

Jeff Garness

Comments from second public hearing

1 JEFF GARNESS: This is Jeff
2 Garness again. This is a comment.

3 The proposed regulations grant
4 engineers and certified installers the latitude to
5 install septic systems in some cases up to 2,500
6 gallons a day without undergoing ADEC plan review
7 and, as a result, many of these systems are going
8 to be installed without any assessment as to
9 whether the system is a functional equivalent to a
10 service discharge.

11 And my concern is: How does ADEC
12 intend to reconcile this with the Maui SCOTUS
13 decision of 2020? And it's important to define

1 which septic systems are going to be treated as
2 functional equivalents. That needs to be addressed in
3 18 AAC 72. And furthermore, 18 AAC 72 should
4 prohibit the installation of any septic system that
5 is a functional equivalent without ADEC plan
6 review.

7 So I think we've got a big hurdle
8 here where we basically have a lot of people,
9 working as certified installers and engineers,
10 installing systems that could fall within the
11 definition of a functional equivalent of a service
12 discharge per the SCOTUS decision, and until ADEC

13 sorts this out, I'm a bit confused how we're going
14 to incorporate -- how we can move forward with
15 18 AAC 72 without fixing that within 18 AAC 72.

I wanted to bring up a comment regarding the soil application rates for drain fields receiving effluent from advanced wastewater treatment systems. And, of course, I've expressed concern that the Municipality of Anchorage codified separation distances - - or not separation distances, but application rates for effluent from
1 advanced wastewater treatment systems in the year
2 2000, and we have about -- there's actually about
3 1,000 advanced wastewater treatment systems
4 installed in Anchorage.

5 Now, the comment that I've
6 received back is, "well, we just can't use that
7 because you can't apply these to, you know, other
8 systems." And in the end, ADEC always ends up
9 making decisions. Sometimes it's their decision as
10 to what the application rate going to be, not the
11 design engineer's.

12 And the reality is, we need to
13 codify this. We can't kick this can down the road
14 for every plan review. We don't know what the
15 application rate is going to be until somebody in

16 your Department decides what it's going to be. And
17 we don't have to use the MOA application rates, but
18 at least let's come up with something, and we can
19 use those as a baseline and maybe, you know,
20 utilize some application rate for a drain field
21 size up to, you know, 1,000 square feet or
22 whatever, you know, whatever the working group
23 decides, but we should not be just ignoring this
24 very important subject. We are not starting from
25 scratch, in terms of the state of Alaska, in
26 dealing with soil application rates for advanced
27 wastewater treatment systems. We've got a baseline
28 of success.

29 So I would like to see us work
30 this out in a working group and come up with
31 something that, you know, everyone would agree on,
32 you know, commercial systems with these sizes of
33 drain fields or whatever, so that we don't design
34 systems, submit them to you, let them get kicked
35 back, then have to charge our clients to redesign
36 systems because we have no idea what you guys are
37 going to accept for an application rate.

38 And in some cases, you know, we
39 get dictated an application rate to us that we
40 disagree with, but our client and us, we don't have
41 the time, resources, or money to keep arguing with

42 DEC about the application rate. And the end result
43 is, we put in a drain field that, from maybe the
44 design engineer's perspective, is way larger than
45 it needs to be and costs our client a bunch of
46 money.

47 All I'm saying -- my comment is,
48 we need to fix this. You know, if you care about
49 the residents of the state of Alaska and making
50 your process affordable, as affordable as possible
51 in terms of plan review, and allowing them to put
52 in septic systems or advanced wastewater treatment
53 systems in as an affordable way as possible, you'll
54 help us get this resolved.

1 JEFF GARNES: I'd like to make a
2 comment regarding the building drains and the
3 separation distances that are being proposed.
4 Correct me if I'm wrong. I believe that proposed
5 separation distance is 100 feet, and that's to the
6 piping that's within the building under the floor
7 space, not a crawlspace but in a floor slab.

8 And if the separation distance of
9 100 feet has been called out, I would really be
10 interested to know what's driving that large of a
11 separation distance. This subject matter has
12 actually come up with the drinking water folks

13 before, and they said, "No, we don't intend to
14 regulate that." And, I mean, I don't think I'm a
15 year down the road from that comment, and I see
16 this.

17 Now, I don't have a problem with
18 you regulating. What I do have a concern about is
19 why we picked 100 feet. If I'm not mistaken, in
20 the Uniform Plumbing Code there is -- in Section
21 700 under sanitary drainage -- don't quote me on
22 the term, but it's under, I think, Section 700.

1 They allow -- or they call them
2 separation distances to, I believe, building drain
3 in one of the tables there, and it allows you --
4 it's 50 feet unless you have, I believe, a sewer --
5 or building a drainage pipe in that's suitable, you
6 know, within the building footprint, in which case
7 I think, because it's typically pressure-tested and
8 inspected before the floor slab goes in, they allow
9 a separation distance of 25 feet.

10 And I would be -- I'd like to
11 really ask DEC to consider really hard why we would
12 go to such a restrictive separation distance if the
13 Uniform Plumbing Code appears to allow us a
14 separation distance of 25 feet instead of 100 feet.
15 And if we're going to go to more than that, you
16 know, it would be nice to know why. I mean, have

17 there been a significant number of cases where
18 we're having wells contaminated from the drainage
19 from building drains and contaminating wells that's
20 driving this, or is it just something that, you
21 know, you decided to do?

22 And then rather going to the
23 Uniform Plumbing Code, you said, "Let's just make
24 it 100 feet," which is going to force wells to go
25 farther from buildings, you know, longer water line
2 runs. On some sites it's going to make it really
3 restrictive, maybe not even possible to put the
4 well on the property, maybe make it undevelopable,
5 possibly. I don't know, but I think we need to
6 really consider making something that is that much
7 more restrictive -- if we don't have something, you
8 know, cases that are driving it, problems that are
9 driving it, are we looking for a solution to a
10 nonproblem?

11 That's my comment, end of this
12 comment. Thank you.

1 JEFF GARNESS: Yeah, this is Jeff
2 Garness. I want to comment regarding the required
3 separation distance to sumps. I'd like to note
4 that it was not clear in the regulation what the
5 intent was, whether that's a sump handling domestic
6 wastewater or even nondomestic wastewater inside

7 the crawlspace, and ask that you clarify that in
8 the future.

9 And then also, that separation
10 distance has not been codified in the past to
11 anything inside the building footprint regarding
12 sumps, and so I would argue that that has the
13 potential to increase costs if it's going to move
14 private wells or public wells further away from the
15 buildings and, you know, it's just one more
2 separation distance.

3 So I'd certainly ask you to look
4 at, you know, what's driving this. Have we had
5 health issues associated with this? And try and
6 avoid creating greater separation distances than
7 are necessary in the Uniform Plumbing Code so that
8 we don't create more restrictive site conditions
9 that drive the cost up for the residents of Alaska
10 and make engineering costs more expensive and
11 development more expensive overall.

1 JEFF GARNES: I'd like to make a
2 comment about the log cribs, if you could make an
3 effort to clarify. The way I'm reading the
4 regulation as written, it prohibits the use of log
5 cribs, even if they have a septic tank in front of
6 them, and log cribs are used extensively. There

7 are many of them here within the municipality of
8 Anchorage. They're tested and functional and meet
9 all separation distances.

10 And the regulation also prohibits
11 any, I think, component of the system being made of
12 wood. And I would ask to you consider, you know,
13 in some places it may be -- there may be a viable
14 alternative rather than prohibiting any component
15 being made of wood -- say, all-weather wood with,
16 you know, a varathane lining or something like
17 that. There may be some options.

18 So I would make the comment that I
19 think we should avoid putting something into
20 regulation that absolutely prohibits something
21 rather than, you know, writing a regulation that
22 allows us to continue to use log cribs that are
23 currently functional, because if you prohibit the
24 use, there's people in the city of Anchorage that
25 are going to spend, you know, \$20,000, \$30,000,
26 \$40,000 putting in new septic systems because their
27 log crib they can no longer use, and so it's a
28 significant economic impact to people in the city
29 of Anchorage.

30 I can't speak for how heavily --
31 or how many log cribs exist outside the
32 municipality of Anchorage, but I assume there's a
33 lot of them.

34 JEFF GARNES: Yeah. I'd like DEC
35 to consider -- if you look at the -- I call it the
36 EPA purple book. I can't remember the -- well,
37 it's not the one that was done like in 1980; it's
38 the one that was called the Onsite Wastewater
39 Treatment Systems Manual, and I believe it was
40 published in 2002. As a matter of fact, I'm
41 certain of that.

42 And within there they talk about
43 water usage and, you know, how we're trending
44 towards water-efficient -- you know, there's
45 certain federal laws that require, you know, water
46 conservation, you know, in terms of appliances and
47 fixtures. Toilets are not 5-gallon flushes
48 anymore, and so we know these flows are lower.

49 And what I'd like to see is DEC at
50 least consider these lower application rates the
51 EPA manual had indicated, that if these
52 water-saving fixtures and appliances were
53 incorporated, that they expected flows to average
54 between 40 and 60 gallons per day per capita. And
55 if you picked number in the middle there, 50, it's
56 a pretty significant reduction.

57 Now, I'm not saying that, you
58 know, we should, across the board, do that for
59 drain fields, but it may be a room for savings for

60 folks in the state of Alaska on septic tank sizing.
61 If you're using 50 gallons a day per capita instead
62 of 75, which is pretty uncommon unless you've got
63 some other issues going on with water wasting, you
64 should be able to get by using smaller tankage and
65 maybe in some cases arguably smaller drain fields.
66 I'm not saying that -- you know, I
67 think there's probably less room there for drain
68 fields because we have drain field performance data
69 out there right now where we know how they're
70 performing regardless of a flow, you know, or
71 regardless of water-efficient fixtures and things
72 of that nature. But the tankage -- I think there's
73 an avenue there that we consider that would
74 actually provide a savings to residents of the
75 state of Alaska and reflect a much more
76 progressive, modern code.
77 we're using, you know, flow rates
78 that are fairly archaic, and we haven't changed
79 that. And if we're going to do a code change of
80 this size, I think we could sort of look at
81 opportunities that, if a design engineer is going
82 to submit information that they're building a new
83 home and we've got, you know, all modern fixtures
84 and appliances, it's reasonable to expect
85 significantly less flows. And we're seeing that,

86 you know, in apartment buildings, new apartment
87 buildings that are being built. I'm seeing flows
88 that are under, oh, I think 35, 40 gallons a day
89 per person living in the apartment buildings, the
90 larger apartment buildings. Don't quote me on
91 that, but I'm pretty sure that was the most recent
92 number that I saw in a larger apartment building.
93 I think we're missing an
94 opportunity here to really, you know, step up and
95 be a little bit more progressive with our code and
96 look at an opportunity to recognize the changes we
97 have made in water efficiency over the last few
98 decades. And that is acknowledged in the EPA
99 manual, and actually the Municipality of Anchorage
100 codified that in 2018, that you can actually -- if
101 you can document that you have lower, you know,
102 flush volume toilets and fixtures, appliances, and
103 things of that nature, you can actually put in, you
104 know, a smaller system.

105 So I think that that's something
1 that would be -- really provide an opportunity for
2 savings for people in Alaska, particularly in areas
3 where you've got septic tanks out there. That
4 extra 2 feet of septic tank may be significant. It
5 may be the difference between having to float it
6 down the river versus getting it in a plane or

7 something.

8 So I would like to ask you to take
9 that into consideration in this revision, which,
10 again, we probably won't see another one maybe in
11 my lifetime, and let's make it a legacy one.

12 I'd like to address the issue of
1 nitrate analysis, and I'd like to see a working
2 group come up with something with staff and develop
3 something that is a common-sense regulation. Right
4 now it's based upon gallons per day. If you
5 discharge 2,500 gallons a day, that's what's
6 driving your nitrate study, when in reality it
7 doesn't matter how many gallons a day you are
8 discharging. What matters is: what's the quality
9 of the effluent, and how many pounds of nitrogen
10 are you discharging?

11 And whether you want to do that on
12 a monthly basis or an annual basis, we can take
13 that into consideration, but we also have to look
14 at, you know: Is the aquifer confined? Is it a
15 nonissue because the aquifer is confined? And the
16 way the regulation is written, it's driving people
17 that would not know better to come to you guys and
18 say, "Hey, we'd like to talk to you about, you
19 know, what latitude you have in all this." They're
20 going to charge their client to do this stuff, bill

21 them, and then they're going to submit it to you.

22 And it may be something along the
23 lines of, you know, "We are operating three months
24 out of the year in a remote location with no
25 neighbors, but we did a nitrate study and charged
13 our clients whatever that's going to be, when in
14 reality we didn't need one at all because the total
15 nitrogen we're discharging is so insignificant
16 compared to 2,500 gallons a day of septic tank
17 effluent being discharged."

18 That's what you're really driving,
19 the way you have the regulation written out. 2,500
20 gallons a day of, let's say, septic tank effluent
21 at 60, 80 milligrams per liter total nitrogen. But
22 if I'm only discharging three months a year in a
23 remote location because it's a fishing lodge, why
24 would I do a nitrate study in that particular case?
25 Or if the aquifer is confined, why would we do a
26 nitrate study?

27 And so what I'm getting at is,
28 let's provide avenues to actually prevent people
29 from paying for engineering work they don't need
30 and doesn't actually -- or in situations where the
31 total nitrogen load is so insignificant that we
32 shouldn't be doing the study because it doesn't
33 matter how many gallons per day. If I've got an

34 advanced treatment system that's designed for
35 nitrogen removal, we could be down into maybe the
36 20s of milligrams per liter, so maybe we're, you
37 know, under a half or a third of what a septic tank
38 might be.

39 That needs to be taken into
40 consideration when we're doing the -- determining
41 whether a nitrate analysis is necessary. We're
42 concerned about total nitrogen; we're not concerned
43 about gallons of water. But the way the regulation
44 is written, it basically drives us towards doing
45 these analyses when, in fact, they should be
46 unnecessary until we get a certain, you know, total
47 pounds of nitrogen per month or per year or
48 whatever. You know, come up with something.
49 And that's where the working group
50 could come in. We could literally bring hundreds
51 of years of experience to the table from the people
52 probably sitting in this conference right now that
53 could do something that would provide a cost
54 savings to the residents of Alaska and not
55 compromise the environment.

56 So I would ask you to take that
57 into consideration when you consider the working
58 group and the value we can bring to the residents
59 of the state of Alaska and the cost savings we can

60 bring in engineering, and your wasted time in plan
61 review. I shouldn't use the term "wasted time,"
62 but your time spent reviewing things that are
63 perhaps unnecessary. So let's find an avenue where
64 we can take better care of the public without
65 compromising public health, welfare, and safety.
66 That should be our goal, and I'd ask that you work
67 with us to do that.

4 JEFF GARNESS: In regards to the
5 lift stations, one of the things I would recommend
6 you take into consideration is there's all sorts of
7 technology available now with alarms that you can
8 hook up to the float that go in your house, and it
9 will actually e-mail you or text you, or e-mail and
10 text multiple people, and they're inexpensive. You
11 know, they're like \$250, \$300.

12 And so if you have a lift station
13 failure, you can get immediate notification when
14 you're at work. You can get notification to your
15 neighbor, maybe your service provider, for example,
16 if it's a holding tank. But the technology is
17 available to where you don't need to have all this
18 extra storage capacity if you can get the alarm in
19 a quick enough time, you know, and get notification
20 to multiple people.

21 So this is what we see with a lot
22 of the small pump vaults and whatnot that are used
23 like in the Municipality of Anchorage. At least
24 the justification we've used for lift stations
25 ahead of the septic tank or after the drain field
26 go into a an elevated drain field or a drain field
27 that's acceptable, is we utilize these alarm
28 systems as justifications for not having to put in
29 a large lift station because we're going to get
30 immediate notification, not only to the owner but
31 perhaps, you know, their daughter, their son who
32 lives in town if they're out of town. Somebody can
33 respond to it if they left, you know, the water
34 running when they got on the airplane and went to
35 Hawaii.

36 So, anyway, I think it's something
37 that is really worth taking into consideration.
38 Technology has changed, and we just need to -- we
39 need to roll with it. Putting in 350-gallon lift
40 stations is unnecessary and extremely expensive,
41 particularly in a lot of remote areas. It adds --
42 if you put in a 24-inch diameter pump vault, the
43 cost is pretty significant. And so I think we
44 should look for a cost savings to the citizens of
45 Alaska in this, and that 350-gallon lift station is
46 going to cost people more money and, in my opinion,

47 unnecessarily.

48 So I ask that you please take that into
consideration.

1 JEFF GARNESS: I don't see
2 anywhere in the regulations where there is a
3 required separation distance between a subsurface
4 drain and a septic system, and I believe that has
5 been lacking for decades. You can correct me if
6 I'm wrong, but I don't think it's in there. I
7 mean, you could put that septic system right -- I
8 mean, right up to a subsurface drain, where it
9 could move laterally into it and discharge
10 somewhere, you know, into surface waters or
11 whatnot. And that's something that, you know, had
12 somebody -- you know, in the steering group we
13 would have brought that up. It's something that --
14 again, unless I'm missing something, that is not in
15 regulation.

1 JEFF GARNESS: This is Jeff
2 Garness again. One additional comment is, I'd ask
3 that you consider -- and I don't know, you know,
4 how the regulations have to be laid out, but it
5 would be nice to have one article in there, and you
6 put all your horizontal/vertical separation
7 distances for all the components there and put them
8 in tables to the greatest extent possible, so

9 you're not looking back and forth through all these
10 different sections and repeating the same
11 separation distances.

12 It would be nice to have them in
13 one section. You go to it, and then you know you
14 haven't missed anything. Separation distance to
15 curb and drain, separation distance -- vertical
16 separation distance if it's advanced wastewater
17 treatment, vertical/horizontal separation distances
18 for every component, again, in a table if possible.

19 I realize some of it is difficult
20 to do because you're starting to get in water --
21 you know, separation of water and sewer lines and
22 vertical separation and things of that nature. I
23 realize there will be some verbiage there, but you
24 would really help us a lot because we could just
25 focus -- separation distance? Go right to that
26 article, and it's all there. We're not chasing
27 around.

28 Right now you have to look at the
29 section under private water systems in there. Then
30 you got to look at the section for advanced
31 wastewater treatment systems. Then you got to look
32 for conventional systems, and you're going back and
33 forth all over. And, again, if you just did it in
34 one section, it would make our life so much easier,

35 and it would make design work less -- more
36 cost-effective and less room for error too. And
37 then, you know, it would be easier in the future,
38 as we change these things, so everybody knows which
39 places to look through. You're not tearing through
40 the whole new code, if it ever gets modified, to
41 go, "What did they do this time?" You can look at
42 vertical and horizontal separation distances in one
43 spot.

1 JEFF GARNESS: This is Jeff
2 Garness again. Since nobody is commenting, I'll
3 seize the moment.

4 I would like to see you consider,
5 on anything related to certified installers -- it
6 appears that the code is written partially around
7 certified installers in each one of these sections
8 and what they can or can't do. It seems better to
9 have, you know, your sections in the code dealing
10 with the technical aspects of building these
11 things, but have a -- within the certified
12 installer section, Article 4 I believe it is, if my
13 memory is correct, you could put everything in
14 there -- what they can do, what they can't do, you
15 know, what the restrictions are, and all of that
16 under one spot so that the rest of us as engineers
17 don't even have to look -- you know, go sort

18 through that in the rest of the regulation. It
19 would shorten the other articles up and move
20 everything into one spot, where the certified
21 installers could easily find it too. And so I'd
22 ask you to take that into consideration.