



# **Worker fatally injured falling into an excavation**

September 10, 2020

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## **The contents of this report**

This document reports the Alberta Occupational Health and Safety (OHS) investigation of a fatal incident that occurred in September 2020. It begins with a short summary of what happened. The rest of the report covers this same information in greater detail.

## **Incident summary**

A Crawler Operator was on the ground along the top edge of an excavation. The Crawler Operator completed a task of passing PVC pipe down to a work crew, working at the bottom of the excavation. The work crew was in the process of connecting pipe for a sewage line, for a new subdivision in Fort Vermilion. The Crawler Operator fell 3 metres (m) down into the bottom of the excavation and sustained fatal injuries.

## **Background information**

### **Prime contractor**

Northern Road Builders GP Ltd. (NRB) was a heavy construction company operating from La Crete, Alberta. NRB was established in 2009 as a joint venture between Pineridge Logging (PL) and Forest Trotter (FT), two experienced companies providing forest and construction industry service to Alberta for over 15 years. The combined effort of FT and PL, supported NRB the opportunity to pursue larger and more diverse projects across the province in highway construction, subdivision development, landfill/effluent lagoon development, horizontal directional drilling, horizontal auger boring, and environmental rehabilitation. Forest Trotter Group of Companies Inc. was the parent company to NRB.

### **Parent company**

Forest Trotter Group of Companies Inc. (FTEN) was founded in 2000 in La Crete, Alberta. FTEN focused on construction and scarification of trees and forested areas. FTEN acquired Neudorf Logging in 2002, and then entered into the logging business.

In 2009 FTEN joined with Pineridge Chippers (PC) to create NRB allowing for the opportunity to pursue larger and more diverse projects across Alberta. PC shares in NRB were purchased by FTEN, and it was then rolled into of FTEN's group of companies. The creation of NRB occurred simultaneous to the creation of FTEN.

FTEN was previously known as 1567081 Alberta Ltd. with parent company for both FT and NRB. It grew to be a much larger company after the purchase of Exact Harvesting in 2012. The name was subsequently changed to FTEN.

FTEN expanded its operation in 2013, starting with logging camps in the Grande Prairie area for Weyerhaeuser Wood Products. A new branch for logging and construction operation was created in 2016, called Iron Pine Contracting (IPC). IPC joined FT and NRB and Exact Harvesting as part of the parent company of FTEN.

FTEN was created as a single construction company servicing northern Albertans with a staff of approximately 50 employees. FTEN has grown to a group of six companies consisting of over 400 employees, conducting logging, trucking and construction services across all of Alberta. FTEN was the parent company to NRB.

## **Landowners**

Mackenzie County (MC) was a specialized municipality in northern Alberta, Canada. It was located in Census Division 17, along the Mackenzie Highway. The MC municipal office was located in the Hamlet of Fort Vermilion. It was known as Improvement District No. 23 and later the Municipal District of Mackenzie No. 23 on January 1, 1995. In order to address concerns about municipal government and management in a municipality that served a number of unique communities within a very large territory, its status was changed to a specialized municipality on June 23, 1999. The Municipal District of Mackenzie No. 23 then changed its name to MC as of March 8, 2007. MC contracted NRB (FTEN) as the prime contractor to complete the construction project.

## **Crawler Operator**

The Crawler Operator was the fatally injured worker. The Crawler Operator had been employed with NRB for approximately eight years. The worker was trained in operating power mobile equipment.

## **Lead Hand**

The Lead Hand had been with the NRB for approximately 11 years. The first two years were spent operating power mobile equipment, and the last nine years were spent supervising work crews in various jobs. The Lead Hand had approximately 25 years' experience in the construction industry.

## **Operator 1**

Operator 1 was employed by NRB since December 2018. Operator 1 was on-site and was operating the John Deere 350D LC excavator E108 with a v-bucket attachment in order to dig at the time of incident. Operator 1 had 15 years of experience in operating power mobile equipment.

## **Operator 2**

Operator 2 was employed by NRB at the time of incident. Operator 2 was operating the John Deere 330C LC excavator E-104 at the time of incident. Operator 2 was tasked with backfilling the trench with sand. Operator 2 was not present at the time of the incident.

## **Labourer 1**

Labourer 1 had been employed with NRB for just over eight years. The worker was trained in operating power mobile equipment and labour tasks. Labourer 1 was in the excavation and connecting the water pipes at the time of the incident.

## **Labourer 2**

Labourer 2 had been employed with NRB for approximately one year. The worker was primarily assigned to labour tasks. Labourer 2 was in the excavation and connecting the water pipes at the time of the incident.

## **Labourer 3**

Labourer 3 had been employed with NRB for approximately three years. The worker was primarily assigned to labour tasks. Labourer 3 was in the excavation and connecting the water pipes at the time of the incident.

## **Work site, equipment and materials**

### **Work site**

The work site was located at 4302 - 46 Street, Fort Vermilion. NRB was contracted by MC to use applicable equipment and experience to supply and install a waterline and sewer line for a new transitional housing subdivision in Fort Vermilion. NRB was hired to excavate the existing topsoil and then place the pipeline into the bottom of an excavation of approximately 5 m in depth before backfilling the soil.

Water-fit PVC (Polyvinyl Chloride was widely used plastic piping in the plumbing and construction industry) blue-casing pipes, each measuring approximately 20 centimetres (cm) in diameter, 4 m in length and 22 kilograms (kg) in weight, were to be lowered into the trench and connected.

### **Excavator 1**

The John Deere 350D LC E108 excavator with a V-bucket attached, was positioned on the north side of the trench in order to excavate dirt and create a trench for the PVC waterline installation (Figure 1A and Figure 2A).

### **Excavator 2**

The John Deere 330C LC E-104 excavator was positioned adjacent to the trench. It was used to backfill the trench with sand and dirt. It was also to be used for bedding the pipes (the pipe bedding was placed underneath the pipeline and used to provide full support for the pipe and its connections) (Figure 1C and Figure 2C).

### **Backhoe/dozer**

The BH-401/410 G backhoe/dozer was used to level the lot topsoil adjacent to the excavation. (Figure 1B and Figure 2B).



*Figure 1. Photograph of the work site showing excavation, piping and power mobile equipment.*

- A. John Deere 350D LC E108 excavator.*
- B. Location of piping next to excavation and BH-401/410 G backhoe/dozer.*
- C. John Deere 330C LC E-104 excavator.*
- D. Location in the excavation where the work crew (Labourers 1, 2, 3) was positioned.*





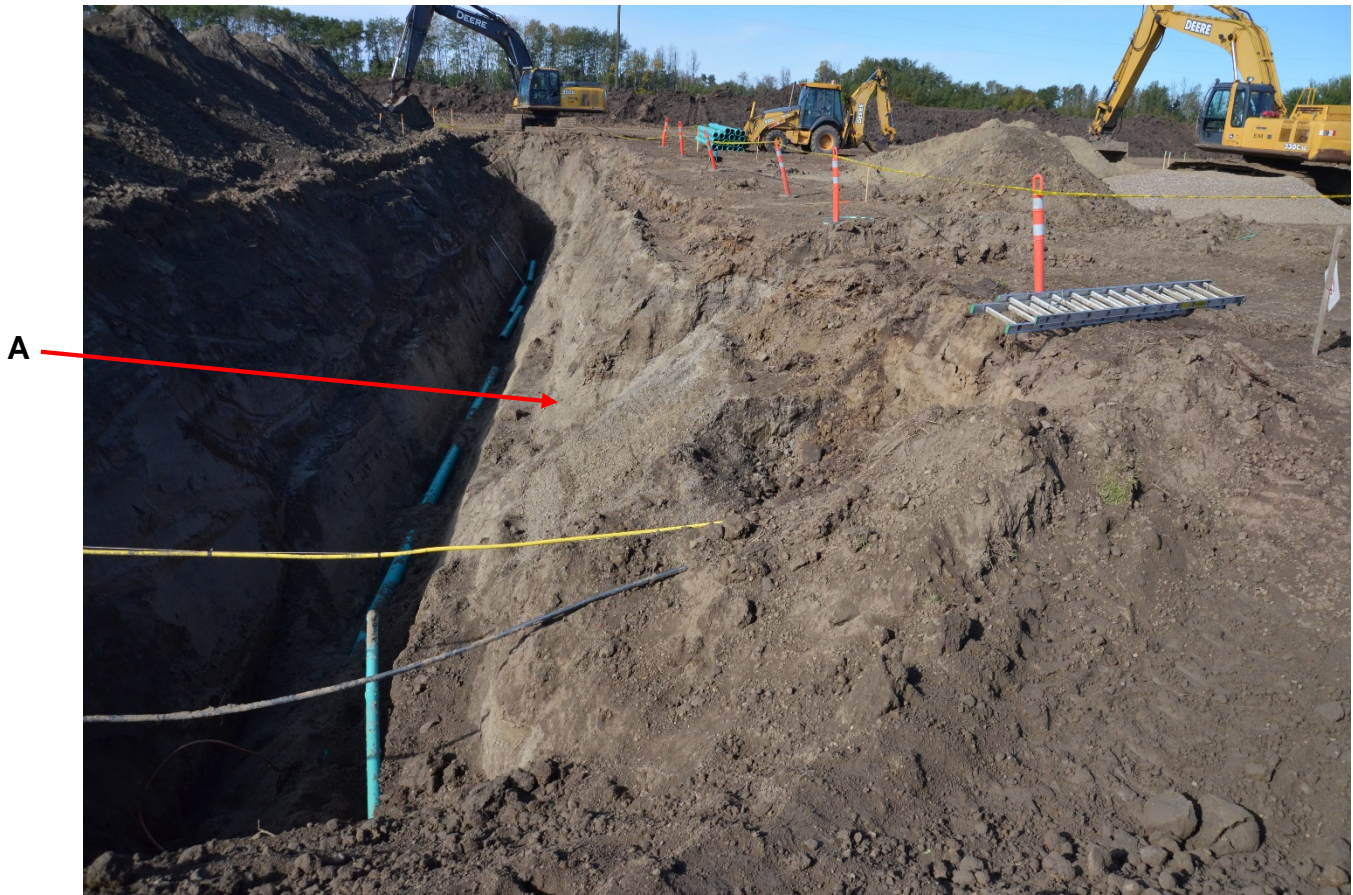
*Figure 2. Photograph of work site, taken from the security fence which was behind securing fencing, showing piping, excavation and power mobile equipment.*

- A. John Deere 350D LC E108 excavator.*
- B. Location of piping material next to excavation and BH-401/410 G backhoe/dozer.*
- C. John Deere 330C LC E-104 excavator.*
- D. Location where workers (Labourers 1, 2, 3) accessed the excavation.*



*Figure 3. Photograph of the excavation where PVC waste waterline was placed.  
A. Approximate location where the workers were positioned while connecting pipe.*





*Figure 4. Photograph of the excavation.  
A. Entrance into the excavation.*



## Sequence of events

At approximately 7:00 a.m. on September 10, 2020, workers arrived on site at location 4302 - 46 Street, Fort Vermilion. The workers conducted a safety meeting in which the Lead Hand assigned tasks to all workers for the work to be conducted that day. Operator 1 was assigned the task of using an excavator (John Deere 350D LC E108 excavator) for digging a trench with an attached v-bucket. Worker 1, Worker 2, and Worker 3 were assigned tasks by the Lead Hand, which required the workers to be positioned in an excavation, a cavity formed by digging out dirt. These workers were responsible for lowering PVC pipe into the trench for construction of a new waste water disposal line. Operator 2 was assigned the task of operating an excavator (John Deere 330C LC E-104 excavator) for levelling the ground and moving sand into the trench for pipe securement and backfilling. The Crawler Operator was assigned the task of operating the BH-401/410 G backhoe/dozer to level out the rough grade on an adjacent lot.

Operator 2, using the excavator, advised the Lead Hand they needed to use the bathroom facilities; Operator 2 left the excavation area and work site in order to do so as the work site did not have on-site bathroom facilities.

After the Crawler Operator completed the task of levelling the lot, they inquired with the Lead Hand with respect to what the next task was to be completed. The Lead Hand instructed the Crawler Operator to pass PVC pipe by hand to the workers who were located at the bottom of the excavation (Figure 1D and Figure 3A). The Crawler Operator and Lead Hand walked over to a pallet adjacent to the trench where PVC water-fitted blue-casing pipes (each measuring approximately 20 cm in diameter, 4 m in length and approximately 22 kilograms in weight) were located in order to prepare the pipes for movement to the trench.

The Lead Hand and Crawler Operator elected to carry PVC pipe over to the workers located in the excavation. Both the Lead Hand and Crawler Operator walked to the excavation and passed PVC pipe down to the workers in the excavation. The Crawler Operator continued with the task of passing pipe. The Lead Hand decided to operate the excavator (John Deere 330C LC E-104 excavator) while Operator 2 was off-site. The Lead Hand continued the duties of operating the excavator by back-filling the excavation. The other workers remained in the excavation in order to receive PVC pipe from the Crawler Operator.

At approximately 9:30 a.m., the Lead Hand operating the excavator (John Deere 330C LC E-104 excavator) scooped a pile of sand from the sand pile located approximately 1.5 m from the trench. The Lead Hand heard a worker alert from below while in the trench, advising the Lead Hand to stop operating the excavator. The Lead Hand ceased operation of the excavator and was advised by Operator 1 that the Crawler Operator had fallen into the trench and was lying on a section of the PVC pipe. The Lead Hand shut off the excavator, exited and walked approximately 1.5 m distance to the trench. The Lead Hand looked into the trench and observed the Crawler Operator lying at the bottom on top of a section of the PVC pipe. The Lead Hand called 911 as other workers provided cardiopulmonary resuscitation (CPR) to the Crawler Operator.

At approximately 9:36 a.m., the Royal Canadian Mounted Police (RCMP), Fort Vermilion Fire Department and Emergency Medical Services (EMS) arrived at the work site. At approximately 10:00 a.m., EMS assessed the Crawler Operator and helped remove the Crawler Operator from the trench. The Crawler Operator was then transported to St. Theresa General Hospital. The attending physician made the decision to have the Crawler Operator airlifted to a hospital in Edmonton. The Crawler Operator was then pronounced deceased.

## **Completion**

A review for enforcement action was completed on February 15, 2022, and it was determined that prosecution or an administrative penalty were not appropriate based on the circumstances surrounding this incident.

This investigation was completed on March 10, 2022.

## Signatures

ORIGINAL REPORT SIGNED

Lead Investigator

February 18, 2022

Date

ORIGINAL REPORT SIGNED

Manager

March 10, 2022

Date