

Questions about CDL requirements come up almost every time a contractor, utility owner, or new operator looks at a hydrovac truck around Sacramento. The trucks are large, they haul thousands of gallons of slurry, and they sit at the intersection of trucking, excavation, and environmental work. That is exactly the kind of situation where regulators pay attention.

If you are planning to run vacuum excavation crews in the Sacramento area, you need to understand two parallel issues. First, when the law requires a commercial driver's license and possibly a tanker endorsement. Second, what kind of skills, safety training, and project planning it takes to actually run a profitable and safe hydrovac operation.

This is a practical walk through both, based on what you really face on a job, not just what the DMV handbook says.

What is vacuum excavation, in plain jobsite terms?

Vacuum excavation is a non mechanical method of digging that uses a high pressure stream and a powerful vacuum to remove soil. There are two main flavors:

Hydro excavation, often shortened to hydrovac, uses high pressure water to liquefy soil, then vacuums the slurry into a debris tank.

Air vacuum excavation uses compressed air to loosen and fracture dry soil, then vacuums the dry spoils into the tank.

On a Sacramento streetscape or utility project, you typically see hydrovac trucks daylighting utilities, opening pole holes, or slot trenching for fiber optics. A crew will park the **Sacramento Vacuum Excavation** truck at the curb, pull a hose and boom out over the work area, and cut a controlled hole while keeping utilities intact.

That is the key difference compared with a backhoe or mini excavator. Traditional excavation equipment rips and lifts soil, and if it hits a gas service, you know it. Vacuum excavation cuts soil away from sensitive lines with much greater control, which is why most utility owners now insist on it for locating.

When people ask, "What is the difference between hydro excavation and vacuum excavation?" The simplest answer is that hydrovac is one type of vacuum excavation, using water instead of air. Most of the larger trucks rolling around Sacramento are hydrovacs.

Is a CDL required for hydrovac jobs?

For almost every full size hydrovac truck in commercial use around Sacramento, the answer is yes, a CDL is required.

The decisive factor is not that you are excavating. It is that the truck is a commercial motor vehicle with a high gross vehicle weight rating (GVWR), often with air brakes, and usually carrying thousands of gallons of liquid slurry.

In California, a CDL is required when:

- The single vehicle has a GVWR of 26,001 pounds or more.
- The combination of truck and trailer exceeds 26,001 pounds and the trailer alone is over 10,000 pounds GVWR.
- The vehicle is designed to carry 16 or more passengers, or carries certain hazardous materials.

Most hydrovac trucks are built on Class 8 chassis with GVWR figures in the 33,000 to 66,000 pound range. Even a compact hydrovac on a smaller chassis usually lands over the 26,001 pound threshold when fully spec'd. That triggers a Class B CDL at minimum.

If you are pulling a large trailer with the hydrovac unit on it, or combining a heavy truck with a heavy trailer, you could cross into Class A CDL territory. For most hydrovac work in the Sacramento region, the configuration is a single straight truck, which points to Class B with the correct endorsements.

So when people ask, "Is a CDL required for hydrovac jobs?" What they actually need to ask is: what is the truck's GVWR, and what endorsements does that configuration require.

Do you need a tanker endorsement for a hydrovac truck?

This is where the discussion often turns murky. Hydrovac trucks have large debris tanks, commonly in the 8 to 15 cubic yard range. When those tanks are full of slurry, you are carrying a significant volume of liquid-like material.

Federal rules require a tanker endorsement (N endorsement) for drivers operating vehicles that:

- Transport liquid or liquefied gas in permanently mounted or portable tanks of an individual rated capacity of 1,000 gallons or more, and
- The total combined rated capacity is 1,000 gallons or more.

California generally follows the federal standard. Many hydrovac debris tanks, depending on configuration, exceed 1,000 gallons capacity. Even though you are technically carrying "slurry" rather than a pure liquid, enforcement officers often treat a full hydrovac tank as bulk liquid.

In practice in the Sacramento area, most reputable hydrovac operators require their drivers to carry a tanker endorsement. It reduces regulatory risk, satisfies insurance carriers, and makes cross-jurisdiction work simpler.

So while a lawyer might argue edge cases, if your hydrovac truck has a debris tank around 1,000 gallons or more, treat the tanker endorsement as a requirement, not an option.

Hazardous materials endorsements, on the other hand, are usually not required unless you are hauling regulated hazardous waste or a special industrial byproduct.

The CDL "7/3 rule" and vacuum excavation schedules

People sometimes bring up, "What is the 7 3 rule in trucking?" When they design hydrovac shifts. They are referring to the split sleeper provision under federal hours of service, where certain drivers can split their off duty and sleeper berth time into two periods, for example 7 hours in the sleeper and 3 hours off duty, instead of one long block.

Whether that applies to your hydrovac drivers depends on several factors: interstate versus intrastate operations, your specific exemptions, and whether the vehicle is subject to federal hours of service rules. Many construction related operations use the short haul or construction exemptions, but they do not remove the responsibility to manage fatigue.

On a busy Sacramento utility job, a hydrovac crew might be asked to daylight hundreds of feet of existing lines in one long day. A smart employer will schedule to keep actual driving hours and total work hours within a safe window, whether or not the federal 7/3 or other split sleeper rules technically apply.

Regulators look at more than your license class. They care about whether you are running drivers and operators in a way that invites fatigue related accidents.

What kind of training is required for vacuum excavation?

CDL requirements tell you who can legally drive the truck on public roads. They do not say anything about who is actually competent to run a vacuum excavation rig.

At a practical level, vacuum excavation training in Sacramento usually has four components:

1. CDL training and endorsements for those who drive the truck.
2. Equipment specific training from the manufacturer or distributor, covering the controls, safety interlocks, pressure limits, and maintenance.
3. OSHA safety training, including excavation safety, confined space basics (for manholes and vaults), and hazard communication.
4. Company procedures, such as utility locate protocols, traffic control, spoil handling, and environmental compliance.

When people ask, "What certifications do you need to run an excavator?" They often mean tracked excavators, not hydrovacs. Some union halls and larger contractors offer formal qualifications and skills tests for excavator operators. Vacuum excavation, being a bit newer, is more often taught through in house programs and manufacturer courses. Regardless, a paper certificate is less important than whether the operator has actually run the hose and wand in real soil, around real utilities, under supervision.

Age is less important than attitude. Someone wondering, "Is 50 too old to become a heavy equipment operator?" Is often surprised at how many experienced operators are in their 50s and 60s. Hydrovac work is physical, but it relies heavily on judgment, spatial awareness, and respect for the underground plant. Those tend to improve with age, not decline.

How deep can vacuum excavation go?

Depth is a common point of confusion. "How deep can vacuum excavation go?" Or "How deep can vacuum excavation go safely without shoring?" Are two different questions.

From a pure equipment standpoint, a hydrovac can excavate 20 feet or more vertically, sometimes significantly more if you increase dig time and manage hose length, air loss, and spoil removal. The limiting factors tend to be the length of the boom, hose drag, and production rates, not a hard mechanical limit.

Safety and regulations, however, change the picture. OSHA rules do not explicitly cap vacuum excavation depth, but trench and excavation standards do apply to any man entry excavations. Common figures people quote include:



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- The 4 foot rule in excavation, where OSHA requires a safe means of egress (like a ladder) in trenches 4 feet or deeper.
- The 5 foot rule, where protective systems such as shoring, shielding, or sloping are generally required for trenches 5 feet or deeper, unless the excavation is entirely in stable rock.
- The 19 inch rule, which often refers to the maximum vertical distance between ladder rungs, or the step height over which a stair or ladder is required.

You will also hear about "How deep can you dig without shoring?" In typical Sacramento soils, which often include mixed fill, clays, and loose utility backfill, working unshored below 5 feet is rarely a good idea, even if some short duration exceptions exist on paper. Hydrovac makes it easier to shape and slope walls, but it does not make soil magically stable.

On many projects we hydrovac to locate and expose utilities, then use conventional machines for mass excavation with engineered shoring. That plays to the strengths of each method.

Production rates: how much can a vac ex excavate in a day?

Actual production varies enormously with soil type, access, utility congestion, and whether the work is vertical potholing or linear trenching. Anyone who gives a single number without a lot of qualifiers is selling something.

On a typical Sacramento utility locate job, a reasonably experienced two or three person crew with a full size hydrovac might:

- Pothole and expose 30 to 60 utility crossings in a day, at depths of 3 to 8 feet.
- Slot trench 100 to 250 feet in a day at narrow widths to 4 or 5 feet deep.

Rocky soil, excessive groundwater, and limited access can cut those numbers in half or worse. Soft backfill and clean access can double them.

The question "How much does an excavator excavate in one hour?" Has the same problem. A 20 ton excavator like a Cat 320 (which does roughly fall into the 20 ton excavator category) might move 80 to 150 cubic yards per hour in an ideal mass excavation scenario. Vacuum excavation rarely competes on pure volume. It wins where precision, safety around utilities, and reduced restoration costs matter.

For example, "How long does it take to dig a 100 ft trench?" With hydrovac depends on width and depth. A 100 foot long, 1 foot wide, 3 foot deep trench in soft soil might be completed in 2 to 4 hours including setup and spoil management. Stretch that to 5 feet deep with dense utilities in the way and you could burn a full day on the same 100 feet.

What does vacuum excavation cost?

Pricing vacuum excavation work requires a blend of trucking sense and construction estimating. When clients ask, "How much does vacuum excavation cost?" They are usually trying to compare it to a mini excavator or backhoe. That is the wrong reference point.

A hydrovac truck might cost you 500,000 to 800,000 dollars to buy, sometimes more for high end units. Daily operating costs include fuel, disposal fees, water supply, maintenance, and, most importantly, skilled labor. So you are not charging mini excavator rates.

In the Sacramento region, typical billing structures include hourly and unit rates:

- Hourly rates often range from 275 to over 450 dollars per hour for a full size hydrovac with crew, depending on scope, mobilization, and contract structure.
- Unit prices might be quoted per pothole, per linear foot, or per cubic yard.

When people ask, "What does excavation cost per hour?" For conventional machines, they often hear figures between 150 and 250 dollars per hour for a standard excavator with operator. Hydrovac runs higher, but it often allows you to avoid utility strikes, reduce hand digging, and narrow restoration limits, which can more than offset the rate.

Suppose a municipality wants to know, "How much to excavate 200 cubic yards" by vacuum. If you assume 20 to 40 cubic yards per day of careful vac work in tight utility corridors, that might represent 5 to 10 days of truck time. At 3,000 to 4,000 dollars per day, you might be in the 15,000 to 40,000 dollar range. In open ground with easy access and a focus on volume rather than precision, you would likely use conventional excavators instead and cut that cost significantly.

To keep your own pricing consistent, you eventually learn why you divide by 27 for cubic yards. Volume calculations start in cubic feet. One cubic yard contains 27 cubic feet. So when you take length times width times depth in feet, you divide by 27 to convert to cubic yards. That conversion underpins both production estimates and disposal calculations.

Here is a compact way to think through pricing a vac excavation job in Sacramento.

1. Estimate mobilization: travel time in and out of the city, traffic control setup, and staging constraints.
2. Assess soil and utilities: soft backfill and single utility crossings differ from dense downtown corridors with multiple lines.
3. Pick a production rate: be realistic for each phase, not just the best case you hit once.

4. Apply your loaded hourly rate or unit price: include truck, crew, overhead, and a margin that keeps the business sustainable.
5. Add disposal and water costs: Sacramento job sites near the river or in dense neighborhoods may have particular rules on where spoils go and how water is sourced.

Those five steps are the backbone of how to price out excavating jobs, whether vacuum, mechanical, or a blend.

Equipment cost: how much is a vacuum excavation truck?

Hydrovac capital costs surprise many newcomers. When someone asks, "How much is a vac ex to buy?" Or "How much is a vacuum excavation truck?" The answer depends on size, options, and whether the unit is new or used.

As a rough, defensible **Sacramento Vacuum Excavation** range for new equipment in California:

- Smaller truck mounted vacuum excavation units might start in the 350,000 to 450,000 dollar range.
- Full size hydrovac trucks with large debris tanks, powerful blowers or fans, and winter packages often run 500,000 to 800,000 dollars or more.

Used units can run far less, but you must carefully evaluate blower hours, tank condition, chassis mileage, and maintenance history. A cheap hydrovac with a tired blower and a rusted tank is a money pit.

These capital costs are one reason CDLs and endorsements matter so much. If only one or two people in your company can legally move a 600,000 dollar truck, every sick day or vacation day becomes a schedule problem.

Safety rules beyond the CDL: excavation and OSHA

Hydrovac work lives at the intersection of trucking rules and excavation safety. CDL and tanker endorsements only cover the roadway side. On site, OSHA excavation standards and general construction safety rules apply just as much as they do to a backhoe trench.

People sometimes throw around a mix of rules, like the 5 4 3 2 1 rule for excavation or the 3/4/5 rule for excavation. These are usually informal mnemonics used in safety meetings to remember thresholds for ladders, protective systems, or clearances. They are not official OSHA titles. Always go back to the actual standard text for binding requirements.

A few safety touchpoints that come up regularly on vac excavation work:

- Ladders in excavations: ladders must be within 25 feet of lateral travel for workers and extend at least 3 feet above the landing. The 19 inch rule for ladder rung spacing and the 35 foot rule for maximum ladder length without landing platforms are part of the broader ladder standards that sometimes intersect excavation access.
- The five general OSHA requirements that matter daily: training, hazard assessment, protective systems, competent person oversight, and documentation. These are not labeled as "the 5 OSHA requirements" in the regulations, but if you miss any of them, you feel it during an inspection.
- OSHA's 3 most cited violations change slightly year to year, but fall protection, hazard communication, and scaffolding or ladder issues often appear at the top. Hydrovac crews are not immune; working near open trenches and on top of tall truck decks invites falls if guardrails and procedures are sloppy.

Vacuum excavation does remove a lot of mechanical strike risks, but it introduces high pressure water and suction hazards. Adequate training, lockout of high pressure systems during maintenance, and simple habits like never putting hands or feet near the intake during operation matter as much as shoring plans.

Practical limits: what are the limitations of vacuum excavation?

For all its advantages, vacuum excavation is not a universal answer.

Here are the most important limitations you encounter in Sacramento work:

1. Hard rock and dense cobbles: air and water can only do so much against solid rock. You may need pre drilling or mechanical breaking before vac work becomes effective.
2. High groundwater: if the hole fills with water faster than you can pump and vacuum, production drops sharply. You can work around it, but it costs time and money.
3. Debris tank capacity and disposal: on a long linear project, you spend a lot of time traveling to and from disposal sites. That affects both cost and how much can be excavated in a day.
4. Access and overhead: low wires, tight alleys, and sensitive landscaping can limit where the truck can sit and where the boom can reach.
5. Environmental constraints: some sites have strict rules on noise, water use, and spoil handling that favor smaller, low impact equipment.

People sometimes ask half jokingly, "Can I dig a trench with a pressure washer?" In a technical sense, yes, you can erode soil with a pressure washer, but without the vacuum component and proper spoil control, you quickly create a muddy mess and potentially undermine surrounding structures. Hydrovac uses high pressure water within a controlled system. Ad hoc pressure washing in the ground is a good way to damage utilities and anger inspectors.

Even something as simple as whether it is better to dig a hole when the ground is wet or dry becomes nuanced. Hydrovac units love moderately moist soil because it cuts and flows well. Saturated clays, on the other hand, turn into heavy, sticky slurry that eats up tank capacity and time. Dry soils can be ideal for air excavation but difficult for water only systems. Knowing your Sacramento soil series and seasonal moisture patterns makes a practical difference.

CDL, operators, and career paths

One underappreciated aspect of hydrovac work is the career ladder it offers. Someone might begin as a laborer on the hose, work up to operator, then pursue a CDL to become a driver operator. Along the way, they gain field experience, safety training, and often a clear pay bump.

A common question is, "What is the highest salary for an excavator operator?" Or a hydrovac operator, in practical terms. In California, highly skilled operators and driver operators with solid safety records can reach into the low six figures, especially when overtime and night shifts are common. That requires not just license cards, but the reputation to handle complex, high risk work without incidents.

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For employers, pairing CDL training with vacuum excavation skills is smart business. It creates redundancy in your driver pool, lets you schedule around vacations, and makes you more resilient when someone leaves for another company.

Pulling it together for Sacramento

Running hydrovac work in Sacramento is partly about soil, utilities, and production. It is also about understanding the legal and practical framework that sits around that shiny vacuum truck.

If the hydrovac truck's GVWR is 26,001 pounds or more, a CDL is required. If the debris tank is around or above 1,000 gallons, a tanker endorsement is either clearly required or so likely to be treated as such that you should not roll without it. If you add trailers or heavier combinations, you may cross into Class A territory.

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That is the legal baseline. On top of it sits real world competence: vacuum excavation training, OSHA compliant excavation practices, and a crew that understands both the capabilities and the limitations of their equipment.

If you invest in those pieces, you can answer confidently when someone on a Sacramento jobsite asks, "Is a CDL required for hydrovac jobs?" You will know the CDL class, the endorsements, and the training behind the person holding that license, and you will be able to stand behind the work your crew performs in the ground.