



The Mulvaney Pipeline

Mulvaney
MECHANICAL, INC.
Mechanical Contractors
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200 Years Ago, We Endured a 'Year Without a Summer'

Two centuries ago, 1816 became the year without a summer for millions of people in parts of North America and Europe, leading to failed crops and near-famine conditions. While they didn't know the chill's cause at the time, scientists and historians now know that the biggest volcanic eruption in human history, on the other side of the world — Mount Tambora in Indonesia in April 1815 — spewed millions of tons of dust, ash and sulfur dioxide into the atmosphere, temporarily changing the world's climate and dropping global temperatures by as much as 3 degrees. In addition to food shortages, the natural climate change caused disease outbreaks. The eruption of Tambora, on April 10, 1815, on the island of Sumbawa in what's now Indonesia, was 100 times more powerful than the 1980 Mount St. Helens blast, according to the U.S. Geological Survey, which ranked the eruption as a seven on its eight-level volcanic explosivity index. The volcano spewed out enough ash and pumice to cover a square area 100 miles on each side to a depth of almost 12 feet. It was by far the deadliest volcanic eruption in human history, with a death toll of at least 71,000 people, up to 12,000 of whom killed directly by the eruption. When a volcano erupts, it does more than spew clouds of ash, which can cool a region for a few days and disrupt airline travel. It also spews sulfur dioxide. If the eruption is strong enough, it shoots that sulfur dioxide high into the stratosphere, more than 10 miles above Earth's surface. Up there, sulfur dioxide reacts with water vapor to form sulfate aerosols. Because these aerosols float above the altitude of rain, they don't get washed out. Instead they linger, reflecting sunlight and cooling the Earth's surface, which is what caused the weather and climate impacts of Tambora's eruption to occur more than a year later. Heavy snow fell in northern New England on **June 7-8**, with 18- to 20-inch high drifts. In Philadelphia, the ice was so bad every green herb was killed. Frozen birds dropped dead in the streets of Montreal, and lambs died from exposure in Vermont. On July 4, one observer wrote that "several men were pitching quoits (a game) in the middle of the day with heavy overcoats on." A frost in Maine that month killed beans, cucumbers and squash, according to meteorologist Keith Heidorn. Ice covered lakes and rivers as far south as Pennsylvania. By the time August rolled around, more severe frosts further damaged or killed crops in New England. People reportedly ate raccoons and pigeons for food. Europe also suffered severely: the cold and wet summer led to famine, food riots, the transformation of stable communities into wandering beggars and one of the worst typhus epidemics in history. **How soon could it happen again?** Eruptions on the scale of Tambora occur once every 1,000 years on average, but smaller events can still substantially impact the climate. With global temperatures at record highs, a massive eruption today could halt climate change. But the effect would be only temporary: Warming would pick up where it left off once all the stratospheric dust settled out, a process that could last a few years or up to a decade.

WHEN IN ROME... Water Diversions

Large water diversion projects serve to transport water from water-rich to water-poor areas. The Roman aqueducts are historically the most famous of this ancient practice, but water diversions in the form of irrigation has been occurring for more than 6,000 years in the Middle East. The difference between ancient and modern diversions resides in the scale of infrastructure and the volume of water moved. Modern engineering has allowed massive and highly efficient diversions of water that threaten biological health and local survivability. In recent decades, the largest and most notable water diversion projects around the world include the Karakum Canal (Turkmenistan), the Central Arizona Project (USA) and the South-North water project (China).

The 854 mile Karakum Canal diverts over 3.4 trillion gallons of water annually from rivers that naturally drain to the Aral Sea. This canal has been a major reason for the Aral Sea disaster, which has left the water body at just 10 percent of its natural size.

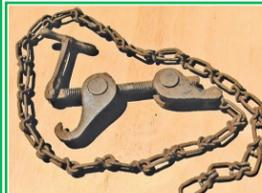
The Central Arizona Project, one of the largest diversion projects in the United States, runs 335 miles and delivers over 4 billion gallons of water annually to south-central Arizona. This diversion, along with many other withdrawals, has resulted in the Colorado River no longer reaching the Sea of Cortez in Mexico.

The South-North water transfer is the largest and most expensive diversion project in human history. The \$80 billion 715 mile infrastructure moves nearly 11.9 trillion gallons of water annually from China's humid southern region to its industrialized northern region. The environmental implications of diverting such massive quantities of water across a country have yet to be realized.

Before You Head to the 2016 Rio De Janeiro Games, You Should Know...

1. **2016 games will be South America's first time hosting the games**
2. **Golf will return to the Olympics after a 112-year absence**
3. **The Rio games will be the first to feature Olympians born in the year 2000.**
4. **There are 7.5 million tickets, with prices ranging from \$40 to \$3,000.**
5. **Around 85,000 soldiers and policemen will be deployed — the largest security force assembled at any event in Brazil's history and twice as large as the security presence for London 2012.**

SUMMER OLYMPICS: August 5th - August 29th



WHAT THE HECK IS IT?

If you can name the item pictured, you may **WIN A MULVANEY MECHANICAL LEATHER JACKET**

When e-mailing your entry, please write **"Newsletter Contest"** in the subject line to avoid our SPAM filter.

Send to: MMI@mulvaneyinc.com

If multiple correct answers are received, one winner will be selected at random.

JUST LIKE THIS ONE



Did you know...

- Cherophobia is the fear of fun.
- In 1942, there was a man called the Phantom Barber. He would break into people's houses in Mississippi at night and cut their hair.
- In 1973, Mao Zedong told Henry Kissinger that China had an excess of females and offered the U.S. 10 million Chinese women.
- During the first Super Bowl in 1967, NBC was still in commercial when the second half kicked off. Officials asked the Packers to kick off again.
- Google was originally named "BackRub"
- Before Stephen Hillenburg created SpongeBob SquarePants, he taught marine biology.
- The most shoplifted food item in the U.S. is candy, in Europe, it's cheese.

Email Pipeline to You?

Please send your request to MMI@mulvaneyinc.com



Last Quarter's Puzzle: Book Binder Finishing Tool

Weighing about 2 and a half pounds, this book binding tool was heated and used with gold foil to decorate fine leather book bindings with exquisite ornamental borders.

WE HAD NO CORRECT ANSWERS THIS TIME AROUND

WHAT'S GOIN' ON?

June 25-29	ASHRAE Annual Conference	ST. Louis, MI
June 26-28	BOMA International Expo	Washington, D.C.
July 27-29	AGC Health & Safety Expo	Washington, D.C.
Sept 12-14	ASHRAE IAQ Conference	Salt Lake City, UT
Sept 26-30	IPC Expo	Alberta, Canada
Oct. 5-7	IFMA World Workplace	San Diego, CA

"Nothing draws a crowd quite like a crowd"

- P.T. Barnum

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