The Cane Creek Mine Disaster: Personal Observations

By Morris T. Worley, P.E.

August 27, 1963, started out to be just another routine summer day at Texas Gulf Sulphur Company's newly developing deep potash mine near Moab, Utah. As Texas Gulf's rock mechanics engineer, I measured salt closure in our test chamber and then joined the mine surveyor in his survey of the drift advance, trying to get ahead of the month-end measuring game.

We surveyed and mapped the advance in both headings being driven toward the ore body. It was close to quitting time and we still had to shoot the side shots to mark the ribs in heading 3 South, when the face crew informed us that they were ready to blast a round. We picked up the theodolite and made our way back to the shaft, where we stored the survey equipment. After putting everything away, we walked to the station, belled a cage, and ascended to the collar. It was 4:40 p.m.; our car pool had already left and we trudged across the yard toward the change house, wondering if they had left us a pickup to take us home.

The concussion from the planned explosion was quickly followed by flying debris and a deep, rumbling sound. We instinctively knew these were no ordinary blast effects. As the debris fell around us, I could tell that the plywood had come from the makeshift ore dump enclosure erected by the contractor. Turning around toward the shaft, I saw the ore dump operator, Matt Rauhala, staggering from the headframe, bleeding severely. We rushed to him, laid him not too gently on the ground, probed for broken bones and finding none, my companion, Bill Smith, raced to the shaft phone and called for the ambulance. By this time, black, sooty clouds of smoke were pouring from the shaft and we knew we had a disaster on our hands. After what seemed to be an eternity, the ambulance arrived and we turned the injured miner over to the EMTs.

I raced to the safety room adjacent to the change house, picked up a couple of Chemox self-contained breathing apparatus and headed back to the shaft. On the way I met Norm Harrison, the contractor's project manager, and Bert Trenfield, the shaft superintendent. We checked out the fit of the masks, while someone fetched another machine from the safety room cache. The three of us began the descent into the mine at around 6:00 p.m., with a forty-five-minute supply of air.

We descended slowly, picking our way through the shredded remains of what had been the corrugated vent line and the twisted service pipelines that had carried compressed air and water down the shaft. It was too smoky to see much beyond the ends of our hands, but we were primarily concerned that the rope guides to which the cage was attached remained intact. We threaded our way down to just above the station level, where the debris in the shaft made further downward movement impossible. We could see very little in the blackness below and calls to the station were met with eerie silence.

At about that time, the bells on our Chemoxs began to ring, signaling that our air supply was nearly gone. Reluctantly, we belled the cage up and slowly returned to the surface and initiated rescue operations. I checked out the two-hour McCaa units, fit-tested the contractor's miners who were certified to wear them, and manned the telephone at the shaft collar. We notified MESA (the forerunner of MSHA) and the Utah State Mine Inspector, and a rescue team from Price, Utah, was dispatched to the scene. The inspectors, federal and state, arrived around midnight and took over the direction of the rescue efforts. I worked through the night and was released to go home at 8:00 the next morning.

I had given no thought to contacting home through the evening and night, so I had no idea of the worry and anguish I was causing my family. Word of the explosion had spread throughout the community by early evening. Since I had not been heard from, they were concerned that I might have been underground when it happened. The next-door neighbors kept Sue and the boys company through the night, and, of course, everyone was relieved when I appeared at the door the next morning.

I caught a few hours of much-needed sleep and returned to the mine at 3:00 p.m. Two of the trapped miners had crawled to the shaft station and, hearing the rescue workers in the shaft above, called out to them. Fortunately, the rescuers heard them and a cage worked its way down to the station and brought them out of the mine at noon, 28 August. We learned that they had been working in the 2 South heading, along with one of the Texas Gulf shifters, who was observing the work.

The shifter, Blackie Eslick, was an underground uranium miner we had hired for his experience and his ability to lead people. These two traits served him well in the emergency. He led the contractor's heading crew to the face of the drift and had them build a brattice cloth wall about forty feet out from the face. He then had them turn off their cap lamps, pool their drinking water supply, and wait patiently for the rescue that was sure to come.

Blackie and the crew had no idea of the extent of the damage in the shaft. As the hours went by, a slow panic began to creep among the huddled miners behind their barricade. Finally, two miners could stand it no longer and, against Blackie's advice, elected to leave the relative safety of the rescue chamber for the uncertain conditions outside.

They crawled on their bellies, having sense enough to realize that any methane remaining in the dead air would rise to the top of the drift, but not recognizing that carbon dioxide, which could have formed as a result of the explosion, would be heavier than air and could suffocate them as they crawled. But their desire to escape overcame rationality and common sense. Luckily, they made it to the shaft without incident.

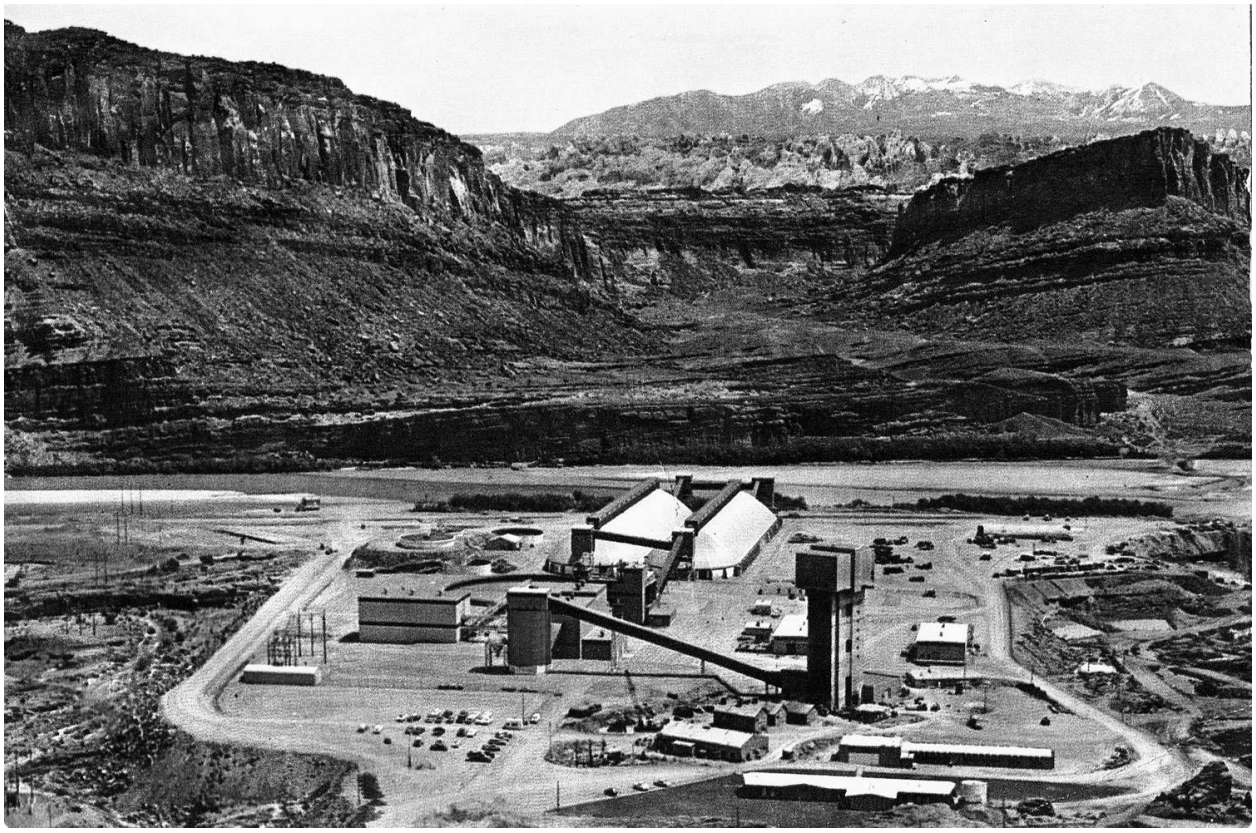
Once the rescue teams learned that there were

survivors, the efforts took on a new sense of urgency. I continued to man the phone and cleaned and repaired the self-rescuers used as backup personal protection by each of the miners involved in the rescue. Nowadays, self-rescue units are required wearing apparel for anyone who works in or visits an underground mine, but it would take disasters like Cane Creek to make the wearing of such devices mandatory.

The five men remaining behind the barricade in 2 South emerged from the mine by 6:00 p.m., 29 August, forty-nine hours after the explosion. Each of the five, Blackie and four of the contractor's miners, was in good condition. They were taken to the hospital for observation, but none suffered any lasting physical effects from their ordeal. Only Blackie ever went underground again, however.

On the way to the barricade in 2 South, the rescue teams encountered numerous bodies, and once the survivors were safely to the surface the grim task of removing the victims began. The first body was recovered by 1:30 p.m. on the day of the rescue. By 5:00 a.m., 30 August, sixteen more had been removed from the mine, with one miner still missing.

I was called out on the thirtieth at 9:00 a.m., after having left at midnight on the twenty-ninth. Wiley Brooks, TGS' general mine foreman, Ed Ziolkowski, a fellow TGS mine engineer, a MESA inspector, and I went underground to take air samples, check for gas, and look for the missing miner. We put together a sketch map of the body locations as they were marked by the rescue teams, as well as of the location and condition of each piece of mining equipment.



Promotional postcard from the Texas Gulf Sulfer Company, touting the opening of Cane Creek. (Author's Collection)

In addition, I made an assessment of the stability of the mine openings. They were in surprisingly good condition. We would later find out that a methane explosion had occurred at the shaft station and the shaft had acted as a gun barrel. Except for the shredded vent pipe in the drifts, there was not much physical damage. Once we had finished our inspection and determined that the mine was safe to reenter, we turned the mine over to the contractor and the cleanup began. A hand was found at 5:00 p.m. that evening, the only body part recovered from the remaining miner.

Eighteen miners died in the disaster, seven were saved.

At the completion of their investigation, federal and state authorities concluded that the routine blast in 3 South, for which Bill and I had had to leave the mine, released a small quantity of methane gas, which was carried from the face to the shaft by the exhaust ventilation.

At the shaft, a repairman was welding on a shuttle car. Welding sparks apparently ignited the methane, causing the explosion to rip through the shaft like a bullet. The force of the explosion collapsed or shredded the corrugated vent tubing used to provide intake air to the mine. As the fresh air to the mine was cut off, the explosive fumes quickly consumed the remaining oxygen and those miners not killed by the blast itself died by asphyxiation.

The days that followed saw us in intensive safety training. Of those TGS employees on site when the explosion occurred, I was the only one who had mine rescue certification. While the contractor cleaned up the mine, the company employees who were assigned underground took safety lamp training, followed sequentially by shot firer, fire boss, and mine foreman training. By the time we resumed underground development, each supervisor and engineer was certified as a gassy-mine foreman by the State of Utah.

During the mine cleanup we TGS engineers and supervisors made daily gas checks within the mine. With no forced ventilation of the headings, there was no way to rid the mine of the stench of death. No one looked forward to gas check duty; there was the smell and the natural rock noises common in deep salt mine openings. But the story also got around that the ghost of the dismembered miner could be seen moaning and wandering the headings looking for his hand. Needless to say, it was not a comfortable assignment.

Many of those who died at Cane Creek that day were close personal friends with whom I had worked during the sinking of the shaft. Memories of the disaster have faded with time, but still remain in my subconscious and surface from time to time. They serve to remind me of the frailty of life and the need to maintain a reliable faith outside myself. I have become a better Christian because of this horrific experience. ■

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Cane Creek Tragedy

Just another hot August day.
The muddy Colorado, flanked by red-rimmed sandstone
walls stretching upward 'til they meet the blue sky,
flows swiftly through the narrow gorge.

Down below, miners toil in declines toward the ore lying
buried, like the riches in a pharaoh's tomb.
A hot August day there, too;
no different than the hundreds that preceded it

We set the line points in each drift,
then headed for the shaft.
A hot shower, a long ride home, family time—
two toddlers, another in the womb, and a loving wife.
No thought of danger!

The blast threw debris across the yard—plywood and
studs from the temporary dumping station landed near
our feet, as we trudged toward the change house.
Black billowing smoke and fumes exited the shaft.
An explosion or fire.

The skip tender, in shock and covered in blood, staggered
into the yard. A twenty foot fall, broken only by the
plummeting remains of his work platform.
Quickly, we loaded him into the mine ambulance,
then turned to the task at hand.

With Chemox breathing machines on our backs and
masks tightly fitted, the super, the captain, and me—
we climbed into the sinking bucket,
and descended into the belching hole.

Down, down, we went into the darkness,
carefully maneuvering the bucket through the "spaghetti"
of what used to be a corrugated vent line.
So far, so good!

As we neared the shaft station,
the bucket became more entangled
in the pipes and tubing—
then the bells on our canisters rang.
Fifteen minutes more air.

We belled the bucket up, slowly retreating and knowing
we had failed to reach our pardners below.

Emerging from the shaft,
gasping for a breath of the cool evening air,
we found that rescue and recovery efforts
were well underway.
Teams from Price and Green River were on their way,
by dawn they would be about
the grim task that lay ahead.

For two long days,
they labored to restore the ventilation,
Two-hour shifts in the sinking bucket—
no complaints, just a sense of urgency.
Then, through the silent darkness,
came a cry for help below.

Two miners crawled to the station, exhausted;
they heard the rescuers above them—and cried out!
Feverish activity in the shaft—two miners alive.
Unhurt, the men were removed to the hospital,
but not before letting us know
that five companions remained alive
in a chamber below.

Buoyed with hope, the rescue teams inched their way
through the tangled mass of vent pipe and fans,
shuttle cars and supplies, slowly clearing the mine.
Thirty hours of agonizing work paid off
as the remaining survivors were found
barricaded behind a makeshift refuge wall.

The grim task of removing bodies then began.
Body bags to a makeshift morgue—
one at a time, as families grieved.
Within eleven hours,
all but one of the miners had been accounted for.
The final body found next day.

Friday, August 30, concluded three days of hell.
The silence underground was deafening
as we took gas samples
and began to reconstruct the tragedy.

Today, the Colorado continues to wend its way south-
ward through the same magnificent canyon lands.
Its majesty stands as an everlasting monument
to the courage of the miners
who gave their lives doing what they loved!

God rest their souls.

Morris Worley, 19 March 1999