

#### **Accident 170401574 - Employee Crushed Between Backhoe Bucket and Outrigger**

Employee #1 had gotten off the backhoe he was operating and left the motor running. He was killed when he was struck by the backhoe and crushed between the bucket and outrigger.

#### **Accident 170010078 - One Employee Killed, One Injured in Trench Cave-in**

At approximately 4:00 p.m. on May 7, 2000, Employees #1 and #2, were working in a 15 ft wide trench. Employee #1 was checking the grade prior to installing a 10 in. diameter drainage pipe. The nearly vertical trench walls were approximately 15 ft tall on the east side and 17 ft tall on the west side, with an additional 8 ft of spoils on the west side. A portion of the east wall collapsed, burying Employee #1 up to his waist and pinning him against the west wall. He was killed. Employee #2 had been operating the backhoe most of the day; he sustained injuries that required hospitalization.

#### **Accident 000837864 - Employee Burned When Natural Gas in Trench Ignites**

Employee #1 and coworkers were in a trench installing water lines to homes. The backhoe excavator bucket struck a gas line, but they continued to work in the trench. Employee #1 began to light a cigarette when the spark from his lighter ignited the gas in the trench. A fire erupted and Employee #1 sustained burns.

#### **Accident 170010094 - Employee's Leg Severed By Lowboy Trailer**

Employee #1, a flagger for Kiewit Construction, was struck by a lowboy trailer that an employee of another company had just loaded with a backhoe. Her leg was amputated in the accident. The driver had not set the brake, nor chocked the wheels, of the lowboy.

#### **Accident 170238638 - One Employee Killed, One Injured When Pinned By Backhoe**

At 6:00 p.m. on January 11, 2000, Employees #1 and #2 were working at a construction site. The operator of a Case 590 SL backhoe was preparing to excavate a small hole. The operator lowered the front bucket and then swung the seat around to face the backhoe controls. He then throttled up, and the backhoe traveled forward, striking Employees #1 and #2 and pinning them against a flatbed trailer. Employee #1 was killed and Employee #2 suffered a broken leg.

#### **Accident 126008762 - Employee's Leg Injured When Struck By Swinging Pipe**

On July 21, 1999, Employee #1 was in a 6 ft deep excavation helping to guide a section of 12 in. diameter by 20 ft long PVC water pipe being lowered into the excavation using a Case 580E backhoe. The employer was operating the backhoe, and the pipe was attached to the backhoe bucket with slings; Employee #1 and a coworker were guiding the pipe with tag lines. The employer lowered the pipe faster than anticipated or desired, apparently because of the position of the backhoe's boom. The pipe jerked and lowered faster than the coworker with the tag line could control its movement. The pipe swung around excessively and struck Employee #1, fracturing his femur, injuring his neck,

lacerating his head, and bruising his chest. Causal factors of the accident were the employer's failure to maintain control of the pipe while it was being lowered, and the workers being too close to the pipe as it was being lowered. Employee #1 was both experienced and well-trained.

**Accident 000883876 - Employee Killed When Run Over By Loader/Backhoe**

Employee #1 was struck by a backhoe/loader as it was backing up. He fell beneath the tires and was killed. The backhoe had an operating back-up alarm and had traveled approximately 100 ft before the accident occurred.

**Accident 000519124 - Employee Killed When Crushed Between Backhoe and Container**

At approximately 2:30 p.m. on August 21, 1998, Employee #1 and a coworker were loading a case 580E backhoe into a 40 ft intermodal container. The exhaust pipe was too high to allow the backhoe to enter. While the backhoe operator remained in the cab with the engine running and in gear, the two employees climbed onto the hood of the backhoe and attempted to bend down the exhaust pipe. The coworker then stepped down into the cab but slipped onto the accelerator, causing the backhoe to move forward. Employee #1 became pinned between the canopy of the backhoe and the top edge of the container. He sustained multiple rib fractures and lacerations to his heart and liver; he died shortly after the accident.

**Accident 126785815 - Employee's Leg Injured in Trench Cave-in**

Employee #1 was in a trench, installing PVC pipes to be used as a drain. At the same time, a coworker was operating a Case 580I backhoe to excavate material from the trench. The west side of the trench caved in on Employee #1, pinning him against the opposite wall. The coworker immediately radioed the public works director and emergency services responded to the scene. Employee #1 was taken to Logan Regional Hospital for observation and evaluation.

**Accident 170701106 - Employee's Leg Fractured When Caught Under Outrigger**

Employee #1, a construction laborer at a pipeline project, was standing approximately 10 ft from a tractor with a backhoe attachment that was being driven by a foreman. He asked the foreman a question and the foreman turned, answered him, and then turned back again. The foreman then lowered the bucket to raise the tractor and to move slightly forward; this is normal procedure and the extended outriggers move forward also, slightly above the road surface. Employee #1 did not notice this movement as he approached the tractor and his lower left leg became caught under one of the outriggers. He suffered a compound fracture, for which he was hospitalized.

**Accident 170132336 - Employee Killed When Knocked Into Trench By Falling Load**

At 3:15 p.m. on or about September 17, 1997, a crew had finished a portion of a trench. One backhoe operator attached the aluminum shoring and lifted it out of the trench, while

Employee #1 was standing close by. Another backhoe operator then asked Employee #1 to connect a chain to the shoring, so he could drag it to another location. While the shoring was being dragged, it hit a piece of asphalt, fell over, and struck Employee #1, causing him to fall backward into the trench. The Portland Fire Department's trench rescue team responded, as did an ambulance. Employee #1 was pronounced dead at the scene.

**Accident 200710267 - Employee Crushed and Killed When Backhoe Overturns on Slope**

Employee #1 was operating a Case 580l backhoe with a bucket full of white rock. He was descending an embankment at an angle when he decided to get off of the backhoe. After Employee #1 dismounted, the vehicle started to tip. The backhoe then overturned, striking him in the upper back, between the shoulder blades and below the neck. Employee #1 was killed. The backhoe was equipped with a roll-over protection system.

**Accident 201400942 - Auger Ruptured A Gas Line**

A power line crew was relocating a utility pole. After using a backhoe to excavate a 300- to 460-millimeter-deep hole, one of the workers started to dig by hand but found the ground was too hard. The crew then used an auger, and it struck a gas pipeline. Apparently, no one was injured.

**Accident 014410443 - Employee Struck and Killed By Backhoe Bucket**

Employee #1, a laborer, was working in a 19 ft long by 9 ft 10 in. wide by 6 ft 8 in. to 7 ft deep trench. A backhoe had made a hole between two concrete piers measuring about 5 ft across and about 5 ft apart. Employee #1 and coworkers were scooping dirt into the hole until enough had accumulated for the backhoe operator to scoop out. The operator brought the backhoe bucket into the trench about 2 ft from the bottom. Unintentionally or intentionally, the operator swung the bucket left about 10 feet to the east end of the trench, pinning Employee #1 against the foundation of the adjacent building. He was killed.

**Accident 014269161 - Employee Injured When Struck By Backhoe Bucket**

Employee #1 was using a hand shovel when he was struck with the bucket or arm of a backhoe. He was injured but did not require hospitalization

**Accident 200020444 - Contact With Overhead Line Thru Boom**

A construction crew was using a Case backhoe-loader (Model No. 580K). The backhoe operator moved the backhoe under a 240/120-volt overhead power line, and the boom contacted the power line. The boom damaged the line conductors and a weatherhead. The conductors broke away from the weatherhead, and the operator jumped off the backhoe. Fortunately, no one was injured. An employee that was allegedly being used as a spotter

was about 7.6 to 9.1 meters away from the **backhoe** at the time of the accident. He had been hand shoveling when the accident occurred. The employer had contacted the owner of the overhead telephone and alarm lines before this incident.

#### **Accident 201520129 - Employee in Trench Injured By Falling Concrete Curb**

A construction laborer working on an underground power line project was in a trench. The trench was less than 1.2 meters deep. A concrete curb was located about 450 millimeters from the trench. The supervisor on the job recognized the potential for cave-in and had the curb braced with two-by-fours. One end of a stud was braced behind the back of the curb and the other end was braced to an existing concrete structure in the trench (probably the concrete cap poured over the existing gas utility). The **backhoe** operator saw the employee in the trench and turned his head to dump his bucket of soil. When the **backhoe** operator looked back, the curb was on top of the laborer's legs. He sustained bilateral leg fractures. By the time emergency medical services arrived, the curbing had been lifted from the injured employee's legs by the **backhoe** and chain. The laborer was hospitalized for 3 days for his injuries.

#### **Accident 170758890 - Employee Killed When Struck By Falling Backhoe Boom**

Employee #1, of Wright Brothers Construction, was using a Caterpillar 225 **backhoe** to excavate an area for water drainage. He apparently struck a rock, knocking out the glass on the right side of the cab. With the boom in a vertical position, Employee #1 leaned out of the right side of the driver's cab, either to look for the glass or to retrieve it. He accidentally struck a joy stick on the right side of the driver's seat that raised and lowered the boom and opened and closed the bucket. The boom came down and struck Employee #1 across the neck and shoulders. He suffered a broken neck and was killed.

#### **Accident 200020352 - Employee Injured in Fall From Backhoe Bucket, Later Dies**

Employee #1 was riding in the bucket of a rubber-tired **backhoe** when he either dropped or fell 8 ft onto the asphalt. He was air-evacuated to the hospital, where he underwent emergency brain surgery the next day and had one-quarter of his brain removed. Employee #1 died on Tuesday, June 3, 1997.

#### **Accident 170204838 - One Employee Killed and One Injured in Gas Line Fire**

At approximately 11:35 a.m. on May 15, 1997, Employees #1 and #2, of K. J. Woods Construction Company, were excavating at a street intersection to repair sewers. Employee #1, who was operating a **backhoe**, struck a gas line that was not marked on the city drawings provided to the company. Approximately two minutes later, they smelled what they believed to be residual gas (a common smell in excavation activities), and stopped the operation. There was no hissing sound and no disturbance or dirt around the pipe commonly associated with an active gas line break. Employees #1 and #2 and the leadman believed they had hit an abandoned gas line. Their employer told them to stop and he called the 800-number for Pacific Gas & Electric. At approximately 11:45

a.m., there was a sudden gas surge, which ignited. The hood on the **backhoe** was open, and the **backhoe** along with Employees #1 and #2 become engulfed by flames. They were treated for second- and third-degree burns at San Francisco General Hospital and St. Francis Hospitals. Employee #1 died one month later of complications from his burn injuries. Upon reviewing the drawing provided by the city, it was noted that the gas line was labeled as abandoned and was flanged off prior to the intersection. No street marking showed the live 4 in. gas line. The gas line burned for approximately 3 hours before Pacific Gas & Electric found the valve to cut off the gas.

#### **Accident 014431639 - Employee Killed When Crushed By Loader/Backhoe**

Employee #1 was moving a tractor **loader** /backhoe onto a trailer. He left the operator's position while the engine was running and the work units were off the ground. When the tractor **loader** /backhoe rolled off the trailer, Employee #1 became caught against the bottom of the tractor and the ramp of the trailer. He was crushed and killed.

#### **Accident 200960995 - Employee's Leg Injured By Falling Backhoe Track**

Employee #1 was lying down on his right side, cleaning the rollers on the right side of a bulldozer. At the same time, his supervisor finished putting in the pin on the other track and a coworker was repositioning the **backhoe** to install the track. The supervisor was coming around the bucket when he saw the coworker hit the track with the bucket as he was backing up. The supervisor ran over to Employee #1 and pulled him out of the way. The track fell over, striking Employee #1 on his left leg, just above his ankle. He sustained injuries that required hospitalization.

#### **Accident 200050128 - Employee Injured When Struck By Rolling Backhoe Bucket**

Employee #1 worked for a company that installed sanitary piping. A coworker was digging a trench to continue installation of the piping when the bucket fell off the **backhoe**. It hit the bottom of the trench, and began to roll. Employee #1 was working in the trench box when he was struck by the bucket. He sustained injuries that required hospitalization.

#### **Accident 200670644 - Employee Run Over By Backhoe, Dies of Heart Attack**

Employee #1 was trying to start a **backhoe** that was in gear, while standing on the ground next to it. When the engine engaged, he was run over by the rear tire. Employee #1 was transported to the hospital, where he suffered a heart attack and died the next day.

#### **Accident 014408777 - Employee Killed When Caught Under Falling Backhoe and Earth**

A supervisor backed a **backhoe** into an excavation. It landed on Employee #1, killing him.

#### **Accident 201570090 - Employee Killed When Struck By Loader Bucket**

In 1997, Employee #1 was working close to where the owner of the company was preparing to transport a Case **loader** /backhoe to another site. The owner drove the machine onto a flatbed trailer and lowered the **backhoe** bucket onto the bed. He then inadvertently activated the control that lowered the loader bucket, which crushed and killed Employee #1. The operator was not aware that Employee #1 was between the trailer and the loader bucket.

#### **Accident 170894794 - Employee's Ribs Fractured When Struck By Falling Pipe**

Employee #1, a truck driver for Commercial Transfer, Inc., was delivering a load of 20 ft long by 12 in. diameter PVC pipe to a construction site. He inspected the load to make sure the steel bands holding the pipes were still attached, and then removed the chains from the load. Employee #1 moved away from the truck to roll up his straps. As a **backhoe** operator began to unload the pipes, the steel bands broke and the pipes rolled off the truck. One pipe struck Employee #1 in the chest while another landed on his ankle. He sustained two broken ribs.

#### **Accident 201400389 - Employee Killed When Struck By Backhoe Bucket**

Employee #1 was struck by a **backhoe** bucket and pinned against an excavation wall. He was killed.

#### **Accident 200070175 - Employee Killed When Struck By Backhoe Bucket**

Employee #1 was working with a **backhoe** operator on an excavation to prepare a work site for the installation of concrete forms. In the process of digging up dirt and old asphalt, the **backhoe** severed a buried telephone cable, interrupting phone service to a nearby laundromat. The telephone repair service was called and the crew then continued working on the site pending arrival of the repairman. They also decided to temporarily splice the cable wires back together so the laundry could continue using its phone. After all the digging was completed, the **backhoe** operator moved his vehicle aside and away from the excavation to allow room for Employee #1 to move the company dump truck out of the way. The **backhoe** operator and the owner of the laundry then began preparing the cable wires for splicing. When Employee #1 returned from moving the truck, he joined them. While they were working, the **backhoe** rolled back toward the excavation and traveled over the its 8 in. lip. Its rear bucket and arm were extended, and the bucket struck Employee #1 in the back with so much force that it also knocked aside his employer. Employee #1 said, "It broke my back," and then he began to have difficulty breathing. A coworker called 911, and the laundry owner administered CPR until EMS personnel arrived. Employee #1 was transported to the hospital, where he was pronounced dead. The **backhoe** operator stated that he had shut down the engine and left the **backhoe** on its outriggers, with its front bucket down and the brakes set. He also said that in the aftermath of the accident he noticed that the outriggers and brakes were not as he had left them. This raised the possibility that Employee #1 didn't have enough room to get the truck past the **backhoe**, and had retracted the outriggers and/or released the brakes to make more room for the truck to pass. No one on the site heard or saw the **backhoe** move until the accident took place.

### **Accident 000642827 - Employee Killed in Trench Collapse**

Several employees were installing a 30 in. steel water line in a trench approximately 75 ft long by 14 ft wide by 9 ft deep. To protect the employees from cave-ins, four steel plates approximately 14 ft long, 8 ft wide, and 1 1/4 in. thick were installed with a **backhoe** alongside the banks of the trench and 1 to 2 ft deep at the bottom of the trench. The employer, however, did not install horizontal bracing. As a result, the bank behind one of the steel plates collapsed, causing the steel plate to tip over. Employee #1, who was welding a pipe joint at the time, was struck by the steel plate. He suffered multiple fractures and trauma, and was pronounced dead a short time after the accident.

### **Accident 200050045 - Employee Killed By Falling End of Metal Tank**

Employee #1 and coworkers were dismantling large metal tanks. This process involved cutting loose the ends of the tanks and having a **backhoe** push the ends into the hollow center of the tank. A **backhoe** was pushing on a loose end piece when it broke away and fell on Employee #1. He was killed.

### **Accident 201400496 - Employee's Legs Fractured When Pinned By Backhoe Bucket**

Employee #1 was working in an excavation that contained a water pipe. The operator of a **backhoe** was talking to a coworker at ground level and inadvertently caught his sleeve on the motion control of the bucket, causing it to move. Employee #1 sustained two broken legs when the bucket pinned him against the water pipe.

### **Accident 171054703 - Employee Injured While Being Lowered Into Trench Box**

Employee #1, age 18, of the West Jordan City maintenance department, and two coworkers, of Speck Construction, Inc., were riding a 72 in. manhole cone that was being lowered into a trench box by a **backhoe**. The men were riding the cone to give it some balance, which it needed because it was missing a chain and bracket. The manhole cone tilted while it was being lowered, pinning Employee #1 between a support chain and the cement manhole wall. He sustained multiple serious injuries, for which he was hospitalized.

### **Accident 171054695 - Employee Twists Knee While Riding Backhoe Load**

Employee #1 and a coworker, both of Speck Construction, Inc., and a West Jordan City maintenance worker were riding a 72 in. manhole cone that was being lowered by a **backhoe** into a trench box. They were riding it to provide some balance because it was missing a chain and bracket. As it was being lowered, the manhole cone tilted, pinning Employee #1's hand between the city worker and the chain. Employee #1 lost his balance, twisting and spraining his right knee. When the cone tilted, the city employee became caught against the cement side of the manhole, and sustained serious injuries.

### **Accident 200000131 - Employee Killed in Backhoe Accident**

Employee #1 used a **backhoe** without the owner's permission while the owner was away from the site. The owner found him next to the overturned **backhoe** in a ravine a day after he was reported missing. The sheriff listed the cause of death as internal injuries. OSHA had no jurisdiction over this incident.

#### Accident 170566848 - Employee Killed When Excavation Caves in

At approximately 3:15 p.m. on October 15, 1996, Employee #1, age 20, and two coworkers were repairing a water pipe in a 10 ft deep excavation. A large section of the west wall and a section of the south wall collapsed, completely burying Employee #1 under 1 1/2 to 2 feet of sand, and burying his coworkers to their waists. A **backhoe** operator working nearby began digging out the two standing coworkers while yelling to another coworker to call 911. When the buried men were freed, they began digging for Employee #1, and were soon joined by fire and other emergency personnel. Employee #1's head was uncovered first, and the rescuers attempted to get him breathing while the rest of his body was dug free. Employee #1 was pronounced dead at the scene at 4:26 p.m. Apparent hazards identified at the site included an accumulation of water, lack of proper sloping of the excavation walls, inadequate protection of the excavation surface, and obstructed egress.

#### Accident 170242606 - Employee's Head Killed When Pinned Against Building

Employee #1, one of the partners of Whitecap Construction, was using a Bobcat with a **backhoe** attachment to excavate in an existing covered garage (carport). He apparently backed the Bobcat out of the covered carport area, ducking under the header as he did so. For some reason the Bobcat then moved forward, pinning his head and neck between the rollcage and the siding covering the header for the carport. Employee #1's head was crushed, and he was killed.

#### Accident 000755918 - Employee Killed When Run Over By Backhoe

Employee #1 was working alone, replacing an orbital steering valve on a **backhoe**. The **backhoe** was in low range, the forward pedal was engaged by placement of two wrenches, and the engine was running. Apparently, he inadvertently struck the gearshift lever, causing the machine to move forward approximately 5 ft. Employee #1 was struck by the **backhoe** and his chest and abdomen were crushed. He was also run over by the machine. Employee #1 died as a result of these cumulative injuries.

#### Accident 170608202 - Employee's Knee Fractured When Struck By Falling Rock

On September 25, 1996, Employee #1, a laborer, was placing rocks from a sloped stockpile into another pile. The rocks were being selected and then transported by a Case 590 **backhoe** to use as slope protection in V-shaped drainage ditches at a ski resort. A 1 ft diameter rock from up the sloped pile became dislodged and struck Employee #1 on his left knee. He was hospitalized with a fractured knee.



#### **Accident 171065147 - Electric Shock - Contact With Overhead Line Thru Boom**

Two employees were moving a manhole into place. One of them, a **backhoe** operator, brought the boom of his **backhoe** into contact with a 7200-volt single-phase overhead power line. The other employee, a laborer, grabbed a chain supported by the **backhoe** so that he could attach it to the manhole. The laborer received an electric shock. The operator moved the **backhoe** away from the power line and went to assist the laborer. The operator also received an electric shock, so he returned to the **backhoe** and moved it further from the power line. His rescue efforts were to no avail however. The laborer had been electrocuted.

#### **Accident 201100054 - Employee Injured When Pinned By Backhoe Bucket**

Employee #1 was a laborer for a construction company that was installing a fiber optic line. He was leaving an approximately 2 ft deep excavation when the right rear tire of a **backhoe** rolled into it. Employee #1 became pinned to the edge of the excavation by the **backhoe** bucket and suffered a severe laceration to his right leg. Apparently, the operator had pulled forward and was turning in his seat to lower the outriggers when the **backhoe** began to roll. At the time, the **backhoe** was idling with the front bucket in the 'up' position. The brakes were not set nor was the **backhoe** otherwise secured.

#### **Accident 170731194 - Employee Killed When Run Over By Loader/Backhoe**

At approximately 9:55 a.m. on August 8, 1996, Employee #1 was operating a **loader** /**backhoe** at a construction site in Pasadena, CA. The work involved trenching and excavating along an embankment with a 30 degree slope. Employee #1 was driving over the embankment when the **loader** /**backhoe** suddenly became unstable and started rolling backward down the slope. He jumped out of the vehicle when it started down the embankment and was run over. Employee #1 was killed.

#### **Accident 200670347 - Employee Killed When Struck By Backhoe Outrigger**

Employee #1 was killed when he was struck by a **backhoe** outrigger.

#### **Accident 201280021 - One Employee Killed, Two Injured When Loader Hits Trailer**

Near the end of the work day, Employees #1 through #3 and two coworkers were connecting a truck and a trailer, and loading it with miscellaneous equipment. Nearby, a foreman had parked a rubber-tired front end loader on the side of a sloped roadway. The loader was parked facing uphill, with the brakes set and engine shut off. After he left to retrieve a coworker from another area of the project, the loader rolled backward down the 8 to 10 degree sloped hill, striking the truck and trailer. Several of the employees were working between the truck and trailer to hook up the trailer to the hitch. Because of ambient noise from the truck's engine and from a nearby crew that was operating a **backhoe**, no one heard the loader rolling down toward them. Employee #1 became trapped under the differential assembly and was killed. Employees #2 and #3 sustained lacerations and possible fractures, for which Employee #2 was hospitalized. The other

two coworkers were not injured. The parking brake was still set on the loader when it was later inspected.

#### **Accident 170748461 - Employee Killed in Trench Cave-in**

Employee #1 was installing sewer pipe in a 5 to 6 ft deep trench. Upon completing the job, he exited the trench and a bulldozer partially covered the pipe with dirt. The bulldozer operator was walking to get on a **backhoe** when he noticed that Employee #1 was in the trench. The trench walls caved in, burying Employee #1 from the neck down. He was killed. The trench walls were vertical, and there was no protective system in place.

#### **Accident 170813885 - Employee's Arm Fractured When Pinned By Boom**

At approximately 8:55 a.m. on July 24, 1996, Employee #1, a laborer, chained a manhole section to a **backhoe** bucket to lower it into an excavation. He then attempted to operate the foot swing controls on the machine from the ground. When he manually depressed the boom swing control pedal, the boom swung abruptly to the right and pinned his right arm and biceps against the tractor. Employee #1 suffered a severe fracture of his right upper arm and was hospitalized for five days.

#### **Accident 200450062 - Employee Killed When Pushed Into Log Flume By Backhoe**

Employee #1 was driving a truck that was positioned behind a log truck being unloaded at the Mead Coated Board, Inc., plant. A mill worker was using a **backhoe** with a boom and paddle to push short logs into the flume. A log apparently became jammed underneath a tire on Employee #1's truck, and he tried to remove it. The coworker did not see him, and Employee #1 was pushed by the **backhoe** into the log flume. He was killed.

#### **Accident 170762371 - Employee's Arm Fractured When Tire Blows Up**

On July 18, 1996, Employee #1, a **backhoe** operator for Stockton Plumbing, attempted to mount an overinflated 16 in. tire on a 16.5 in. rim. The tire blew up, striking him on the left arm. He sustained multiple fractures, for which he was hospitalized. Employee #1 was not using an in-line gauge or regulator.

#### **Accident 200750057 - Employee Killed When Backhoe Overturns**

Employee #1 was operating a large **backhoe** to lift and remove concrete slabs from a bridge at night. The boom was extended out over the side of the bridge when the **backhoe** started to tip over. Employee #1 attempted to jump from the cab and became pinned between the **backhoe** and the bridge. He was killed.

#### **Accident 201060142 - Employee's Back Injured in Trench Cave-in**

Employee #1 was standing in a 4 ft deep trench after pipes had been laid and then covered with sand in preparation for back filling. The aluminum hydraulic shoring was removed, and back filling began when Employee #1 signaled the operator of the Case

580K **backhoe** while still standing in the trench. As a coworker pulled the last jack of the aluminum hydraulic shoring, he instructed the operator of a Case 580K **backhoe** to go to the other side of the trench to begin back filling. The operator shouted at Employee #1 just as the trench wall collapsed on him. An 18 in. wide by 12 in. thick by 10 in. long piece of saw-cut cement fell from the west side of the trench, pinning Employee #1. Coworkers used tools and an aluminum shoring jack to extract him. Employee #1 sustained low back strain and other minor injuries, and was hospitalized for 48 hours.

#### **Accident 014381883 - Employee Killed When Run Over By Backing Truck Trailer**

At approximately 12:50 p.m. on May 13, 1996, the operator of a Ford F super duty 2 ton truck with an attached 20 ft long fifth wheel flatbed trailer, was instructed to back his truck and trailer south along the west shoulder of the northbound lanes of the Route 336 extension. The trailer was carrying a water tank to be used to clean the dirt from a **backhoe** bucket that was being used approximately 50 to 60 ft south of the trailer. The truck driver walked to the back (south) side of the trailer, where he saw that an Illinois Department of Transportation (IDOT) vehicle was parked between his trailer and the **backhoe**. He asked the IDOT representative on site to move his vehicle, then watched him do so. The truck driver then walked along the driver's (west) side of his truck, entered the cab, checked both mirrors, and began backing up. Unobserved and at an unknown time, Employee #1, a roller operator, had parked his roller on the east side of the trailer and then walked to the rear of it. As the Ford truck began backing southward, the **backhoe** operator, who was digging south of the truck, turned and saw Employee #1 being crushed under the rear trailer axle. He began waving and yelling at the truck driver, who had backed approximately 10 ft when he saw the **backhoe** operator's gestures. The truck driver pulled forward and ran to the rear of the trailer, where he observed Employee #1 lying on the ground. Employee #1 sustained multiple massive injuries to the chest and was killed. The truck driver's view to the rear had been obstructed by the tanks on the trailer, and he was looking primarily at the driver's side mirror while backing.

#### **Accident 170734123 - Employee Injured When Excavation Wall Caves in**

Employee #1 and coworkers--the owner of Larson Plumbing, another helper, and a **backhoe** operator-- were connecting a sewer. After the **backhoe** dug the excavation, the owner left the site and Employee #1 and a coworker entered the excavation. Employee #1 was working at the deepest portion of the excavation, which was approximately 8 to 10 ft, when one side of the excavation gave way. He was pinned up to his thighs in dirt, but the coworker was able to get him out. Employee #1 suffered from poor circulation in his legs and spent several days in the hospital. The excavation was not protected against cave-ins. The trench wall gave way because of the excess weight of the dirt piled on top of the edge, and because that that section had been dug up and replaced earlier in the day.

#### **Accident 170826192 - Employee Injured When Backhoe Slides Down Embankment**

Employee #1 was operating a **backhoe** to remove ballast and sub-ballast from a light rail roadbed. He first worked with his outrigger down; he then lifted it up to put the weight of the vehicle on the tires. At the same time, Employee #1 placed the **backhoe** in gear to

move forward. The vehicle immediately started to tilt and slid approximately 48 ft down the embankment. Employee #1 suffered a bruised back and left knee.

#### **Accident 170378665 - Employee Killed When Struck By Iron Pipe**

Employee #1 was working at a construction site during the installation of a new underground water line. The 18 ft long by 20 in. diameter ductile iron pipes were wrapped in heavy-duty plastic material. A nylon strap choker sling attached to a **backhoe** with its bucket removed was being used to lift the 1,500 lb pipe sections. A suspended pipe was being swung into position to be lowered into the trench when the choker sling slipped on the plastic material covering the pipe. One end of the pipe fell and struck a pile of excavated materials; the other end spun around and struck Employee #1. He was killed.

#### **Accident 200020022 - Employee Killed When Struck By Falling Steel Plate**

Employee #1 was working at a site where a Caterpillar **backhoe** and a hook and chain were being used to lift 2-ton steel plate into an excavation. The plate briefly made contact with the ground, creating slack in the chain and allowing the hook to become dislodged from the plate. The plate came out of the sling and fell on Employee #1's lower back as he was attempting to escape. He was killed.

#### **Accident 171048697 - Employee Killed When Pinned in Trench By Backhoe Bucket**

At approximately 11:00 a.m. on March 26, 1996, Employee #1 was helping a **backhoe** operator remove a concrete encasement from a sanitary sewer pipe. Employee #1 was standing inside the trench shield, signaling the operator, when the **backhoe**'s bucket slipped off the concrete encasement and struck him. Employee #1 sustained crushing injuries and may have been pinned against the trench shield. He was killed.

#### **Accident 170831903 - Employee's Tibula Fractured When Thigh Struck By Pipe**

Employee #1 was standing in a 4 ft trench while a 20 ft long 8 in. ductile iron pipe was being lowered to him. The pipe was rigged by a 20 ft long, size 28, grade 80 alloy chain that was hooked to a **backhoe** bucket. As Employee #1 was guiding the male end of the pipe into the female end of a previously installed pipe, the chain unwound from the pipe, dropping it. Employee #1 pushed the pipe away, but it bounced off the trench wall and struck him on the right thigh, fracturing his right tibula. He was transported to the hospital, treated, and released.

#### **Accident 201110046 - Employee's Legs Broken in Trench Cave in**

At approximately 11:15 a.m. on February 24, 1996, Employee #1, of Ross Cook, Inc., was working at a construction site at Universal Studios. He was installing 4 in. PVC pipe in a 2 ft to 3 ft wide by 3 1/2 ft to 5 1/2 ft deep by 150 ft to 200 ft long unshored trench. A **backhoe** operator adjacent to the trench was dumping sand into it about 10 ft ahead of where Employee #1 was standing, at a depth of approximately 5 1/2 ft. Employee #1 was directing the operator on how much sand to dump when a section of the south wall caved

in, pinning him up to his waist against the north wall. Two coworkers immediately jumped into the trench and started digging with their hands to free Employee #1. After about 10 minutes of digging they were still unable to free him, so they called out to the **backhoe** operator to help remove some of the dirt. Before Employee #1 could be rescued, another section of the trench wall caved in and crushed his left leg. He was freed shortly thereafter. Employee #1 had broken both his legs and he was taken to St. Joseph's Hospital, where he was treated and both legs were placed in casts. He was released from the hospital after about six hours.

#### **Accident 170570675 - Employee Injured When Struck By Swinging Backhoe Arm**

Employee #1 was standing on a retaining wall at a construction site, holding up an electrical cord with a shovel. A cement form had broken, and a coworker was attempting to move a Ford model 555D **backhoe** into position to use the bucket. As the driver was exiting the **backhoe** to help Employee #1, the gloves in his back pocket hit the boom control lever on the machine. The boom moved to the right, struck Employee #1, and knocked him into some metal wall studs of the structure under construction. Employee #1 later went to the hospital, where he was diagnosed with a pulled muscle and contusion to the left shoulder.

#### **Accident 000951020 - Employee Dies of Asphyxia in Trench Cave-in**

At approximately 11:00 a.m. on February 12, 1996, Employee #1 was laying 13 ft sections of pvc sewer pipe. He was working inside an 8 ft high by 5 ft wide by 20 ft long trench box that had been installed in a trench that was approximately 17 ft high by 5 ft wide by 40 to 60 ft long. After the employee connected the last section of pipe in the trench box, the track **backhoe** began pulling the trench box forward. When the box began moving, dirt caved in adjacent to the south end of the trench box. The employee, apparently fearing for his safety, ran out of the trench box to exit the excavation by using the sloped portion of the trench wall. After he had traveled approximately 8 ft, the bottom portion of the trench caved in, trapping Employee #1 up to his waist. The top portion then caved in, completely covering him with 2 to 4 ft of dirt. He died of asphyxia.

#### **Accident 014397954 - Electric Shock - Direct Contact With Energized Parts**

An employee was using a Case **backhoe** to locate a 102-millimeter-diameter (4-inch-diameter) water pipe. While he was digging, he uncovered a PVC electrical conduit. He turned off the **backhoe** and walked into a fenced-in area where a 15-kilovolt transformer had been disconnected and removed 6 years earlier. The employee opened the back door of a switch cabinet, placed his right hand on the metal cabinet, and reached inside with his left hand. He contacted a conductor that had once fed the transformer and was electrocuted. This conductor was energized.

#### **Accident 170028260 - Employee Killed in Fire Following Pipeline Rupture**

Employee #1, an electrician, was turning off the engine of a bucket truck when the engine was exposed to flammable vapors from a ruptured underground pipeline. The employee

died from burns suffered in the resulting explosion and fire. The rupture was caused by a **backhoe** digging a ditch.

#### **Accident 000848838 - One Employee Killed, One Injured By Falling Backhoe Bucket**

At approximately 9:45 a.m. on January 10, 1996, Employees #1 and #2 were preparing to move the flat top cover to a storm sewer from the south end to the east end. Employee #1 was trying to align the hole of the flat top cover while Employee #2 was turning the flat top cover from the south end to the east end. They were working directly underneath the suspended bucket to the **loader** /backhoe. Suddenly, the lift assembly cylinder to the bucket failed, causing the bucket to strike both employees. Employee #1 suffered a crushing injury to his head and was killed. Employee #2 sustained fractures to his right arm and right shoulder, for which he was hospitalized.

#### **Accident 000900423 - Employee Killed When Backhoe Overturns**

At approximately 9:50 a.m. on December 22, 1995, Employee #1 was traveling in a Case 580 **backhoe**. He drove the **backhoe** across a slight incline and the right front and rear tires went into a depression in the ground. The **backhoe** turned over and the employee's chest struck the steering wheel and/or the side of the vehicle's roll over protective structure. Employee #1 was transported to the hospital, where he was pronounced dead.

#### **Accident 170105944 - Employee Killed During Trench Cave-in**

After digging an 11 ft long by 4 ft wide by 7 ft deep trench with a tractor-mounted **backhoe**, Employee #1 entered the trench to repair a broken sewer. Shortly after he entered, one of the trench's vertical walls caved in, burying him. Employee #1 was killed.

#### **Accident 170739486 - Employee's Finger Amputated By Falling Backhoe Bucket**

On November 15, 1996, Employee #1 and a coworker were removing the bucket from a Caterpillar tractor, model 446B, equipped with a **backhoe**. The bucket was resting on the ground while the coworker removed the boom and dipper pins. Employee #1, the operator, thought the bucket was in a bind and raised it about 3 in. off the ground. He then put both hands on and under the bucket teeth and was rocking the bucket back and forth when the coworker drove out the pin. The bucket fell, smashing Employee #1's right middle finger and amputated the end above the first joint.

#### **Accident 170061980 - Employee Dies After Struck By Excavator**

At approximately 11:40 a.m. on November 10, 1995, Employee #1 dismounted his rubber tire **backhoe** to direct a dump truck to a spot pointed out to him by a coworker. The coworker was operating a Komatsu PC 220LC multi-directional excavator to pack fill dirt over a culvert in Lenoir, NC. The excavator's boom bucket was on the south side of the excavator, and the operator was facing south and moving north in reverse. His vision was obstructed. Employee #1, who was not wearing a reflective vest, was struck by the excavator's west side tracks as he faced north directing the dump truck. Employee #1

sustained crushing injuries to his legs and pelvis. He died on November 11, 1995, at 5:40 p.m. The excavator's multi-directional alarm was not working and had not worked for more than two weeks.

#### **Accident 170683536 - Employee Killed When Crushed By Backhoe**

At 11:15 a.m. on November 3, 1995, Employee #1, a 19-year-old employee of Hall Plumbing and Mechanical, was working in a 14 ft long by 5 ft wide by 6 ft 2 in. deep trench at a construction site. Another employee was reversing a **backhoe** to position it at the edge of the trench when the **backhoe** began to slip slowly into the excavation. The **backhoe** took several seconds to slide into the trench, and as it was doing so the **backhoe** operator yelled at Employee #1 to get out of the excavation. After slipping slowly for several seconds, the **backhoe** traveled rapidly the rest of the way. The bucket struck Employee #1 and pushed him against the wall of the trench. It rebounded from the point of impact, pinned him against the excavation wall, and killed him. Coworkers in the area attempted to remove him but could not. A tracked excavator working at the same construction site was brought to the accident scene and pulled the **backhoe** out of the excavation. The **backhoe** operator stated that the brakes had not responded when he applied pressure, but a subsequent check found them to perform properly in both forward and reverse directions. One of the witnesses said that the wheels were locked as the **backhoe** slipped into the trench.

#### **Accident 170737928 - Miner Injured When Struck By Backhoe Bucket**

During shaft sinking operations, Employee #1, a miner, had been working on the right side of a mid-size farm tractor-type **backhoe**, trimming rib and installing liner plate. He moved to the left side of the machine to continue the assigned work on the left side of the shaft. The **backhoe** operator did not see Employee #1 move from the right to the left and was not aware of his location when he started the bucket swing. The operator saw him close to the end of bucket swing arc but was unable to stop the bucket from striking him. He was pinned against a vertical, poured-in-place concrete wall that had been placed at the shaft bottom. Employee #1 was hospitalized with a fractured arm.

#### **Accident 170101869 - Employee Injured When Backhoe Rolls Over on Steep Incline**

At approximately 3:15 p.m. on September 1, 1995, Employee #1 was using a **backhoe** to transfer hot mix asphalt between two trucks. He was working on a roadway with a steep transition from a 5 to 18 degree slope. He was approaching the truck being loaded with the bucket of the **backhoe** at nearly full height when he crossed the point of transition and the **backhoe** rolled over downhill, landing on its right side. Employee #1 was not wearing a seat belt and was injured when he struck against the roll cage on the **backhoe**. He sustained bruises and lacerations to his back, chest, and legs. He claims a lapse in judgment caused him to operate the **backhoe** too close to the downhill transition of the slope.

#### **Accident 170830327 - Employee Injured in Jump From Overturning Backhoe**

Employee #1 was driving a Caterpillar **backhoe** loader, model #416B, serial #82K01420, through a field and down to an overfill pond in order to spread gravel around the pond. The employee had the **backhoe** in 2nd gear as he was approaching the pond. He alleged that he tried to apply the brakes but heard a grinding noise behind him. The brakes then failed and the pedals went to the floor. He then tried to use the emergency brake to stop the **backhoe** but it kept on moving. Its right front wheel went over the edge of the pond and the **backhoe** started to roll over onto its right side. Employee #1 jumped off the **backhoe** and onto the crushed stone that he was going to spread around the pond. He sustained cuts to his face and bruises. His brother took him to the hospital.

#### **Accident 170620728 - Employee Injured in Trench Cave-in**

The employer, Siteworks Construction, Inc., was digging a trench for drainage piping for a new city park. Employee #1 was in the 4 ft deep trench, checking the grade, when a coworker, the **backhoe** operator, yelled at him, "Run, run." The north side of the trench caved in and Employee #1 was buried by the dirt up to his waist. Employee #1 was extricated by coworkers and firefighters. He sustained fractures to his pubic bone and sacrum

#### **Accident 014367692 - Employee Crushed to Death When Run Over By A Backhoe/Loader**

A **backhoe** /loader operator was backing up a 30 degree slope in order to position a JCB **backhoe** , serial #330 000, so that a hole could be dug for a light pole's installation base. The grassy slope was wet from a recent shower and the **backhoe** slid 13 feet down the slope to the horizontal asphalt drive. As another attempt was made to position the **backhoe** , Employee #1, who is believed to have been riding on the **backhoe** , slipped off and was run over by the front wheel. He sustained fatal crushing head and chest injuries.

#### **Accident 000925008 - Electric Shock - Contact With Overhead Line Thru Boom**

An employee was handling an iron pipe that was suspended by a **backhoe**. The boom of the **backhoe** contacted an overhead power line, and the employee was electrocuted.

#### **Accident 201340155 - Employee Injured in Fall From Truck Bed, Later Dies**

At approximately 6:00 p.m. on June 26, 1995, Employee #1 and coworkers were unloading a generator light tower from the back of a flatbed truck. He was standing on the generator, hooking up some chains, when he was struck by the **backhoe** that was being used to lift the generator off the truck bed. Employee #1 fell, striking his head. He was taken to the hospital, where he died on July 22, 1995.

#### **Accident 171045156 - Employee Suffers Compound Fracture When Leg Struck By Rail**

Employee #1, of Pacific Railroad Salvage, was attaching railtongs to a rail in preparation for a **backhoe** to pick it up. The rail was under one of the **backhoe** 's outriggers. When the **backhoe** began to pick up the rail, it popped out from under the outrigger and swung



around, hitting Employee #1 in his left leg. He sustained a compound fracture for which he was hospitalized.

#### **Accident 170127153 - Three Employees Killed, One Injured in Trench Cave-in**

At approximately 7:00 p.m. on June 9, 1995, Employees #1 through #4 were in a trench 23 ft long, 4 ft wide, and 10 ft 2 in. deep, with vertical walls and unshored sides. They were laying lengths of sanitary sewer pipe from a manhole in the street to an apartment building. The employees had already laid two sections of 10 ft long pipe on the trench bottom when the south face or wall caved in, knocking Employees #1 through #3 against the north trench face and completely burying them. Employees #1 and #2 died in the trench. Employee #3 was rescued, and hospitalized with minor injuries. Employee #4, the **backhoe** operator and company owner, suffered a heart attack attempting to dig his coworkers out of the trench. He had triple bypass surgery, but died.

#### **Accident 000900274 - Employee Breaks Leg When Struck By Backhoe**

Employee #1 was standing behind a **backhoe** /drill rig and directing a front-end loader. A coworker, who was operating the drill rig, backed up the machine and struck Employee #1. He sustained a broken leg.

#### **Accident 014528558 - Employee Killed When Pinned Between Backhoe Frame and Boom**

Employee #1, the operator of a Case 580 Super K Turbo Loader **Backhoe**, was preparing to replace a broken swing cam bolt while the engine was idling. Employee #1 was found unconscious, pinned in the pinch point of the boom swing and the frame of the machine. Employee #1 died as a result of his injuries. There were no witnesses.

#### **Accident 170833685 - Employee Dies When Caught Between Loader Bucket and Trailer**

The superintendent for L.H. Cranston and Sons, Inc., stated that Employee #1 was locking the trailer door with a chain at the end of the day, a normal procedure. The **backhoe** operator had driven his machine, loader end first, to the rear door of the trailer. Employee #1 was standing inside the trailer, ready to unload a tamper from the **backhoe**, which was raised to approximately 36 in., into the storage trailer. The normal procedure is to block the door with the **backhoe**'s 95 in. long by 35 in. high loader bucket to keep thieves from breaking into the trailer. The **backhoe** operator reported that after backing a few feet from the trailer with the bucket raised, he turned in his seat to fasten the side window latch located near the rear of the cab. While he did so, the **backhoe** drifted forward, pinning Employee #1, who was now standing on the ground locking the roll-up door, between the loader bucket and the rear of the trailer. Employee #1 died. The **backhoe** operator, with 35 years experience, 5 years during his employment with this company, was filling in this day for another operator who had taken a vacation day. The JCB **backhoe** was in good working order.

### **Accident 000639021 - Employee Is Struck and Killed By A Backhoe Bucket**

Employee #1 was either loading or unloading rocks from the front of a **backhoe** when he was struck and killed by the **backhoe** 's bucket.

### **Accident 170736334 - Employee Injured When Struck By Backhoe Boom**

At approximately 1:30 a.m. on April 8, 1995, Employee #1, a **backhoe** operator, was standing on the ground placing a 5-gallon emulsion pile on the **backhoe**. He had not turned off the engine when he got off the **backhoe**, and kept the engine running. The pile struck the control lever of the **backhoe** boom and the boom struck him, bruising his shoulders. He was taken to U.S.C. Medical Center by paramedics and was hospitalized. He is now being treated as an outpatient.

### **Accident 170210322 - Employee Dies When Crushed By Bucket Against Trench Wall**

At 2:10 p.m. on March 23, 1995, a three man crew was repairing a damaged underground roof drainage pipe. Employee #1 climbed down into an approximately 4 foot deep excavation for an unknown reason. The **backhoe** operator did not see him and swung the bucket around. The bucket struck the employee in the chest and pinned him to the side of the excavation. He was crushed and killed.

### **Accident 170569859 - Employee Is Injured in Fall From Front End Loader Bucket**

Employee #1 was standing in the front bucket of a Caterpillar **backhoe** loader raking loose spoil from an approximately 15 foot tall rock wall. The **backhoe** loader bucket was raised approximately 10 to 20 feet in the air. While attempting to open and/or secure a cab door window, the **backhoe** loader operator struck the loader control bucket. The bucket tilted down, causing Employee #1 to fall from the bucket. He became pinned between the bucket and rock wall. The operator then backed the **backhoe** loader away from the rock wall, causing Employee #1 to fall to the ground. Employee #1 suffered a sprained ankle and bruises, cuts, and lacerations to both legs.

### **Accident 170706824 - Employee Struck in Head By Loader-Backhoe Bucket**

Three employees were relocating an underground power line. They were working in a 1.2-meter-wide-by-18.3-meter-long trench that varied in depth from 1.6 to 2.1 meters. Shortly after 2:00 p.m., the supervisor told the other two employees to exit the trench and to begin cleaning up. About 15 minutes later, Employee #1 was standing on the trench benching slightly below grade while to his north, the supervisor was operating a John Deere loader-backhoe. As the supervisor raised the loader's front bucket, the rear bucket swung around and struck Employee #1 on the head. He suffered contusions and lacerations and was not breathing when emergency medical services arrived several minutes later. He was pronounced dead on arrival at the hospital.