## Making Waves in Pasture Water Systems (Part 1): Pete Bauman and Wayne Vincent

## Season 1, Episode 50

[Intro music]

**Kiernan Brandt:**

Welcome to Cattle HQ, a podcast from industry experts and progressive producers discussing cutting edge info about the cow calf sector to keep cattlemen and women in the know and positively affect their bottom line.

**Madison:**

Welcome to Cattle HQ brought to you by South Dakota State University Extension. I am Madison Kovarna, a beef nutrition field specialist based out of Watertown and joining me on this episode is Pete Bauman and Wayne Vincent. Pete is SDSU Extension’s Natural Resources and Wildlife Field Specialist. He is also based out of the Watertown Regional Center. Wayne is from Common Sense Solar and Common Sense Solar Services include DC solar pumps along with pipeline, storage tank design, and installation. Wayne works with producers to design and install systems that meet goals and expectations while also keeping in mind no two operations are the same. I’m glad to have both of them here as we will be discussing alternative watering systems for livestock and this episode, I’m sure, will be plenty of fun with these two big personalities with me in the room and I hope that you guys get just as much enjoyment in learning out of this conversation as I will. One of the things that I wanted to start off was, Wayne, I wanted to give you a few moments to introduce yourself to our listeners that may not be familiar with you, such as what do you do for work, where are you from, and maybe how you ended up with Common Sense Solar?

**Wayne:**

Well, as you said, we specialize in alternative watering systems and infrastructure buildouts for mainly cattle. We started this in 2013 because we had a need ourselves and we got really interested in it. These were rather crude rudimentary at the time, and we said, “Well, let’s see how far back we can peel this and make it better.” So, we just started developing it and our business, we had a retail side to our business in the agricultural support industry, and we just kind of ran with it from there.

**Madison:**

Then I guess Pete’s also sitting here with me so I should give him time to introduce himself for anybody who has not met him before. I’ll ask you the same things, Pete. What do you do for work, where are you from, and how did you end up with Extension?

**Pete:**

Where I’m from, originally grew up on a small beef operation in Minnesota and my just real quick story is learned looking back how many things we did wrong or how many things we maybe could have done better and that is not a criticism of my family or the culture. It’s just you didn’t know what you didn’t know. Through my career working in wildlife, wildlife habitat, there was a tipping point in my career when I was trying to bring cattle back to prairies and habitats and ecologically over loved land that needed disturbance that we weren’t able to provide and trying to bring cows back into those system. That was like a big tipping point in really having to be innovative and creative in trying to meet ecological objectives, wildlife objectives, and producer objectives. These cows don’t manage themselves when they’re on these properties. So, water systems were a huge part of all of that. It took a lot of that here then to SDSU Extension back in 2012, and shortly after that, met Wayne really, so that’s kind of been growing together a little bit. Certainly, he’s the expert, but we’ve really been able to take advantage of the relationship building and just being innovative and I think back to some of the stuff like he said, pretty rudimentary at the beginning and I look at the products and things that are on the market now compared to 10 years ago, Wayne, it’s pretty phenomenal.

**Madison:**

And that’s when this episode kind of came up in my mind of talking more about challenging our mindset and this is what we’ve done because this is how we’ve done it. I came out to Pete and asked him who we should talk to in regards to building these systems and he brought up Wayne and I was really glad that the both of you have not only worked together but learned together through your careers. I’m a young buck that doesn’t know a lot of things so I’m excited to quiz you and to get your thoughts and opinions on some of these topics. But one of the things that I am a little unfamiliar with is there’s a lot of definition for an alternative watering system. There’s an endless list of them, but what is maybe some ones that you like to work with personally, Wayne, or is it something you’re willing to kind of make something that meets each operations goals or what they’re looking for?

**Wayne:**

There’s nothing off the shelf in this. It’s all one off. Two neighbors are going to have two different systems based on the number of cattle they run the topography and what exists there for water source.

**Pete:**

I don’t know that we’ve ever seen any two things the same. I don’t know that we’ve ever seen all of everything yet, what people come up with, I mean, we might use a little bit of jargon so let’s make sure that we try not to do that and we’re not advocating brands but we’ll talk about kind of - so like a cult, what they call Cobalt system, which is a deep buried system that uses ground heat more or less to keep the water unfrozen. We’ve seen them serviced or the water sourced from rural water, from wells, from an innovation, I remember clearly, the first producer that said, “Well, what if I take one of those and bury it 1,500 yards away from my stock dam and do an underground feeding from the stock dam into the…” and I’m like, “That could work.” So what do I do? I call Wayne and I was like, “Hey, Wayne, will this work?” “I don’t know. Let’s try it.” It’s all one-offs. It’s interesting.

**Wayne:**

You try a lot different things. You learn something with every project.

**Pete:**

Absolutely.

**Wayne:**

You learn new things on a repeat trip back on another project for the same customer.

**Pete:**

Like I said, there’s nothing canned. Everything’s custom.

**Madison:**

So, there’s no, necessarily, list that a producer can find online that kind of says this will be this or this will be that. It’s kind of you maybe can have those definitions but you can customize it to be your own is what I’m hearing as well.

**Wayne:**

You can’t stop boxing things up with a phone call, a little bit of research. First, know what your water source is then know what your water requirements are and then you build it from there. So many gallons per head per day, so many gallons per day, this is my grazing season and you go up from there, this is the water storage I need to have. That’s a good start but then you really start expanding. Well, this is all in one corner of my pasture. If you have your water source in one corner of your pasture, that’s going to get grazed really well, but this corner isn’t because cattle, I mean, they’re not going to overexert themselves to go back for the water. So, location of your water source is also important. Maybe you want to central water facility where you break your pasture into paddocks. They all come into the center to drink. That’s just where it all starts.

**Pete:**

I was going to say that your question there was what is an alternative watering system. As Wayne’s talking, I’m thinking about, “Okay, what it really is, is probably anything that’s not your traditional electric and water source, Ritchie Water right next to the yard and/or the open stock dam. Anything else is pretty much an alternative [Laughter] water system because you know they have to be designed and placed.

**Wayne:**

Right. Those lines are very blurry. [[Crosstalk]](https://recordings.civi.com/cgi-bin/player.php?file=PC-00002-CattleHQ-Ep50.mp3&starttime=462&duration=20) We use the dams as a type of surface water, pipelines, we also use… one of the hardest challenges for using alternative water and alternative power sources for water is winter. It is not our friend and the harder you fight it, the harder Mother Nature fights back. You’ll never win the battle. Everybody wants a solar water pump to pump water in the winter. Keep that electrical bill down because I’ve never seen a decrease in rates yet. The problem is, you may get a week, two weeks of there’s no sun. You get that fog that rolls in, in November. We’ve all seen it. You can’t build enough battery into something to make that work so you either got to reach out to generator or you need to find a way to blend the AC and DC. One of the best systems we have in the winter was we had there’s existing AC, we put a solar pump in, and it blends itself. So, if there’s enough solar available to pump the water, they’ll run on solar, and if there isn’t, it will just switch automatically to AC and back and forth as it needs to so you’re getting cost savings there. You’re getting the efficiency and it was a pressurized system, so if you have a Ritchie or some of these others, like a tube type drinker where it’s not allowed to capacity but it’s pressurized, that’s what you want in the winter because everybody says how do I go with a tanked one, I want one. Well I say, how much ice do you want chop? There are ways around that where you float a milk jug with salt and then that would help a little bit. Geothermal risers like Pete’s talking about, we built those in the tanks and that helps in the center to keep it thinner for the float, but really, the best ones we’ve done is a hybrid AC-DC system and a purpose-built water that doesn’t hold water but it’s using geothermal and it’s below the frost line and it’s water on demand. That is the most efficient in the winter, we found, because I guarantee, if that’s November, I’ll get five phone calls a year so what do you have for solar water heater? Absolutely nothing. [Laughter] It’s just simple physics and science. You can’t generate enough waters to run a heater on solar.

**Madison:**

One thing we’ve kind of been drifting into this as well, with your experience, Wayne, in building these systems, you’ve kind of been hinting or kind of dancing around the fact of there are some big questions you’d like to ask during this design process. What are maybe your top three big-ticket items that you’re going to ask any producer that comes up to you saying that they want some sort of alternative watering system? What are the first couple of things that come to your mind?

**Wayne:**

What is the water source is the first question. Is it surface water? Is it groundwater in a well? What’s the capacity of the well? What will the well provide us? How much do we need? Because if I know how much we need then I can figure out how many storage we need and that’s expanding into what we need for tanks. We get into the infrastructure side of it.

**Pete:**

So, Wayne, when a producer does ask you those questions, let’s back up a second, when you say how much do we need, let’s talk about how that producer gets the answer to that question a little bit. What are the resources that actually get you to the nuts and bolts to be able to start building all these designs? How do they know what they need? Let’s talk through that a little bit.

**Wayne:**

Well, it’s going to be based on gallons per head, gallons per head per day, and a total gallon requirement and you can get that. The numbers that I found were really effective are the one that I get from the SDSU Extension office, from NSCS, those are the standards that we use. Caused me the questions. He’s doing this all on his own so he’s not being held to the NSCS standards. I still design that system to those standards because it works. If he doesn’t want - I don’t want a big tank. I don’t want this. I want that well. What else can we do, because, in July there’s forest fires in Canada, we’re going to get the smoke and that is going to cut down on your production. So maybe we do the ability to run it off a small suitcase generator to make up for that just knowing you’re going to have to do it if you don’t have sun.

**Pete:**

I think these things that Wayne’s getting into are really, really intriguing because 10, 15 years ago, it’s not like the questions didn’t exist but if we look at where we’ve gone, and I’ll use South Dakota for an example, with the onset of more innovative grazing and more realization of what we’re doing in the world of soil health, we get the Soil Health Coalition meeting right here in town as we’re recording this podcast, and I guarantee to you, big things that are being discussed there are alternative grazing programs, winter grazing, residue grazing, pushing these grazing systems back into the shoulder seasons and even in the heart of winter have created the need for advancements into the nuances of these systems. It’s much different running the solar, like you’ve said, run the solar system up to and until maybe your October traditional takeout date. It’s much different now thinking that we’re going to maybe have those animals out there on crop residue or pasture or stockpiled winter grazing through January and February. The goal is always – I think about what drives these goals and the goals are progressive, regenerative producers that are wanting to extend their grazing season feed less hay. That’s really kind of our driver for the - and not all of these systems. We want to be innovative throughout the summer and growing season too, but this winter need, it has driven so much innovation that then makes the summer systems just work that much better and I think that’s been really neat.

**Wayne:**

Yes, the type of water source advances from traditional [[Unintelligible]](https://recordings.civi.com/cgi-bin/player.php?file=PC-00002-CattleHQ-Ep50.mp3&starttime=794&duration=20) to what we have now available as far as switching and controls and even different types of pump. It’s amazing how the improvements we’ve seen. We’ve even done solar system pumps where they’re running rural water, but rural water could not develop the pressure to get up over the hill to the tanks, so holding tank in the booster station, that was the niche we filled there.

**Madison:**

I think that’s the important thing to keep in mind as producers are looking at these, is that it’s not always building these big extravagant systems. It’s sometimes as simple as using what you already have, and like you just mentioned, adding in that booster station because you already have a water source that just needs a little bit of extra help to maybe expand into doing a different grazing pattern or if you do want to add rotational grazing but you’re like, “How do I get water to the other side?” Rather than redesigning the wheel, maybe using the wheels that already exist and kind of making them fit the car that you’re trying to drive to make the new operational choice. One question I have for you, Pete, is you’ve been in Extension, like you said, since 2012 but before that you were with The Nature Conservancy and you work with the Grassland Coalition now pretty heavily, what are some benefits to using these alternative systems compared to maybe a more traditional source, just kind of in your opinion and experience?

**Pete:**

Oh, wow. So benefits are - the list is long and we hope to continue this discussion, but the big categorical benefits, let’s start with the livestock. Why have we been doing this? Maybe we have land management goals, but to achieve those goals, we have to remember what we’re actually doing. We can’t eat grass. We need an interim digester, which is the cow, to create a food source for us. That’s the bottom line, and so we want that animal to be efficient and healthy. Clean water, and this is the basic premise of all, this clean, healthy cool water creates better gains, no question. Also, animal health, if we can move those animals out of stock dams, out of stagnant systems, and drinking from a source that they can’t contaminate, cleaner water. We haven’t really described what these systems might look like for the first-time listener but when you can move water from a stagnant source through a system of solar pump, pipes, whatever, to a tank that those animals can’t contaminate, you’ve improved your water quality right there. That’s reason number one as far as benefits, but the second benefit is then to the land. What do we owe ourselves as far as land managers? For instance, if you got to stock dam, those of us experienced with stock dams, they eventually will fail, whether it’s a dugout or a dam. You’ve got erosion. You’ve got sedimentation, siltation. You’ve got just progression of the land for wanting to fall back into that water source and digging those things out, it used to be a couple grand. Now, I don’t even know. It’s probably quite a bit more to bring in an excavator and dig those out and you still got the same problem recurring. So, moving the animals out of that system on the land, fencing them out, solar pumping or whatever to a different source also protects the land and protects your downstream neighbors. It protects your downstream liabilities and these are things that are not necessarily threatening today. I’m not saying that most guys, most producers with livestock gone pasture in a dam necessarily should fear any kind of downstream retribution. It’s not like a dairy accidentally having a spill into a creek. But the more that we can keep our resources, whether those are manure resources, urine resources out there on the land distributed well, all of this starts to play together into having a functional, healthy system and I guess that’s the driver. That’s the driver for those - that’s why these systems make sense for, you mentioned The Nature Conservancy, they make sense for anybody regardless of where you are on your management spectrum in my opinion.

**Madison:**

Do you have anything to add, Wayne?

**Wayne:**

I’ve been pretty lucky because, mainly, my side is the technical side, pumps and controllers and panels and wattage and power and how to get it there and make it work. But I’ve been really lucky to work with Nature Conservancy with Pete at the SDSU Extension with NSCS. It has broadened my vision of what these systems are and their total effect and the total benefits they can bring and the downsides to watch for. I could build it in the office but being out there in the field and talking about everybody who’s working on the second, third, and fourth layer of it that I don’t necessarily have to deal with and getting that explanation saying, “Yes, this kind of works.” I’ve been pretty lucky there.

**Pete:**

These water systems are just fun. I don’t know how else to say it. [Laughter] This is some of the funniest part of grazing innovation. We’ve gone so far in fencing and think of what we got with remote fence, collared animals. These water systems are on the same trajectory. There’s so many cool fun things you can do, but now we’ve got the ability to monitor them visually and electronically with cameras or trips on your cellphone. You can know if your cattle are essentially drinking or if your system’s failing through multiple resources. If they’re fed through real water systems, all the real water systems now are going to basically remote monitoring, so we know. You can get a ping. “Hey, you, you’re using 2,000 gallons today when normally you only use 200” and it alerts you to problems in the system. Wayne’s way more an expert on all this than I am, but it’s the innovation that comes along with it and the benefits that we reap. It’s not just about gadgetry, the benefits you reap in livestock production, land health speak for themselves, and I don’t know anyone that regrets distributing water more thoroughly across, let’s say, their system, whether it’s pasture system, whether it’s crop residue distribution, thorough distribution of water, well thought-out distribution of water, I’ve never heard anybody that’s regretted that investment.

**Wayne:**

As to water as a resource, it’s required element in the plan but it’s also a tool, and using that tool, you can improve your pasture management and the way your cattle are moving around, the way your cattle are at any given time.

**Madison:**

As someone who is more on the cattle side and the animals themselves, I always compare them to toddlers in the fact of if they can make life easier by being a little more lazy or a little less motivated to go somewhere else, they’re not going to. So, if you’re water source, whatever that is, it’s natural, it’s a fountain, they’re going to stay as close to that as possible because, like you mentioned earlier, Wayne, they don’t necessarily want to exert more energy to get to that water source than they have to and when we start looking at grazing systems, you’ll notice that the areas around the water source just get used and abused by those animals inadvertently because they want to be close to that water source especially during the hot summer. Who wants to walk a mile when it’s 100 degrees outside versus walking half a mile because you stayed closer? I think when you start realizing the fact that you can then use their natural behavior to be closer to a water source with these alternative systems, you can really start utilizing that land more efficiently, even potentially extend your grazing seasons now because you’re not looking at areas where they just naturally congregate and saying, “There’s nothing here for them, I have to move them.” It really opens up a lot of management opportunities for people in exploring these and I think that’s also the second fun part for me at least, the systems themselves are cool but the fact that now I have so many more cattle behavior things to play with when building these grazing systems or working with producers, that for me, is arguably one of the fun parts of exploring these different management strategies.

**Pete:**

For me, I’m a land manager. Cattle, I don’t want to diminish the fundamental ecological role of livestock, but if you compartmentalize livestock as a tool to achieve your goals, you start to open your mind up to the idea that, okay, tools need support. If I’ve got a hammer and I’ve got a screwdriver and I’ve got pliers and I’ve got a vice grip and I’ve got these, pretty soon, I don’t have enough hands to hold all these tools that I might need so I need a tool belt. I look at the water systems as the tool belt, because if it’s built accordingly, it can encompass the impact of all these other tools. So, my example would be you mentioned congregation around a water source, what we don’t understand or we don’t necessarily think deeply enough about, is not the opportunity that the water provides on a single source in a pasture but the opportunities that it’s taking away from us. For instance, how many times have we all heard, “I wish I could do this” or “I wish I could do that,” whether it’s separating bowls or breeding later or maybe calving or any number of herd manage things and they say, “I wish I could but I can’t because I don’t have the water. I don’t have the distribution. I don’t have the fence and the infrastructure that would support that.” But then, if you think even deeper, that impacts your own water sources. We’ve all seen it. What does that actually costing me that I’m not accounting to my lack of investment in water? Weed management. That’s the weediest places in the pasture. That’s the weediest. That’s the most erosion that we have. How many times are we lazy and so we go to our water source and that’s where we dump our mineral or maybe our shade or our oilers and all these things. Pretty soon you’ve created the social center of the pasture right around the water then we get into things like deep graze or heavier grazing. What does that lead to? Disease. Our cattle’s sticking their noses right into the dirt because they’re there and they’re lazy and they’re getting that second and third and fourth bite off of those plants right by the water. So, what’s going to happen to that plant community? It’s going to revert back to a more early successional stage and that’s where we get our Kentucky Bluegrass and Brome and Cool Season Grasses and gum weeds and spurges and all these things that we then fight for the rest of the year and that’s why I say those that have - what I actually kind of considered a fairly - I wouldn’t call it a small investment, but comparatively, I’m looking at Wayne over here and I’m thinking this guy’s so innovative. The idea is to save money. Make the investment you need and overbuild a little bit but these aren’t huge bills necessarily. So, if you kind of eat that elephant a piece at a time or you’re at a time or - and that’s why, you know, I appreciate Wayne so much. If you have a project, he’ll compartmentalize it and say, “Okay, well, do we need to do all of it right away? Do we want to do all of it right away, or can we…?” Then of course, you’ve got your funding sources, maybe you’ve got partners with NRCS or Game, Fish, and Parks and I just love our community on all this because people think really logically and they break it down and say, “Let’s eat this elephant one bite at a time and let’s tackle the big things first and we’ll build out, and eventually, we’ll build out to crop land or maybe that’s where the money’s at, we’ll do that first.” It’s innovative but I think that it’s - I know this is alliance, but it’s so key to remember that this investment saves money, time, energy, effort. It’s a quality of life thing. It absolutely is a quality of life thing for those that have begun to understand how this fits in. It’s like a Keystone project on the ranch or the farm that can really create benefits you might not even remember to measure in the future.

**Wayne:**

Outlook on that is great because there’s long-term goals, long-term views, but I’m going to go really short if you’re here. If you’re going to do anything, anything at all, is get your livestock, if it’s surface water, get them air gapped from their water source. The health of your calves, because cows can handle a lot higher bacteria a little than calves can. Just getting them air gapped out of that water so they can’t glut on water sources, they just don’t know or they just can’t get a place to stand in the summertime. Just getting them air gaps first. Just get that done and just that, see a change. The cattle will show you if you have a water tank and an open dugout, stay in the dugout or they come to tank to check it out.

**Pete:**

Even if it’s the exact same water that is…

**Wayne:**

Yes, exact same water but they go up there to drink it, at least the dirt settled to the bottom up there.

**Pete:**

We’ve done a few tours, Wayne said this and we’ve done a few tours where we’ve been lucky enough in the heat of the day to see this and it’s the best aha moment for anybody that’s on these tours when they see these cattle and they’re in the dugouts. Maybe they’re in there because they just haven’t quite got the fence, fenced them out yet. They’re in transition, so the tanks are up, the pumping’s going, they’re going to the tank, but the cattle still have access to the dugout and they just haven’t gotten them out yet.

**Madison:**

One thing that I think a lot of people forget is that if we give cattle the choice between a clean water source and “dirty” water source, whatever that looks like, they are smart enough to choose the clean one. My master’s work, we did some research into water intake in a confinement system with weather but one of the things and kind of looking at what affects that was just the simple palatability and they are very sensitive to the palatability of their water. In fact, there are some numbers out that if they have a choice to pick as little as 50 parts per million of manure contamination, they will go to the other tank that didn’t have anything in it. They start to decrease their water intake when we get up to 2,500 parts per million and a gallon of water that’s only a half an ounce of contamination that’s in there. So to us, we’re not going to maybe even see or notice, but they’re already going to start compensating for that. I always advocate if you have tanks, clean them. Even if it’s winter, figure out how to clean them. When you’re out in the pastures, and you guys mentioned they go out and stand, there is no other clean water source that they can choose. If they’re reducing water intake, they’re reducing how much they’re going to eat because their digestion isn’t working at full capacity anymore so there’s not enough water moving through. It really starts to have a trickle-down effect if there is no other option and I think that’s something, too, to apply to these conversations of, there’s a lot of water that’s okay for cattle to drink. It’s not going to cause any health or production issues but if you look at it and if you were in their shoes, you wouldn’t want to stick your nose in it to drink it. We really can’t expect them to do the same thing and that’s the mindset I like to keep for myself when we talk about the ponds and the creeks and the stock dams and all of these things, is that something that if you were in their shoes, you would want to take in and utilize.

**Pete:**

So, I have a question for you as more of a beef health and beef nutritionist than I ever am. We know that there’s data out there for gains on the feed lottery, I’m vaguely aware of these numbers that, I would say, you can get up to a third more efficiency or whatever that is. Can you tell us or has there been studies on this particular subject on pasture, on grass cattle, or on yearlings and stockers, et cetera. I assume it partly is all summer, but is there numbers that support that?

**Madison:**

There have been a couple of studies that I’ve reviewed not only in just making presentations but also in grad school. There was a study, I forget where they did it, but they had cow calf pairs out grazing and they split them up into different groups and essentially what it was is they were either going to be drinking directly from a pond, they were going to pump that pond water up to a tank like we were just talking about, have them drink out of the trough but not have access directly to the pond, or they basically brought in a rural water system or a well water to its own tank and they split them up. Research wise, they made sure there was no interactions of the cattle or the grass or anything like that to make sure it’s as easy to compare cost as we could. What they found in those cow calf pairs is that calves that had their mamas drinking out of either of the through options, whether it was pumped from a pond or it was a well water system, gained 10% better than the calves from the other cows that were drinking directly out of the pond. The calves maybe weren’t drinking much water to make a difference, but how I’ve interpreted those results was the fact those cows are drinking more, they’re able to be more efficient in their digestion, and because of that, they’re able to produce more milk for that calf on grass. So, milk’s biggest component is water and if they’re limiting their water intake, you can’t produce a product that’s water if you’re not drinking enough. That’s kind of what the calves will do better. There was also the same system but they did it with yearlings the next time and they found yearlings that were drinking out of those through systems were 20% to 25% better on a game front with just a simple water adjustment. They had them the same everywhere else. There’s a couple of studies out there that touch on those topics, definitely becoming more popular now. We’ve got the nutrition stuff figured out. We’ve got how to feed cattle properly pretty much on lockdown of we can take a lot of different things and pretty much tell you pretty close how the cattle are going to perform, but now we’re looking more into the things that, okay, we can feed them great but why are they not doing what we want them to do and investigating those other pieces of the puzzle, environment, weather, water. So, they’re coming up, there’s a couple of them out there that you can find, but typically, the big message of all of them is the better quality water you can have and the more you can convince them to drink, the better they’ll do.

**Pete:**

Think of that, 10% on a weaned calve. Let’s just use a 500-pound calf, 50 pounds at $2.00 to $3.00, how fast do these systems pay you back is amazing, assuming all other management is in line.

**Wayne:**

It’s great to see validation with your numbers of what the thoughts we’ve always had on it, but the other side of it is we have to think pasture and manure, and feed of the cow, and test water. Know your water. Water testing isn’t that expensive. There’s a lot of resources that will help you get your water tested. We did one system. I’m just going to think back, I’m not going to name names of places, but we did a system where we took them off of a local well and we tied it in with flooring while we ran five miles of pipe, just because we wanted, we put heat loops in the tanks for the yards and that was our goal, was to have waters that wouldn’t freeze and we trenched it all and it was great. This was for a pure-bred operation. So, reproduction is their number one goal, you know what I’m saying? Fertility. The status in a year, they started seeing some numbers moving around well. We brought in some animal health guys and we tested. They tested the water then because I always tell people you should probably test the water if you’re making a big change. We’ve been doing this for 100 years, you know what you have, you know what you have, maybe you should still test it maybe to get better, you know, just test the water and see what you need to do when you change something. They checked it and they had to change their entire mineral program because what they had was affecting their reproduction, their fertility.

**Pete:**

So, they stayed with the new water and then…

**Wayne:**

[[Crosstalk]](https://recordings.civi.com/cgi-bin/player.php?file=PC-00002-CattleHQ-Ep50.mp3&starttime=2072&duration=20) The flooring water. It was an old well but we had access to it. They actually had an easement to it and they said, “Well, if we do this…” I said, “Yes, we just run the pipes. Not a big deal. Change out all the stuff you have but this new stuff in, but the water is on you.”

**Madison:**

With water quality, too, it’s relatively easy to test and a lot of, selfless plug, SDSU’s regional centers all have water meters. They won’t be able to tell you exactly what’s in it so I can’t test your water and tell you that you have blue-green algae or that you have high sulfate levels or anything like that, but what I can tell you is if the total dissolved solids and salts are at a level where you should be concerned and want to know what’s there. We can do that. You can send water samples all across the nation really to get them tested. We’ve got a PDF online on the Extension website that has a bunch of labs that will do it but simply understanding that what is in your water will help make a lot of management decisions, especially in South Dakota with high sulfate areas and having high sulfate water, sulfate levels can really wreak havoc on overall production. They can impact all sorts of things but it’s something that also impacts their other mineral absorptions. So, you’re kind of talking how they had to change their mineral program, high sulfur can impact the level of copper that these cattle can absorb. It competes in the body in how they can take that in. So, inadvertently, if you have high sulfate water, a lot of those producers have to over supplement copper just to make sure they’re getting their bare minimum. Just doing a simple test to know where you are, and you don’t have to do it every season, but at least once a year is better than not at all. A lot of the times during droughts is when we see a lot of people bringing them in but you should also be bringing them in when it’s really, really wet and it seems that nature’s faucet never turns off because you’re going to end up capturing maybe some minerals that are deeper down that now finally have access to water to seep up or run off from different areas. There’s always a good time to test it and it’s always better to be safe than sorry when it comes to just what is there and what you’re providing them.

To are loyal listeners, this is Madison coming back in. This conversation with Pete Bauman and Wayne Vincent went so well, we couldn’t fit all of it in one episode. Stay tuned for the second-half of this alternative water systems conversation that will be released soon. This is the end of this episode of Cattle HQ brought to you by SDSU Extension, Headquarters for all things beef cattle. Visit extension.sdstate.edu for the latest beef information. Until tell the next episode, stay curious and keep learning.

**Kiernan Brandt:**

Thank you for tuning into this episode of Cattle HQ. Brought to you by SDSU Extension, headquarters for all things beef. We invite you to visit extension.sdstate.edu for the latest beef information as well as subscribe to the show on Spotify. You will also find show notes and resources from today’s episode, until next time. Remember, success is not a goal, it’s a byproduct.

[Outro music]