that water was not able to flow through and continue to erode areas that were already failing. Once these culverts were filled, the ends would be crushed and buried into the railway embankment. Client concerns included the following: Traditional methods were time consuming, expensive, and complicated. Traditional abandonment products were not eco friendly and posed challenges during installation. For example, concrete slurry mixtures would “blow out” during installation, requiring a major cleanup operation. They also require heavy equipment which, when operating beside highways, would require extra resources for traffic control, lane closures and other safety measures.

FillFoam Solution

FillFoam Canada presented a solution to the client that would provide all the benefits with none of the risks or complications. FillFoam Canada built a 50 ft injection nozzle and capped the far end of the culvert leaving a single exhaust port. The 50 ft nozzle was placed into the 75 ft culvert creating an injection point 25 ft from the end. Foam was pumped in from this point until it pressurized the far end and began coming out of the port. The port was then plugged, and the nozzle was pulled roughly 10 ft back towards the open end of the culvert. Each time the foam moved 10-15 ft back towards the injection end

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of the culvert, the nozzle was pulled back as well. Keeping roughly 10 ft of foam between the open end (injection side) of the culvert and the end of the nozzle. This approach kept the foam under positive pressure during installation allowing it to fill to the volume of the culvert. Once the foam reached the injection side of the culvert, the nozzle was slowly removed while the pumps were still running to ensure that any void left behind was filled. Once removed, the pumps were shut down. This process took roughly 2 hours per culvert.

FillFoam Canada's approach removed the heavy equipment requirements, as the only equipment required onsite was a ¾ ton truck and trailer. This eliminated the need to shut down one lane of the highway and manage traffic as equipment was moved or operated. This approach also eliminated concerns related to spills. The cleanup of concrete slurry is a much more involved process as the product is highly flowable and often a leak leads to many yards of liquid concrete spilling into potentially sensitive areas. Fillfoam cleanup is extremely fast, safe, and efficient.

Summary

FillFoam Canada put a plan together that successfully accomplished the client's goal of filling and burying abandoned culverts. This plan was completed faster, safer, cheaper and at a reduced complexity when compared to the concrete slurry fill alternatives.