MINUTES
WATER QUALITY MANAGEMENT ADVISORY COUNCIL
April 25, 2017
Oklahoma Department of Environmental Quality
Multipurpose Room
Oklahoma City, Oklahoma

Official WQMAC
To be approved at the July 25, 2017 Meeting

Notice of Public Meeting – The Water Quality Management Advisory Council (WQMAC) convened for a Regular Meeting at 2:00 p.m. at the Oklahoma Department of Environmental Quality (DEQ), 707 North Robinson, Oklahoma City, Oklahoma. The meeting was held in accordance with the Open Meeting Act, with notice of the meeting given to the Secretary of State on October 13, 2016. The agenda was posted at DEQ twenty-four hours prior to the meeting. Due to no quorum Ms. Shellie Chard, Division Director of the WQD, advised Mr. Duane Winegardner, Chair, to go to the discussion of rulemaking and then go back to calling the meeting to order, roll call and approval of the minutes.

MEMBERS PRESENT
Robert Carr
Brian Duzan
Mark Matheson
Jon Nelson
Steve Sowers
Debbie Wells
Duane Winegardner

DEQ STAFF PRESENT
Shellie Chard
Chris Armstrong
Mark Hildebrand
Richard McDaniel
Jennifer Boyle
Michelle Wynn
Travis Couch
Patty Thompson
Lloyd Kirk
Terry Lyhane
Lee Dooley
Hillary Young
Martha Penisten
Sarah Penn
Stephen Baldridge
Greg Carr
Traci Kelly
Quiana Fields

MEMBERS ABSENT
Jim Rodriguez
Jeff Short
Terry Wyatt

OTHERS PRESENT
Lynette Wrany, Court Reporter

DISCUSSION OF RULEMAKING FOR FY 2018:

OAC 252:628 – INDIRECT POTABLE REUSE – SURFACE WATER AUGMENTATION
– Mr. Saba Tahmassib, Engineering Manager of the DEQ, stated that the DEQ staff will be proposing a new Chapter of rules for Indirect Potable Reuse for later this year. Also, gave a presentation on an update of the progress of the workgroup consisting of Oklahoma Water Resources Board, national experts, municipalities and DEQ.

See transcript pages 4 – 29
Mr. Nelson entered the meeting.

**OAC 252:653 – AQUIFER STORAGE AND RECOVERY** – Mr. Tahmassebi, stated that the DEQ staff will be proposing a new Chapter of rules for Aquifer Storage and Recovery for later this year. Also, gave a presentation on an update of the progress of the workgroup consisting of subject matter experts.

*See transcript pages 29 - 47*

Mr. Winegardner called the meeting to order. Ms. Quiana Fields called roll and confirmed a quorum was present.

*See transcript pages 47 - 49*

**Approval of Minutes from the January 10, 2017 Meeting** – Mr. Winegardner called for a motion to approve the Minutes of the January 10, 2017 Regular Meeting. Mr. Matheson moved to approve and Ms. Wells made the second.

<table>
<thead>
<tr>
<th>Robert Carr</th>
<th>Yes</th>
<th>Steve Sowers</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Duzan</td>
<td>Yes</td>
<td>Debbie Wells</td>
<td>Yes</td>
</tr>
<tr>
<td>Mark Matheson</td>
<td>Yes</td>
<td>Duane Winegardner</td>
<td>Yes</td>
</tr>
<tr>
<td>Jon Nelson</td>
<td>Abstain</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See transcript pages 49 - 50*

**DIRECTOR’S REPORT** – Ms. Chard provided an update on other division activities.

*See transcript pages 50 - 61*

**NEW BUSINESS** – None

**ANNOUNCEMENTS** – The next scheduled meeting is on Tuesday, July 25, 2017, 2:00 p. m. at DEQ.

**ADJOURNMENT** – Mr. Matheson moved to adjourn and Mr. Duzan made the second. The meeting was adjourned at 3:30 p.m.

<table>
<thead>
<tr>
<th>Robert Carr</th>
<th>Yes</th>
<th>Steve Sowers</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brian Duzan</td>
<td>Yes</td>
<td>Debbie Wells</td>
<td>Yes</td>
</tr>
<tr>
<td>Mark Matheson</td>
<td>Yes</td>
<td>Duane Winegardner</td>
<td>Yes</td>
</tr>
<tr>
<td>Jon Nelson</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*See transcript pages 61 - 62*

Transcripts and Attendance Sheet are attached as an official part of these Minutes.
CALL TO ORDER - 2:00 P.M.

Chairman Duane Winegardner: Good afternoon.

Welcome to our meeting this afternoon.

We are not having a quorum right now, but we will start with some of the non-voting type things,
such as the discussion of the rulemakings. And we'll start with that.

And then when -- we are expecting one or two more members to be here in just a few minutes. And then when that happens, we will go back to the roll call and have the formal opening of the meeting.

So. Saba, are you going to address us today on the indirect potable water reuse? Do we need to move so we can see something? Or --

MR. SABA TAHMASSEBI: You know, in five minutes you will.

Chairman Duane Winegardner: Okay.

MR. SABA TAHMASSEBI: In five minutes I think you may want to go sit at that very front row. This is just like a country wedding. We have the front row for the family of the groom and the bride. You can go sit there.

But then the deal is that, when you want to ask questions, because this is being recorded, we ask you to, please, come here at the podium or somewhere else. Ask your questions there so it can get recorded.

Chairman Duane Winegardner: Okay.

MR. SABA TAHMASSEBI: Well, may I start?

Chairman Duane Winegardner: Go right ahead.

MR. SABA TAHMASSEBI: This is on, right?

MS. QUIANA FIELDS: No, it's not on.

MR. SABA TAHMASSEBI: It's not on. Put my glasses on. Is it on now?

MS. SHELLIE R. CHARD: The red light's not on.

MR. SABA TAHMASSEBI: Red light is on, but --

Oh, yeah. The red light is on. I have only worked here like 27 years. Eventually I'm going to learn how to use this equipment.

Well, folks, thank you so much for accommodating us on a -- during a day where we don't have any actual rules for your consideration.

But we have a very aggressive regulatory agenda this year. And we've talked to you about this over the past several months or even last year about what we are up to. But now that we are getting so close to having rules, and that's going to happen this
1 year, we wanted to make – provide you an update and
2 make you aware of what we’re doing. sort of get you
3 on board with what’s going on at DEQ.
4 We are super excited about this aggressive
5 agenda. It all started when we were hit by the
6 drought a few years ago and we realized that we at
7 DEQ, we play a role in providing water security as far
8 as quantity goes and as far as quality goes for the
9 sake of Oklahoma.
10 So we started thinking about what is it that
11 we can do to help us be in a better position to
12 mitigate the impacts of drought the next time that it
13 hits.
14 And you’re already aware of some of the
15 initiatives that we’ve had, because some of them have
16 been on the front page of newspapers. They have to do
17 with water conservation, water audits. They have to do
18 with some of the innovations that Oklahoma has had
19 with the management of waste water residuals from
20 drinking water treatment operations. We’ve talked to
21 you about these before in the past and they have been,
22 like I said, on the front page of newspaper articles.
23 A couple of other things that we are doing in
24 Oklahoma, as far as the regulatory arena is concerned,
25 we have put together a group to address aquifer

1 storage and recovery. That is the second presentation
2 for today. And also, we have a workgroup that is
3 developing rules for IPR, Indirect Potable Reuse. And
4 we have other folks who are going to make
5 presentations about this to you.
6 Let me introduce what the IPR workgroup does.
7 I have been involved with it for three years myself.
8 And this is a group of folks from municipalities, from
9 industry, from regulatory agencies who came together
10 and put together a workgroup to come up with a water
11 reuse program in Oklahoma.
12 That workgroup gave way to a smaller
13 workgroup that is actually working on resolving all
14 the issues that you have with IPR and actually write
15 the rules. This subgroup is chaired by two folks who
16 are not even DEQ employees.
17 One of them is Michael. He is with –
18 Michael Graves. He is a principal with Garver
19 Engineering in Norman.
20 And another one, another member, is an
21 ex-professor at Ohio State who is a Stanford Ph.D.,
22 Ellen McDonald. She works in Texas. And she is the
23 other Co-Chair of this group.
24 So we have asked Michael to give a
25 introduction to IPR, what IPR is, why we need it in

1 just give you a brief introduction to Indirect Potable
2 Reuse.
3 I’ll echo some of what Saba said regarding
4 the collaboration amongst the folks that are involved
5 in this committee.
6 It’s been -- it’s been a little longer than
7 that, a little longer than three years for me, Saba.
8 when we -- some of you may recall we first developed
9 non-potable reuse regulations five, six years ago.
10 And that has continued on. That’s been a very
11 successful program. There are actual projects that
12 are reducing their potable water demands right now by
13 using non-potable water for irrigation practices and
14 so forth. And the workgroup and certainly DEQ
15 deserves a lot of credit for that.
16 (Mr. Jon Nelson entered the meeting.)
17 This group is -- has got some -- has taken
18 care of a lot heavy lifting over the last several
19 years. There’s a little bit left to go. I think we
20 have a finish line in sight. But it’s been -- it’s
21 been a pleasure to get a chance to partner with not
22 only this agency, but the Water Resources Board in
23 development of these regulations,
24 So with that, why would we -- why would we
25 want to reuse waste water? Specific to Oklahoma.
there are some really obvious water availability
drivers for reusing waste water.

Of course, House Bill 3055 initiated the
Water for 2060 Act. Most of you guys and gals are
familiar with that and its bold initiative, the first
of its kind in the country, and maybe still the only
of its kind to commit a state to using no more fresh
water 50 years from the time that Act was enabled.

So there's a -- there's a big, big driver
there. Obviously, reuse and recycling and reclamation
of water is an essential item for us to be able to
meet that goal.

Another reason for considering indirect
potable reuse of waste water is to evaluate that
against what are increasing costs associated with
importing water from outside a -- outside its own
basin. The energy costs associated with delivery of
that water, sometimes hundreds of miles away, the
reservoir construction costs to store that water can
quickly create some significant costs for a utility.

Whereas, the recycling of waste water is a water
supply that is drought resistant.

People use water in their homest year around.
Obviously, we use more water from an irrigation
standpoint in the summer, but that's not collected in
our sanitary sewers. So the water that we do use in
our homes, it is drought proof, because you use it
year around, regardless of whether it's winter or
summer. Capturing some of that water and reusing it,
treating it, obviously, to advanced standards and
reusing that water for potable uses is something that
just makes a lot of sense.

Another driver that's often overlooked that
can be significant for indirect potable reuse projects
is that waste water discharge standards are becoming
more and more advanced. We have a very robust
regulatory process to improve our streams, and rivers,
and lakes and that sometimes results or requires
municipalities to consider advanced treatment
alternatives in order to meet those increasing
discharge limits that are often associated with a
total maximum daily load study or a waste load
allocation study.

So when a city has to invest in these
expensive treatment techniques, you kind of start to
ask yourself, you know, are there other uses for this
water, besides just discharging it to the neighboring
stream that they've always discharged to. And from an
increasing standard standpoint, you know, what used to
be the standard whenever I started 'n this business,
1 ongoing or recently completed potable reuse project
2 studies that I'm aware of. And I just looked at
3 Oklahoma and Texas. We're involved in many of these.
4 Some of these are other consultants. Some of these
5 are actually moving forward or have moved forward with
6 capital improvements, some of which are direct potable
7 reuse. We don't have time today to dive into the
8 details of direct. But basically direct or DPR
9 bypasses that environmental buffer that I spoke of
10 earlier and takes the treated effluent directly to the
11 drinking water treatment facility.
12 A little closer to home, and there are - up
13 there - you saw there are multiple locations in
14 Lawton or in Oklahoma where these are being evaluated,
15 Lawton is one of those. This is an aerial of Lawton's
16 water reclamation facility.
17 What Lawton is considering, first of all,
18 they are looking for additional water supply. They
19 had a -- they were hit very severely by the drought a
20 few years back. In fact, their total water supply was
21 down to less than 50 percent. Growing up in that
22 area, I thought Lawton was water rich. They have
23 access to Lake Ellsworth, Lake Lawtonka and Waurika
24 Lake. But the drought hit and it hit hard.
25 And so, they're evaluating numerous

---

1 concerned about. But there will be additional
2 treatment required and this agency, with the
3 workgroup's help, is defining what that additional
4 treatment requirement should be as we speak.
5 And so with that, I think I'll turn it back
6 over to Saba.
7 MR. SABA TAHMASSEBI: Thank you so much,
8 Michael.
9 I think just because of the logistics of
10 where the speakers are, maybe it's a good idea to wait
11 until the end and then ask questions.
12 Greg, you can come. Yes. Greg Carr is Chief
13 Engineer of DEQ Water Quality Division. He will make
14 a presentation. I'm going to over to load your
15 presentation.
16 MR. GREG CARR: Okay, Appreciate everyone
17 being here. My name is Greg Carr. I'm the Water
18 Quality Division Chief Engineer. I'll be talking to
19 you today about Indirect Potable Reuse through Surface
20 Water Augmentation and our proposed rules for such.
21 All right. So towards the end of these
22 proposed rules, we have formed a Water Quality
23 Standard Subcommittee. We have members from DEQ, the
24 Oklahoma Water Resources Board, municipalities. We've
25 also got national technical experts, such as Alan

---

1 alternative water supplies, reuse just being one of
2 those. And one of the concepts that they're
3 evaluating is currently their waste water treatment
4 plant discharges to Nine Mile Creek, which is shown
5 there at the bottom of the figure. Their objective is
6 to evaluate and develop treatment costs to divert that
7 discharge to either a tributary to Waurika Lake or
8 their Waurika Pipeline, which conveys water from
9 Waurika Lake to Lake Ellsworth. In that scenario,
10 either Waurika Lake or Lake Ellsworth would serve as
11 that environmental buffer that I mentioned earlier.
12 And I don't have time to mention in detail all the
13 projects that are going on in Oklahoma, but there are
14 others.
15 The last component that I wanted to leave you
16 with today regarding an introduction to IPR is that
17 the treatment components are important. There is a
18 multi-barrier approach that this agency is evaluating
19 to ensure that safe water is discharged to that
20 environmental buffer. Most of these barriers exist
21 within an existing waste water treatment plant. In
22 fact, the biological processes alone in a
23 well-operated water reclamation facility or waste
24 water treatment plant do a really good job at
25 addressing a lot of the contaminants that we're

** LOWERY & ASSOCIATES, INC. **
(405) 319-9990
looking at and Cryptosporidium. We've got some log requirements for those. Five day Carbonaceous Biological Oxygen Demand, Turbidity. We've got Nutrients, specifically total nitrogen and total phosphorus. Chlorophyll-a. Primary MCLs. Secondary MCLs. these are from the Drinking Water Standards. We've got Contaminants of Emerging Concern. both non-carcinogenic and carcinogenic. And Total Organic Carbon. And as far as the Water Quality Standards go we've got them listed there. I believe all of those are narrative for beneficial use and anti-degradation, with the exception of the chlorophyll-a requirement for SWS. Sensitive Public and Private Water Supplies. And that sets a numerical standard of 10 micrograms per liter. Those are existing. This is what we call our four box model for developing nutrient limits. Box Number 1 is our technology-based limits for total nitrogen and total phosphorus.

We've got a Box 2, Water Quality Based Limits for Total Maximum Daily Load requirements as applicable.

Box 3 is our Water Quality Based Limits, which basically protects the existing criteria for chlorophyll-a, turbidity and dissolved oxygen. And then these all lead our lowest end-of-pipe values for total nitrogen and total phosphorus.

Box 4 is our Monitoring and Analysis box. It's our feedback box. It allows us to monitor and analyze. And basically there may be an effect on permit limits as we see a need for that.

This is our Hydrologic Mass Balance Model. It's one of the several tools that the sub-committee has been using. This actual spreadsheet was developed by Terry Lyhane. Little shout out. He worked on this for us. It's essentially a Mass Balance Model. This one helps us predict conservative constituents, conservative substances and track their concentrations in accordance with the predicted flows and levels in lakes.

This one, in particular, is for Lake Thunderbird. I believe we had COMCD data all the way back to 1958, which is where the volume data came from. And you can see the blue line. that's Lake volume. The gold line is the concentration of the measured pollutants or predicted pollutant. You can see they correspond. Basically a low volume in the lake corresponds to a high volume for the -- high concentration for the pollutant. There is a glaring error here. I put Chapter 626. What we are proposing as the number for Indirect Potable Reuse 628. 626 is already taken.

But 626 is what we're proposing for Indirect Potable Reuse. We have the following subchapters: Chapter number 1 is General Provisions. And Terry Lyhane is leading the writing on that. Benchmark Quality Standards, that's led by Mike Moe. Technology Standards is led by Patrick Rosch. Operational Standard by Patty Thompson. Permitting is led by Greg Carr, me. And Lake Monitoring Parameters and Frequency is led by Karen Steele.

And then, as Saba said, we'll save the questions. But I'm excited about it.

MR. SABA TAHMASEB. Folks, before you -- before we open this up to questions, I'd like to let the Council and also the audience know that this has been a monumental effort really.

What Greg showed you was just a synopsis of the types of tools that the workgroup has been using and the logical sequence of events. We have these types of flow charts for various contaminants, which state what is the logical sequence of adding a contaminant. And then the idea here is to be as protective as possible to make sure that the water resources in Oklahoma remain safe for human health and the risks are fully understood and analyzed and, at the same time, that we are following a common-sense approach, something that is not prohibitive.

Obviously, if you want to make the risk to be zero, then what you have to do is do nothing. Because, if you do nothing, then there is zero risk.

So the question becomes what kind of risk is acceptable. With this group of folks, national experts, the stakeholders, DEQ and Water Board folks, we've been able to do that.

And as you know, as you have worked with engineers, you know that every time you have five engineers in the room, you have three dissenting opinions. And at the same time, you also know that -- you may not know this. I didn't know this until recently -- that engineers are also philosophers. So not only -- in these meetings not only we talk about science and engineering and equations, we talk about people's philosophies, too.

So these are long, long meetings. The meetings that we have are five-hour meetings. The workgroup meetings are five-hour meetings.
1 call me a slave driver. And I think they are trying
2 to be nice with me when they call me that.
3 And at DEQ this has been a great effort, too.
4 We have Tuesday meetings for two hours every week.
5 And then we have Thursday meetings every other week.
6 So we have one and a half hour meetings every week
7 to get this done. And we’ve put significant
8 resources, DEQ resources, to get this done.
9 And I know that OWRB the same way. They are
10 spending a lot of their human capital in trying to get
11 this done. And this is not just engineers and
12 hydrologists, but also lawyers and administrators.
13 everybody coming together to get this done just to
14 make sure at the end we have a program that is
15 responsive to the public, addresses our water security
16 issues, so that we can have economic prosperity in our
17 state and be safe and also be doable. This is what we
18 want to do and this is where we have everyone together
19 working together to make this happen.
20 And our schedule is that we hope to have
21 these rules -- it’s not that we hope to, but we are
22 going to give you these rules for your consideration
23 this year. And we hope to go to the Board with them
24 during the first meeting of 20. what is next year, 18,
25 and then go to the next legislative session for their

26 discussion.
27 I know you guys have regular meetings to
28 discuss it, but I thought maybe the public might have
29 some discussion along the way.
30 MR. SABA TAHMASSEBI: Yes. By all means.
31 CHAIRMAN DUANE WINEGARDNER: One of the
32 things, if I may comment just very briefly.
33 MR. SABA TAHMASSEBI: Yes, sir.
34 CHAIRMAN DUANE WINEGARDNER: One of the
35 things we need to do is promote public education. I
36 know there -- I was discussing the same topic with
37 some people from some other states and we’ve come to
38 the conclusion that we generally should start in about
39 Second Grade and work our way up so that by the time
40 that these people get home and convince their parents
41 that it’s worth listening to, because I know we’ve had
42 lots of discussion about Lake Thunderbird and the
43 various cities involved there. And I think we need a
44 lot more education and we need to promote that.
45 That’s my take on it.
46 MR. SABA TAHMASSEBI: That’s a -- that’s an
47 excellent comment. I know that the municipalities
48 that are interested in this, public education is
49 something that they are really concerned with and they
50 are addressing it actively.

51 approval.
52 With that, I open this to questions. And
53 we’ve got various members from the workgroup, from the
54 Water Board, from DEQ, our experts, they are in the
55 room. And you can ask these questions now if you
56 like.
57 And then our folks are going to stick around
58 after the meeting, too. So if there are some issues
59 that you have that you want to address after the
60 meeting, they are going to be here to talk to you
61 about that. So go ahead.
62 MS. SHELLIE R. CHARD: You might have them
63 use the microphone, to have people come up to the
64 microphone.
65 MR. SABA TAHMASSEBI: Yes. Come to the
66 microphone and ask questions.
67 Duane, you can either use Debbie’s, if you’d
68 like, or you can come up here.
69 CHAIRMAN DUANE WINEGARDNER: Okay. Go ahead.
70 I just moved around here so I could --
71 MR. SABA TAHMASSEBI: Yes, you can.
72 CHAIRMAN DUANE WINEGARDNER: -- just kind of
73 see what’s going on.
74 Questions? This has been such an important
75 factor in our water use and there should be some

76 Our workgroup has also divided into various
77 subgroups. And one of the subgroups is also
78 addressing public education, although there won’t be a
79 DEQ regulatory aspect to that. But there is a, as
80 part of the workgroup activities, that’s being
81 addressed through one of the subworkgroups.
82 CHAIRMAN DUANE WINEGARDNER: Very good.
83 MR. JON NELSON: So, Saba, I think I saw just
84 two -- two locations in your chart that reflected
85 additional discussion and most of them were resolved,
86 right?
87 MR. SABA TAHMASSEBI: Correct, yes.
88 MR. JON NELSON: Okay. So -- so it locks
89 like the schedule will look good this time for next
90 year to have draft standards?
91 MR. SABA TAHMASSEBI: Well, we are hoping
92 that it won’t be next year, it will be this year.
93 MR. JON NELSON: Well, this -- okay. Or
94 early ’18 or late, late ’17?
95 MR. SABA TAHMASSEBI: Yeah. I think that
96 Mark can help me with this. But the thought is for us
97 to come up -- to come to you with a draft of our rules
98 in September and then the final version, DEQ version.
99 later on this year. And, hopefully, have your buy in
100 and go to the Board with it next year.
Mark, you want to comment on that?

MR. MARK HILDEBRAND: That is right, Jon.

We're planning on having draft rules and presenting
them to you all at the September meeting, fate
September meeting, and then getting comments from
everybody and letting everybody participate and have
our public meetings and help us dress up our rule
writing, and then come -- move forward with them in
our early January meeting. And it would go forward to
the February Board for them to vote on and move on to
the Governor and Legislature.

MR. JON NELSON: Okay. So it would be --
it's the plan we should be chewing on something by the
--- before the end of this year?

MR. MARK HILDEBRAND: Oh, yeah. And we'll
probably -- well, we plan on sending stuff out early
fall, early fall to get at least to you all to give
comments on. And then we'll move forward with
everybody else. We want everybody in the rooms'
comments, if you've got them, once we get these out.

MR. JON NELSON: One of the questions I had,
I know there is a lot of places in Oklahoma where
we've got indirect reuse going on today. I mean,
there's enough -- there's a discharge upstream of
water sources. And I think -- I thought at one time

DEQ was taking a look at those locations, identifying
those.

Has there been any kind of -- has there been
any kind of assessment done as to impacts, what these
rules are going to do to those folks that are already
in that situation, been for years?

MR. SABA TAHMASSEBI: Well, it is in our
agenda to address the definition of IPR with our
workgroup during our May 8th meeting.

And then but the general DEQ sentiment is
that these rules are not designed to be prohibitive or
not designed to create obstacles to what is happening
already.

So somehow, and these are just my thoughts
right now. somehow we are going to carve out a
language for IPR that is for future projects and not
for what happened, what's happening de facto right now
elsewhere in Oklahoma.

Because when you really look at it, most of
us. most of us are drinking some kind of a reclaimed
water. And there are some municipalities that drink
mostly reclaimed water. And the idea is not to create
problems for people when there are nc environmental or
human health problems.

So these are just for -- right now what we

are addressing mostly is discharge into terminal lakes
and then using the lake as a buffer for drinking water
purposes.

MS. SHELLIE R. CHARD: This is Shellie Chard.
Water Quality Division Director.

And just to kind of follow up with what Saba
has said, you know, we kind of have looked at lake
discharges differently than river discharges. We do
have the moving water. It's not just going there to
stay until it's either evaporated or used for some
purpose.

The Water Quality Standards contemplate
public and private water supply as a designated
beneficial use. We have, in the last few years, added
some additional protections. If you're within five
miles of a drinking water intake, you do have to do
some additional disinfection. So that's already in
place today.

So mostly what we're looking at the changes
are where we do have a discharge going into a lake.
So we do have some planned, intentional river
discharges that will be picked up through a PWS
intake. We do have some of that. We know we have the
de facto. We are starting to see some that is
planned.

But at least right now, as we look at the way
the Water Quality Standards are structured, we feel
like we have a pretty good way to keep having those
kinds of things happen with the little bit of
additional disinfection. And then as we move closer
to potable or the direct potable reuse, then we may
have to rethink that. But it shouldn't impact
somebody that is discharging four miles upstream of a
discharge or of an intake.

MR. JON NELSON: Yeah. It was the unintended
consequences that I was concerned about and not the
intended. So that's good.

MR. SABA TAHMASSEBI: Yeah. We're trying to
avoid those unintended consequences. And then you see
these are -- although these are going to be DEQ rules.
we don't treat them as DEQ rules. We treat them as
Oklahoma rules for Oklahomans, because drought is an
Oklahoma problem.

Folks in Oklahoma, we think, they needed to
get together and come up with an Oklahoma solution for
this problem. And for that reason, we have these
workgroups with various interests and the rules are --
we have a table that Greg showed you, it's not the --
we don't call it the DEQ said-so table, we call it the
consensus table.
<table>
<thead>
<tr>
<th>Page 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>It's a -- we talk. Our engineers and philosophers tell us what they think. And then, after much discussion, we come up with a solution that is a consensus that is something that everybody can live with. And at the end the rules that will come for your consideration and your approval, they are the workgroup products for both ASR and for IPR. And for that reason, you know, I'm very thankful to our national experts who have spent tremendous amount of time and efforts bringing in their expertise, free of charge, just to get this done. Because they're really interested in having a part in solving the drought situation in Oklahoma. CHAIRMAN DUANE WINEGARDNER: Any other questions? And if there are none, I think I'm going to rule from the chair that we move ahead with the Aquifer Storage and Recovery Presentation. MR. SABA TAHMASSEBI: Yes. CHAIRMAN DUANE WINEGARDNER: And then after that, since we now appear to have a quorum, then we'll take care of the minutes and the administrative things. MR. SABA TAHMASSEBI: And I'm very low tech today. I'm the guy that changes the slides. Yes. I'm really representing the Oklahoma ASR workgroup here and sharing with you what the progress of the workgroup has been so far. First of all, for those of you who might not know what ASR is, it's been -- we think, a lot of people think, that during the times of drought under certain circumstances it makes good sense to store the water that we have underground, as opposed to in reservoirs. Reservoirs, during the times of summer, they can act as evaporation basins. And we lose a lot of water due to evaporation. And as an example, the Foss Reservoir, that you're familiar with, they lose about 60 inches of water every year due to evaporation. And under certain circumstances it might make more sense to store this water underground so that we do have water for our citizens to use. Some of you may or may know this, but the way Oklahoma was designed is that water moves -- I know. Bud, yes. You know, if you designed Oklahoma or not, because you are smiling -- but water moves from west to east. West -- Western Oklahoma is about 1,000, 1,200 feet, it's elevation is higher than Eastern Oklahoma. So water moves from west to east. And then we put these reservoirs strategically, we put them in locations to intercept the flow of this water from west to east where the east has too much water, the west doesn't have enough water. And this way people in west have surface water to use. But then, when the drought hit, we thought about providing options to municipalities and citizens of Oklahoma to expand the portfolio of options that they have to address the drought situation. And one of them was ASR, injection or delivery of water into the subsurface into aquifers for future recovery. And this is again, because of the water security concerns as far as quantity goes and it's one of the portfolio of options that we are providing our folks. We believe that if you build it, they will come. So we are trying to put together this regulatory structure, this administrative structure so that people who want to use it, they have -- they have something to -- they have follow through with it. And what ASR rules are. The intent is that these rules will provide an avenue for people who want to intentionally deliver water to the subsurface for future recovery, they can do that. This is what it is. What it's not, is not a vehicle for DEQ to do enforcement. This is not something that we dreamed of. To go after pig farms or mines or anything. It's not intended to be an enforcement tool. It is just that if under certain circumstances it makes sense to deliver the water to the subsurface, we don't want to say that, no you can't, because we don't have rules for it. We want to say that, yes you can. Yes you can and this is how you can do it safely, if it makes sense for you to do this. Actually in our ASR definitions language we are going carve out some activities that people are concerned with. Some -- this is not a pig farm regulation deal. This is not a mines regulation deal. So we are going to carve out those activities and only focus on intentional delivery of water for future recovery, something like a municipality would do. So we have formed this workgroup with the best and brightest from DEQ, from the Water Resources Board, the Corporation Commission, Department of Agriculture, Oklahoma Geological Survey, U.S. Geological Survey. And then, by the way, the Kerr Lab is a new member of the workgroup. They're going to start coming to our workgroup meetings, the next workgroup meeting. The Office of the Secretary of Energy and Environment.</td>
</tr>
</tbody>
</table>

** LOWERY & ASSOCIATES, INC. **
(405) 319-9990
GWPC, you all know Mike Paque. His Deputy Dan Yates, he is a member of the workgroup. Burns & McDonnell, there is a — this is the firm that designed and operates the Wichita, Kansas ASR plant and the engineer who is in charge of those operations. He is a very smart fellow. He is part of the workgroup and has been a tremendous asset to our workgroup. Carroll Engineers. We have a gentleman, his office is in Colorado. And he was one of the engineers that was one of the minds behind the Water for 2060 and worked with OWRB to develop that plan. He is part of the group. And then the manager of the City of Ada. And we also have representation from Oklahoma State Legislature Scott Martin. Republican from Norman. He is part of the workgroup.

So when the workgroup started working some two and a half years ago, we identified that there were three major obstacles to having successful aquifer storage and recovery in Oklahoma. One of them is ASR water rights. If you inject water or deliver water at your property, can your neighbor then produce it? Is it recoverable? Is their water? Whose water is it? This was not fully described in Oklahoma law. So Senate Bill 1219 last year, in 2016, passed the legislature which paves the way for OWRB to come up with this mechanism of designating water rights for the water that was delivered. And that mechanism requires a DEQ permit or approval. And that's one of the other reasons why we need to have these rules. The second thing that the workgroup identified was that our groundwater standards, our anti-degradation standards, are so robust that it precluded having ASR in any meaningful way in Oklahoma. So through the workings of the workgroup, we developed language, OWRB developed language, to carve out a section in the regulations for anti-degradation and groundwater standards that allows for ASR to happen. We took two obstacles out of the way and that's something that passed the Board just a couple of months ago. And it will go through the legislative approval during this session. And then last is why we are here. And that's the implementation and time frames. Now that the groundwater standards are out of the way, the water rights issues have been addressed, how do you do ASR? We need to have a regulatory framework to make this happen for permitting. And we are not reinventing the wheel. We started this effort by surveying the other states. And last year the workgroup developed a questionnaire and submitted it to several states. We got very good responses. And one of our — is Tory here in the room? She is not? Okay. I can get her to work, but I can't get her to come to meetings. So I need to work on that. But she is a sharp, sharp scientist and she was in charge of that effort. And she published this effort at the GWPC's web page and went to Orlando last year and presented that, the results of that study, to a national audience. And that was the start of our serious work at ASR, just we wanted to know what the other states had done so we could piggyback on their efforts. And later on the workgroup, again with Tory, we surveyed a handful of states to see what their operational and permitting standards are for ASR so we don't have to reinvent the wheel. And we are basing a lot of our work on what other states have done. We did this — I'm not sure what's happening. But — well, I talked — okay here. So the general concepts, the first one is treatment. We have raw water, some kind of river water or water from another aquifer or whatever source it is. It needs to be treated so that it is clean enough to be delivered to the subsurface. So there's that treatment aspect. And then that water needs to get delivered to the subsurface. And then we have monitoring of the raw water and monitoring of the aquifer before we start the ASR. And monitoring of the water wells in the ASR area. It's going to be a element of pilot testing for the aquifer and the subsequent monitoring. The reason is that sometimes, due to the geochemical characteristics of the aquifer and the water, if you deliver water that is very clean into an aquifer that is very clean, just because of the fact that the geochemical characteristics are different, it is possible that, as a result of that water delivery, you can liberate some contaminants from the matrix of the aquifer rock. So that needs to be checked. It needs to be studied to make sure that doesn't happen. I mean, one example is, arsenic or chromium or other metals like lead, if they exist in the geologic strata, they are part of the rock, and then, when you change the geochemistry of the aquifer, they dissolve into the water and we don't want that to
<p>| 1 | happen. So we're going to have some testing done to make sure that doesn't happen. Then you have construction standards for the recharge wells and for the infiltration basins. These are the basins like ponds that have a permeable floor. And water can percolate through these basins and recharge the aquifer. Then we have operating standards. Now that you have everything set up, how you're going to -- how you're going to operate this; at what pressures, what flow rates, what monitoring scheme. And then at the end we have financial assurance. So we have a DEQ team of rule writers and they work under the direction of Hillary Young. Hillary, you want to stand up for people to see who you are? Hillary is a chief engineer for the Land Protection Division. The UIC is under that, actually has a staff of Water Quality and UIC folks, lawyers, technical people. And they meet at least once a week and they are writing the rules here. Both Greg and Hillary are going to be here after the meeting for you guys to get to know them better and ask any questions that you may have. Any subsequent rulemaking draft rules or ASR rulemaking, they will be presented by Hillary. So you may want to get to know her better. The first subchapter is General Provisions. And then Subchapter 3, at DEQ we don't like even numbers, so 3 we have Raw Water and Aquifer Characterization, followed by ASR Treatment Plant Construction. Recharge Well and Infiltration Basin Construction, and Aquifer Storage and Recovery Operations. These are the different Subchapters. Let me go over -- this is a conceptual flow chart of how ASR works. First, your raw water goes to Box 1. Box 1 is the ASR Treatment Plant Construction Permit. This is not unlike the treatment plants that we already have for waste water and drinking water. The ASR treatment, you have elements of both waste water and drinking water, depending on what the source of the water is. Once the water gets treated -- and you need to have a permit. This is the first box that requires an ASR permit. And the permit that is needed is down here. Box 1, Treatment and -- I can't see from here. MR. MARK HILDEBRAND: Construction Permit. MR. SABA TAHMASSEBI: Yes, Treatment and something else. MS. SHELLIE R. CHARD: Construction Permit. MR. SABA TAHMASSEBI: Treatment plant, yes. | 1 | Treatment Plant Construction Permit. You know, I know what to do. There is a trick that Paul taught me about. There you go. There is Paul. He's the other guy I was telling you about. Okay. So -- MR. STEPHEN BALDRIDGE: Do you think it would be better to start with the other chart, because it has the preliminary -- MR. SABA TAHMASSEBI: Louder, Stephen. I'm old. MR. STEPHEN BALDRIDGE: Do you think it would be better to start with the other chart, because it has the preliminary stuff? MR. SABA TAHMASSEBI: No. No. I purposely decided to do this. MR. STEPHEN BALDRIDGE: Okay. MR. SABA TAHMASSEBI: Yes. This was Stephen Baldridge, our UIC attorney. And once I learn how to satisfy Stephen, I can die a happy man. He just is never happy with what I do. Okay. So here, now I can read that. You have the Box 1, Permit Treatment Plant Construction Permit. This is going to be Chapter 653. a brand new chapter. It's not going to be under UIC. The reason it's not going to be under UIC is because there are some UIC aspects and some Water Quality aspects. So the Chapter 653 will get its authority from both Safe Drinking Water Act and Clean Water Act and also UIC Rules and Water Rules in Oklahoma. So here, after the water gets treated, there can be residuals from this treatment facility. And they need to be addressed somehow. And we already have the regulatory infrastructure to address them. We have a permit for the management of the treatment residuals. This might be a discharge permit. It might be a deep underground injection well permit to get rid of the treatment residuals. So Box 1A. we don't need to do anything about, because we already have the regulatory infrastructure to address them. And then up here, after the water gets treated, there's going to be some kind of a valve here, just in case something goes wrong. Somehow the water doesn't get properly treated, a valve is going to be available, you can turn it on, and the water, instead of going to the injection field is going to get discharged into surface water or into some kind of a storage basin. We already have for Box 2. we already have the regulatory infrastructure to address that and there is nothing that we need to do, we need to do to |</p>
<table>
<thead>
<tr>
<th>Department of Environment Quality 4/25/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. address that.</td>
</tr>
<tr>
<td>2. And then, if everything's — if everything is okay, then you need to have the construction of ASR water delivery to the subsurface. And then again, these are the 653 rules. You're going to have construction standards for Recharge Well Construction. Permit, for infiltration basins and for any other delivery mechanisms that might exist. If there is a trench, there's whatever system that it is. So there is going to be an ASR permit required for Box 3. And Box 4 is there's one permit that addresses the operation of everything. It's going to be -- this permit here. The final permit. The permit that gives folks the permission to deliver the water and start using ASR. It will have operation standards for treatment. It will -- like how often do you inspect the facility, what needs to be done, what needs to happen for the inspections. It's going to have requirements for the operation of the recharge wells and the infiltration basins. And the reason there are multi-colors here is that what is blue or, I guess, teal, this is what traditionally is a Water Quality issue, something that our 6th floor does. And what's beige is what is something that traditionally the 5th floor UIC group does.</td>
</tr>
<tr>
<td>4. 1 characterized.</td>
</tr>
<tr>
<td>2. And then there needs to be a work plan for aquifer quality characterization. This is both in areal and vertical extent, what the quality of the water is. And based on that, there's going to be a communication between different parts of DEQ to determine the level to which the raw water needs to be treated prior to delivery to the subsurface. And that's the dark orange one. These are the initial steps. These are the new steps. These are things that we don't already have in our rules. We do not. And then this is now Box 1 for the treatment. The box numbers correspond to the previous figure. We have for the Treatment Plant Construction Permit, we have submittal of an engineering report, we have submittal of engineering plant construction permit application, pilot testing of the ASR treatment plant just to make sure that the treatment unit's equipment, they treat the water the way they are supposed to. And then next, Permit for Management of the Treatment Residual. And we already have both OPDES Storage and UIC options available in the rules for them. Box 2, the OPDES, as we talked about, we</td>
</tr>
<tr>
<td>6. 1 already have a system for that.</td>
</tr>
<tr>
<td>2. Box 3, Submittal of the Construction Permit Application for ASR Water Delivery, Aquifer Modeling and Pilot Testing. And Box 4, the last one, is the ASR Operating Permit Application. And here you can see, during this seven-step process, where you start and where you end. And some of the steps can be taken care of contemporaneously. And we developed this — Stephen really wanted this. So we did this for him — just for you to see where you go. Okay. This is it. So if you have any questions, our team is here to entertain them. Thank you. CHAIRMAN DUANE WINEGARDNER. Are there any discussion topics? Any questions? We would like to invite the board members to come up. MR. MARK HILDEBRAND: Duane, this is Mark Hildebrand. I've just got one comment, just to let everybody know that our rulemaking timeline is going to be the exact same as our IPR. So we're planning on bringing some draft rules for you all to look at in September, and then having our final ones ready for</td>
</tr>
</tbody>
</table>

** LOWERY & ASSOCIATES, INC. **

(405) 319-9990
<table>
<thead>
<tr>
<th>Department of Environment Quality 4/25/2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 you all to vote on in January of '18. just FYI. Thank you.</td>
</tr>
<tr>
<td>3 MR. BRIAN DUZAN: I do have kind of a question. You had talked about that this would require a separate plant, similar to the drinking water and the waste water. Is that going to be cost prohibitive? I mean, you said Wichita does it. 8 But Wichita's a major city. And most of the cities in Oklahoma that have this are kind of Western Oklahoma 10 that are going to have the financial ability to go through this process? 12 MR. SABA TAHMASSEBI: Well, this is — this is not like a cheap solution for everyone. It's not. 14 Like you talk about Wichita, and Wichita is a $70 million capital investment project. And then the thought is that if city planners are planning on bringing in industry, they are planning on growing, they need to have some solutions in their toolbox of what they can do to provide water security. This is something that they can do. It's not for everyone. And then the reason it is justified to treat the water prior to its delivery is that Oklahoma has tremendous groundwater resources, very high quality. And we cannot, as a state, we cannot accept a risk of contaminating them. Because, once you do that, then</td>
</tr>
<tr>
<td>1 you're stuck with a contaminated aquifer that's going to persist for years. 3 So we need to make sure that the water is treated properly and it is delivered properly and everything is done right. So if a community can't afford it, then there are other tools they can look at. I mean, this is not for everyone. 8 MR. BRIAN DUZAN: Okay. Thank you. 9 MR. SABA TAHMASSEBI: But then I might also say that this is for drinking water. Right now at the Blaine Gypsum Aquifer in the southwest corner of Oklahoma a pilot ASR project has been going on since the 1980s. And that aquifer is not used for drinking water, it is used for agricultural purposes. 13 In fact, if there is an aquifer that has marginal quality water and then people want to use it for agriculture, then the level of treatment will be different. The idea is to not to compromise the quality of the groundwater. So depending on what use it is, what designated use it is, then the treatment and the costs and everything will differ. 22 MS. SHELLIE R. CHARD: And Brian, I would just add to that, it is something that we're starting to see more and more across the country, and that is being. You know, fit for use, treat for purpose. You</td>
</tr>
<tr>
<td>1 know, depending on where you are, they phrase it differently. But, basically, let's stop treating everything to drinking water standards and treat it for the intended use or existing water quality or. you know, some of those kinds of things. 6 Obviously, we would not want to do, you know, treating to a marginal quality and inject into a drinking water groundwater use area. But the marginal quality waters, you know, we do have some other options. 11 And even on the — we look at potable reuse. 12 We have all kinds of non-potable reuse options and where we can treat to that purpose, as opposed to having to treat everything to drinking water standards. But I think we're going to see more and more of that as we move forward. 17 CHAIRMAN DUANE WINEGARDNER: Thank you. 18 Well, I believe we have a quorum now. So I will call this meeting to order. And it is about 3:10 or thereabouts. 21 MS. SHELLIE R. CHARD: 3:13. 22 CHAIRMAN DUANE WINEGARDNER: Okay. And this regular meeting of the Water Quality Management Advisory Council was called in accordance with the Open Meeting Act.</td>
</tr>
</tbody>
</table>

** LOWERY & ASSOCIATES, INC. **

(405) 319-9990
Richard has been around a long time. So I
know you may have seen him or met him, as there have
been other rules presented over the years. But he
will be the person that you will most likely be
interacting with when we are addressing the private
sewage, private water, dealing with septage haulers,
all of those kinds of programs. And so I wanted to
make sure you all had a chance to meet Richard, if you
hadn’t already.

You may have noticed one of our long-time
members of the Council is not present today and he was
not listed as absent either. That is Mike Paque.
He was confirmed by the Senate this morning, taking a
seat on the Environmental Quality Board. So he will
be attending some of the Council meetings, he said,
just to kind of stay in tune with everything happening
and then be an advocate for this Council with the
Board as rulemaking moves through that process.

So I was looking. And with Mike vacating his
spot today and having a vacant position, the Speaker
of the House appointment, and then several of you are
currently in expired terms and have not been
reappointed, we have six of the 12 positions either
vacant or expired.

We are working with the Governor’s Office and
they have indicated probably in June is when they will
do all of their appointments that do not require
Senate confirmation.

The Speaker of the House, we’ve been told,
yes, we know. So we wait until they provide us with
an appointment.

And we also are in communication with the
Senate Pro Temp to try and have all of our positions
filled. And it makes it not quite so stressful when
we have a potential of 12 in order to have seven here.
So that’s something you know, we’re going to be, you
know, working with the officials to get appointments
made as soon as possible.

So, hopefully, by our next meeting, you will
have new friends around the table. So we’ll see how
the process plays out and how quickly. I know some of
you have asked what do I do and what does this mean.
And you serve until you’re notified otherwise. We’ve
had some positions be expired as long as three or four
years and then the person be reappointed. So we just
kind of keep going. And so, you’re still with us
until there is something that changes that.

So that’s going to be something we’ll kind of
see how things unfold over the next few weeks or few
months.

** LOWERY & ASSOCIATES, INC. **
(405) 319-9990
We've had several legislative actions this session that have related to water, primarily water reuse arena. One of the bills that is going to be important for oil and gas water reuse, Senate Bill 743, that addresses the ownership of the produced water and it also allows for compensation and how that would work when we're dealing with oil and gas exploration and production.

We also had a bill, Senate Bill 287, which has gone to the Governor for signature. This allows the Oklahoma Corporation Commission to seek authority to issue NPDES permits for oil and gas exploration and production. Where we see that primarily is the construction permitting related to oil and gas exploration and production. As it is now, EPA must issue those permits and then DEQ is required to issue the 401 certification that water quality standards are being met. Under this bill, it clears the way for the Corporation Commission to begin the process of issuing those permits and, in which case, they would do the certification.

The Department of Agriculture went through that just a few years ago. So Corp Comm would be the last piece of the water—Waste Water Programs to be delegated to the state.

We also have an oil bill—potentially House Bill 1485. That is—right now is also an oil and gas-related water bill. But we're hoping to have a floor substitute introduced that will allow us to do more design-build construction projects for waste water treatment facilities. We have the language already in the drinking water construction standards, but on the waste water side you had to have a construction permit before you could even go out to bid. This allows for the bidding and everything to occur, then to get construction permits so that we have the ability to phase permits so that you can design, build as you go and get those permits via through a permit amendment or modification, rather than having to do all of that upfront. We have that for drinking water, so this is making the waste water side mirror that.

Also in that bill allows us to do ADR that you just heard—talked about today, to do pilot projects. Right now there's nothing that says you can't do it, but there's nothing that gives us the authority to do it either. So this language if it gets introduced, would allow for pilot projects and allow us to be able to go down that road and get some of those projects started, that we have had some inquiries of the facilities that would like to do some projects. And we're already seeing, as Saba said, some of those in agriculture areas, marginal quality waters. A couple of the Tribes are looking at some projects. And so we want to get the language in so that we can work with some of our cities that are wanting to pursue those projects.

So we'll see what happens. I think we have until Friday for that language to get inserted. If not, we'll try again next year.

As most of you know, President Trump has been issuing multiple executive orders that affect the environment or EPA regulation. Something you know, that we're seeing kind of as a mantra for EPA is they're going to have a back-to-the-basics agenda, as opposed to what we've seen in the last few years. Which is kind of drinking from a fire hose. As much that could come out was coming out and trying figure out what to do about it.

So really, they're looking at three big things as what they're looking at. It's protecting the environment, engaging with partners, whether they be states, businesses, municipalities, stakeholders in general, and then also to come up with sensible regulations for economic growth. So that's kind of what EPA's focus and what Administrator Pruitt is talking about.

Right now we've heard a lot of talk about infrastructure financing. We've seen some positive things happening as far as SRF funding, Brownfield, Superfund. Still what we're seeing, a little scarily on the USDA development funding and some of the other funding sources that kind of don't have as much of a banner waving, hello, we do infrastructure. But that's something that we're all working on.

We have heard through the grapevine two or three different ways that it looks like we will have a continuing resolution by the end of the week so there's not a federal government shutdown. Who knows how real that is until it happens. They're either going to vote to do it or they're not. So we're hopeful that we're not going to see that shutdown. That we will see a continuing resolution that goes through the end of the federal fiscal year. If it does, that means very little cuts, just going to be off-the-top rescission, which is less than 1 percent for the state Tribal funding grants and for SRF.

And then there will be the work on what the...
next budget will look like. And, you know, I think
when you see the list of things that the President has
proposed that should be zeroed out, you’re not likely
to see Congress agree that all Great Lakes funding
initiative should go to zero. There are too many
House and Senate members that that is very important
to them. It’s unlikely to see the Chesapeake Bay
initiative go to zero, because so many of those states
and municipalities and industries have spent a lot of
money to advance to where they are now. They don’t
want it to go back.

I suspect we are likely to see the
U.S.-Mexico border initiatives, you know, I just, you
know, maybe it’s watching the national news, I don’t
see those getting a lot of funding. We’ll see. But
it’s all— everybody is speculating. And I guess
here in a few months we will figure out who was the best
at speculating or if anybody was or if we have another
continuing resolution or what we have.

So I think we don’t really know much about
the federal budget, but I guess we’re going to find
out here pretty soon how willing at least they are to
compromise for the current federal fiscal year.
On the state fiscal year budget for next
year, we don’t know. We’ve been asked a lot of
questions. We, you know, answer those questions.
What does DEQ do? What’s important? What could you
cut? How much have you been cut before? How much is
every— you know, kind of start looking at all of
those budget things.

Again, you listen to the rumor mill and watch
all the news, life as we know it may no longer exist
or it may be exactly the same with pretty much no
changes. And so I’m guessing reality is somewhere in
between.

But the Legislature does have to pass a
budget before they adjourn the last Friday in May,
unless the Governor calls a special session, in which
case then that would be some time after the second
week in June.

So we’re kind of in a wait-and-see mode on
the state budget, but that’s not that unusual. It’s
usually some time in May when we actually start seeing
real budget numbers and get a feel for what it’s
actually going to look like. So that will be
happening fairly quickly.

One last thing that I will just share with
you. The Water Quality Staff has been working on
several national projects through the Environmental
Council of States, which is basically an organization

that is Scott Thompson and his counterparts in other
states of the environmental agency directors.

With all of the attention on lead in drinking
water, the Flint, Michigan situation, there is a lot
of focus on, you know, knee jerk reactions. what are
the big things that, oh, my gosh, there’s lead in
drinking water, everybody should shift all of their
resources to addressing that. Oh, no, there is some
other problem, we should shift all of our resources to
dealing with that, rather than looking at kind of a
bigger picture.

And one of the things that ECOS has done, you
know, we need to look at real measurements and look at
what’s actually happening not today but over the last
five years, ten years, some period of time.

So one of the projects that Oklahoma DEQ was
working on was blood lead levels in children. There
was a lot of attention on what cities are monitoring,
how often are they monitoring, what ZIP codes are
being looked at. ‘We look at childrens’ blood lead
levels, how does that overlap with the drinking water
systems.

And those of us in this business came to the
conclusion pretty quickly that old houses with
lead-based paint were, you know, contributing a lot
more than the drinking water systems. And so when we
looked across the country, we found that blood-lead
levels in children has been steadily declining since
the ’70s.

Every now and then you might see a little bit
of a blip, but there is a definite downward trend.
But the CDC has been routinely dropping the level that
they consider appropriate or acceptable. And they
say, you know, it should be zero. So any test is
harmful and it’s bad. And when you start seeing
different statistics reported, the statistics that
they’re using, they’re comparing against different
standards. And so it kind of made it look like there
was this huge growing problem of lead levels in
children. And what we have found is really we’ve had
a steady decline. And that now that the level has
dropped to five, even though the Safe Drinking Water
Act standard is ten, it’s making things a little bit
interesting and you have funding federal agencies at
battle of what standard is correct.

But even with that, we’re seeing the levels
well below five. So when the level drops in another
year or two to three and a half. I think we still will
see a steady decline.

So that was kind of good news that we were
1 able to participate in that study and do a lot of work
2 kind of graphing and mapping out some of those details
3 and being able to show, you know, what managing water
4 and waste water really is all about.
5 So I have thrown a lot of information at you
6 following a lot of information on Water Reuse. So I
7 will stop with that and ask if anybody has any
8 questions or comments.
9 CHAIRMAN DUANE WINEGARDNER: Do you have a
10 crystal ball?
11 MS. SHELLIE R. CHARD: I have a Magic 8 Ball.
12 Does that count?
13 CHAIRMAN DUANE WINEGARDNER: That will count.
14 I think in this time of transition, that's
15 probably the best. I don't know. I don't know what
16 to expect.
17 Are there any questions for Shellie?
18 Are there any items of New Business which we
19 need to discuss or hear? Any concerns?
20 Okay. Well, then the next meeting that we
21 have will be July 25th at 2:00 o'clock in this room.
22 And we look forward to seeing you all then.
23 Is there anything else that needs to be
24 brought up one last time?
25 Okay. I will declare this meeting to be

2 adjourned.
3 MR. MARK MATHESON: I'll make a motion to
4 adjourn.
5 MR. BRIAN DUZAN: Second.
6 MS. QUIANA FIELDS: Mr. Carr?
7 MR. ROBERT CARR: Yes.
8 MS. QUIANA FIELDS: Mr. Duzan?
9 MR. BRIAN DUZAN: Yes.
10 MS. QUIANA FIELDS: Mr. Matheson?
11 MR. MARK MATHESON: Yes.
12 MS. QUIANA FIELDS: Mr. Nelson?
13 MR. JON NELSON: Yes.
14 MS. QUIANA FIELDS: Mr. Sowers?
15 MR. STEVE SOWERS: Yes.
16 MS. QUIANA FIELDS: Ms. Wells?
17 MS. DEBBIE WELLS: Yes.
18 MS. QUIANA FIELDS: Mr. Winegardner?
19 CHAIRMAN DUANE WINEGARDNER: Yes.
20 See. I knew if I raised this thing once I
21 would get a motion.
22 ADJOURNMENT - 3:30 P.M.
<table>
<thead>
<tr>
<th>NAME</th>
<th>AFFILIATION</th>
<th>Address and/or Phone and/or E-Mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mark Hildebrand</td>
<td>DEQ</td>
<td><a href="mailto:mark.hildebrand@deq.ok.gov">mark.hildebrand@deq.ok.gov</a></td>
</tr>
<tr>
<td>Shellee Chad</td>
<td>DEQ</td>
<td></td>
</tr>
<tr>
<td>Traci Kelly</td>
<td>DEQ</td>
<td><a href="mailto:traci.kelly@deq.ok.gov">traci.kelly@deq.ok.gov</a></td>
</tr>
<tr>
<td>Jeff Everett</td>
<td>OGE</td>
<td><a href="mailto:evrettjd@oge.com">evrettjd@oge.com</a></td>
</tr>
<tr>
<td>Brian Dugar</td>
<td>GCT</td>
<td></td>
</tr>
<tr>
<td>Bud Grummd</td>
<td>EFO</td>
<td></td>
</tr>
<tr>
<td>Rob Singleton</td>
<td>JBAI</td>
<td></td>
</tr>
<tr>
<td>Steve Landers</td>
<td>GP</td>
<td></td>
</tr>
<tr>
<td>Robert Carr</td>
<td>WOMAC</td>
<td></td>
</tr>
<tr>
<td>Quiana Fields</td>
<td>DEQ</td>
<td></td>
</tr>
<tr>
<td>Uzzana Graves</td>
<td>Casper</td>
<td></td>
</tr>
<tr>
<td>Terry Lynam</td>
<td>DEQ</td>
<td><a href="mailto:terry.lynam@deq.ok.gov">terry.lynam@deq.ok.gov</a></td>
</tr>
<tr>
<td>Mike Mather</td>
<td>Contactor</td>
<td><a href="mailto:mike.mather@cherry.com">mike.mather@cherry.com</a></td>
</tr>
<tr>
<td>Sara Gibson</td>
<td>OWEB</td>
<td></td>
</tr>
<tr>
<td>Jennifer Boyle</td>
<td>DEQ</td>
<td></td>
</tr>
<tr>
<td>Travis Couch</td>
<td>DEQ</td>
<td></td>
</tr>
<tr>
<td>Lee Darrow</td>
<td>DEQ</td>
<td></td>
</tr>
<tr>
<td>Hillary Young</td>
<td>DEQ</td>
<td><a href="mailto:hillary.young@deq.ok.gov">hillary.young@deq.ok.gov</a></td>
</tr>
<tr>
<td>Richard McDaniel</td>
<td>DEQ</td>
<td><a href="mailto:richard.mcdaniel@deq.ok.gov">richard.mcdaniel@deq.ok.gov</a></td>
</tr>
<tr>
<td>Ken Hansel</td>
<td>City of Norman</td>
<td><a href="mailto:ken.hansel@cityofnormanok.gov">ken.hansel@cityofnormanok.gov</a></td>
</tr>
<tr>
<td>Kelly Dixon</td>
<td>DEQ</td>
<td><a href="mailto:kelly.dixon@deq.ok.gov">kelly.dixon@deq.ok.gov</a></td>
</tr>
<tr>
<td>Steven 10/13/17</td>
<td>DEQ</td>
<td></td>
</tr>
<tr>
<td>Chris Armstrong</td>
<td>DEQ</td>
<td><a href="mailto:chris.armstrong@deq.ok.gov">chris.armstrong@deq.ok.gov</a></td>
</tr>
</tbody>
</table>
CHECK BOX TO COMMENT

NAME and/or AFFILIATION

Address and/or Phone and/or E-Mail

Martha Finster  DEQ
Sarah Penn  DEQ
Mark Thompson  DEQ
Lloyd Knight  DEQ
Michelle Wyman  DEQ
Greg Carr  DEQ
Kinsley Money  TPF
Debbie Welke  DEQ
Jon Nelson  WAMAS

Kinsley@4uOKcs.com