



An Extended Guide · No. 1613

Sizing for a Well-and-Septic Property

The whole rural picture:
water in, water out

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! Read this first — size for safety, not just comfort

Getting the size right is not only about comfort — it is about safety, too. An undersized unit gets overloaded and pushed harder than it should be: it runs hot, it strains, and a motor that can't get the surge it needs can hum, overheat, and be damaged. So take the size seriously and always leave yourself a margin — a little extra room — rather than sizing right to the edge. And one safety rule never changes: any fuel-burning generator gives off carbon monoxide, an invisible, deadly gas, so it runs **OUTDOORS ONLY**, well away from the house (the safety agencies say at least 20 feet), never in a garage or on a porch even with the door open. A battery or power station makes no exhaust and is safe to use indoors. On a rural property you often have more than one motor to think about — the well pump, maybe a septic pump or an aerator, a sump pump, a freezer — so there is a bit more to add up, but the same careful method covers every one of them.

The whole rural picture: water in, and water out

A country property is really two water systems in one: the well that brings fresh water in, and the septic system that carries wastewater out. When the power goes, both can go quiet — so let's size for the whole picture, calmly and in order.

I'm Bill. Folks on a well already know to plan for the pump. What catches people out is the other end of the house — the septic side — because some septic systems have electric parts that need power too, and some need none at all. Sorting out which kind you have is half the battle, and it's the first thing we'll settle.

This guide pulls the whole rural picture together: the well pump, the septic system, the sump pump in the basement, the freezer in the garage, even the barn. We'll keep the deep pump arithmetic in our well-pump surge guide and just fit the pump into the bigger plan here.

★ Let's map your property together

Not sure what has a motor and what doesn't out at your place? Jot down what you can and call or text me at (330) 200-8042. We'll walk the property on paper and figure out what needs power — free, with nothing to sell you.

The whole idea, on one page

If you remember only this page, you already understand how to think about backup power for a well-and-septic home.

- ❑ A rural home has two water systems: the well brings water in, the septic carries it out.
- ❑ The well pump is almost always the biggest surge on the property — size the whole plan around it.
- ❑ A conventional gravity septic system needs no power at all — there may be nothing extra to size there.
- ❑ A pumped or aerated septic system does need power: an effluent or grinder pump, or an aerator that runs often.
- ❑ You may have several motors — well pump, septic pump, sump pump, freezer, furnace blower — so add them up with care.
- ❑ Store drinking water and water for flushing; rural outages tend to run longer.

✓ The one-sentence version

Find every motor on the property, size around the single biggest surge (almost always the well pump), and store water for the days the pump is off.

Two systems, two jobs

It helps to picture your property as a loop: clean water comes in one side, used water leaves the other.

The **water-in** side is the well. A pump down the well pushes water up to the house for drinking, cooking, washing, flushing, and the animals. No pump, no fresh water — which is why the well pump earns the top spot on almost every rural must-run list.

The **water-out** side is the septic system. Here's the part that surprises people: whether it needs power depends entirely on what kind of system you have. Some move waste along by plain gravity and use no electricity; others rely on a pump or an air blower that stops the moment the power does.

✓ Both ends matter

Plan for water in and water out. No power can mean no fresh water and, in a pumped system, wastewater that has nowhere to go. Knowing which half needs backup keeps you from either forgetting a motor or over-planning.

The water-in side: your well pump

The well pump is the giant of the property, so it sets the size of everything else.

Most home wells use a 240-volt submersible pump with a big starting surge — often around three times its running watts — which is usually the single biggest jolt anywhere on the property. That's why you size the whole plan around the pump first, then fit the rest of your list underneath it.

A 240-volt pump can't be run off a plain extension cord, either. It needs a transfer switch or interlock and a unit with a 240-volt outlet and generous surge headroom. That's a big topic on its own, so our well-pump surge guide walks through the pump's numbers and its soft-start options in full — here we just give it its place in the bigger picture.

✓ Size for the pump, then everything else fits

Choose a unit that starts the well pump comfortably, and the fridge, the freezer, and the septic pump usually tuck in beneath it. The pump sets the ceiling.

The water-out side: does your septic even use power?

This is the single most useful question on the septic side, and the answer changes your whole plan.

A **conventional gravity septic system** uses no electricity at all. Waste flows downhill from the house to the tank, and liquid seeps out into the drain field on its own. If that's what you have, there's simply nothing on the septic side to size for — genuinely good news, and one less motor to worry about.

A **pumped or aerated system** is different. If your drain field or mound sits uphill, or your soil needs extra treatment, the system uses an electric pump or an air blower — and those stop working the instant the power goes. Those are the systems that belong on your must-run thinking.

✓ Find out which kind you have first

If you're not sure, look for a control box or an alarm panel near the tank or on the house, or ask the company that installed or pumps your septic. A gravity system has no electrical box at the tank; a pumped or aerated one does.

The septic parts that need power

If your system isn't plain gravity, here are the electric parts you might find, and how each one behaves.

Septic part	What it does	Needs power?
Effluent pump	Moves liquid up to the field or mound	Yes — a motor
Grinder pump	Grinds and pumps waste uphill	Yes — a motor
Aerator	Adds air in an aerobic system	Yes — runs often
Gravity flow	Waste flows downhill on its own	No power at all

A septic pump is a motor, so it surges when it starts — like the well pump, only usually smaller. An aerator (the air blower on an aerobic system) is a steadier load that runs much of the day rather than a big brief jolt. Read the nameplate on whichever you have; our guide on reading a nameplate shows you exactly where to look.

★ Tell me what's out at the tank

If there's a control box or an alarm by your septic, snap a photo of any label and text it to me at (330) 200-8042. I'll help you tell a pump from an aerator and work out what to add to your plan — free.

Walk the property and find every motor

A rural plan goes wrong when a motor gets forgotten. So let's not forget any — take a slow walk with a notepad.

The goal is simply to list everything with a motor or compressor, because those are the parts that surge and that a generator has to be strong enough to start. Everything else — lights, chargers, the coffee maker — is a steady, well-behaved load you'll simply add up.

- **The well:** the pump, and the pressure tank and switch in the basement or utility room.
- **The septic:** a pump, grinder, or aerator, if you have a pumped or aerated system (look for a control box).
- **The basement:** a sump pump, if you have one — a motor that surges, and one you may lean on hard in a storm.
- **The kitchen and garage:** the fridge and any chest or upright freezer, each with a compressor that surges.
- **Heat:** the furnace blower or the boiler's circulator pump — near the top of the list in an Ohio winter.
- **The barn or outbuildings:** stock-tank heaters, heat lamps, ventilation fans, a second pump or hydrant.

★ Photograph every nameplate as you go

Snap the label on each motor — pump, freezer, blower — and text the photos to me at (330) 200-8042. I'll help you turn them into a sensible surge number for the whole property, at no charge.

Several motors, one calm plan

A rural list can carry three or four motors, and that can feel like a lot. Here's why it isn't as daunting as it looks.

You add the **running watts** of everything you'll run at once — every motor's steady draw plus all the lights and electronics — into one steady total. Then you add just the **single biggest surge** on top, which on a rural property is almost always the well pump.

You don't add every motor's surge together, because motors essentially never start at the very same instant. So even with a well pump, a septic pump, a sump pump, and a freezer, you plan for the running total plus one surge — the largest. Our running-watts-versus-starting guide explains this two-number idea in full.

✓ Only the biggest surge

Adding a small septic pump to a list that already has a well pump usually doesn't raise your surge number at all — the pump's jolt is still the biggest. That keeps a longer list from spiraling out of control.

Size around the biggest surge — and leave room

With the running total set and the biggest surge identified, a little generosity here pays off for years.

Make sure your unit's surge rating clears the well pump's starting jolt comfortably, with headroom on top — not sized right to the edge. When you're torn between two sizes on a property with several motors, step up rather than down. There's more asking for power out here than in a town home, so the cushion matters more.

Why so careful? Because an undersized unit can't deliver the jolt a pump demands, so the motor hums, strains, and heats instead of starting. That's hard on the pump and hard on the unit. Our guide on margin and headroom covers just how much cushion is sensible.

! Watch out when several motors cycle together

On a busy rural circuit, the well pump, the furnace blower, and a sump pump can all decide to run in the same stretch. If the unit strains or the lights dim, turn something off and take the big loads in turns rather than forcing it — our guide on managing loads during a run shows how.

Don't forget the barn and the animals

If you keep livestock or have outbuildings, they carry loads of their own — some steady, some with a motor.

- **Stock-tank heaters and heat lamps:** heavy but steady draws with no surge — they just make heat, so add their running watts.
- **Ventilation or exhaust fans:** these have motors, so they surge a little when they start.
- **A second pump or a yard hydrant:** some properties have a booster or a separate barn pump — another motor to note.
- **An electric fence charger:** a tiny, steady load, but one you may want kept on to keep animals safe.

In winter especially, the animals still need water — and that comes from the same well pump. So the barn is one more reason the pump sits at the heart of a rural plan.

✓ Decide what's a must and what can wait

A stock-tank heater in a cold snap may be a must; a shop tool may not be. Our guide on making your must-run list helps you sort the barn loads into must, want, and skip.

Two kinds of homes, two sets of needs

This guide is rural at heart, but the water-out side splits even country readers into two camps — and it all turns on whether you have a septic pump at all.

If you live in town or the suburbs

Right at the edge of town, plenty of homes are a hybrid: they draw water from a private well but send wastewater to the city sewer. That means a well pump to size for, but no septic pump to worry about — the sewer takes the water-out side off your plate.

- You still have a well pump, so size for its big 240-volt starting surge just as a full-rural reader would.
- City sewer means no septic pump or aerator to add — one less motor on your list.
- Your other motors are the usual ones: fridge, freezer, furnace blower, maybe a sump pump.
- Our well-pump surge guide covers the pump in full; this guide keeps it in the bigger picture.

If you are out in the country on a well

Out on a full well-and-septic property, both ends of the house can depend on power — the well pump for sure, and the septic too if it's a pumped or aerated system. You may be juggling several motors, with the well pump the biggest of them.

- The well pump's starting surge is almost certainly the single biggest number on your whole list — size around it.
- If your septic is pumped or aerated, add that motor too; if it's gravity-fed, there's nothing to size there.
- Add the sump pump, the freezer, and the furnace blower, then size for the running total plus the one biggest surge.
- Store several days of drinking water and water for flushing — rural outages run longer.

★ The pump and the septic, sorted together

Tell me what water systems you have — well, septic, sump — and your pump's nameplate or horsepower, and I'll help you size the whole property. Call (330) 200-8042. Our well-pump surge guide goes deeper on the pump itself.

Store water — for drinking and for flushing

This is the simplest, cheapest, most reliable part of the whole plan, and it asks nothing of your generator or your electrician.

When the well pump is off, the whole house goes dry — no drinking water, and no water in the tank to flush with. Even a perfectly sized generator can have an off day, so stored water is your backstop, and it costs almost nothing to set aside.

- Store several days of drinking water per person, and more if you keep livestock.
- Set water aside for flushing too — a filled bathtub or a few jugs goes a long way.
- A battery or power station makes no exhaust and is safe indoors, though many can't deliver the surge to start a 240-volt pump.
- Rural outages tend to run longer, so plan for days rather than hours.

! Water first

Even with a generator you trust, keep stored drinking water on hand. A machine can fail; a few jugs of water never will. This is the one part of the plan you can do this afternoon, on your own.

The hookup is a licensed electrician's job

Sizing the surge is half the plan; connecting a 240-volt pump safely is the other half.

A 240-volt well pump — and often a septic pump on the same property — is wired through a transfer switch or an interlock at your panel by a licensed electrician, usually with a permit. I'm a tech helper, not an electrician, but coordinating a trustworthy one is part of what I do, and I'll gather your numbers and your list so the pro can move fast.

Our guide on your transfer switch's circuit count explains how to choose which circuits get backed up — the well pump and the septic pump both want a spot — and our guide on sizing a standby generator covers a permanent, automatic option for a home that leans on backup often.

! Never back-feed the panel yourself

Feeding a generator into a dryer outlet, or with a double-ended so-called suicide cord, can electrocute a lineman working to restore your power and can start a fire. A transfer switch or interlock, installed by a licensed pro, is the only safe way to connect a pump.

If your septic is gravity-fed, breathe easy

It's worth saying plainly, because so many rural readers plan for power the septic side doesn't actually need.

If your system moves waste by gravity alone — no pump, no aerator, no control box at the tank — then the septic side needs no backup power whatsoever. You can cross it right off your list and put your attention where it belongs: the well pump.

Don't let anyone talk you into sizing up for a septic system that doesn't use electricity. Over-planning costs money and buys a bigger, thirstier unit than you need. Sensible, not oversized, is the goal — as our guide on margin and headroom explains.

✓ Just confirm it really is gravity

Before you cross it off, take one look for a pump, an air blower, or an alarm panel. If there's none, you're gravity-fed. When in doubt, a quick call to your septic installer settles it.

When to bring in a professional load calculation

A rural property with several motors is exactly the kind of place where a pro's measurement earns its keep.

A licensed electrician can do a proper load calculation and even measure the real starting draw of your pump with a clamp meter — turning a careful estimate into a measured number you can size around with confidence. It's the right call when you're covering the whole property, considering a standby unit, or your math sits close to a line between two sizes.

Because a well-and-septic home combines a 240-volt well pump, a possible septic pump, and long-outage planning all at once, it's one of the strongest cases for a pro. Our guide on when to get a professional load calculation walks through exactly what to expect.

★ I'll help you get ready for the pro

I help you gather every nameplate and build your must-run list, then coordinate the licensed electrician who does the calculation. Call or text me at (330) 200-8042 to get started.

Common mistakes on a rural property

Nearly all rural sizing regret traces back to a handful of avoidable slip-ups. Now you'll spot them coming.

- **Assuming the septic needs power** when it's a gravity system, and over-buying to cover a motor that isn't there.
- **Forgetting the septic pump entirely** when it is a pumped or aerated system, and being surprised by the alarm.
- **Forgetting the barn** — the stock-tank heater, the ventilation fan, the animals' water.
- **Guessing the well pump's wattage** instead of reading the plate or asking the well company for its horsepower.
- **Storing no water**, and discovering the taps are dry the moment the pump stops.
- **Sizing to the edge** with several motors on the property, leaving no cushion when a few cycle at once.

! The costliest mistake is undersizing the pump

The well pump's surge is the easiest thing to guess low on and the costliest to get wrong. When your math sits near the line between two sizes, size up.

Questions worth asking

Whether you're talking to your well company, your septic installer, an electrician, or me, these get you to the truth about your property.

Q: What kind of septic system do I have?

The key question. A gravity system needs no power; a pumped or aerated one does. Your septic installer or the company that pumps your tank can tell you, or you can look for a control box or alarm.

Q: Is there a septic pump or aerator, and what's its rating?

If your system is pumped or aerated, find the nameplate on the pump or the air blower. A pump surges like the well pump, only smaller; an aerator runs steadily and often.

Q: What's my well pump's horsepower or nameplate rating, and its voltage?

Almost all home well pumps are 240 volts. Your well company usually has the horsepower on file. It's the starting point for a real surge number rather than a guess.

Q: Which motors might run at the same time?

This tells you how much steady load can stack up at once. The single biggest surge still sets your surge number, but the running total matters when several motors share the load.

✓ There's no silly question

If the well-and-septic picture still feels tangled, that's completely normal. Call or text me at (330) 200-8042 and we'll sort it out together.

Common Questions

The well-and-septic questions I hear most often, answered plainly.

Q: Does my septic system need backup power?

Only if it's a pumped or aerated system — one with an effluent pump, a grinder pump, or an aerator. A conventional gravity system moves waste downhill on its own and needs no electricity at all.

Q: What's an aerator, and does it need power?

It's the air blower on an aerobic (aerated) septic system, and yes, it needs power. Unlike a pump, it runs much of the day as a steady load rather than a big brief jolt.

Q: If the power's out, can I still flush the toilet?

In a gravity system, usually yes, as long as there's water in the tank to flush with — which is why stored water matters. In a pumped system, waste can't move once the pump stops, so go easy until power or the generator is back.

Q: Will one generator cover both the well and the septic pump?

Usually, yes, if it's sized around the well pump's surge with headroom. The septic pump is generally the smaller motor and tucks in underneath — but read both nameplates so you know.

Q: How much water should I store?

Enough drinking water for several days per person, plus extra for animals and for flushing. Rural outages run longer, so err on the generous side.

★ Still puzzling over the property?

Send me your list of water systems and your pump nameplates at (330) 200-8042, and we'll work through the whole property together, at your pace.

A quick self-check at your kitchen table

You can pressure-test your rural plan in about a minute with these questions.

- ☐ I know whether my septic is gravity-fed or a pumped/aerated system.
- ☐ I've walked the property and found every motor, barn included.
- ☐ I know the well pump is the biggest surge and I'll size around it.
- ☐ I've added the running total plus the single biggest surge, with a margin.
- ☐ I've stored several days of drinking water and water for flushing.

✓ If any answer is 'not sure', that's fine

That's exactly what this guide, and a friendly phone call, are for. Reach me at (330) 200-8042 and we'll fill in the blanks together.

One property, one plan

The pieces come together into a single, coherent plan once you let the well pump lead.

Size for the pump first, since it sets the ceiling, then fit the septic pump, the sump pump, the freezer, and the furnace blower underneath it. That keeps the whole property on one plan rather than a pile of separate parts, and it keeps your number honest.

Our well-pump surge guide handles the pump in depth, our guide on sizing for a sump pump covers the basement, and our guide on sizing a standby generator covers a permanent, automatic option for a home that leans on backup power often.

✓ The pump leads, everything follows

If you get the well pump right, with real headroom, the rest of a rural list almost always fits comfortably beneath it. Start there and the plan falls into place.

Bringing it all together

A well-and-septic property has more moving parts than a town home, but the plan is straightforward once you take it in order.

Settle whether your septic needs power at all, walk the property and find every motor, size around the well pump's surge with generous headroom, plan the 240-volt hookup with a licensed electrician, and store water for the long haul. Then the whole rural picture holds together.

Our running-watts-versus-starting guide explains the two-number idea, our well-pump surge guide handles the pump, and our guide on when to get a professional load calculation tells you when a measured number is worth it.

★ Let's size your whole property, together

If you'd rather talk it through than puzzle it out on paper, that's exactly what I'm here for. Call or text me at (330) 200-8042 with your water systems and your pump's nameplate — free, with nothing to sell you.

You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made sizing backup power for a home on a well and septic feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't do the licensed electrical or gas work myself — for that I'll help you line up a trustworthy local pro.

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Rural Systems -- Which Need Power?

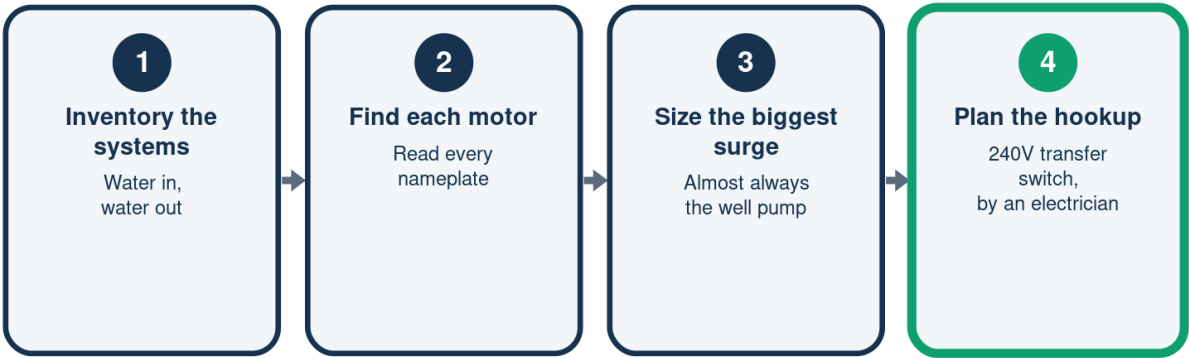
What to size for on a well-and-septic property

	Needs power?	Watch for
Well pump	Yes -- big surge	Usually the biggest
Septic pump	Yes, if pumped	A second motor
Aerator	Yes -- runs often	Aerobic systems
Gravity septic	No power at all	Nothing to size

A gravity septic system needs no power; a pumped or aerated one does.

Sizing a Well-and-Septic Home

Four steps, taken in order



Store water too -- rural outages run longer.

Gravity vs. Pumped Septic

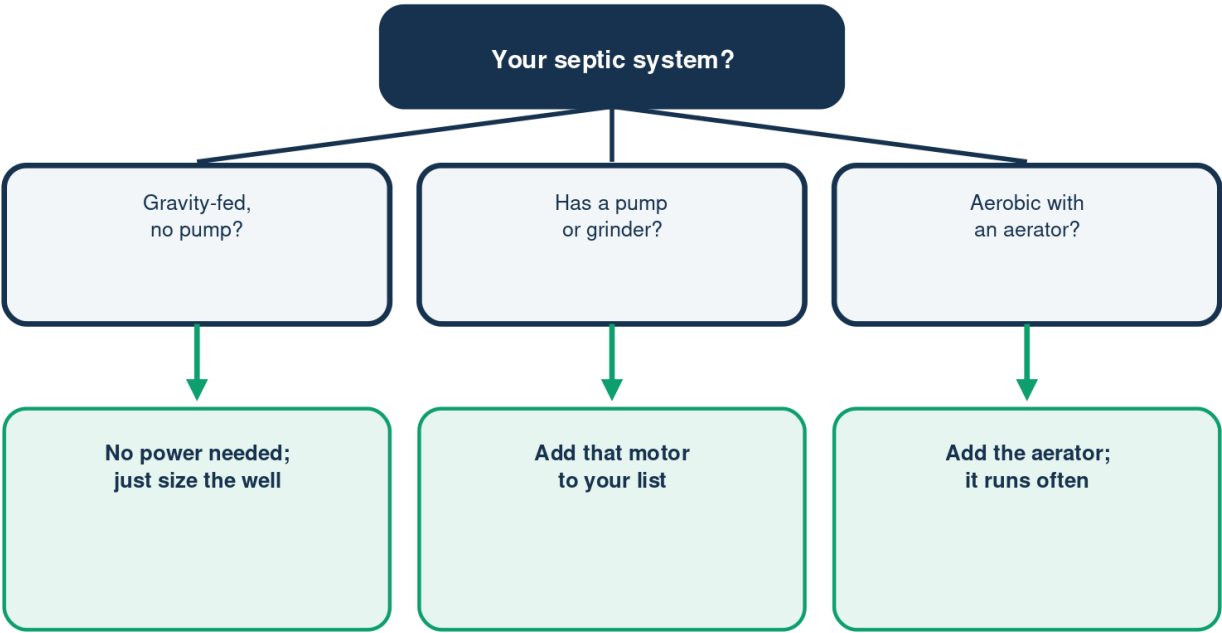
Only some septic systems need backup power

	Power needed?	What to plan
Gravity septic	None	Nothing to size
Pump or grinder	Yes	Add its motor
Aerobic / mound	Yes -- aerator	Add the aerator
Not sure?	Look for a box	Ask the installer

No control box or alarm at the tank usually means gravity -- no power.

What Kind of Septic Do You Have?

Your septic type decides what to size for



The well pump is still the biggest surge -- size around it either way.

Illustration - a schematic, not to scale. Your setup may differ.



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A Note From Bill

A quick note from Bill.

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