

THE STONE  
EXPERTS

# 28 September 2014 Incident at Waterman Quarry

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## Lessons Learned

The Frazier Quarry, Inc.  
Harrisonburg, VA

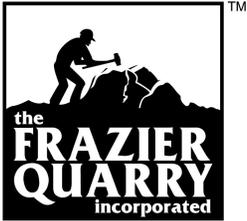
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Director of Health and Human Relations  
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# B.L.U.F.

(Bottom Line Up Front)

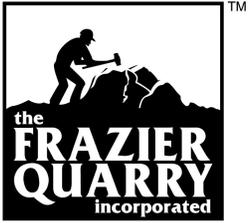
- On Sunday—28 September 2014—The Frazier Quarry, Inc. initiated our Emergency Response Plan (ERP) due to an incident involving an unauthorized access by two minors at our Waterman Quarry location in Harrisonburg, Virginia.
- Rising and disturbing trend of fatalities/ serious injuries involving unauthorized persons in abandoned and active mine sites across America. *Virginia included.*
- Following a focused after action review and internal assessment, we feel it is important to share “Lessons Learned” with any and all who might benefit.



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# Background

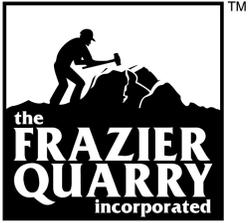
- The Frazier Quarry, Inc. (TFQ) is a fourth generation, family owned and operated company located in the central Shenandoah Valley, Virginia focused on producing quality limestone aggregate in order to support our customers needs.
- Incident took place at our Waterman Quarry location in Harrisonburg, VA on Sunday, 28 Sept 2014, at approximately 1900 hrs.
- Waterman Quarry has not been in full production status since 3<sup>rd</sup> QTR 2008 and is currently in an 'abandoned status' with MSHA. We fall under the jurisdiction of Virginia DMME.
- Incident was non-mining related and involved two teenage siblings (17 Y/O female; 15 Y/O male) who ignored posted warnings and trespassing signs, bypassed a substantial fence, and attempted to scale a high wall in the north west corner of the pit area.
- Upon descending the high wall to an orphaned and inaccessible bench, the female dislodged a substantial bolder which rolled over her—causing multiple crushing injuries and leaving her non-ambulatory. Both teenagers were stuck on the bench with no way to get out.
- As darkness began to fall, the 15 Y/O male alerted 911 via a cell phone of the situation.
- Harrisonburg/ Rockingham Emergency Communications Center (ECC) notified TFQ staff of the emergency and requested assistance in locating and assisting in rescue efforts.
- TFQ's ERP was initiated. The teenagers were located within 30 minutes (in the darkness) and rescue efforts ensued.
- Rescue took approximately three and half hours—under less than optimal conditions—to complete and involved an joint multi-agency/area Technical Rescue Team (TTT), Harrisonburg/ Rockingham Fire and Rescue, and TFQ personnel.
- 17 Y/O Female was air lifted via Life Flight to University of Virginia Medical Center where she is recovering. Her brother was rescued unharmed.
- Trespassing charges were filed for both minors.



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# Waterman Quarry Overview

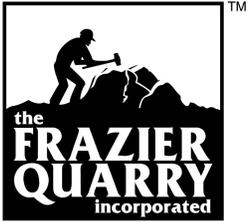




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# Scene Overview

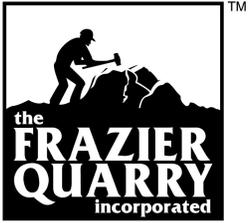




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# Scene Overview



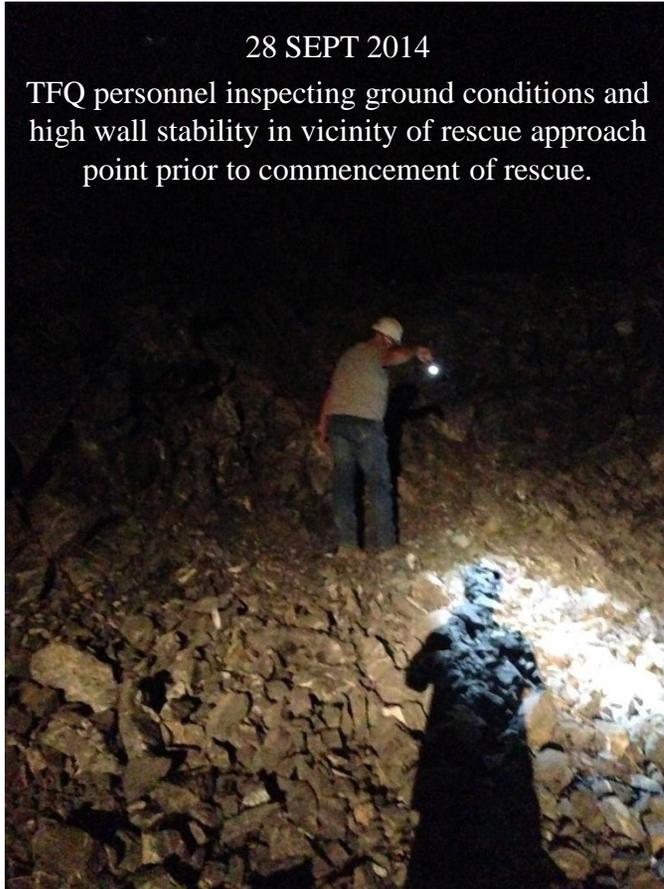


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# Scene Overview

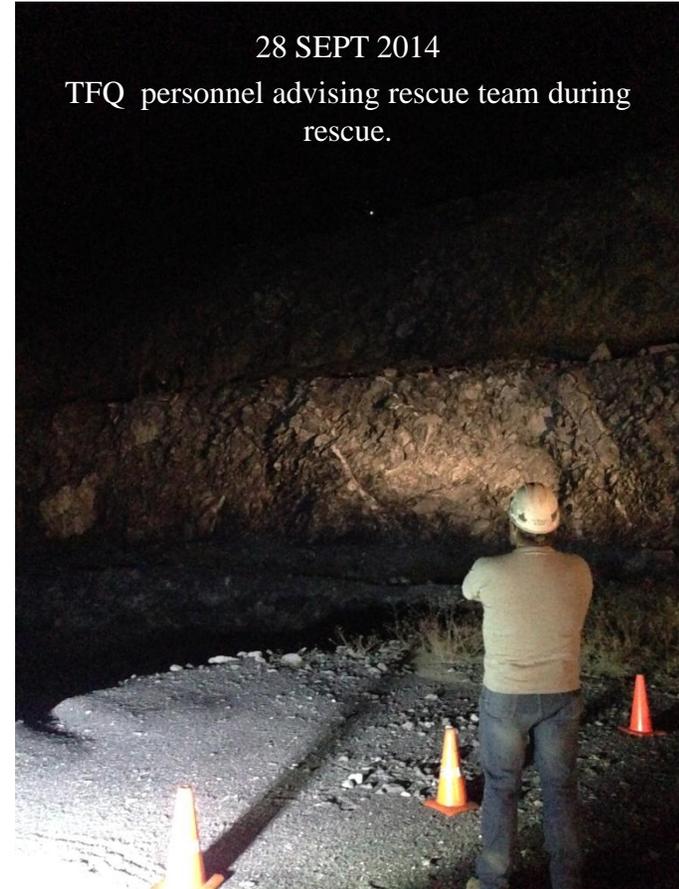
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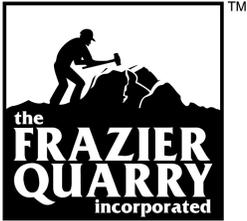
TFQ personnel inspecting ground conditions and high wall stability in vicinity of rescue approach point prior to commencement of rescue.



28 SEPT 2014

TFQ personnel advising rescue team during rescue.





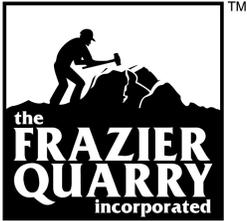
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# Lessons Learned

## **TOPIC: SIMPLE/ CONCISE ERP AND REALISTIC ERP REHEARSALS**

**DISCUSSION:** Every organization has some level of an ERP. In order for an ERP to be effective, the plan must be clearly communicated and understood by all stakeholders (employees); one person must be in charge; rehearsals **MUST BE** rehearsed on a regular basis (bare minimum of twice a year per site) and **MUST BE** realistic. The final component to a successful and efficient ERP is feedback garnered through an After Action Review (AAR)—not just at the management level—but with all personnel involved. It is difficult to prepare for and rehearse **EVERY** situation, so it is incumbent on management and safety personnel to accurately assess risk and prioritize from most likely to least likely in occurrence. TFQ has benefited from streamlining our ERP and ensuring it is simple and concise. Simplicity has bought us flexibility, which then allows you to delegate the authority of critical decision making, particularly in high stress situations, down the lowest level of management. The common denominator across all organizational functions—**MOST IMPORTANTLY IN THE INTIATION OF AN ERP**—is trust. Organizations will build this trust through realistic rehearsals and meaningful feedback.

**RECOMMENDATION:** Spend as much time as possible building a simple, concise, and effective ERP. Strategies for success rely on top down (management) planning, bottom-up (employee) refinement. Once you have a plan constructed, **TRAIN, TRAIN, TRAIN**. Ensure this plan is understood by evaluating realistic rehearsals. Don't practice the plan for the sake of "training," practice the plan for evaluation and feedback. Ensure you have a goal set for each rehearsal. I understand a lot of us don't have an infinite amount of time—we are doing far more with less comparatively than five, six, or seven years ago. Additionally, ensure from a management perspective that the external notifications are made in a timely manner. Try setting up an management alert that crosses several spectrums of technology (cell phone/ email/ text/ etc.).



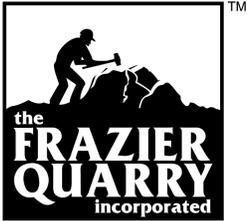
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# Lessons Learned

## **TOPIC: DEVELOPING AND MAINTAINING RELATIONSHIPS WITH LOCAL EMERGENCY FIRST RESPONDERS**

**DISCUSSION:** Over the course of our organization’s history, we have always maintained ties to our public safety apparatuses. This includes fire, rescue, and police. We periodically invite fire and rescue teams to individual locations to ensure they have an increased awareness of the hazards found on a mine site. Additionally, offering locations for training venues—such as the joint technical rescue teams accessing a pit or plant area—is the best way for stakeholders to increase hazard awareness while building foundational relationships. Keep in mind that multiple mine sites might be in separate jurisdictional areas. We have found that continuity of information is best managed from an internal organizational stand point. Don’t count on separate agencies to communicate with each other. Most organizations have volunteer fire and rescue personnel within their ranks. These folks have a breadth of experience that can prove highly beneficial in streamlining site specific or organizational ERPs. Additionally, don’t overlook those folks who may have military (active or reserve) experience. Often times, these folks are the ones who can remain calm, cool, and collective in the most stressful of situations.

**RECOMMENDATION:** Get to know who the key emergency personnel are in your area. Find out who the decision makers are when an emergency ensues. Invite them to your locations and engage them. Ensure that your local ECCs’s have a valid and updated call list (who to contact in an emergency) that accounts for at a minimum: a day contact, a night contact (after hours), and email/ text. If possible, choose someone within your own organization who is local to the each specific mine site in order to reduce travel time and link-up. As in any emergency, time is critical; the “Golden Hour” is achievable in 99% of areas—no matter how remote it may seem. When and where possible, offer locations for training venues, and try to integrate your personnel with emergency/ first responders training plan. It’s through this shared training experience that first responders better understand your specific tactics, techniques and procedures and vice-versa.



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# Lessons Learned

## **TOPIC: PROACTIVLY ENGAGING LOCAL COMMUNITIES**

**DISCUSSION:** According to the *Mine Safety Health Administration's* (MSHA) "Stay Out, Stay Alive" website:

*Every year, dozens of people are injured or killed while exploring or playing on mine property...The men and women employed in our nation's mines are trained to work in a safe manner. For the unauthorized explorer, hiker, off-roader or rock hound, however, the hazards are not always apparent. Active and abandoned mine sites have proved to be an irresistible "and sometimes deadly" draw for children and adults. <sup>1</sup>*

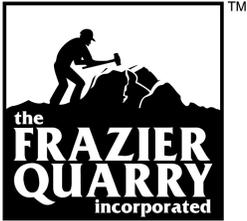
Between 2000 and 2014, there have been 369 fatalities—almost 25 per year—related to unauthorized access on mine sites; 93% of those fatalities have been males with an average age of 30.<sup>2</sup> Both MSHA and Virginia DMME have readily accessible information for parents, teachers, and students alike, as well as initiatives to engage the public in order to increase awareness of the hazards found on mine sites. Regardless, organizations large and small should continue to engage and educate their surrounding communities on the critical role the mining industry plays while highlighting the hazards and steps operators take to create safer work conditions.

One of the most beneficial and rewarding programs TFQ maintains is working with educators at all levels to coordinate site visits for Valley students. We have found that the large majority of folks—adult or child—have no idea a mine site is so close to where they live, yet alone the important roles we play in the local economy and public infrastructure.

**RECOMMENDATION:** Engage your community. Open your doors. Obviously take steps to mitigate hazards and comply with the Law, but be as transparent as possible. Our communities need us as much as we need them. Try approaching your local school system and educators. The VTCA has an excellent outreach with the Virginia Association of Science Teachers (VAST), and is continuously working to create new material for their annual conference. Our friends at DMME will go above and beyond to assist us any way possible. Bottom line—an increased public awareness of the important roles our industry plays, combined with the hazards found across our sites, creates stronger community bonds, safer neighborhoods, and greater chances for future success.

<sup>1</sup> MSHA, *Stay Out! Stay Alive! Fact Sheet*, [www.msha.gov/SOSA/facts.asp](http://www.msha.gov/SOSA/facts.asp).

<sup>2</sup> MSHA, *Previous Fatal Accident Summaries*, [www.msha.gov/SOSA/previousfatalstats.asp](http://www.msha.gov/SOSA/previousfatalstats.asp)



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# Resources



**Mine Safety and Health Administration**  
*Stay Out! Stay Alive! ;*

<http://www.msha.gov/SOSA/SOSAhome.asp>



**Bureau of Land Management**  
*Abandoned Mine Lands (AML) Portal*

<http://www.abandonedmines.gov/>



**Virginia Department of Mines, Minerals, and Energy**  
*Safety Alerts- Trespassing;*

[http://www.dmme.virginia.gov/dmm/sa\\_trespassing.shtml](http://www.dmme.virginia.gov/dmm/sa_trespassing.shtml)