

STATE OF LOUISIANA
DEPARTMENT OF NATURAL RESOURCES
OFFICE OF CONSERVATION

IN RE:
H.C. DREW ESTATE, represented
by its Trustees, Louie D. Barbe, III
and C.W. Shaddock

VERSUS DOCKET NO.: ENV-L-2022-01

NEUMIN PRODUCTION COMPANY
and
STOKES & SPIEHLER, INC.

DOCKET NO. 2019-4925, DIV. "F"
14TH JUDICIAL COURT,
PARISH OF CALCASIEU
(JUDGE DERRICK KEE)

* * * * *

TRANSCRIPT OF THE PUBLIC HEARING
REPORTED IN THE ABOVE ENTITLED AND NUMBERED CAUSE
BY KARLA H. MAYERS, CERTIFIED COURT REPORTER FOR
THE STATE OF LOUISIANA.

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REPORTED VIA VIDEOCONFERENCE
COMMENCING AT 8:30 A.M. ON MARCH 31, 2022

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APPEARANCES

MR. THOMAS E. BALHOFF, HEARING OFFICER

LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE
OF CONSERVATION, PANEL:

GARY SNELGROVE
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ALSO PRESENT:

PATRICK RITCHIE
BRANDON M. VERRET
SHAWN WIGGINS
TIMOTHY SEILER
DAVID ANGLE
ANGELA LEVERT

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25

INDEX

Page

EXAMINATION OF PATRICK RITCHIE, PWS, BY:
MR. JOHN C. FUNDERBURK 32
QUESTIONS BY PANEL 88
REPORTER'S CERTIFICATE 97

EXHIBITS

(EXHIBITS RETAINED BY COUNSEL)

1 (The following proceedings took place before
2 THOMAS E. BALHOFF, HEARING OFFICER, on the
3 31st day of March, 2022.)

4 THE HEARING OFFICER:

5 Good morning, everybody. We're on
6 the record. This is a public hearing in the
7 case of, "H.C. Drew Estates, represented by
8 its Trustees, Louie D. Barbe, III, and
9 C.W. Shaddock vs. Neumin Production Company
10 and Stokes & Spiehler, Incorporated," Docket
11 No. 2019-4925, Division F, 14th Judicial
12 District Court, Parish of Calcasieu,
13 Judge Derrick Kee, K-e-e. For purposes of
14 this public hearing at the Office of
15 Conservation, this is Docket No.
16 ENV-L-2022-01.

17 Before I begin, I would like to do a
18 roll call so we understand who is actually on
19 this -- on this proceeding. I'm looking at a
20 list. John Funderburk, you are on this call.
21 Is that correct?

22 MR. FUNDERBURK:

23 Yes, Your Honor.

24 THE HEARING OFFICER:

25 Who is Brandon Verret? Is

1 Brandon Verret there? Brandon?

2 MR. VERRET:

3 Yes. I'm just observing. I'm
4 involved in -- hold on one second.

5 THE HEARING OFFICER:

6 Can you identify yourself?

7 MR. VERRET:

8 Brandon Verret. And I'm giving you
9 my information right now. I just got thrown
10 on this last minute; so bear with me.

11 THE HEARING OFFICER:

12 Are you connected with one of the
13 parties, Mr. Verret?

14 MR. VERRET:

15 Yes, not one of the parties
16 presenting today. My computer is having
17 issues at the moment. Just give me a second.
18 Can you come back to me?

19 THE HEARING OFFICER:

20 Yes, I will. Okay. Who is Call-in
21 User No. 2? Is there somebody on the phone,
22 Call-in User 2?

23 (NO RESPONSE)

24 THE HEARING OFFICER:

25 Okay. Let me keep going.

1 Claire Zeringue? Who are you with,
2 Ms. Zeringue?

3 MS. ZERINGUE:

4 I'm with Neumin Production Company.

5 THE HEARING OFFICER:

6 Okay. Is Mr. Angle on the phone --
7 on the feed?

8 MR. ANGLE:

9 Yes. Good morning. Dave Angle here.

10 THE HEARING OFFICER:

11 Good morning. Mr. Ritchie, I know
12 you're going to testify shortly. You're on --
13 you're on the feed?

14 MR. FUNDERBURK:

15 Yes, sir, he's sitting right next to
16 me.

17 THE HEARING OFFICER:

18 Okay. That's fine. Shawn Wiggins?
19 Who is Mr. Wiggins?

20 MR. WIGGINS:

21 Yeah. Hi. This is Shawn Wiggins
22 with ERM. Good morning.

23 THE HEARING OFFICER:

24 Okay. And Mr. Timothy Seiler -- is
25 that correct -- with DEQ?

1 MR. SEILER:

2 That would be "Seiler" with DEQ, yes,
3 sir.

4 THE HEARING OFFICER:

5 Okay. "Seiler." I apologize.

6 MR. SEILER:

7 No problem.

8 THE HEARING OFFICER:

9 And, Ms. Tyler Kostal, are you on the
10 feed?

11 MS. KOSTAL:

12 Yes, I am. Good morning.

13 THE HEARING OFFICER:

14 Good morning.

15 MS. KOSTAL:

16 Neumin.

17 THE HEARING OFFICER:

18 Okay. Is there anybody else on this
19 Zoom call that I have not called their name?

20 MS. LEVERT:

21 This is Angela Levert, and I am here
22 on behalf of Neumin Company as well.

23 THE HEARING OFFICER:

24 Okay. Fine. Thank you. Okay. I'm
25 ready to go. Okay. Let's start. For

1 purposes of this public hearing, as I said,
2 this is Docket No. ENV-L-2022-01. As I
3 appreciate it, H.C. Drew Estates, the
4 Plaintiff, filed a Petition for Damages on
5 October 18, 2019, seeking damages and
6 remediation for environmental damage to
7 certain land owned by the plaintiff. I'm
8 going to refer to part of that petition to set
9 forth the controversy, or dispute, between the
10 parties.

11 Paragraph 3 of the petition states
12 that the land is located in Section 15,
13 Town -- Township 10, South Range 11, west of
14 Calcasieu Parish, located in North Choupique,
15 spelled C-h-o-u --

16 (TECHNICAL DIFFICULTY)

17 THE HEARING OFFICER:

18 I'm sorry? Hello? Okay. I'm going
19 to continue. North Choupique Oil and Gas
20 Field. Paragraph 6 of the petition states
21 that plaintiff entered into a mineral lease
22 with Defendant Neumin Production Company on or
23 about August 23, 2000. That lease is attached
24 to the petition as Exhibit A.

25 Paragraph 7 of the petition states

1 the plaintiff entered into a road service
2 servitude agreement with Defendant --
3 Defendant Neumin Production Company on
4 December 1, 2000. That servitude agreement is
5 attached as Exhibit B to the petition.

6 Paragraph 8 of the petition states
7 that Defendant Neumin Production Company, in
8 concert with others, conducted oil and gas
9 exploration and production activities on
10 Plaintiff's property.

11 Paragraph 11 of the petition states
12 that Defendants conducted their oil and gas
13 operations pursuant to the contracts just
14 referred to.

15 Paragraph 13 of the petition states
16 that the well that had been drilled was
17 plugged and abandoned, and on September 15,
18 testing -- I think this was -- I think this
19 was in 2015 -- testing performed on
20 Plaintiff's property by environmental experts
21 revealed excessive salt, petroleum
22 hydrocarbons, and other contaminants in the
23 soil and groundwater in close proximity to the
24 facilities operated by Defendants.

25 Paragraph 16 of the petition states

1 that Plaintiffs are legally responsible --
2 that Defendants are legally responsible for
3 any and all compensatory damages associated
4 with the damage to Plaintiff's property.

5 Paragraph 21 of the petition states
6 that the -- that the environmental damage to
7 Plaintiff's property constitutes a breach of
8 express and implied obligations in the
9 agreements referred to, and the Defendants
10 breached these obligations by failing to
11 promptly and fully restore the property and
12 failing to promptly remedy the damage caused
13 to the property.

14 Paragraph 34 and 35 state that in
15 addition to Defendants' breach of their
16 private law duties owed to the plaintiff, the
17 Defendants have violated regulatory laws of
18 the State of Louisiana and particularly
19 Act 312 of 2006, which is supplemental to
20 Plaintiff's private law causes of action.
21 Quoting in part from Paragraph 35 of the
22 Petition, "The Plaintiff is also entitled to
23 and does hereby assert as an additional cause
24 of action for cleanup to regulatory standards
25 under Act 312, particularly that part enrolled

1 at Louisiana Revised Statute 30:29."

2 There's also a First Supplemental and
3 Amended Petition of Damages served on
4 December 16, 2019. Paragraph 24A states in
5 part, and I quote, Defendant has caused
6 environmental damage as defined in Louisiana
7 Revised Statute 30:29(I).

8 On October 14, 2021, Neumin
9 Production Company made a limited admission,
10 and pursuant to Louisiana Revised Statute
11 30:29, they invoked the provisions set forth
12 for limited admissions in Louisiana Code of
13 Civil Procedure, Article 1563. That limited
14 admission describes the property for which the
15 limited admission is made. And Exhibit 1
16 attached to the limited admission identifies
17 the property for which the limited admission
18 is made.

19 Just for purposes of this statement,
20 limited admissions allow a responsible party
21 to designate a specific piece of property, and
22 that's what -- and that was done -- done in
23 this case.

24 On October 25, 2021, Judge Kee signed
25 an order, which in part states, "Neumin shall

1 develop a plan for evaluation or remediation
2 of environmental damage as provided in
3 Louisiana Revised Statute 30:29(C)." And
4 continuing to quote, "The Louisiana Department
5 of Natural Resources shall conduct a public
6 hearing regarding the Neumin plan and file a
7 final plan that evaluates or remediates the
8 property pursuant to deadlines and procedures
9 set forth in Louisiana Revised Statute 30:29."

10 Pursuant to a Motion for Extension
11 of Time, Judge Kee signed an order on
12 February 8, 2022, extending the deadline to
13 hold a public hearing so that the hearing
14 would be timely if held on or before
15 April 8, 2022.

16 The landowner H.C. Real Estate,
17 through their counsel, on February 14, 2022,
18 informed the Commissioner, Richard Ieyoub, and
19 Gary Snelgrove, Director of Environmental
20 Division at the Office of Conservation and who
21 is one of the panelists for this hearing, that
22 the landowner did not intend to participate in
23 the public hearing but did submit comments on
24 that date, February 14, 2022, by Brent Bray of
25 RBB Consulting, LLC, and they also submitted

1 an affidavit from Louie D. Barbe, III. The
2 panel has been furnished with those comments,
3 and that affidavit.

4 On March 14, the landowner, H.C. Drew
5 Estate, through counsel, on March 14, 2022,
6 filed a motion to strike Neumin Production
7 Company Limited' admission -- limited
8 admission plan and to dismiss this limited
9 admission hearing. On March 15, 2022, the
10 hearing officer, with concurrence of the
11 panel, issued reasons which, in -- which, in
12 essence, denied that motion.

13 This public hearing is being held
14 pursuant to Louisiana Revised Statute
15 30:29(C)(1) and (C)(2)(A), which is part of
16 what is commonly referred to as Act 312. This
17 hearing is convened timely pursuant to the
18 extension of time.

19 Within 60 days of the conclusion of
20 this hearing, using and applying applicable
21 regulatory standards, the Department will
22 approve or structure a final plan -- excuse
23 me. They will approve or structure a
24 preliminary plan, because it's my
25 understanding that other agencies will be

1 involved, and there will be a review of the
2 preliminary plan, and there are time limits
3 set forth in the statute for what takes place
4 when it comes back to DNR, or to the Office of
5 Conservation. And there's some more general
6 comments here.

7 That -- that pretty much sets forth
8 the procedure. So we're here for a public
9 hearing because a lawsuit was filed. That
10 lawsuit triggered certain procedures. Code of
11 Civil Procedure 1563 gave Neumin the right to
12 make a limited admission. They made that
13 limited admission.

14 The judge has ordered this hearing
15 take place. Just briefly, when the motion to
16 dismiss by the landowner was filed, this
17 agency did not have the authority to dismiss
18 the action. The -- that party would have to
19 go -- it's the panel's understanding that
20 party would have to go back to the Court.
21 That was not done. So we're proceeding.

22 So, ultimately, in accordance with a
23 time schedule set forth in the statute, a
24 most -- a preliminary most feasible plan and
25 written -- written reasons in support thereof

1 will be put together. And if taken into
2 consideration with comments from other
3 agencies, there will be a final plan, which
4 will be filed with the Court, which, of
5 course -- which retains oversight and
6 jurisdiction of this entire process.

7 The decision-makers to whom will be
8 present for evidence here -- and I know -- let
9 me make a comment about -- about the
10 landowner. The landowner has advised the
11 Office of Conservation that they are declining
12 to participate in this proceeding, as
13 Mr. Brumby sent a letter to that effect.

14 The panel invited the landowner to
15 file their comments and objections, which --
16 which they did. I think the -- I think the
17 date that came in was February 14, 2022. I do
18 not know if the landowner is on this Zoom
19 proceeding now, but, if they are, at
20 appropriate points in time, they are
21 invited -- they're going to be invited to
22 question witnesses. The panel's belief is,
23 they want this to be a full opportunity for
24 parties to make their position known before
25 they craft a final plan. So some of my

1 comments, when I talk about adverse parties,
2 obviously, the landowner has declined to
3 participate. So we'll see what happens over
4 the next day or two.

5 The decision-makers, as you know, are
6 a panel of three Office of Conservation
7 employees and scientists. Their backgrounds
8 have been provided to -- to everyone, and you
9 know what their backgrounds are. So, you
10 know, my vernacular, that's your jury.
11 They're going to be the decision-makers.
12 Their charge is to listen, to consider and
13 review the evidence submitted here in this
14 hearing as to the Neumin plan, based on the
15 evidence, to approve and structure a plan,
16 which they determine to be the most feasible
17 plan to protect the health, safety, and
18 welfare of the people of this state.

19 This hearing does not involve private
20 rights either by contract or in law. As I --
21 as I understand the landowner's position as to
22 why its not participating, it has contracts
23 with the Defendant Neumin, and so this panel
24 is not here to decide issues of private rights
25 in contract or in law.

1 And, also, in that connection, refer
2 to a Supreme Court decision, "State vs.
3 Louisiana Land and Exploration Company."
4 There's been several decisions that emanated
5 from the Supreme Court in that -- in that
6 litigation, but the one I'm going to refer to
7 is 110 So. 3d 1038, decided in 2013, where the
8 Supreme Court reviewed the act and made clear
9 that the act is not about private rights.

10 This hearing concerns remediation in
11 accordance with what is referred to as the
12 "applicable state standards," or "regulatory
13 standards." The Supreme Court decision which
14 I referred to says, "By mandating that
15 applicable standards shall be used and applied
16 in approving or structuring the most feasible
17 plan to evaluate or remediate the
18 environmental damage." The Legislature has
19 not limited the Department to any one standard
20 in its development of the most feasible plan,
21 and the Supreme Court cited Louisiana Revised
22 Statute 30:29(C)(3), again, the same -- same
23 litigation I referred to earlier.

24 The standards, as, I think, the
25 parties here know, that are typically looked

1 to, first and foremost, Statewide Order 29-B,
2 which is an Office of Conservation regulation
3 and standards in Chapter 3; secondly, RECAP,
4 the LDEQ regulation; also, if necessary,
5 Chapter 14 of LDEQ's radiation regulations for
6 NORM.

7 The panel -- the panel includes
8 Mr. Gary Snelgrove, Ms. Jamie Love,
9 Mr. Stephen Olivier. You have their
10 backgrounds; so you know what their -- you
11 know what their technical backgrounds are.
12 You know who you can direct your comments to.
13 They have -- some of them have -- or all of
14 them have different experiences, but they've
15 all been involved in reviewing plans like
16 this.

17 Okay. Just a couple of comments
18 about my role. It's going to be a little bit
19 different in this case probably. I'm not a
20 decision-maker. I don't consult with these
21 panelists during this hearing, at breaks, or
22 any other point. I don't talk to them about
23 what I think about the witnesses. That's
24 going to be their job. After this is over
25 with, they are going to be the ones that

1 arrive at a decision, without speaking to me
2 about the evidence or the witnesses.

3 In the past, I have been involved
4 in -- on a number of occasions, they have
5 involved me much like a law clerk. They ask
6 me to come in. They tell me what their
7 decision is. They ask me to write a draft for
8 them. They -- in all cases that I've been
9 involved in the past, they take that draft,
10 they edit that draft, and that -- the written
11 reasons and the plan is their plan. I'm
12 simply sort of a scribe to help them put it
13 together by looking at the transcript and
14 looking at the exhibits that they direct me
15 to.

16 Again, I said this is a little bit
17 different since we are not going to have
18 somebody cross-examining as one -- cases I've
19 been involved in the past. Typically, if
20 there's a dispute about evidence coming in and
21 there's a -- there's a basis the evidence
22 should not come in for some -- some rule of
23 evidence, I've been asked to make rulings.
24 Obviously, we don't have the other side here.
25 They declined to participate. So my role, as

1 I appreciate it right now, may be much less
2 than it has been in the past, and this may be,
3 for me, much more cut and dry. But to the
4 extent that there are issues, I will try to be
5 a person who will resolve the -- the
6 procedural issues, not the substance.

7 We fully appreciate this is not the
8 last step along the way. Obviously, after
9 this, this -- if a plan is craft -- assuming a
10 plan is crafted, it's going to -- it's going
11 to be filed with the Court, and other people
12 will just deal with it. This panel and myself
13 believe that the process is best served by
14 fairness, and I think that's what everyone
15 here is going to try to -- try to do.

16 Again, my roll will be more minimal
17 in this case if there's really not an adverse
18 party. I will tell you -- I've told others in
19 the past -- I do wear hearing aids. I'm
20 40 percent deaf in both ears. These are good
21 hearing aids, but sometimes I can't pick up
22 everything. And if I ask someone to repeat
23 themselves -- if I'm involved in the process,
24 I'm doing my best to try to listen in case
25 there's some need for a ruling. So just

1 appreciate that if I ask you to repeat
2 yourself, it's my problem, not yours.

3 Logistically, unless -- I realize
4 we've got -- today is going to be a short day.
5 We have Mr. Richards -- Ritchie. Mr. Angle is
6 going to, I appreciate it, be up Monday and
7 then Ms. Levert after that. So we may not
8 have a lengthy hearing like some of them in
9 the past. But, in general, my procedure has
10 been, and I'm going to ask everybody, we start
11 at 8:30 sharp.

12 So Monday we start at 8:30 sharp, and
13 unless one of the panelists, for some reason,
14 is not sitting here and ready to go, then
15 we're going to start at 8:30 sharp. We will
16 break at -- again, we may not go to noon
17 today, but if we have Monday, we'll break at
18 noon or as close as possible to noon depending
19 on the witness.

20 We will try to -- I'm not going to
21 break immediately in the middle of a question,
22 but we'll try to find a convenient time where
23 someone is questioning the witness so we can
24 break for lunch. Lunch breaks will be one
25 hour only. I know that doesn't give people a

1 lot of time, but one hour.

2 So, Monday, if we're going, we'll
3 have a one-hour break for lunch. We're going
4 to have 15-minute breaks in the morning,
5 15-minute breaks in the afternoon, if we
6 get -- if we get that far. We will finish at
7 4:30 sharp each day, if we go that long. It
8 sounds like we're not going to go that long
9 today. It's possible we may not go that long
10 Monday. But if, for some reason, we are at
11 4:30, we're going to break and continue on
12 Tuesday. The panel, in addition to what
13 they're doing here, they have their other work
14 going on. They're entitled to finish at 4:30.
15 I promised them for this hearing, and I've
16 promised them in the past, we're going to stop
17 at 4:30. Again, that may not be a problem in
18 this particular hearing.

19 The 15-minute break in the morning,
20 we'll try and go about an hour and a half,
21 typically break, say, at 10:00 or 10:15.
22 We'll go to noon, and in the afternoon, we'll
23 try to break about 2:45. Again, it may not --
24 these rules may not come into play in this
25 hearing.

1 I think that's all of my comments. I
2 think that's my only -- that's my opening
3 comments. And with that, unless somebody --
4 someone here on the panel, Mr. Snelgrove or
5 one of the -- Mr. Funderburk or anybody, has
6 any questions before we kick off, we're ready
7 for Mr. Ritchie.

8 MR. SNELGROVE:

9 No questions on our end.

10 THE COURT REPORTER:

11 Who was that that spoke?

12 THE HEARING OFFICER:

13 Okay. Now, I'm going to reposition
14 myself back away from the camera.

15 MR. FUNDERBURK:

16 Yeah. Mr. Balhoff?

17 THE HEARING OFFICER:

18 Yes.

19 MR. FUNDERBURK:

20 The Court Reporter here had just
21 asked who spoke, and I believe that was
22 Mr. Snelgrove. But I was just going to kind
23 of introduce her via video to everyone who
24 is -- who is on the screen. That is
25 Gary Snelgrove who is standing right there,

1 Jamie Love, who is in the middle there, and
2 Stephen Olivier, who is on the left side.

3 THE COURT REPORTER:

4 Thank you.

5 MR. FUNDERBURK:

6 Yes, ma'am. And, Mr. Balhoff, I also
7 had a couple of opening comments as well as
8 introduction of some exhibits while we're
9 getting this -- this hearing going so that
10 then we can get on to Mr. Ritchie. Would you
11 like me to do that at this time?

12 THE HEARING OFFICER:

13 No. You know, I forgot. I
14 apologize. I would like for you to introduce
15 whatever exhibits. I have your exhibit
16 list -- let's see. Okay. I know -- you know,
17 pursuant to what -- the schedule we put out, I
18 know you had given us a witness list. I know
19 the witness list includes three people,
20 Mr. Angle, Ms. Levert, and Mr. Ritchie.

21 And you've given us an exhibit list,
22 and I haven't empirically studied it, but
23 it's -- it's an exhibit list that includes 45
24 items on it. And so whatever you intend to
25 introduce at this point, why don't you go

1 ahead and do that before we start with the
2 witness.

3 MR. FUNDERBURK:

4 Yes, sir. Thank you very much. What
5 we would like to do as far as introducing the
6 exhibits at this point is we're -- we're
7 pretty much going to introduce all of them
8 right now. There's a couple that will come in
9 through Mr. Angle, and I'll try not to take
10 too much time as we go through this, as we do
11 have -- it's a total of 50 exhibits now that
12 we have, a supplemental list that was provided
13 as well last week.

14 So, first, I would like to offer,
15 file, and introduce Exhibits 1 and 2, which
16 are the site investigation plan that was filed
17 on November 10, 2021, and the supplement to
18 the site investigation plan of January 14,
19 2022.

20 THE HEARING OFFICER:

21 Okay. They're accepted.

22 MR. FUNDERBURK:

23 The next --

24 THE HEARING OFFICER:

25 You know, you can go through them one

1 at a time. I'm not going to -- I'll say it at
2 the end, but as far as I'm concerned, they're
3 all going to be accepted into evidence, but
4 keep going.

5 MR. FUNDERBURK:

6 Yes, sir. And so I'll try to make
7 this a little bit tighter than that. There
8 were then, following that -- Exhibit Nos. 3
9 through 11, were all some type of submissions
10 to the LDNR either by Neumin or by the
11 landowner, and it's also the court -- the
12 court records. The limited admission is
13 included in there as well and the motions from
14 the Court. So that's Exhibits 3 through 11,
15 and we would offer, file, and introduce those
16 into the record as well.

17 THE HEARING OFFICER:

18 They're accepted.

19 MR. FUNDERBURK:

20 Exhibits 12 through 32 are all public
21 notice and party notice exhibits, as I would
22 call them. They are the notices that went out
23 to the paper. They are the records of
24 certified mail going out to the parties, et
25 cetera. So we would offer, file, and

1 introduce Exhibits 12 through 32.

2 THE HEARING OFFICER:

3 They're accepted.

4 MR. FUNDERBURK:

5 And Exhibits 33 and 34 are the
6 request for a site visit by the LDNR, as well
7 as the minutes from the Commissioner's
8 Conference. We would offer, file, and
9 introduce those at this time, Exhibits 33 and
10 34.

11 THE HEARING OFFICER:

12 Accepted.

13 MR. FUNDERBURK:

14 And the remainder of the exhibits
15 that are on this list will be coming in
16 through the testimony of the various
17 witnesses.

18 THE HEARING OFFICER:

19 Okay. That's fine. Okay. Ready
20 with Mr. Ritchie?

21 MR. FUNDERBURK:

22 Okay. Would you like me to make
23 any -- any opening comments now? I was --

24 THE HEARING OFFICER:

25 You know, I didn't plan on it,

1 obviously, but it may be that that's useful to
2 the panel, because if you want to put it
3 together in some sort of context before we
4 start, that's fine.

5 MR. FUNDERBURK:

6 And it is. It's going to be very
7 brief, because, as we believe in all of these,
8 it's the scientists who are the ones who --
9 who matter here and not the lawyers. It's the
10 folks on the panel and the three folks who we
11 will have testifying here.

12 But the first thing I want to do,
13 Mr. Balhoff, is thank you for your service
14 here in handling this as the hearing officer.
15 I would like to thank the panel for being here
16 today and for working around some scheduling
17 issues that we had. We're very appreciative
18 of that, because it has certainly helped us
19 all be here and, I think, proceed very
20 efficiently with this. So we're going to get
21 to the testimony here very quickly.

22 Everybody on this panel has been out
23 to the site and has seen the site, so you know
24 what we're talking about. It is a relatively
25 small site, recent vintage, if you will. It

1 was an oil well from 2000 to 2015.

2 So, you know, we will be going
3 through the process a little bit out of our
4 normal order. Usually, I think that for the
5 ones we've had in the past, the full limited
6 admission plan has been described by the
7 author of that plan, and then we've gone on to
8 discrete parts of that. We're starting today
9 with Mr. Patrick Ritchie, who will be
10 describing his vegetation study and his root
11 zone study that he did in conjunction with
12 Dr. Holloway.

13 So I think that y'all have met
14 Mr. Ritchie in the past and probably don't
15 know Mr. Ritchie, though, as well as you might
16 know Mr. Angle and Ms. Levert in their
17 dealings with you in the past. But
18 Mr. Ritchie will be here today. We will
19 finish our testimony with him today, and then
20 we will reconvene on Monday with Mr. Angle and
21 Ms. Levert. And, again, we certainly thank
22 you for -- for your time.

23 And this -- this is, as you will see,
24 and you probably have seen, from what has been
25 provided to you so far -- there has been a

1 very full analysis that has been done of this
2 small site. A hundred and -- almost 150 soil
3 samples have been taken over this, roughly,
4 one-acre site. So we believe it was very
5 thorough. That will be described by our
6 witnesses, of course.

7 And there's not a lot of remediation
8 that is proposed here simply because there is
9 not a lot of impact out on this site and
10 not -- not much from the standpoint of
11 regulatory exceedances on this site, but those
12 will be described in detail as well.

13 And if at any time y'all have any
14 questions either of me or of our witness,
15 certainly, please, feel free to stop us during
16 the presentation and ask then and there. You
17 certainly don't need to wait until we are done
18 with the presentation, because I know, at
19 least for me, if I hold onto a question too
20 long, sometimes I might forget it and forget
21 the context that I was asking it in, even if I
22 wrote it down. So feel free to do that.
23 That's not a problem for us. We will stop at
24 any point. If you have any questions, just --
25 just let me know. You know, if I keep talking

1 just raise your hand, tell me to stop and ask
2 the question.

3 So we certainly welcome all the
4 questions that y'all have today, because we
5 want to make sure that you are comfortable
6 with the evidence that has been provided to
7 you today to be able to make your decision on
8 the plan. We want you to have the full
9 information.

10 And that's a word that Mr. Balhoff
11 had used earlier is the "evidence." And we
12 think that's very important. That's why we're
13 here today is to present that evidence here to
14 the panel and let y'all make a decision on
15 what needs to be done out there to make sure
16 that it complies with regulatory standards.

17 So thank you very much. And with
18 that, I am going to go off to the side here.
19 You won't see me on camera, but I will be
20 asking the questions to Mr. Ritchie. We are
21 here in our office at Kean Miller. I hope
22 that, you know, nothing behind me is too
23 distracting. We tried to lower the shades to
24 make sure that we had a decent backdrop, and
25 we have our court reporter, Ms. Mayers, here

1 with us as well. So if y'all have any
2 questions of me, please let me know now; if
3 not, I will hand it over to Mr. Ritchie.

4 THE HEARING OFFICER:

5 And before -- before we start with
6 Mr. Ritchie, I would ask Ms. Mayers, as the
7 court reporter, to swear the witness in.

8 (PATRICK RITCHIE, PWS, having been first
9 duly sworn, was examined, and testified
10 as follows:)

11 MR. FUNDERBURK:

12 And I will step out -- out of the
13 way, that is.

14 THE WITNESS:

15 Good morning.

16 MR. FUNDERBURK:

17 Good morning, Mr. Ritchie. Can
18 everybody hear me okay?

19 MR. SNELGROVE:

20 Yes, we can.

21 MR. FUNDERBURK:

22 Great. Thank you very much.

23 BY MR. FUNDERBURK:

24 Q Mr. Ritchie, will you please introduce
25 yourself to the panel?

1 A Yes. My name is Patrick Ritchie, present
2 in Metairie, Louisiana, and I work for ERM,
3 Environmental Resources Management.

4 Q And I've got a PowerPoint that I'm going
5 to get up here in a second, but will you please
6 tell the panel what you do at ERM?

7 A Sure. I'm a principal consultant with
8 ERM. My main role is a senior scientist in
9 ecological assessments, effective root zone
10 studies. I also work as a project manager and
11 lead scientist and wetland scientist on capital
12 projects and permitting responsibilities and
13 regulatory matters.

14 Q And how long have you been with ERM?

15 A With ERM, I've been working there for 12
16 years.

17 Q What did you do before you were with ERM?

18 A Before ERM, I was -- I was a high school
19 teacher in Ruston, a coach for two years. And
20 then I changed career and moved into working as a
21 wetlands scientist for the Shaw Group. I did that
22 for two years, working specifically with the
23 Coastwide Reference Monitoring System, the
24 wetlands monitoring program.

25 Q Great. And I've got a PowerPoint up here

1 now, a presentation.

2 MR. FUNDERBURK:

3 You've got -- all right. Thank you
4 very much. I do have some technical help in
5 here, too. So can the panel see this?

6 MR. SNELGROVE:

7 Yes, we can.

8 MR. FUNDERBURK:

9 All right. Thank you.

10 BY MR. FUNDERBURK:

11 Q Mr. Ritchie, before I get any further into
12 your -- your background, what -- what are we
13 looking at here in this photograph?

14 A Sure. So the panel has been at the site.
15 So this is just a picture looking from the pasture
16 south towards the -- the well site, showing the
17 vegetation, being mostly herbaceous vegetation.
18 And in the far -- in the distance there, you can
19 see a rig when the ERM personnel were doing an
20 investigation there as well.

21 Q Great. So let's continue on with your
22 background. And before we get into your
23 education, I want to talk about your time as a
24 wetland scientist at the Shaw Group.

25 A Okay.

1 Q Can you explain to the panel what you were
2 doing with the Shaw Group during that time?

3 A I can. It was primarily a responsibility
4 of a wetland scientist in the field -- working in
5 the field. I have experience working with wetland
6 vegetation, hydrology, and my responsibilities
7 were investigation of wetland sites, starting from
8 the coast, all the way up through the different
9 habitats that they have occurring in Louisiana.

10 Primary responsibilities were identifying
11 plants. We did vegetation surveys over the
12 summer, summerwide vegetation surveys, for
13 different areas. We would essentially take a 5x5
14 square, put it down, and identify every species in
15 there along a transect for several hundred sites
16 across Louisiana in coastal marshes all the way up
17 into forested areas, swamps, bottomland hardwoods
18 and such.

19 Q So how much of your time was spent in the
20 field, roughly?

21 A Roughly 95 percent of my work was in the
22 field in South Louisiana.

23 Q And did that assist you in your experience
24 in being able to identify and study plants?

25 A It has. It was one of the key

1 responsibilities of that. As the panel may be
2 familiar with the CRMS data, we've relied upon it
3 in several other reports and other matters, and
4 the data is very important for that.

5 Q And this was, obviously, specific to
6 Louisiana?

7 A It is, yes. It's used as a baseline for
8 many, many studies that are done across the state.

9 Q And we've already talked about, from
10 there, you went to Mike Pisani & Associates.
11 Correct?

12 A That's correct.

13 Q And then -- and then that became -- or you
14 became part of ERM through that. Right?

15 A That is correct. Yes. There was an
16 acquisition with ERM, yes.

17 Q And you've been working at ERM since?

18 A That is correct.

19 Q How many years have you worked on
20 environmental issues related to legacy sites in
21 Louisiana?

22 A As far as legacy sites, I've had about 12
23 years of experience. I've worked on over 75 cases
24 and projects all across in -- in numerous
25 responsibilities and roles, working in the field,

1 reporting, data collection, and everything
2 underneath -- under the sun.

3 Q And with the root zone studies, it says
4 down here you have 25 plus root zone studies
5 conducted across Louisiana. Who would you
6 primarily work with on those root zone studies?

7 A That was Dr. Luther Holloway.
8 Occasionally we would have some other individuals.
9 Arville Touchet was with us on several instances
10 as well.

11 Q And I think those are -- those are names
12 that are familiar with -- familiar to the
13 panelists here. And did you also do any
14 ecological assessments as part of your work with
15 legacy sites?

16 A I have. So I've worked with
17 Dr. Helen Connelly, Dr. John Rogers doing
18 ecological assessments, wetlands functional
19 assessments. I've helped collect data, identify
20 plants, the habitats, and make determinations on
21 ecological and habitat health.

22 Q So it's fair to say that you've had
23 extensive fieldwork so far in this -- in this
24 area?

25 A I have, yes.

1 Q Well, then let's put the fieldwork aside
2 for a second and talk about your education. Can
3 you tell the panel what degrees you have? Just
4 tell them about your education.

5 A Okay. So I have an associate's degree
6 from Colby Community College in Colby, Kansas. I
7 was a scholar athlete -- scholarship athlete for
8 wrestling there. But after I finished my
9 wrestling career, I moved back home, and I have a
10 bachelor's degree at Tulane -- from Tulane
11 University in ecology and evolutionary biology.

12 Q And when did you get that bachelor's
13 degree?

14 A That was 2005.

15 Q And you said ecology and evolutionary
16 biology?

17 A Yes, sir.

18 Q What types of things were you studying in
19 that discipline?

20 A You know, general biology courses, as well
21 as ecology, you know, calculus, chemistry,
22 statistics, organic chemistry, but I also
23 specialized in plants. So I took plant
24 systematics with, you know, labs where we would
25 have to have unknown species and use dichotomists

1 keys and such to identify the plants. Plants in
2 human affairs, which is an agronomic course, I
3 took that as well, as well as a forestry policy
4 course and numerous -- general botany and courses
5 like that, yes.

6 Q What got you interested in doing that?
7 You went from -- you were, obviously, a high
8 school and college wrestler. You had the business
9 administrate -- administration and accounting, and
10 now you're into plants. What got you interested
11 in that?

12 A It's -- it's kind of interesting. You
13 know, just kind of analytical thinking, and, you
14 know, after working and living in the midwest --
15 my roommates were a bunch of farmers and, you
16 know, I spent a lot of time with them. One of my
17 friends' dad was a lead forester in Cali --
18 Colorado. Excuse me. And so I just started
19 getting interested in that and realized that
20 economy wasn't for me and so I started looking at
21 the -- the more natural world. I grew up, you
22 know -- you know, camping and other things like
23 that; so I made that transition.

24 Q And your master's degree of science -- in
25 soil and water science from the University of

1 Florida, that was in 2015?

2 A That's correct. Yes.

3 Q And can you explain why, you know, there's
4 that ten-year difference and why you went back and
5 got that degree?

6 A Sure. So I've always wanted a master's
7 degree. So when I was completing my degree at
8 Tulane, you know, I was looking at the master's
9 program. But, to be quite frank, Tulane was
10 extremely expensive; so -- you know, so I was
11 going to take some time. So I was looking to
12 start my career and try and make some money, but
13 then soon after that I got married, and then soon
14 after that we had kids, and life just kind of
15 happened. But it was always something that I
16 wanted to pursue, and so then I went back -- while
17 working full-time, having a family, you know, went
18 back to school and -- and completed that degree.

19 Q And what type of coursework were you doing
20 as part of that degree?

21 A So it had a number of different courses
22 very specific to wetlands and soil science. I
23 took courses in soil remediation. I've taken
24 courses in hydric soils and other wetlands
25 courses, water quality as well. Additionally, I

1 received a graduate certification in wetlands and
2 water resources management while taking that --
3 getting that degree as well, and so
4 biogeochemistry -- several biogeochemistry courses
5 as well, things of that nature.

6 Q And you have a graduate certification from
7 there as well. What is that in?

8 A It's specific to wetlands. So, again,
9 that was -- you know, one of the primary focuses
10 of my degree was -- was wetlands. So a number of
11 my courses were applied to that certification.

12 Q Well, let's move on to your professional
13 certifications. Up here on the screen, you'll see
14 Professional Wetland Scientist, PWS, No. 2780.
15 Can you tell the panel about that certification,
16 please?

17 A I can. So the Society of Wetland
18 Scientists is the premier of wetland science
19 society. And the PWS would be -- I guess you
20 could associate it similar to a PG for wetland
21 scientists. So it requires education, experience
22 in order to receive that designation.

23 So for that, I had to submit an
24 application, which included all the coursework
25 that I took, with grades as well, to receive that.

1 And then I have to have five years of working
2 experience in wetlands prior to. And then the
3 society also will designate areas of expertise.
4 And so in order to do that, I have to submit my
5 statement of qualifications for each individual
6 area of expertise.

7 And I was awarded -- or identified as an
8 expert in 15 different areas. Most -- mainly,
9 in response -- responsive to this matter would be
10 botany, hydric soils, wetland and water
11 delineate -- waterbody delineation, ecological and
12 functional assessments, mitigation, restoration,
13 plan and design of projects, water quality.
14 It's -- it's an extensive list, but I was
15 identified for those with the society.

16 Q Understood. Thank you. And do you -- do
17 you have to do any continuing education as part of
18 that certification?

19 A I do. So every five years, you have to
20 have continuing education. I've recently reupped
21 my -- so there's ongoing courses that I've taken
22 with, you know, plant anatomy, other -- other
23 wetlands resources and, you know, things like
24 that.

25 Q I wasn't meaning to skip forward yet but I

1 think that we have come to the end of that slide.
2 So I will move on to the next one. Have you
3 worked in -- you know, the work that you've done
4 after you graduated Tulane, have you worked with
5 the -- any of the Louisiana State agencies in any
6 of your time out in the field working?

7 A I have. I've -- you know, with the CRMS
8 project, that was working with members of DNR.
9 I've also worked recently with this panel for --
10 we had a meeting about the -- a recent project for
11 the agricultural plan that we have set forth.
12 I've also worked with the Bayou Corne sinkhole,
13 worked with individuals as well, and then, also,
14 in numerous other instances with the permitting,
15 as far as, you know, responsibilities for meeting
16 state and federal regulations.

17 Q And even though you may not have been the
18 person testifying or the frontman, if you will,
19 have you been -- have you supported projects that
20 have been presented to the LDNR like in these
21 limited admission hearings?

22 A I have. So most recently, the Jeanerette
23 project, I coauthored that report with
24 Dr. Holloway, and I was, you know, integral in
25 working on that most feasible plan and giving my

1 opinions on the effective root zone and the health
2 and nature of that forested swamp, in that -- in
3 that case.

4 Q And that would be Jeanerette Lumber &
5 Shingle?

6 A That's correct. Yes.

7 Q And so you've actually been the coauthor
8 on reports that have been provided to LDNR as part
9 of these limited admission hearings?

10 A That's correct. So I have been a
11 coauthor, and I have also been a primary author
12 for some -- some as well.

13 Q And you did perform a vegetative and root
14 zone study in this case. Correct?

15 A I did.

16 Q And you've done at least 25 of these with
17 Dr. Holloway, Mr. Touchet, others. Correct?

18 A That is correct.

19 Q I am going to try to do something here
20 that I might not be able to do. I want to switch
21 this to your CV, but I don't see how I do that,
22 but maybe I am real quick. So let me see.

23 A I think you're almost there, yeah.

24 Q Yeah, almost there, not quite. I
25 appreciate the patience, but I do want to get your

1 CV up there. It is Exhibit No. 47. There we go.
2 So I'll try and get this up a little bit. This is
3 Exhibit No. 47. Mr. Ritchie, is this a copy of
4 your current CV?

5 A It is, other than the photo. That was a
6 prepandemic photo.

7 Q Got it. And this is a part of -- of the
8 limited admission plan in Appendix F of Exhibit 1.
9 Correct?

10 A That is correct.

11 Q And does this reflect your education,
12 training, and experience?

13 A Yes, it does.

14 Q Is this something you keep at -- in your
15 file as a part of your business?

16 A It is.

17 MR. FUNDERBURK:

18 So I would offer, file, and introduce
19 Exhibit 47, the CV of Patrick Ritchie.

20 THE HEARING OFFICER:

21 It's accepted -- accepted into
22 evidence. John, I assume you're not -- you're
23 getting -- you're going to tender him in the
24 field. Correct?

25 MR. FUNDERBURK:

1 That was my next -- that was my next
2 statement, Your Honor.

3 THE HEARING OFFICER:

4 Okay. Before you do that, I forgot
5 to say at the beginning and as Mr. Ritchie
6 starts to testify, this is not absolutely
7 necessary, but, as you know, one of the things
8 I asked were -- or was that the document --
9 the documents be Bates numbered.

10 And when a witness testifies, such as
11 Mr. Ritchie or somebody else, sometimes it's
12 going to be self-evident where something is,
13 but if it's -- if it's something obscure, if
14 you refer to a Bates number page during the
15 examination it will help, afterwards, when
16 reviewing the transcript, find the document
17 that he's talking about.

18 Some -- some of it is going to be
19 very obvious; so I'm not asking you to do that
20 always, but just -- you know, that's one of
21 the reasons the Bates numbers are there.

22 MR. FUNDERBURK:

23 Yes, sir.

24 THE HEARING OFFICER:

25 Okay.

1 MR. FUNDERBURK:

2 And thank you very much. And so this
3 one is his stand-alone CV. It does carry the
4 Bates number N_LDNR_HCDE_02500. It can also
5 be found as part of the report at the same
6 prefix and 00514 to 00518.

7 THE HEARING OFFICER:

8 Okay. So why don't you -- I know --
9 and you may have a few more questions, but
10 when you tender him, just tell me the field,
11 because he's probably going to be accepted.

12 MR. FUNDERBURK:

13 Yes, sir. That's what I was doing
14 next. So, Your Honor, at this time I will
15 tender Mr. Ritchie as an expert in botany,
16 plant ecology, soil and wetlands, and root
17 zone analysis.

18 THE HEARING OFFICER:

19 Okay. It's -- he's accepted. It's
20 my understanding his testimony is going to be
21 in the area of root zone?

22 MR. FUNDERBURK:

23 Yes, sir, and vegetative -- his
24 vegetative -- or his observations of the
25 vegetation out there and the health of the

1 vegetation.

2 THE HEARING OFFICER:

3 Okay. He's accepted in the fields as
4 tendered. Go ahead. Continue.

5 MR. FUNDERBURK:

6 Thank you.

7 BY MR. FUNDERBURK:

8 Q So I'm going to go back and get onto
9 our -- get back on our PowerPoint. But can you
10 tell the panel basically -- just give an overview
11 of what you were doing out there on the site, the
12 time that you spent on the site, who you were
13 with. Just give that basic overview, and then
14 we'll start stepping through it.

15 A Okay. So we -- "we," is going to be
16 included with myself and Dr. Holloway; so when I
17 refer to it as "we," that's -- those are the
18 individuals I'm speaking of. We visited the site
19 in September. We spent two days of our time
20 investigating the property, which is substantial
21 for, again, as you mentioned, a small, one-acre
22 property. And we did general observations of the
23 site, reviewed the site setting, the land use,
24 what it's currently being used for. We also
25 were -- we also conducted our effective root zone

1 study as well.

2 Q That's right. And you and Dr. Holloway
3 coauthored a report that was part of the limited
4 admission plan. Correct?

5 A That is correct.

6 Q And that would be found at Appendix F of
7 that limited admission plan. Correct?

8 A That's correct.

9 MR. FUNDERBURK:

10 And for the record, that would be
11 Appendix F of Exhibit 1. And the report by
12 Dr. Holloway and Mr. Ritchie, which is
13 entitled, "Review of Plant Conditions and
14 Vegetation Root Study on the H.C. Drew Manual
15 Estate 15 No. 1 in Calcasieu Parish,
16 Louisiana" bears Bates labels
17 N_LDNR_HCDE_00444 through 00518.

18 BY MR. FUNDERBURK:

19 Q Now, as we discussed earlier, Mr. Ritchie,
20 Dave Angle, one of your colleagues, will be here
21 on Monday to walk through and describe the site
22 setting, the site overview, the plan itself, the
23 evidence that supports the plan, et cetera, and
24 your -- your testimony is relatively limited to
25 the vegetation and root zone study.

1 A That's correct.

2 Q But what I would like to -- for you to do,
3 so we can kind of set the stage here, is just give
4 a very brief walk-through on the site setting out
5 here. So I've put a slide up here for the panel,
6 and we actually do have a Bates number that this
7 refers to down at the bottom left-hand corner,
8 which will be our Bates number and 0054. It's a
9 figure from the limited admission plan. Can you
10 just reorient the panel with where this site is?

11 A I can. So it's in Calcasieu Parish about
12 six miles west of Sulphur. That's a very rural
13 area. The site itself is pastureland. It's
14 just -- just south of I-10.

15 Q And, as you mentioned earlier, that the
16 actual well site itself that we can see here with
17 this fenced-in area, the former well site, is
18 about one acre. Correct?

19 A That's correct. So the well site as it is
20 when we did our investigation, as you said, it's
21 approximately one acre, a very rural area, mainly
22 used for cattle grazing, as we noticed several
23 cattle on site, mostly herbaceous vegetation,
24 occasional trees spotted around. It was a former
25 operations -- there was a well. From my

1 understanding and looking at some of the
2 historical aerials, there was a tank battery and
3 also some operations areas there. And right now
4 it is still some well pad material and a fence
5 around -- barbed wire fence around the area.

6 Q So well pad material, meaning shells,
7 gravel --

8 A Shell, gravels, rocks, yes, the standard.

9 Q But no equipment remaining on the well --
10 on the well site?

11 A That is correct.

12 Q So, again, this is just the -- the
13 reintroduction. For those of us -- I've only been
14 out there once or twice myself. I know the panel
15 went once. And so can you just describe what
16 we're seeing here?

17 A Yeah. So the bottom -- or on the left,
18 rather, is the entrance gate to the property. It
19 is to the southwest of the well site, and so that
20 is the entrance gate coming in. You can see that
21 it was locked. There is a cattle guard there
22 on -- behind the fence, if you're able to see
23 that, again, indicating that this area is used for
24 production of livestock.

25 The center photo is the gravel road

1 leading up to the well pad. You can see that this
2 is actually facing west outside of the -- the site
3 itself, but you can see -- somewhat on either end
4 of the road, you can see the posts for that barbed
5 wire fence and, as you can see, the area
6 surrounding this well site, herbaceous vegetation
7 growing, green, healthy and even growing all
8 through the road itself.

9 And then on the right-hand side is another
10 photo of the operational area, again, all
11 herbaceous vegetation, meaning non-woody
12 vegetation. You can see in this photo there's --
13 there's some yellow flowering. It's that time of
14 year for some of these species present. And then
15 you can also see the -- the trucks and tent, and
16 that's when ERM was conducting some investigation
17 of that site at that time.

18 Q On your general observations, -- we're
19 talking about the site setting -- did you observe
20 any sort of stressed vegetation out there?

21 A Did not. So all the areas that we
22 visited, everything was green, growing, healthy,
23 and showed no signs or indication of any kind of
24 impact from former E&P operations.

25 Q Right. And even -- even on these well pad

1 areas, you can see that the grass is growing
2 through -- you know, through the gravel area in
3 some spots. Right?

4 A That is correct.

5 Q So USDA soil types, this is something that
6 you had studied as just part of your general
7 overview of the property. Correct?

8 A It is. It's something that we'll normally
9 do prior to visiting a site. USDA has done an
10 excellent job mapping soil types, and we use this
11 as a reference to kind of get a lay of the land
12 before we go out there. So what we do is we look
13 at the types of soils that we would expect and
14 then the site setting.

15 So in the photograph there, you can see,
16 again, this is facing north from the well site,
17 showing pasture mainly. And then, in the
18 distance, there are some trees spotted and a tree
19 line at the edge of the property there.

20 But what we noticed were three different
21 types of soils. Again, these are poorly drained
22 soils. We have the Prairieland, the Midland, and
23 the Mowata/Vidrine, which is a complex of soils.
24 And those are the three that we observed and
25 identified in our investigation as well.

1 Q And we'll go to the next slide just to
2 show parts of this, but I will note that we have
3 exhibits on our list of -- Exhibits 36, 37, 38,
4 39, 40, and 41. So, to be more clear, Exhibits 36
5 through 41 are the Prairieland series, Vidrine
6 series, the Calcasieu Parish Soil Survey, the
7 Midland series, the Mowata series. Are these all
8 things that you looked at as part of your study of
9 this site?

10 A I did. And notably here, you can see that
11 the land use was -- that was identified in the
12 soil survey was what we had -- we observed on site
13 as well. So these soil types are appropriate for
14 crops, cultivating rice, and pasture, and that's
15 what this use was for.

16 MR. FUNDERBURK:

17 And at this time, Mr. Balhoff, we
18 would offer, file, and introduce Exhibits 36
19 through 41.

20 THE HEARING OFFICER:

21 Those are accepted into evidence.

22 MR. FUNDERBURK:

23 Thank you.

24 BY MR. FUNDERBURK:

25 Q Well, then, let's get to what we're here

1 to talk about, right, your vegetation and root
2 zone study. And you did perform a root zone study
3 out there?

4 A That's correct.

5 Q With Dr. Holloway?

6 A That's correct.

7 Q You used a specific methodology. Correct?

8 A We did.

9 Q And let's look at some of the documents
10 that you relied upon for your methodology for root
11 zone analysis. What are we looking at up here on
12 the screen?

13 A Okay. So root zone analysis is nothing
14 new, and which the panel has probably heard,
15 Dr. Holloway testified before that -- what he
16 commonly refers to as the "Dutch bible." It's
17 what you see on the left there. That's the
18 Schuurman and Goedewaagen, if I've pronounced that
19 correctly --

20 Q Better than I would have pronounced it, no
21 doubt, but go ahead.

22 A So that's a document from 1971. Again, it
23 describes analysis of subsurface or roots and the
24 techniques that are used to make those
25 observations. Again, that one even references

1 other -- other studies dating back to early 1900s.
2 So, again, this isn't a -- this is a new -- this
3 isn't a new practice. It's something that is very
4 common and is widely explored.

5 Q And what about this -- this is a more
6 recent document that's on the right. That is
7 Exhibit 42 on our list. Can you describe for the
8 panel kind of what's -- what's in that study and
9 why it's important to your work?

10 A I can. So this is a more recent, 2021,
11 publication. And, again, it just shows that these
12 techniques that we use that are -- are referenced
13 in the Schuurman paper, excavation, trench profile
14 wall, soil coring, these are all accurate methods
15 that are still used today. And it did have some
16 additional ones, but these are still commonly used
17 techniques for this type of analysis.

18 Q And there's also one that's not on this
19 slide, but it's our Exhibit 46, which was a US EPA
20 2015 paper, "Determination of the Biologically
21 Relevant Sampling Depth for Terrestrial and
22 Aquatic Ecological Risk Assessments." It's a
23 mouthful. But is that something you also looked
24 at as part of your work?

25 A We also rely on that as well, yes.

1 MR. FUNDERBURK:

2 At this time, Mr. Balhoff, I would
3 like to offer, file, and introduce
4 Exhibits 35, 42, and 46.

5 THE HEARING OFFICER:

6 Those are accepted into evidence.

7 MR. FUNDERBURK:

8 Thank you.

9 BY MR. FUNDERBURK:

10 Q And what you had seen in these papers that
11 we've talked about regarding the analysis of
12 roots, is that consistent with your education and
13 your experience in this field?

14 A It is. So I -- I've learned some of these
15 methods in my education. We've done these.
16 Again, the types of work that we've done, the
17 excavations are very commonly done when we do
18 evaluations of soils, not just our root analysis.
19 So these are very common methods that I have used.

20 Q All right. We're getting into
21 site-specific stuff now. Why is it important,
22 first of all, to do a site-specific analysis of
23 the vegetation and the root zones?

24 A You can make some general determinations
25 of rooting depth, and there -- there's, you know,

1 publicly available, you know, articles and things
2 like that that discuss these things. But it's
3 very important to look at a specific situation in
4 a site-specific study, looking at the soil types,
5 the hydrology, the setting, and any kind of other
6 influences that there could be on these -- on this
7 vegetation that could potentially impact the
8 rooting depth of these particular species. So
9 that's why we like to do a site-specific
10 assessment.

11 Q And up here on the screen is a term we
12 haven't spoken about yet, and it's called
13 "effective root zone." What -- what is an
14 effective root zone?

15 A So the effective root zone is the depth at
16 which the soils go into the soil profile that are
17 necessary for a plant's growth and reproduction.
18 Again, it's not the -- the deepest roots, but it
19 is the majority of the roots. So we look for the
20 majority of the roots that help produce a growing
21 vegetation and complete its life cycle.

22 Q And did you do that in this case? In
23 other words, did you go out in the field and look
24 to determine the effective rooting zone of these
25 native plants?

1 A I did.

2 Q And you did that with Dr. Holloway.

3 Correct?

4 A That's correct. Yes.

5 Q So let's talk about the general method of
6 doing so here, and I'll let you walk us through
7 left to -- to right. I mean, this is -- this is
8 get-your-hands-dirty kind of science here. Right?

9 A It is. It's definitely labor-intensive.
10 Right? And so that's why these studies can take
11 some time. And that's why it took us two days to
12 investigate a small property, but, again, it's
13 worth it, because it's very good data. It's a
14 very efficient way of making these determinations.

15 Q And what we've --

16 A So --

17 Q So you've got on this left side -- and we
18 do again --

19 MR. FUNDERBURK:

20 And for the panel, we will be
21 providing this presentation after we are done
22 here with his testimony, and they do have the
23 Bates labels down here on the bottom of the
24 pictures to get you to these same photographs
25 later on.

1 BY MR. FUNDERBURK:

2 Q Excavation of the tree roots, why are
3 you -- why are you doing that?

4 A So in order to identify the rooting
5 pattern of the trees, we'll actually excavate
6 around them. So we'll take hand shovels, shovels,
7 spades, a number of different items used, and
8 tools, and we will dig around the roots themselves
9 and excavate them so that we can determine the
10 depth of them.

11 Q And then they're spray-painted for what
12 reason?

13 A It's just for visual. It's easier to see,
14 you know, in the photographs and things like that.
15 And then as we go through the -- my testimony,
16 we'll show the maps that we actually draw of the
17 rooting pattern itself. So it's important to
18 excavate so that you can find the -- the depth of
19 which the roots are growing and assess the density
20 which in they exist in this wall profile.

21 Q And I think that it's also important for
22 the -- for the panel to understand. I mean, we
23 know we -- we know people say a picture is worth a
24 thousand words. Right? But you're not making
25 your determinations based upon these pictures.

1 Correct?

2 A No. You know, these are just, you know,
3 for reference. But the determinations are based
4 on what we visibly see in the -- in a situation.

5 Q And that's why you actually go out in the
6 field yourself?

7 A That's correct. Yes.

8 Q So we can -- you can try and show us what
9 you're talking about from the pictures, but your
10 observations are done in the field, and you write
11 those down at that time. Correct?

12 A That's correct.

13 Q So what are we seeing here in this trench
14 profile wall?

15 A So for a trench profile wall, we dig a
16 trench. Typically, we would be digging
17 2-feet-by-2-feet-by-3-feet, and we did that in
18 this case as well. And what we'll do is we will
19 find the vegetation that we're looking at, find a
20 specific specimen, that is, where we have the
21 dominant vegetation occurring, and then we'll dig
22 a trench.

23 And then what we'll do is we'll establish
24 this profile wall that we can look at. We'll put
25 a tape measure on the side, as you can see on the

1 left, starting at the ground surface down to the
2 bottom of the trench, and we'll take a -- you
3 know, a knife and just pick apart the soil.

4 So you can see on the right side of the
5 picture, you know, the sheared side of it where,
6 you know, the shovel has a very nice flat, you
7 know, side to it or face to it. So what we'll do
8 is we'll actually take the knife to pick out the
9 soil so we can get a good idea and determination
10 of the effective root zone and see the roots
11 themselves, and that's what you can see in the
12 picture.

13 Q And on the right here, you have the soil
14 coring. Why is there soil coring in addition to
15 this trench profile wall?

16 A So this is just to make sure that we fully
17 assess the depths and determination of the
18 distribution of the roots. So you can see in this
19 picture -- that's Jake Robertson, another
20 individual with ERM, a little bit younger back
21 than myself that's helping.

22 And so he takes a hand auger, and so at
23 the bottom of our trench, he just extends the
24 auger through the soil. We remove that soil
25 itself, slice it open, and look at the profile

1 itself to see if there's any roots existing below
2 our profile -- our trench.

3 Q And so here, again -- and we won't --
4 won't go through these in great detail like we
5 just did, but very similar to what we're seeing,
6 this is a result -- a picture of the -- a root
7 around one of those trees, a trench profile wall,
8 again, and this is the soil core on the far right
9 that you were talking about. Correct?

10 A That's correct. So, again, we'll have the
11 cores. We'll lay them down. We'll cut them open,
12 and then we'll do the same method of picking
13 out -- picking at the soil to expose any roots
14 that are in the interior of that core.

15 Q And what is this figure that you have down
16 here at the bottom?

17 A So, again, and the panel has probably seen
18 these type of things before, it's just a way of
19 showing how we would measure abundance. So in
20 this -- this is, again, from the Schuurman &
21 Goedewaagen, just showing the density. And as we
22 go through my testimony, we'll go through it, and
23 you'll see these -- these -- the nomenclature used
24 as abundant or common in many -- and this is just
25 a diagram showing the type of distribution. It's

1 common -- commonly done in, you know, soil matrix
2 as well when we're looking at redoximorphic
3 features and things like that. The panel has
4 probably seen things like that. And the same
5 thing for when we determine a percent cover of
6 vegetation and things like that. So these are
7 common -- common methods of identifying these
8 things.

9 Q And in the scientific and, frankly,
10 practical community, is a root zone study like
11 this something that is commonly accepted?

12 A It is. It's used specifically in
13 irrigation oftentimes, again, looking at the
14 effective root zone when watering or applications
15 of any kind of fertilizers and things like that.
16 It -- it's used. And there are published papers
17 as well that have, you know, studies on effective
18 root zone of crops and other plants.

19 Q And are you aware of, on this site, anyone
20 else doing this type of root zone analysis?

21 A No.

22 Q All right. So explain to the panel what
23 we're looking at on this slide, please.

24 A Okay. So on the right-hand side, it's --
25 this is an aerial image of the site. Again, the

1 star in the center is where the well -- well was
2 located previously. And you can see the outline
3 of -- of the fence as well and the road that
4 extends from the west to the southwest to the
5 entrance gate that we saw in the previous picture.

6 And just looking at the -- the site
7 itself, you can see that it's all -- all the
8 vegetation is herbaceous there. And then there's
9 other dots that we have. The yellow dots indicate
10 the herbaceous species of the nonwoody, the
11 grasses, the sedges, and -- that we assessed.

12 And then you can also see the green dots,
13 which are the two tree species that we were able
14 to investigate on site. Again, there weren't any
15 trees around other than these two, but we thought
16 that it would be important to have a sampling of
17 tree species as well.

18 Q Right. You kept your investigation in
19 this -- this very field where this well site is?

20 A That's correct.

21 Q And you can see the boundaries with the
22 roads and ditches, et cetera?

23 A Yes.

24 Q And how did you -- how did you choose
25 these, you know, five herbaceous and the two

1 trees?

2 A So when we first enter a site, we will
3 drive the entire site looking at the condition of
4 the vegetation. We will assess the different
5 types of vegetation that are present. And so for
6 this one, we found areas where we had different
7 species that were kind of dominating. Again,
8 there's a lot of mix out in the pasture here
9 that -- and -- but we were able to find some good
10 areas that have good representation of the type of
11 vegetation that's naturally growing here.

12 Q Great. And so before we get into these
13 specific areas, these specific sites, what was
14 your general observation of the property from a
15 health standpoint? And when I say "health," I'm
16 talking about health of vegetation.

17 A The vegetation all appeared healthy,
18 productive, growing. There were, again, cattle
19 present that were grazing here as well. So it
20 appeared that everything -- in my opinion, that
21 everything was healthy.

22 Q Yeah. We -- on our site visit with --
23 with LDNR, with the panelists, we had to wait on
24 some of those cows to get out of the way.

25 A Right. Yeah. We had to -- we had to shoo

1 them away at some of our -- around some of our
2 sample locations. They -- they like to get there
3 and be nosy.

4 Q And I noticed that the areas that you've
5 chosen are all outside of the barbed wire fence
6 well site area. Why is that?

7 A So we really want to look at, you know,
8 the native conditions around. We don't want to
9 look at any area that could have any kind of
10 potential impacts, either -- you know, from the
11 well site itself. So we're looking at, if there
12 were remediation required, what would the goal be
13 for -- for restoring that effective root zone in
14 that operations area.

15 Q All right. Well, let's go dive into the
16 specific areas here. And so let's talk about this
17 live oak. Why did you choose this -- well, we
18 already talked about kind of why you chose this
19 live oak, but we'll show where it is up here.
20 This map shows the location. That's, what, about
21 a quarter to a half-mile away from the well site?

22 A That's correct.

23 Q And what did you do as far as studying
24 this tree?

25 A So we -- again, we -- we selected this --

1 it's not the dominant vegetation on site. This is
2 a single individual tree that we located, likely a
3 shade tree. Looking through the historical
4 aerials, you can see that the tree has been there
5 for a very long time. We measured the diameter,
6 and understand that it's a fairly old tree.

7 So what we did was we selected that in
8 case there would be the potential future growing
9 of trees on the site. But, again, it was not a
10 representative of the dominant vegetation here
11 now.

12 So we selected the tree. We would take
13 general observations looking at the tree. As you
14 can see on the left-hand side, you know, you have
15 the typical type branching, as, I'm sure, the
16 panel has seen live oaks before. They were very
17 tall, green, growing, full of foliage. There were
18 no, like, epicormic branching or witches' broom,
19 or any kind of stunted growth on this tree. So
20 that's a good candidate that we like to look at.
21 We want to look at a -- a healthy, growing
22 individual and determine the effective root zone
23 of those.

24 Q And I think you went through this in a
25 little bit of generality earlier, but as far as

1 trying to locate the roots, what is it that y'all
2 do?

3 A So this is just a snapshot in time that
4 we're looking at here in the middle of what our
5 investigation included, but what we'll do is
6 we'll -- we'll look at the root collar, looking at
7 these main lateral roots that are extending, that
8 you can kind of see in that picture, and they
9 extend out in kind of a webbed pattern.

10 And what we'll do is we'll follow those,
11 and we'll dig along and excavate those along the
12 profile. We try and follow them as far as they
13 can go, but, you know, lateral roots can grow
14 pretty far. We also take a T-probe or a metal
15 probe and probe around and underneath to make sure
16 that we get a good understanding of the
17 composition of the roots at this place.

18 Q So you're talking about a -- like, a metal
19 rod to see what's down underneath the surface?

20 A That's correct. So in -- in conjunction
21 with the excavation, we probe around and help
22 follow the roots and determine if there's, you
23 know, subsurface roots and things like that as
24 well.

25 Q Did you take down your observations in

1 real time?

2 A We do. So what -- what I did was
3 collected the data. Again, here's an example of
4 the data sheet that we would -- that we collected
5 for this site. On the left again, the top, it
6 just includes general information about the site.
7 And then you can see the -- the map of root
8 distribution that we have for this -- for this
9 species here.

10 And what we'll do is we'll paint --
11 spray-paint them out and stand at the bole, or the
12 trunk of the tree, and draw that diagram to -- to
13 present this to -- in our report.

14 Q What is "DBH" here?

15 A That's the diameter at breast height. So
16 that is about -- approximately 4 1/2 feet from the
17 ground surface. We'll take a tape measure and
18 wrap it around the trunk of the tree, or bole of
19 the tree, to determine that. And those are --
20 those are used, you know, in determination of age
21 of trees sometimes and things like that and also
22 look at the health of the -- of the tree.

23 Q And this is a pretty old and healthy tree?

24 A It is. It was -- it was -- like I said,
25 it was probably a good shade tree for the farmers

1 and -- and the cows probably.

2 Q And did you then go in and map this out
3 yourself, or who drew that for you?

4 A I did. So I drew that out. And, again,
5 you know, these are representations of what we
6 observed on site. Again, these are -- you know,
7 it's not to scale. Again, you know, my Art 101
8 class comes in handy somewhat, but, again, we
9 tried our best to -- to draw the root profile as
10 we saw it in the field.

11 Q And so you came to the conclusion -- you
12 and Dr. Holloway came to the conclusion that the
13 effective root zone is ten inches below ground
14 surface. How did you come to that conclusion?

15 A That's correct. So that's based on
16 looking at these major lateral roots and also
17 looking at the profile itself where you have a lot
18 more of the finer roots at the surface that are
19 growing from these major lateral roots. And
20 they're the ones that do, you know, the heavy
21 lifting so to speak of the plant, and that's where
22 the nutrients and water are being absorbed. And
23 so in our investigation, we took our measurements,
24 we dug our excavations around those roots, and
25 that was the determination that we made.

1 Q All right. Let's move on to tree number
2 two. This is a sugarberry, or hackberry, tree.
3 And, you know, you chose this one. This was one
4 of the two trees in the pasture. Correct?

5 A It was. So -- so it gave us another
6 representation of -- of a woody species, a
7 sugarberry, but, you know, it's more commonly
8 known as a hackberry. And we had similar
9 observations that we made. This tree, there were
10 a lot more roots growing on the surface itself, as
11 you can see in that photograph in the middle. And
12 we mapped those out, we dug around those, we
13 excavated below, we probed below and around, and
14 we made our determination of the effective root
15 zone.

16 We also -- in the next slide you'll see we
17 did the same thing. We collected our data, filled
18 out our data sheets, made our measurements and
19 things like that, and came to our conclusion that
20 the effective root zone for this tree is also ten
21 inches.

22 Q And probably given the time of the year
23 and as much sunshine, this was a spot you would
24 have liked to have hang out -- to have hung out in
25 for a little while longer because of the shade.

1 Right?

2 A It was. So it's better than just being in
3 a pasture and sticking your head down in a hole
4 for -- for hours.

5 Q Well, let's get on to that part, because
6 here, you had the same effective rooting zone, ten
7 inches. Correct?

8 A That is correct.

9 Q Through the same method. Correct?

10 A That is correct.

11 Q But as far as this site is concerned,
12 the herbaceous vegetation is much more dominant?

13 A It is and looking at the use as -- as a
14 pasture, that's why we get selected -- and because
15 of the dominance of the vegetation -- why we
16 selected these -- these species.

17 So the first one here is Bermuda grass.
18 Again, this is -- you know, the cattle like this.
19 Again, they were grazing all in this area, and we
20 had to shoo some of them away. But we found a
21 stand of Bermuda grass that was dominant, and we
22 did multiple methods here at our first site.

23 So we dug our trench profile wall and --
24 as you can see in this center picture there. And
25 the panel, if you can see, again, this is just

1 kind of a representation of what we saw on site,
2 and since you -- but you can see the majority of
3 the roots are right there at the surface and only
4 extend several inches down with, you know, notable
5 smaller root hairs down through the profile.

6 But to continue down, we used the soil
7 coring method as well, and then observed the
8 rooting pattern in that depth as well. And this
9 location is to the -- if you look at the map
10 there, it's to the bottom right-hand corner of
11 this field.

12 Q And there -- you've selected some
13 photographs on here. We've got the Bates numbers
14 on there, but these aren't all the photographs
15 that you took out there. Correct?

16 A That's correct. We took -- we took
17 multiple.

18 Q Right. And there's actually an Appendix B
19 to your report, Bates labeled 471 -- God bless
20 you.

21 A Thank you.

22 Q -- to 491 that has additional photographs,
23 if the panel would like to see those. Correct?

24 A That's correct.

25 Q And as far as -- we've also looked at the

1 root data form; so we'll move to the root data
2 form here. But the full root data forms are also
3 included as Appendix C to your report. Correct?

4 A That's correct. And the herbaceous are a
5 little bit different, where we, you know, map the
6 root abundance. So in this particular case, we --
7 we excavated and used the soil core method to go
8 50 inches down in the profile.

9 And, again, the -- from the picture you
10 saw previously, most of the roots are in that top
11 inch or two, and that's where we had that
12 determination of abundant rooting at the top and
13 then moving down to common, sparse, and very
14 sparse through the profile.

15 And here we determined that the effective
16 rooting zone is ten inches. But even looking at
17 this picture, you can see it's -- the rooting
18 density is much greater in the top six inches.
19 But, again, being a little conservative in this,
20 we -- we identified ten inches as the effective
21 rooting zone.

22 Q And there are terms that were used back on
23 that -- on that form, "Common," "Sparse," "Very
24 sparse." Where do you get those terms from?

25 A So those are terms that, again, are, you

1 know, referenced in the Dutch bible and other
2 scientific literature and things like that, and,
3 again, that diagram showing the general
4 understanding of what an abundant root system
5 would look like and the density in that. So
6 that's what we use and years and years of
7 experience and probably hundreds of holes that
8 we've dug -- that I've dug and stuck my whole head
9 down in a hole and looking at roots over the years
10 and -- to be able to make those determinations.

11 Q So here, the effective rooting zone of ten
12 inches below ground surface is -- is where you
13 stopped seeing those common roots?

14 A That's correct. That's correct.

15 Q And you go to sparse to very sparse?

16 A That's correct. Again, you know, we're --
17 we're conservative in our approach, where, if
18 we're able to visually see any type of roots, you
19 know, we'll -- we'll include those.

20 Q Let's talk about this next one, and it's
21 one that I hadn't -- I don't think I've heard of.
22 I know Bermuda grass, but I've never heard of
23 short-bristle horned beaksedge. Can you tell the
24 panel about what -- what that is?

25 A I can. So this is a -- this is a sedge

1 species. There were numerous sedge species on
2 site, but this is a good -- good representation, a
3 good stand that we found of this. It's a --
4 actually, a wet species. So it's normally found
5 in wet areas. And most of these sedges that we
6 saw and inspected, they all have similar rooting
7 distribution and rooting patterns. So we selected
8 this one as a good representation of -- of those
9 species on site.

10 Q And you see here -- this is a lot of roots
11 right there at the -- at the very surface.

12 A Again, so this type of species -- and at
13 this particular location, it probably is not
14 visible in these photos, but there was surface
15 water present. It was very wet here. And so
16 species like this, they'll do that. Right?
17 They'll grow where the surface -- you know, where
18 they can get some air, you know, the nutrients,
19 the water. Right? So that's -- that's where this
20 is a little bit different than some of the other
21 species we observed.

22 Q And is that why you chose this spot,
23 because it was a little bit wetter?

24 A It was, yes. And the location is just
25 north of the well pad area; so there was just

1 this smaller kind of microtopography depression in
2 that field, and it was holding a little bit of
3 water.

4 Q Got it. So the effective rooting zone of
5 seven inches below the ground surface there,
6 again, is where you start going from abundant, or
7 common, to sparse to very sparse?

8 A That's correct. And we used the same
9 methods as before, you know, dig a trench, and,
10 you know, worked through, looking at the root
11 profile, so yes. And seven inches was the
12 effective rooting zone for this species.

13 Q Another one that I hadn't heard of is the
14 annual marsh-elder. And can you explain to the
15 panel why you chose this?

16 A So we selected this. This was near the
17 trees, as you can see in this photograph. There's
18 a very dense stand of the march-elder here. It's
19 an herbaceous -- it's more of a weedy type species
20 in pastures. It's not palatable to -- to
21 livestock. I guess, you know, some history was
22 that Native Americans used it. But -- but that's
23 why we selected this species, because of the
24 dominance in this area, and it was a
25 representation of a different type of species that

1 we wanted to look at.

2 Q And I didn't ask this of the last two, but
3 I was just reminded to ask now. The roots that
4 you saw there on the herbaceous vegetation, did --
5 were those healthy, the ones that were abundant
6 and common?

7 A They were. So we -- that's one thing that
8 we always look at in -- in our investigations. So
9 I'll look at the roots, and we'll take them -- and
10 there's a lot of different roots. So being able
11 to identify roots for individual plants is
12 important, too, and with a lot of experience in
13 the field and doing this work for many years, I've
14 been able to do that. So we will look at that.

15 We'll also look whether they're living or
16 dying. So a lot of areas here, particularly in
17 South Louisiana, with things like this, you have a
18 lot of anaerobic activity and things like that
19 where you will have decomposition, and some of
20 these roots can be there for a very long time, but
21 they're dead and not -- so we have to make sure
22 that we make note of that as well. You know,
23 there's just different methods that you kind of
24 test whether or not -- you know, the rigidity and
25 sheathing and other things like that to tell

1 whether a root is alive or dead.

2 Q And the herbaceous vegetation itself, did
3 it also appear to be healthy in these areas?

4 A It did. As you can see in the photograph,
5 it was all growing, and, you know, this is related
6 to the ragweed, so it had a little congestion
7 around here.

8 Q Understood. And so, again, you put
9 together -- in real time, based upon your personal
10 observations, you put together this form, and you
11 came to what conclusion on the effective root
12 zone?

13 A So the effective root zone for this
14 species was six inches. And you can see there,
15 you know, we have all of our removed soil for our
16 trench and the datasheet that accompanied this.

17 Q Let's talk about crabgrass, and I'm sure
18 everybody is a little familiar with crabgrass.

19 A Uh-huh.

20 Q Why did you choose that?

21 A So it was -- it was another species that
22 we found within this pasture. It was, you know,
23 another location that was green, healthy, growing.
24 It had a nice, good patch of crabgrass, which
25 that's probably not the term you want to use for

1 crabgrass, but -- you know, if it's in your yard.

2 But we did the same thing. We dug our
3 trench, again, picked apart. You can see here in
4 the -- in the center of the photo looking at the
5 root distribution and identifying as we went down,
6 looking down in this trench, looking at the root
7 distribution as well. This is more centrally
8 located north -- in this field, north of the well
9 site, and we found an effective rooting zone of
10 six inches for this site.

11 Q And how are you getting, you know, say,
12 this picture right here? Who is taking that
13 picture?

14 A So I -- well, I'll take either a camera or
15 my, you know, iPhone, and we'll put it down in
16 there. Still working on some methods of -- of
17 photography to try and get better profile
18 pictures, you know, going down, but yeah. So you
19 get on your hands and knees down in the -- in the
20 dirt and try -- try and get a good -- good shot
21 that members of the panel and others that, you
22 know, want to investigate this can -- can view
23 what we did.

24 Q And what are we looking at in this picture
25 here?

1 A So that's a picture of the field. Again,
2 you know, you can see there's -- well, to my eye.
3 You can see a very -- numerous species in the
4 background and then the species that we're looking
5 at in the foreground, and then there's the trench.
6 So there's -- there's the hole that we dig with
7 the tape measure coming out of it with the soil
8 that we extracted. We always replace the soil
9 back as well, you know, try and leave as little
10 damage as possible when we investigate these
11 plants as well.

12 Q And you found an effective rooting zone
13 here of six inches below the ground surface?

14 A That's correct.

15 Q So let's go to our last one here, and
16 we're closing in.

17 A Okay.

18 Q You know, we're about to wrap up here.
19 But you chose Bermuda grass again. And why did
20 you choose Bermuda grass twice?

21 A So, again, this is looking to the far
22 north. So it's -- as far as the distance, it was
23 a great -- great distance from the first Bermuda
24 grass sample. But, again, this is a species --
25 there's different varieties of Bermuda grass that

1 cattle like to eat. And so being the -- that
2 importance for that purpose and that land use
3 currently at the site, we selected this second
4 one.

5 Again, you can see from the picture on the
6 left, very, very robust, productive vegetation.
7 The profile wall is, you know, one of -- one of
8 the photos that we selected here, again, showing a
9 very shallow rooting depth at this area -- like
10 all the vegetation in this site, a very shallow
11 rooting depth and an effective root zone of seven
12 inches at this site.

13 Q And that's -- that's actually a little
14 shallower than the first Bermuda grass. Correct?

15 A It is. And that -- and that's why we do
16 these investigations, -- we do site-specific --
17 because you could look and take some general
18 assumptions on rooting depth, but that's why we
19 like to look at these specific sites,
20 site-specific details, so that we can give the
21 panel and those that make decisions the effective
22 rooting zone in -- in multiple ways.

23 Q Got it. And, again, you've got the form
24 that you did. We've got the photographs,
25 including the coring over here.

1 A That is correct.

2 Q So let's talk about the results of all
3 your work. We've spent the last, you know, 30, 45
4 minutes going through what you did. What were the
5 results?

6 A So the results were that we identified the
7 deepest effective root zone as ten inches. Again,
8 some of the other herbaceous species were more
9 shallow than that, but all this -- all the root
10 vegetation that we observed were green, growing,
11 healthy, being productive. So we -- we also
12 noticed that there were some in flower and other
13 things like that. So all life cycles were
14 being -- were observed as well. So we determined
15 that, if required, that a remediation depth of 12
16 inches would be adequate and sufficient to sustain
17 the growth of the vegetation that we observed on
18 site.

19 Q And this is -- this chart here is part of
20 your report --

21 A That is correct.

22 Q -- and included in that report, Bates No.
23 454?

24 A Yes.

25 Q So let's talk about the opinions that you

1 reached here. Can you give the panel a summary of
2 your opinions? It's contained in your report, but
3 I would like them to hear it from you so --
4 especially so that they can ask any questions
5 about these opinions before you are done with your
6 testimony.

7 A Okay. Sure. So, generally speaking, that
8 all the vegetation that we observed was green. It
9 was healthy. It was growing. We were able to
10 observe the rooting depth and determine the
11 effective root zone. And all the species that we
12 identified and viewed on site, very shallow roots.
13 They were -- the roots themselves were also
14 healthy. And then we determined that the deepest
15 effective rooting zone is ten inches. But, also,
16 the opinions were -- the panel has seen the site
17 and been on site and know for themselves what
18 the -- the pastures are being used for, and that's
19 the land use that we -- we saw out there.

20 For -- if required, the potential
21 remediation depth for our assessment is 12 inches.
22 But, again, on site, understanding, looking at the
23 most feasible plan, that there are some
24 recommendations potentially for deeper depths,
25 which I agree with, if we are able to reach that

1 effective rooting zone for these species.

2 Q And you've read the limited admission
3 plan, and Mr. Angle will testify about it later.

4 A That's correct.

5 Q And if any remediation is going to be
6 performed out there, that's going to be soil
7 blending. Correct?

8 A That's correct. So if you -- if you think
9 of soil, we're not just thinking of just the
10 mineral materials. Right? So we have mycorrhizal
11 fungi, bacteria, nematodes. It's a living thing.
12 So it's this composition that has existed for
13 hundreds, thousands of years.

14 And so to upset that through these
15 remediation processes -- we want to try and limit
16 that as much as possible. So if remediation is
17 required at this site, amendments, adding hay and
18 things like that -- some things like that and
19 mixing is a little bit more beneficial for this
20 purpose than digging, hauling, and removing and
21 all that.

22 Q So you would agree that soil blending
23 would be preferable to a dig-and-haul, if
24 remediation is required?

25 A In my opinion, yes.

1 Q And based on your observations, did you
2 see any effect on the vegetation from any oil and
3 gas activities on the site?

4 A I did not, not from oil and gas.

5 Q Mr. Ritchie, were you able to get your
6 opinions and your observations out to the panel
7 during your testimony here today?

8 A I have.

9 Q And I think we've -- I think we've covered
10 everything that you were here to testify about. I
11 certainly thank you for your time and working
12 through this with the panel.

13 MR. FUNDERBURK:

14 So, Mr. Balhoff, I would pass the
15 witness on to see if the panel has any
16 questions that they would like to ask of him.

17 THE HEARING OFFICER:

18 Okay. Thank you. Thank you very
19 much. I do not see anybody on the Zoom feed
20 from the Veron Bice firm. If so, identify
21 yourself, and I would invite questions from
22 the Veron Bice firm if they are on the feed.

23 (NO RESPONSE)

24 THE HEARING OFFICER:

25 Okay. So it doesn't look like they

1 are here. So we're going to go to the panel,
2 and I'm going to leave it up to Mr. Snelgrove
3 to decide the order of the panel as far as
4 questions. Okay.

5 MR. SNELGROVE:

6 Okay. Can we take a break?

7 THE HEARING OFFICER:

8 Okay. Okay. You want to take a
9 ten-minute break?

10 MR. SNELGROVE:

11 Ten minutes.

12 THE HEARING OFFICER:

13 Ten-minute break. Okay. So we're
14 going to take a ten-minute break, and then
15 we'll start. Thank you.

16 MR. FUNDERBURK:

17 Thank you.

18 (RECESS TAKEN)

19 THE HEARING OFFICER:

20 Okay. So we're back on the record.

21 And, Mr. Snelgrove, does the panel have
22 questions?

23 MR. SNELGROVE:

24 We do, just a few. And we thank you,
25 Mr. Ritchie, for your testimony.

1 THE HEARING OFFICER:

2 Let me move this over. Hang on.

3 MR. SNELGROVE:

4 Thank you. Can you hear me well?

5 THE WITNESS:

6 I can. Thank you.

7 MR. SNELGROVE:

8 Good morning to you, and we, again,
9 appreciate your testimony and just have a few
10 questions.

11 THE WITNESS:

12 Okay.

13 MR. SNELGROVE:

14 So, first, for -- just for
15 edification purposes or whatever, if -- in the
16 very beginning of your presentation, there
17 were a few photos of the site entry, you know,
18 where the cattle guard was, and a couple of
19 views of the road and the property. What was
20 the day or the -- or, at least, the season and
21 maybe the year when those photos were taken?

22 THE WITNESS:

23 Those were in September 2021; so that
24 was during -- during our investigation.

25 MR. SNELGROVE:

1 Okay. Got you.

2 THE WITNESS:

3 Uh-huh.

4 MR. SNELGROVE:

5 All right. And, secondly -- and I'm
6 going to ask this question, and it may get --
7 you know, it may -- it may morph, but I'm
8 going to attempt to say it as succinctly as
9 possible the first time around, but -- so
10 there were -- there were two tree species and
11 four grass species that were selected --

12 THE WITNESS:

13 That's correct.

14 MR. SNELGROVE:

15 -- for the root zone study. And so
16 the question is, are those -- are those --
17 were those species determined to be
18 representative of a root zone study --
19 effective root zone depth for conditions that
20 would go beyond, say, just cattle grazing? In
21 other words, if the property would return to a
22 state where there would be no cattle, then go
23 to fallow, if you will, and other species that
24 we observed when we were on our site visit --
25 there were other trees. There were brushes.

1 There were other species out there, maybe not
2 in the vicinity proper where -- where the
3 limited admission is located; however, you
4 know, coming along that road, there were --
5 there was a tree line and what have you.

6 So, again, the question would be, you
7 know, the species that were selected, are
8 they going -- are they going to be
9 representative of conditions and be -- and
10 allow for growth of other species that may
11 enter into that area if there were no cows or
12 no -- no conditioning of the land in that area
13 for cattle grazing and allowed to return to
14 something more of a native or natural state
15 with -- with the other species in -- you know,
16 in consideration?

17 THE WITNESS:

18 Yes. And I appreciate that question.
19 And the answer is, yes, it would. So, again,
20 it -- it is representative. That's why we
21 selected species like the marsh-elder, which
22 is not something that cattle use to graze. So
23 it would be something that you would -- or a
24 species that you would see in a fallow state.
25 I've done numerous studies of fallow lands and

1 also in some agricultural settings as well,
2 and so that -- these root zones would be
3 representative of that.

4 As far as the trees go, that's why we
5 selected the two trees, in case there was some
6 potential in the future of planting trees. As
7 you mentioned, that there were trees along the
8 tree line itself, but for our investigations,
9 we typically don't want to look at trees that
10 are near waterbodies, on spoil banks, along
11 banks and stuff, because just the natural
12 rooting structure would not be the same for
13 those conditions.

14 So the answer is, yes, it would be
15 representative of any kind of species.

16 MR. SNELGROVE:

17 Okay. So what I'm hearing then is --
18 and certainly correct me if I'm not getting
19 this correct, but you are -- you've
20 established that there are two different
21 settings here. The species that we located or
22 observed in the tree line area, in your
23 opinion, would not necessarily be -- would
24 have an advantageous growth at the property
25 where the tank battery and the -- and the

1 features are that were -- you know, that's
2 part of the limited admission.

3 So is there -- is that -- is that
4 correct that there would be -- because there's
5 a different setting there, different
6 environmental conditions, you would expect to
7 have a different strand of -- of native
8 vegetation that would occur, and the species
9 that you selected would -- would, therefore,
10 be representative of what the expectation
11 would be in a fallow condition for -- allowing
12 for the roots to do what they need to do to
13 support the growth of those species?

14 THE WITNESS:

15 That's correct. So along river banks
16 and things like that, that would be considered
17 a different type of habitat, so to speak, than
18 what you would have in the interior of the
19 pasture itself. And so that's why we -- we
20 selected those trees that were in the pasture
21 proper instead of along the river banks
22 itself.

23 MR. SNELGROVE:

24 Okay. That -- that takes care of it
25 for me. It was more of a site-specific,

1 setting-specific conditions, and you found the
2 species that were in or nearby to -- to select
3 for -- for the purposes of your root zone
4 study?

5 THE WITNESS:

6 That is correct.

7 MR. SNELGROVE:

8 Okay.

9 MS. LOVE:

10 I don't have any other questions.

11 MR. SNELGROVE:

12 They have no further questions.

13 THE WITNESS:

14 Great. Thank you.

15 MR. SNELGROVE:

16 Thank you.

17 MR. FUNDERBURK:

18 I'll trade spots with you.

19 THE HEARING OFFICER:

20 Okay. We are going to adjourn until
21 Monday at 8:30, and the participants here will
22 be in their same locations, and the court
23 reporter will be there at 8:30 ready to go
24 Monday morning.

25 MR. FUNDERBURK:

1 Yes, sir. I had one -- one other
2 little thing just to mention as we go into
3 Dave Angle and Angela Levert's testimony come
4 Monday is that Ms. Levert has specifically
5 mentioned her Exhibit 45 that is in our list
6 of non-planned exhibits that are some RECAP
7 evaluation tables. I know that's something
8 that she will be spending some time on during
9 her testimony. So she just wanted to call
10 those out as, you know, maybe something --
11 something, if the panel wants to look at it
12 over the weekend, that she'll be spending some
13 time on.

14 THE HEARING OFFICER:

15 Okay. John, one question. I know
16 you have estimates in the list that you gave
17 me for witnesses. Let's see. I don't know if
18 I can put my hands on it but -- not to hold
19 you to it, but what do you think in terms of
20 length? We start at 8:30 and we take normal
21 breaks, what -- what do you feel like the day
22 looks like?

23 MR. FUNDERBURK:

24 I think we should be early to
25 mid-afternoon. That is a very safe estimate

1 for us to be done.

2 THE HEARING OFFICER:

3 Okay. Sounds good. Okay. We're
4 going to adjourn -- adjourn until Monday
5 morning, 8:30. Thank you.

6 MR. FUNDERBURK:

7 Thank you very much. Have a good
8 day.

9 THE HEARING OFFICER:

10 Thank you.

11 (OFF THE RECORD AT 10:33 A.M.)

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REPORTER'S CERTIFICATE

I, Karla H. Mayers, a Certified Court Reporter in and for the State of Louisiana, do hereby certify that the foregoing is a true and correct transcript of the proceedings held at this public hearing on the 31st day of March, 2022, as set forth in the forgoing 96 pages.


I further certify that said testimony was reported by me in the Stenotype reporting method, was prepared and transcribed by me or under my direction to the best of my ability and understanding.

I further certify that the transcript has been prepared in compliance with transcript format guidelines required by statute or by rules of the board and that I have been informed about the complete arrangement, financial or otherwise, with the person or entity making arrangements for deposition services.

I further certify that I have acted in compliance with the prohibition on contractual relationships, as defined by Louisiana Code of Civil Procedure Article 1434 and in rules and advisory opinions of the board.

I further certify that I am not an attorney or counsel for any of the parties, that I am neither related to nor employed by any attorney or counsel connected with this action, and that I have no financial interest in the outcome of this matter.

This certification is valid only for this transcript accompanied by my signature on this page.


Karla H. Mayers, CCR
Certificate No. 94023

Transcript of The Public Hearing
March 31, 2022

(14 11:8 12:17, 24 13:4,5 15:17 18:5 25:18	2019 8:5 11:4 2019-4925 4:11	312 10:19,25 13:16
(C)(2)(A) 13:15	14th 4:11	2021 11:8,24 25:17 56:10 89:23	31st 4:3 32 26:20 27:1
0	15 8:12 9:17 13:9 42:8 49:15	2022 4:3 12:12, 15,17,24 13:5,9 15:17 25:19	33 27:5,9 34 10:14 27:5, 10
00514 47:6	15-minute 22:4,5,19	21 10:5	35 10:14,21 57:4
00518 47:6 49:17	150 30:2	23 8:23	36 54:3,4,18
0054 50:8	1563 11:13 14:11	24A 11:4	37 54:3
1	16 9:25 11:4	25 11:24 37:4 44:16	38 54:3
1 9:4 11:15 25:15 45:8 49:11,15	18 8:5	1900s 56:1	39 54:4
1/2 70:16	1971 55:22	2780 41:14	3d 17:7
10 8:13 25:17	2	29-B 18:1	4
101 71:7	2 5:21,22 25:15	2:45 22:23	4 70:16
1038 17:7	2-feet-by-2-feet-by-3-feet 61:17	3	40 20:20 54:4
10:00 22:21	2000 8:23 9:4 29:1	3 8:11 18:3 26:8,14	41 54:4,5,19
10:15 22:21	2005 38:14	30 84:3	42 56:7 57:4
10:33 96:11	2006 10:19	30:29 11:1,11 12:9	45 24:23 84:3 95:5
11 8:13 9:11 26:9,14	2013 17:7	30:29(C) 12:3	454 84:23
110 17:7	2015 9:19 29:1 40:1 56:20	30:29(C)(1) 13:15	46 56:19 57:4
12 26:20 27:1 33:15 36:22 84:15 85:21		30:29(C)(3) 17:22	47 45:1,3,19
13 9:15		30:29(I) 11:7	

<p>471 74:19</p> <p>491 74:22</p> <p>4:30 22:7,11,14, 17</p> <hr/> <p style="text-align: center;">5</p> <hr/> <p>50 25:11 75:8</p> <p>5x5 35:13</p> <hr/> <p style="text-align: center;">6</p> <hr/> <p>6 8:20</p> <p>60 13:19</p> <hr/> <p style="text-align: center;">7</p> <hr/> <p>7 8:25</p> <p>75 36:23</p> <hr/> <p style="text-align: center;">8</p> <hr/> <p>8 9:6 12:12,15</p> <p>8:30 21:11,12,15 94:21,23 95:20 96:5</p> <hr/> <p style="text-align: center;">9</p> <hr/> <p>95 35:21</p>	<p>A</p> <hr/> <p>A.M. 96:11</p> <p>abandoned 9:17</p> <p>able 31:7 35:24 44:20 51:22 65:13 66:9 76:10,18 79:10,14 85:9,25 87:5</p> <p>absolutely 46:6</p> <p>absorbed 71:22</p> <p>abundance 63:19 75:6</p> <p>abundant 63:24 75:12 76:4 78:6 79:5</p> <p>accepted 25:21 26:3, 18 27:3,12 45:21 47:11, 19 48:3 54:21 57:6 64:11</p> <p>accompanied 80:16</p> <p>accordance 14:22 17:11</p> <p>accounting 39:9</p> <p>accurate 56:14</p> <p>acquisition 36:16</p> <p>acre 50:18,21</p> <p>across 35:16 36:8, 24 37:5</p>	<p>act 10:19,25 13:16 17:8,9</p> <p>action 10:20,24 14:18</p> <p>activities 9:9 87:3</p> <p>activity 79:18</p> <p>actual 50:16</p> <p>adding 86:17</p> <p>addition 10:15 22:12 62:14</p> <p>additional 10:23 56:16 74:22</p> <p>Additionally 40:25</p> <p>adequate 84:16</p> <p>adjourn 94:20 96:4</p> <p>administrate 39:9</p> <p>administratio n 39:9</p> <p>admission 11:9,14,15, 16,17 13:7, 8,9 14:12,13 26:12 29:6 43:21 44:9 45:8 49:4,7 50:9 86:2 91:3 93:2</p> <p>admissions 11:12,20</p> <p>advantageous 92:24</p> <p>adverse 16:1 20:17</p>	<p>advised 15:10</p> <p>aerial 64:25</p> <p>aerials 51:2 68:4</p> <p>affairs 39:2</p> <p>affidavit 13:1,3</p> <p>afternoon 22:5,22</p> <p>afterwards 46:15</p> <p>age 70:20</p> <p>agencies 13:25 15:3 43:5</p> <p>agency 14:17</p> <p>agree 85:25 86:22</p> <p>agreement 9:2,4</p> <p>agreements 10:9</p> <p>agricultural 43:11 92:1</p> <p>agronomic 39:2</p> <p>ahead 25:1 48:4 55:21</p> <p>aids 20:19,21</p> <p>air 77:18</p> <p>alive 80:1</p> <p>allow 11:20 91:10</p> <p>allowed 91:13</p> <p>allowing 93:11</p>
--	--	---	--

Amended 11:3	application 41:24	around 28:16 50:24	Associates 36:10
amendments 86:17	applications 64:14	51:5 60:6,8	assume 45:22
Americans 78:22	applied 17:15 41:11	63:7 65:15	assuming 20:9
anaerobic 79:18	applying 13:20	67:1,8	assumptions 83:18
analysis 30:1 47:17	appreciate 8:3 20:1,7	69:15,21	athlete 38:7
55:11,13,23	21:1,6 44:25	70:18 71:24	attached 8:23 9:5
56:17 57:11, 18,22 64:20	89:9 91:18	72:12,13	11:16
analytical 39:13	appreciative 28:17	80:7 90:9	attempt 90:8
anatomy 42:22	approach 76:17	arrive 19:1	auger 62:22,24
Angela 7:21 95:3	appropriate 15:20 54:13	Art 71:7	August 8:23
Angle 6:6,8,9 21:5	approve 13:22,23	Article 11:13	author 29:7 44:11
24:20 25:9	16:15	articles 58:1	authority 14:17
29:16,20	approving 17:16	Arville 37:9	available 58:1
49:20 86:3	approximately 50:21 70:16	asked 19:23 23:21	awarded 42:7
95:3	April 12:15	46:8	aware 64:19
annual 78:14	Aquatic 56:22	asking 30:21 31:20	
answer 91:19 92:14	area 37:24 42:6	46:19	<hr/> B <hr/>
anybody 7:18 23:5	47:21 50:13, 17,21 51:5, 23 52:5,10	assert 10:23	bachelor's 38:10,12
87:19	53:2 67:6,9, 14 73:19	assess 60:19 62:17	back 5:18 14:4,20
anyone 64:19	77:25 78:24	66:4	23:14 38:9
apart 62:3 81:3	83:9 91:11, 12 92:22	assessed 65:11	40:4,16,18
apologize 7:5 24:14	areas 35:13,17	assessment 58:10 85:21	48:8,9 56:1
appeared 66:17,20	42:3,8 51:3	assessments 33:9 37:14, 18,19 42:12	62:20 75:22
Appendix 45:8 49:6,11	52:21 53:1	56:22	82:9 88:20
74:18 75:3	66:6,10,13	assist 35:23	backdrop 31:24
applicable 13:20 17:12, 15	67:4,16 77:5	associate 41:20	background 34:12,22
	79:16 80:3	associate's 38:5	82:4
		associated 10:3	

backgrounds 16:7,9 18:10,11	begin 4:17	78:2 86:19	Brumby 15:13
bacteria 86:11	beginning 46:5 89:16	blending 86:7,22	brushes 90:25
Balhoff 4:2 23:16 24:6 28:13 31:10 54:17 57:2 87:14	behalf 7:22	bless 74:19	bunch 39:15
banks 92:10,11 93:15,21	behind 31:22 51:22	bole 70:11,18	business 39:8 45:15
Barbe 4:8 13:1	belief 15:22	botany 39:4 42:10 47:15	<hr/>
barbed 51:5 52:4 67:5	believe 20:13 23:21 28:7 30:4	bottom 50:7 51:17 59:23 62:2, 23 63:16 74:10	C <hr/>
based 16:14 60:25 61:3 71:15 80:9 87:1	below 63:1 71:13 72:13 76:12 78:5 82:13	bottomland 35:17	C-H-O-U 8:15
baseline 36:7	beneficial 86:19	boundaries 65:21	C.W. 4:9
basic 48:13	Bermuda 73:17,21 76:22 82:19, 20,23,25 83:14	branching 68:15,18	Calcasieu 4:12 8:14 49:15 50:11 54:6
basically 48:10	best 20:13,24 71:9	Brandon 4:25 5:1,8	calculus 38:21
basis 19:21	better 55:20 73:2 81:17	Bray 12:24	Cali 39:17
Bates 46:9,14,21 47:4 49:16 50:6,8 59:23 74:13,19 84:22	bible 55:16 76:1	breach 10:7,15	call 4:18,20 7:19 26:22 95:9
battery 51:2 92:25	Bice 87:20,22	breached 10:10	Call-in 5:20,22
Bayou 43:12	biogeochemist ry 41:4	break 21:16,17,21, 24 22:3,11, 19,21,23 88:6,9,13,14	called 7:19 58:12
beaksedge 76:23	Biologically 56:20	breaks 18:21 21:24 22:4,5 95:21	camera 23:14 31:19 81:14
bear 5:10	biology 38:11,16,20	breast 70:15	camping 39:22
bears 49:16	bit 18:18 19:16 26:7 29:3 45:2 62:20 68:25 75:5 77:20,23	Brent 12:24	candidate 68:20
		brief 28:7 50:4	capital 33:11
		briefly 14:15	care 93:24
		broom 68:18	career 33:20 38:9 40:12
			carry 47:3

Transcript of The Public Hearing
March 31, 2022

case 4:7 11:23 18:19 20:17, 24 44:3,14 58:22 61:18 68:8 75:6 92:5	chart 84:19	11:12 14:10	56:16 57:17 64:1,11 72:7
cases 19:8,18 36:23	chemistry 38:21,22	Colby 38:6	community 38:6 64:10
cattle 50:22,23 51:21 66:18 73:18 83:1 89:18 90:20, 22 91:13,22	choose 65:24 67:17 80:20 82:20	collar 69:6	Company 4:9 6:4 7:22 8:22 9:3,7 11:9 13:7 17:3
caused 10:12 11:5	chose 67:18 72:3 77:22 78:15 82:19	colleagues 49:20	compensatory 10:3
center 51:25 65:1 73:24 81:4	chosen 67:5	collect 37:19	complete 58:21
centrally 81:7	Choupique 8:14,19	collected 70:3,4 72:17	completed 40:18
certain 8:7 14:10	cited 17:21	collection 37:1	completing 40:7
certainly 28:18 29:21 30:15,17 31:3 87:11 92:18	Civil 11:13 14:11	college 38:6 39:8	complex 53:23
certification 41:1,6,11,15 42:18	Claire 6:1	Colorado 39:18	complies 31:16
certification 41:13	class 71:8	come 5:18 19:6,22 22:24 25:8 43:1 71:14 95:3	composition 69:17 86:12
certified 26:24	cleanup 10:24	comes 14:4 71:8	computer 5:16
cetera 26:25 49:23 65:22	clear 17:8 54:4	comfortable 31:5	concerned 26:2 73:11
changed 33:20	clerk 19:5	comment 15:9	concerns 17:10
Chapter 18:3,5	close 9:23 21:18	comments 12:23 13:2 14:6 15:2,15 16:1 18:12, 17 23:1,3 24:7 27:23	concert 9:8
charge 16:12	closing 82:16	Commissioner 12:18	conclusion 13:19 71:11, 12,14 72:19 80:11
	coach 33:19	Commissioner' 12:18	concurrence 13:10
	coast 35:8	s 27:7	condition 66:3 93:11
	coastal 35:16	common 56:4 57:19 63:24 64:1,7 75:13,23 76:13 78:7 79:6	conditioning 91:12
	Coastwide 33:23	commonly 13:16 55:16	conditions 49:13 67:8 90:19 91:9 92:13 93:6 94:1
	coauthor 44:7,11		
	coauthored 43:23 49:3		
	Code		

Transcript of The Public Hearing
March 31, 2022

conduct 12:5	28:3 30:21	9,10 74:15, 16,23,24	craft 15:25 20:9
conducted 9:8,12 37:5 48:25	continue 8:19 22:11 34:21 48:4 74:6	75:3,4 76:14,16 78:8 82:14 83:14 84:1, 21 86:4,7,8 90:13 92:18, 19 93:4,15 94:6	crafted 20:10
conducting 52:16	continuing 12:4 42:17, 20	correctly 55:19	CRMS 36:2 43:7
Conference 27:8	contract 16:20,25	counsel 12:17 13:5	crops 54:14 64:18
congestion 80:6	contracts 9:13 16:22	couple 18:17 24:7 25:8 89:18	cross- examining 19:18
conjunction 29:11 69:20	controversy 8:9	course 15:5 30:6 39:2,4	cultivating 54:14
connected 5:12	convened 13:17	courses 38:20 39:4 40:21,23,24, 25 41:4,11 42:21	current 45:4
connection 17:1	convenient 21:22	coursework 40:19 41:24	cut 20:3 63:11
Connelly 37:17	copy 45:3	court 4:12 14:20 15:4 17:2,5, 8,13,21 20:11 23:10, 20 24:3 26:11,12,14 31:25 32:7 94:22	CV 44:21 45:1, 4,19 47:3
Conservation 4:15 12:20 14:5 15:11 16:6 18:2	core 63:8,14 75:7	cover 64:5	cycle 58:21
conservative 75:19 76:17	cores 63:11	covered 87:9	cycles 84:13
consider 16:12	coring 56:14 62:14 74:7 83:25	cows 66:24 71:1 91:11	<hr/> D <hr/>
consideration 15:2 91:16	Corne 43:12	crabgrass 80:17,18,24 81:1	dad 39:17
considered 93:16	corner 50:7 74:10		damage 8:6 10:4,6, 12 11:6 12:2 17:18 82:10
consistent 57:12	correct 4:21 6:25 36:11,12,15, 18 40:2 44:6,10,14, 17,18 45:9, 10,24 49:4, 5,7,8 50:1, 18,19 51:11 53:4,7 55:4, 6,7 59:3,4 61:1,7,11,12 63:9,10 65:20 67:22 69:20 71:15 72:4 73:7,8,		damages 8:4,5 10:3 11:3
constitutes 10:7			data 36:2,4 37:1, 19 59:13 70:3,4 72:17,18 75:1,2
consult 18:20			datasheet 80:16
consultant 33:7			date 12:24 15:17
Consulting 12:25			
contained 85:2			
contaminants 9:22			
context			

dating 56:1	declined 16:2 19:25	depression 78:1	60:9 64:5
Dave 6:9 49:20 95:3	declining 15:11	depth 56:21 57:25	68:22 69:22 70:19 85:10
day 4:3 16:4 21:4 22:7 89:20 95:21 96:8	decomposition 79:19	58:8,15 60:10,18 74:8 83:9, 11,18 84:15 85:10,21 90:19	determined 75:15 84:14 85:14 90:17
days 13:19 48:19 59:11	deeper 85:24	depths 62:17 85:24	develop 12:1
DBH 70:14	deepest 58:18 84:7 85:14	DEQ 6:25 7:2	development 17:20
dead 79:21 80:1	Defendant 8:22 9:2,3,7 11:5 16:23	Derrick 4:13	diagram 63:25 70:12 76:3
deadline 12:12	Defendants 9:12,24 10:2,9,17	describe 49:21 51:15 56:7	diameter 68:5 70:15
deadlines 12:8	Defendants' 10:15	described 29:6 30:5,12	dichotomists 38:25
deaf 20:20	defined 11:6	describes 11:14 55:23	difference 40:4
deal 20:12	definitely 59:9	describing 29:10	different 18:14,19 19:17 35:8, 13 40:21 42:8 53:20 60:7 66:4,6 75:5 77:20 78:25 79:10, 23 82:25 92:20 93:5, 7,17
dealings 29:17	degree 38:5,10,13 39:24 40:5, 7,18,20 41:3,10	design 42:13	DIFFICULTY 8:16
December 9:4 11:4	degrees 38:3	designate 11:21 42:3	dig 60:8 61:15, 21 69:11 78:9 82:6
decent 31:24	delineate 42:11	designation 41:22	dig-and-haul 86:23
decide 16:24 88:3	delineation 42:11	detail 30:12 63:4	digging 61:16 86:20
decided 17:7	denied 13:12	details 83:20	direct 18:12 19:14
decision 17:2,13 19:1,7 31:7, 14	dense 78:18	determination 56:20 62:9, 17 70:20 71:25 72:14 75:12	Director 12:19
decision- maker 18:20	density 60:19 63:21 75:18 76:5	determination s 37:20 57:24 59:14 60:25 61:3 76:10	dirt 81:20
decision- makers 15:7 16:5,11	Department 12:4 13:21 17:19	determine 16:16 58:24	
decisions 17:4 83:21	depending 21:18		

Transcript of The Public Hearing
March 31, 2022

discipline 38:19	dominance 73:15 78:24	49:19 50:15 68:25	15 86:1 90:19
discrete 29:8	dominant 61:21 68:1, 10 73:12,21	early 56:1 95:24	efficient 59:14
discuss 58:2	dominating 66:7	ears 20:20	efficiently 28:20
discussed 49:19	dots 65:9,12	easier 60:13	either 16:20 26:10 30:14 52:3 67:10 81:14
dismiss 13:8 14:16, 17	doubt 55:21	eat 83:1	emanated 17:4
dispute 8:9 19:20	draft 19:7,9,10	ecological 33:9 37:14, 18,21 42:11 56:22	empirically 24:22
distance 34:18 53:18 82:22,23	drained 53:21	ecology 38:11,15,21 47:16	employees 16:7
distracting 31:23	draw 60:16 70:12 71:9	economy 39:20	end 23:9 26:2 43:1 52:3
distribution 62:18 63:25 70:8 77:7 81:5,7	drew 4:7 8:3 13:4 49:14 71:3,4	edge 53:19	enrolled 10:25
District 4:12	drilled 9:16	edification 89:15	enter 66:2 91:11
ditches 65:22	drive 66:3	edit 19:10	entered 8:21 9:1
dive 67:15	dry 20:3	education 34:23 38:2,4 41:21 42:17, 20 45:11 57:12,15	entire 15:6 66:3
Division 4:11 12:20	dug 71:24 72:12 73:23 76:8 81:2	effect 15:13 87:2	entitled 10:22 22:14 49:13
DNR 14:4 43:8	duly 32:9	effective 33:9 44:1 48:25 58:13, 14,15,24 62:10 64:14, 17 67:13 68:22 71:13 72:14,20 73:6 75:15, 20 76:11 78:4,12 80:11,13 81:9 82:12 83:11,21 84:7 85:11,	entrance 51:18,20 65:5
Docket 4:10,15 8:2	Dutch 55:16 76:1		entry 89:17
document 46:8,16 55:22 56:6	duties 10:16		ENV-L-2022-01 4:16 8:2
documents 46:9 55:9	dying 79:16		environmental 8:6 9:20 10:6 11:6 12:2,19 17:18 33:3 36:20 93:6
doing 20:24 22:13 34:19 35:2 37:17 39:6 40:19 47:13 48:11 59:6 60:3 64:20 79:13		<hr/> E <hr/>	EPA 56:19
	E&p 52:24		epicormic 68:18
	earlier 17:23 31:11		

Transcript of The Public Hearing
March 31, 2022

equipment	31:6,11,13	expect	eye
51:9	45:22 49:23	53:13 93:6	82:2
ERM	54:21 57:6	expectation	
6:22 33:2,6,	evolutionary	93:10	<hr/> F <hr/>
8,14,15,17,	38:11,15	expensive	face
18 34:19	examination	40:10	62:7
36:14,16,17	46:15	experience	facilities
52:16 62:20	examined	35:5,23	9:24
essence	32:9	36:23 41:21	facing
13:12	excavate	42:2 45:12	52:2 53:16
essentially	60:5,9,18	57:13 76:7	failing
35:13	69:11	79:12	10:10,12
establish	excavated	experiences	fair
61:23	72:13 75:7	18:14	37:22
established	excavation	expert	fairly
92:20	56:13 60:2	42:8 47:15	68:6
Estate	69:21	expertise	fairness
12:16 13:5	excavations	42:3,6	20:14
49:15	57:17 71:24	experts	fallow
Estates	exceedances	9:20	90:23 91:24,
4:7 8:3	30:11	explain	25 93:11
estimate	excellent	35:1 40:3	familiar
95:25	53:10	64:22 78:14	36:2 37:12
estimates	excessive	exploration	80:18
95:16	9:21	9:9 17:3	family
et	excuse	explored	40:17
26:24 49:23	13:22 39:18	56:4	far
65:22	exhibit	expose	22:6 25:5
evaluate	8:24 9:5	63:13	26:2 29:25
17:17	11:15 24:15,	express	34:18 36:22
evaluates	21,23 26:8	10:8	37:23 43:15
12:7	45:1,3,8,19	extend	63:8 67:23
evaluation	49:11 56:7,	69:9 74:4	68:25 69:12,
12:1 95:7	19 95:5	extending	14 73:11
evaluations	exhibits	12:12 69:7	74:25 82:21,
57:18	19:14 24:8,	extends	22 88:3 92:4
everybody	15 25:6,11,	62:23 65:4	farmers
4:5 21:10	15 26:14,20,	extension	39:15 70:25
28:22 32:18	21 27:1,5,9,	12:10 13:18	feasible
80:18	14 54:3,4,18	extensive	14:24 16:16
everyone	57:4 95:6	37:23 42:14	17:16,20
16:8 20:14	exist	extent	43:25 85:23
23:23	60:20	20:4	features
evidence	existed	extracted	64:3 93:1
15:8 16:13,	86:12	82:8	February
15 19:2,20,	existing	extremely	12:12,17,24
21,23 26:3	63:1	40:10	

15:17	final	following	full
federal	12:7 13:22	4:1 26:8	15:23 29:5
43:16	15:3,25	follows	30:1 31:8
feed	find	32:10	68:17 75:2
6:7,13 7:10	21:22 46:16	foreground	full-time
87:19,22	60:18 61:19	82:5	40:17
feel	66:9	foremost	fully
30:15,22	fine	18:1	10:11 20:7
95:21	6:18 7:24	forested	62:16
feet	27:19 28:4	35:17 44:2	functional
70:16	finer	forester	37:18 42:12
fence	71:18	39:17	Funderburk
51:4,5,22	finish	forestry	4:20,22 6:14
52:5 65:3	22:6,14	39:3	23:5,15,19
67:5	29:19	forget	24:5 25:3,22
fenced-in	finished	30:20	26:5,19
50:17	38:8	forgot	27:4,13,21
fertilizers	firm	24:13 46:4	28:5 32:11,
64:15	87:20,22	form	16,21,23
field	first	75:1,2,23	34:2,8,10
8:20 35:4,5,	11:2 18:1	80:10 83:23	45:17,25
20,22 36:25	25:14 28:12	forms	46:22 47:1,
43:6 45:24	32:8 57:22	75:2	12,22 48:5,7
47:10 57:13	66:2 73:17,	forth	49:9,18
58:23 61:6,	22 82:23	8:9 11:11	54:16,22,24
10 65:19	83:14 89:14	12:9 14:3,7,	57:1,7,9
71:10 74:11	90:9	23 43:11	59:19 60:1
78:2 79:13	five	forward	87:13 88:16
81:8 82:1	42:1,19	42:25	94:17,25
fields	65:25	found	95:23 96:6
48:3	flat	47:5 49:6	fungi
fieldwork	62:6	66:6 73:20	86:11
37:23 38:1	Florida	77:3,4 80:22	furnished
figure	40:1	81:9 82:12	13:2
50:9 63:15	flower	94:1	future
file	84:12	four	68:8 92:6
12:6 15:15	flowering	90:11	
25:15 26:15,	52:13	frank	<hr/> G <hr/>
25 27:8	focuses	40:9	Gary
45:15,18	41:9	frankly	12:19 18:8
54:18 57:3	foliage	64:9	23:25
filed	68:17	free	gas
8:4 13:6	folks	30:15,22	8:19 9:8,12
14:9,16 15:4	28:10	friends'	87:3,4
20:11 25:16	follow	39:17	gate
filled	69:10,12,22	frontman	51:18,20
72:17		43:18	

Transcript of The Public Hearing
March 31, 2022

65:5	10,15,20	grazing	
gave	22:2,3,8,11,	50:22 66:19	
14:11 72:5	14,16 23:13,	73:19 90:20	
95:16	22 24:9 25:7	91:13	
general	26:1,3,4,24	great	
14:5 21:9	28:6,20 29:2	32:22 33:25	
38:20 39:4	31:18 33:4	34:21 63:4	
48:22 52:18	40:11 44:19	66:12 82:23	
53:6 57:24	45:23 46:12,	94:14	
59:5 66:14	18 47:11,20	greater	
68:13 70:6	48:8,15 78:6	75:18	
76:3 83:17	81:18 84:4	green	
generality	86:5,6 88:1,	52:7,22	
68:25	2,14 90:6,8	65:12 68:17	
generally	91:8 94:20	80:23 84:10	
85:7	96:4	85:8	
get-your-hands-dirty	good	grew	
59:8	4:5 6:9,11,	39:21	
getting	22 7:12,14	ground	
24:9 39:19	20:20 32:15,	62:1 70:17	
41:3 45:23	17 59:13	71:13 76:12	
57:20 81:11	62:9 66:9,10	78:5 82:13	
92:18	68:20 69:16	groundwater	
give	70:25 77:2,	9:23	
5:17 21:25	3,8 80:24	Group	
48:10,13	81:20 89:8	33:21 34:24	
50:3 83:20	96:3,7	35:2	
85:1	grades	grow	
given	41:25	69:13 77:17	
24:18,21	graduate	growing	
72:22	41:1,6	52:7,22 53:1	
giving	graduated	58:20 60:19	
5:8 43:25	43:4	66:11,18	
goal	grass	68:8,17,21	
67:12	53:1 73:17,	71:19 72:10	
God	21 76:22	80:5,23	
74:19	82:19,20,24,	84:10 85:9	
Goedewaagen	25 83:14	growth	
55:18 63:21	90:11	58:17 68:19	
going	grasses	84:17 91:10	
5:25 6:12	65:11	92:24 93:13	
8:8,18 15:21	gravel	guard	
16:11 17:6	51:7,25 53:2	51:21 89:18	
18:18,24,25	gravels	guess	
19:17 20:10,	51:8	41:19 78:21	
15 21:4,6,	graze		
	91:22		
			H
			H.C.
			4:7 8:3
			12:16 13:4
			49:14
			habitat
			37:21 93:17
			habitats
			35:9 37:20
			hackberry
			72:2,8
			hairs
			74:5
			half
			22:20
			half-mile
			67:21
			hand
			31:1 32:3
			60:6 62:22
			handling
			28:14
			hands
			81:19 95:18
			handy
			71:8
			hang
			72:24 89:2
			happened
			40:15
			hardwoods
			35:17
			hauling
			86:20
			hay
			86:17
			HCDE_02500
			47:4
			head
			73:3 76:8
			health
			16:17 37:21
			44:1 47:25
			66:15,16

Transcript of The Public Hearing
March 31, 2022

70:22	height	Honor	81:5
healthy	70:15	4:23 46:2	Ieyoub
52:7,22	held	47:14	12:18
66:17,21	12:14 13:13	hope	III
68:21 70:23	Helen	31:21	4:8 13:1
79:5 80:3,23	37:17	horned	image
84:11 85:9, 14	Hello	76:23	64:25
hear	8:18	hour	immediately
32:18 85:3	help	21:25 22:1, 20	21:21
89:4	19:12 34:4	hours	impact
heard	46:15 58:20	73:4	30:9 52:24
55:14 76:21, 22 78:13	69:21	human	58:7
hearing	helped	39:2	impacts
4:2,4,6,14, 24 5:5,11, 19,24 6:5, 10,17,23 7:4,8,13,17, 23 8:1,17 12:6,13,21, 23 13:9,10, 13,17,20 14:9,14 16:14,19 17:10 18:21 20:19,21 21:8 22:15, 18,25 23:12, 17 24:9,12 25:20,24 26:17 27:2, 11,18,24 28:14 32:4 45:20 46:3, 24 47:7,18 48:2 54:20 57:5 87:17, 24 88:7,12, 19 89:1 92:17 94:19 95:14 96:2,9	28:18 37:19	hundred	implied
	helping	30:2 35:15	10:8
	62:21	hundreds	importance
	herbaceous	76:7 86:13	83:2
	34:17 50:23	hung	important
	52:6,11	72:24	31:12 36:4
	65:8,10,25	hydric	56:9 57:21
	73:12 75:4	40:24 42:10	58:3 60:17, 21 65:16
	78:19 79:4	hydrocarbons	79:12
	80:2 84:8	9:22	inch
	high	hydrology	75:11
	33:18 39:7	35:6 58:5	inches
	historical		71:13 72:21
	51:2 68:3	I	73:7 74:4
	history		75:8,16,18, 20 76:12
	78:21	I-10	78:5,11
	hold	50:14	80:14 81:10
	5:4 12:13	idea	82:13 83:12
	30:19 95:18	62:9	84:7,16
	holding	identified	85:15,21
	78:2	42:7,15	include
	hole	53:25 54:11	76:19
	73:3 76:9	75:20 84:6	included
	82:6	85:12	26:13 41:24
	holes	identifies	48:16 69:5
	76:7	11:16	75:3 84:22
	Holloway	identify	includes
	29:12 37:7	5:6 35:14,24	18:7 24:19, 23 70:6
	43:24 44:17	37:19 39:1	including
	48:16 49:2, 12 55:5,15	60:4 79:11	83:25
	59:2 71:12	87:20	
	home	identifying	
	38:9	35:10 64:7	
hearings			
43:21 44:9			
heavy			
71:20			

Incorporated 4:10	investigate 59:12 65:14	January 25:18	50:3 52:23
indicate 65:9	81:22 82:10	Jeanerette 43:22 44:4	53:11 56:8
indicating 51:23	investigating 48:20	job 18:24 53:10	58:5 59:8
indication 52:23	investigation 25:16,18	John 4:20 37:17	64:15 66:7
individual 42:5 62:20	34:20 35:7	45:22 95:15	67:9,18
68:2,22	50:20 52:16	judge 4:13 11:24	68:19 69:8,9
79:11	53:25 65:18	12:11 14:14	74:1 78:1
individuals 37:8 43:13	69:5 71:23	Judicial 4:11	79:23 92:15
48:18	89:24	jurisdiction 15:6	knees 81:19
influences 58:6	investigation s 79:8 83:16	jury 16:10	knife 62:3,8
information 5:9 31:9	92:8	<hr/>	know 6:11 15:8,18
70:6	invite 87:21	K	16:5,9,10
informed 12:18	invited 15:14,21	<hr/>	17:25 18:10,
inspected 77:6	invoked 11:11	K-E-E 4:13	11,12 21:25
instances 37:9 43:14	involve 16:19	Kansas 38:6	24:13,16,18
integral 43:24	involved 5:4 14:1	Kean 31:21	25:25 27:25
intend 12:22 24:24	18:15 19:3,	Kee 4:13 11:24	28:23 29:2,
interested 39:6,10,19	5,9,19 20:23	12:11	15,16 30:18,
interesting 39:12	iphone 81:15	keep 5:25 26:4	25 31:22
interior 63:14 93:18	irrigation 64:13	30:25 45:14	32:2 38:20,
introduce 23:23 24:14,	issued 13:11	kept 65:18	21,24 39:13,
25 25:7,15	issues 5:17 16:24	key 35:25	14,16,22
26:15 27:1,9	20:4,6 28:17	keys 39:1	40:3,8,10,17
32:24 45:18	36:20	kick 23:6	41:9 42:22,
54:18 57:3	items 24:24 60:7	kids 40:14	23 43:3,7,
introducing 25:5	<hr/>	kind 23:22 39:12,	15,24 46:7,
introduction 24:8	J	13 40:14	20 47:8
	Jake 62:19		51:14 53:2
	Jamie 18:8 24:1		57:25 58:1
			60:14,23
			61:2 62:3,5,
			6,7 64:1,17
			65:25 67:7,
			10 68:14
			69:13,23
			70:20 71:5,
			6,7,20 72:3,
			7 73:18 74:4
			75:5 76:1,
			16,19,22
			77:17,18
			78:9,10,21
			79:22,24
			80:5,15,22
			81:1,11,15,

18,22 82:2, 9,18 83:7 84:3 85:17 89:17 90:7 91:4,7,15 93:1 95:7, 10,15,17	lawsuit 14:9,10 lawyers 28:9 lay 53:11 63:11 LDEQ 18:4 LDEQ's 18:5 LDNR 26:10 27:6 43:20 44:8 66:23 lead 33:11 39:17 leading 52:1 learned 57:14 lease 8:21,23 leave 82:9 88:2 left 24:2 51:17 55:17 59:7, 17 62:1 70:5 83:6 left-hand 50:7 68:14 legacy 36:20,22 37:15 legally 10:1,2 Legislature 17:18 length 95:20 lengthy 21:8 letter 15:13 Levert 7:20,21 21:7 24:20 29:16,	21 95:4 Levert's 95:3 life 40:14 58:21 84:13 lifting 71:21 limit 86:15 limited 11:9,12,13, 15,16,17,20 13:7,8 14:12,13 17:19 26:12 29:5 43:21 44:9 45:8 49:3,7,24 50:9 86:2 91:3 93:2 Limited' 13:7 limits 14:2 line 53:19 91:5 92:8,22 list 4:20 24:16, 18,19,21,23 25:12 27:15 42:14 54:3 56:7 95:5,16 listen 16:12 20:24 literature 76:2 litigation 17:6,23 little 18:18 19:16 26:7 29:3 45:2 62:20 68:25 72:25 75:5,19 77:20,23	78:2 80:6,18 82:9 83:13 86:19 95:2 live 67:17,19 68:16 livestock 51:24 78:21 living 39:14 79:15 86:11 LLC 12:25 locate 69:1 located 8:12,14 65:2 68:2 81:8 91:3 92:21 location 67:20 74:9 77:13,24 80:23 locations 67:2 94:22 locked 51:21 Logistically 21:3 long 22:7,8,9 30:20 33:14 68:5 79:20 longer 72:25 look 53:12 55:9 58:3,19,23 61:24 62:25 67:7,9 68:20,21 69:6 70:22 74:9 76:5 79:1,8,9,14, 15 83:17,19 87:25 92:9 95:11
<hr/> L <hr/>			
labeled 74:19 labels 49:16 59:23 labor- intensive 59:9 labs 38:24 land 8:7,12 17:3 48:23 53:11 54:11 83:2 85:19 91:12 landowner 12:16,22 13:4 14:16 15:10,14,18 16:2 26:11 landowner's 16:21 lands 91:25 lateral 69:7,13 71:16,19 law 10:16,20 16:20,25 19:5 laws 10:17			

looked 17:25 54:8 56:23 74:25	lunch 21:24 22:3	mapped 72:12	mention 95:2
looking 4:19 19:13, 14 34:13,15 39:20 40:8, 11 51:1 55:11 58:4 61:19 64:2, 13,23 65:6 66:3 67:11 68:3,13 69:4,6 71:16,17 73:13 75:16 76:9 78:10 81:4,6,24 82:4,21 85:22	Luther 37:7	mapping 53:10	mentioned 48:21 50:15 92:7 95:5
looks 95:22	<hr/> M <hr/>	maps 60:16	met 29:13
lot 22:1 30:7,9 39:16 66:8 71:17 72:10 77:10 79:10, 12,16,18	made 11:9,15,18 14:12 17:8 39:23 71:25 72:9,14,18	March 4:3 13:4,5,9	Metairie 33:2
Louie 4:8 13:1	mail 26:24	march-elder 78:18	metal 69:14,18
Louisiana 10:18 11:1, 6,10,12 12:3,4,9 13:14 17:3, 21 33:2 35:9,16,22 36:6,21 37:5 43:5 49:16 79:17	main 33:8 69:7	married 40:13	method 59:5 63:12 73:9 74:7 75:7
Love 18:8 24:1 94:9	major 71:16,19	marsh-elder 78:14 91:21	methodology 55:7,10
lower 31:23	majority 58:19,20 74:2	marshes 35:16	methods 56:14 57:15, 19 64:7 73:22 78:9 79:23 81:16
Lumber 44:4	make 14:12 15:9, 24 19:23 26:6 27:22 31:5,7,14, 15,24 37:20 40:12 55:24 57:24 62:16 69:15 76:10 79:21,22 83:21	master's 39:24 40:6,8	microtopograp hy 78:1
	making 59:14 60:24	material 51:4,6	midafternoon 95:25
	management 33:3 41:2	materials 86:10	middle 21:21 24:1 69:4 72:11
	manager 33:10	matrix 64:1	Midland 53:22 54:7
	mandating 17:14	matter 28:9 42:9	midwest 39:14
	Manual 49:14	matters 33:13 36:3	Mike 36:10
	map 67:20 70:7 71:2 74:9 75:5	Mayers 31:25 32:6	miles 50:12
		mean 59:7 60:22	Miller 31:21
		meaning 42:25 51:6 52:11	mineral 8:21 86:10
		measure 61:25 63:19 70:17 82:7	minimal 20:16
		measured 68:5	minute 5:10
		measurements 71:23 72:18	
		meeting 43:10,15	
		members 43:8 81:21	

Transcript of The Public Hearing
March 31, 2022

minutes 27:7 84:4 88:11	Mowata/ vidrine 53:23	7:16,22 8:22 9:3,7 11:8, 25 12:6 13:6	number 19:4 40:21 41:10 46:14 47:4 50:6,8 60:7 72:1
mitigation 42:12	multiple 73:22 74:17 83:22	14:11 16:14, 23 26:10	numbered 46:9
mix 66:8	mycorrhizal 86:10	never 76:22	numbers 46:21 74:13
mixing 86:19		nice 62:6 80:24	numerous 36:24 39:4 43:14 77:1 82:3 91:25
moment 5:17	<hr/> N <hr/>	nomenclature 63:23	nutrients 71:22 77:18
Monday 21:6,12,17 22:2,10 29:20 49:21 94:21,24 95:4 96:4	N_ldnr 47:4	non-planned 95:6	
	N_ldnr_hcde_ 00444 49:17	non-woody 52:11	
	name 7:19 33:1	nonwoody 65:10	<hr/> O <hr/>
money 40:12	names 37:11	noon 21:16,18 22:22	oak 67:17,19
monitoring 33:23,24	native 58:25 67:8 78:22 91:14 93:7	NORM 18:6	oaks 68:16
morning 4:5 6:9,11, 22 7:12,14 22:4,19 32:15,17 89:8 94:24 96:5	natural 12:5 39:21 91:14 92:11	normal 29:4 95:20	objections 15:15
	naturally 66:11	north 8:14,19 53:16 77:25 81:8 82:22	obligations 10:8,10
morph 90:7	nature 41:5 44:2	Nos 26:8	obscure 46:13
motion 12:10 13:6, 12 14:15	nearby 94:2	nosy 67:3	observation 66:14
motions 26:13	necessarily 92:23	notable 74:4	observations 47:24 48:22 52:18 55:25 61:10 68:13 69:25 72:9 80:10 87:1,6
mouthful 56:23	necessary 18:4 46:7 58:17	notably 54:10	observe 52:19 85:10
move 41:12 43:2 72:1 75:1 89:2	need 20:25 30:17 93:12	note 54:2 79:22	observed 53:24 54:12 71:6 74:7 77:21 84:10, 14,17 85:8 90:24 92:22
moved 33:20 38:9	needs 31:15	notice 26:21	observing 5:3
moving 75:13	nematodes 86:11	noticed 50:22 53:20 67:4 84:12	
Mowata 54:7	Neumin 4:9 6:4	notices 26:22	
		November 25:17	

Transcript of The Public Hearing
 March 31, 2022

<p>obvious 46:19</p> <p>obviously 16:2 19:24 20:8 28:1 36:5 39:7</p> <p>occasional 50:24</p> <p>Occasionally 37:8</p> <p>occasions 19:4</p> <p>occur 93:8</p> <p>occurring 35:9 61:21</p> <p>October 8:5 11:8,24</p> <p>offer 25:14 26:15, 25 27:8 45:18 54:18 57:3</p> <p>office 4:14 12:20 14:4 15:11 16:6 18:2 31:21</p> <p>officer 4:2,4,24 5:5,11,19,24 6:5,10,17,23 7:4,8,13,17, 23 8:17 13:10 23:12, 17 24:12 25:20,24 26:17 27:2, 11,18,24 28:14 32:4 45:20 46:3, 24 47:7,18 48:2 54:20 57:5 87:17, 24 88:7,12, 19 89:1 94:19 95:14 96:2,9</p>	<p>oftentimes 64:13</p> <p>oil 8:19 9:8,12 29:1 87:2,4</p> <p>okay 5:20,25 6:6, 18,24 7:5, 18,24,25 8:18 18:17 23:13 24:16 25:21 27:19, 22 32:18 34:25 38:5 46:4,25 47:8,19 48:3,15 55:13 64:24 82:17 85:7 87:18,25 88:4,6,8,13, 20 89:12 90:1 92:17 93:24 94:8, 20 95:15 96:3</p> <p>Olivier 18:9 24:2</p> <p>once 51:14,15</p> <p>one 5:4,12,15 12:21 17:6, 19 19:18 21:13,24 22:1 23:5 25:25 35:25 39:16 41:9 43:2 46:7,20 47:3 49:20 50:18,21 55:25 56:18 63:7 66:6 72:3 73:17 76:20,21 77:8 78:13 79:7 82:15 83:4,7 95:1,</p>	<p>15</p> <p>one-acre 30:4 48:21</p> <p>one-hour 22:3</p> <p>ones 18:25 28:8 29:5 56:16 71:20 79:5</p> <p>ongoing 42:21</p> <p>open 62:25 63:11</p> <p>opening 23:2 24:7 27:23</p> <p>operated 9:24</p> <p>operational 52:10</p> <p>operations 9:13 50:25 51:3 52:24 67:14</p> <p>opinion 66:20 86:25 92:23</p> <p>opinions 44:1 84:25 85:2,5,16 87:6</p> <p>opportunity 15:23</p> <p>order 11:25 12:11 18:1 29:4 41:22 42:4 60:4 88:3</p> <p>ordered 14:14</p> <p>organic 38:22</p> <p>outline 65:2</p> <p>outside 52:2 67:5</p>	<p>oversight 15:5</p> <p>overview 48:10,13 49:22 53:7</p> <p>owed 10:16</p> <p>owned 8:7</p> <hr/> <p style="text-align: center;">P</p> <hr/> <p>pad 51:4,6 52:1, 25 77:25</p> <p>page 46:14</p> <p>paint 70:10</p> <p>palatable 78:20</p> <p>panel 13:2,11 15:14 16:6, 23 18:7 20:12 22:12 23:4 28:2, 10,15,22 31:14 32:25 33:6 34:5,14 35:1 36:1 38:3 41:15 43:9 48:10 50:5,10 51:14 55:14 56:8 59:20 60:22 63:17 64:3,22 68:16 73:25 74:23 76:24 78:15 81:21 83:21 85:1, 16 87:6,12, 15 88:1,3,21 95:11</p> <p>panel's 14:19 15:22</p>
--	--	--	--

Transcript of The Public Hearing
March 31, 2022

panelists 12:21 18:21 21:13 37:13 66:23	20 20:18 26:21	personal 80:9	pictures 59:24 60:25 61:9 81:18
paper 26:23 56:13, 20	pass 87:14	personnel 34:19	piece 11:21
papers 57:10 64:16	past 19:3,9,19 20:2,19 21:9 22:16 29:5, 14,17	petition 8:4,8,11,20, 24,25 9:5,6, 11,15,25 10:5,22 11:3	Pisani 36:10
Paragraph 8:11,20,25 9:6,11,15,25 10:5,14,21 11:4	pasture 34:15 53:17 54:14 66:8 72:4 73:3,14 80:22 93:19, 20	petroleum 9:21	place 4:1 14:3,15 69:17
Parish 4:12 8:14 49:15 50:11 54:6	pastureland 50:13	PG 41:20	plaintiff 8:4,7,21 9:1 10:16,22
part 8:8 10:21,25 11:5,25 13:15 36:14 37:14 40:20 42:17 44:8 45:7,15 47:5 49:3 53:6 54:8 56:24 73:5 84:19 93:2	pastures 78:20 85:18	phone 5:21 6:6	Plaintiff's 9:10,20 10:4,7,20
participants 94:21	patch 80:24	photo 45:5,6 51:25 52:10,12 81:4	Plaintiffs 10:1
participate 12:22 15:12 16:3 19:25	patience 44:25	photograph 34:13 53:15 72:11 78:17 80:4	plan 12:1,6,7 13:8,22,24 14:2,24 15:3,25 16:14,15,17 17:17,20 19:11 20:9, 10 25:16,18 27:25 29:6,7 31:8 42:13 43:11,25 45:8 49:4,7, 22,23 50:9 85:23 86:3
participating 16:22	patrick 29:9 32:8 33:1 45:19	photographs 59:24 60:14 74:13,14,22 83:24	
particular 22:18 58:8 75:6 77:13	pattern 60:5,17 69:9 74:8	photography 81:17	
parties 5:13,15 8:10 15:24 16:1 17:25 26:24	patterns 77:7	photos 77:14 83:8 89:17,21	
parts 29:8 54:2	people 16:18 20:11 21:25 24:19 60:23	pick 20:21 62:3,8	plans 18:15
party 11:20 14:18,	percent 20:20 35:21 64:5	picked 81:3	plant 38:23 42:22 47:16 49:13 71:21
	perform 44:13 55:2	picking 63:12,13	plant's 58:17
	performed 9:19 86:6	picture 34:15 60:23 62:5,12,19 63:6 65:5 69:8 73:24 75:9,17 81:12,13,24 82:1 83:5	planting 92:6
	permitting 33:12 43:14		plants 35:11,24 37:20 38:23 39:1,10
	person 20:5 43:18		

Transcript of The Public Hearing
March 31, 2022

58:25 64:18 79:11 82:11 play 22:24 please 30:15 32:2, 24 33:5 41:16 64:23 plugged 9:17 point 18:22 24:25 25:6 30:24 points 15:20 policy 39:3 poorly 53:21 position 15:24 16:21 possible 21:18 22:9 82:10 86:16 90:9 posts 52:4 potential 67:10 68:8 85:20 92:6 potentially 58:7 85:24 Powerpoint 33:4,25 48:9 practical 64:10 practice 56:3 Prairieland 53:22 54:5 preferable 86:23 prefix 47:6 preliminary 13:24 14:2, 24	premier 41:18 prepandemic 45:6 present 15:8 31:13 33:1 52:14 66:5,19 70:13 77:15 presentation 30:16,18 34:1 59:21 89:16 presented 43:20 presenting 5:16 pretty 14:7 25:7 69:14 70:23 previous 65:5 previously 65:2 75:10 primarily 35:3 37:6 primary 35:10 41:9 44:11 principal 33:7 prior 42:2 53:9 private 10:16,20 16:19,24 17:9 probably 18:19 29:14, 24 47:11 55:14 63:17 64:4 70:25 71:1 72:22 76:7 77:13 80:25 probe 69:15,21	probed 72:13 problem 7:7 21:2 22:17 30:23 procedural 20:6 procedure 11:13 14:8, 11 21:9 procedures 12:8 14:10 proceed 28:19 proceeding 4:19 14:21 15:12,19 proceedings 4:1 process 15:6 20:13, 23 29:3 processes 86:15 produce 58:20 production 4:9 6:4 8:22 9:3,7,9 11:9 13:6 51:24 productive 66:18 83:6 84:11 professional 41:12,14 profile 56:13 58:16 60:20 61:14, 15,24 62:15, 25 63:2,7 69:12 71:9, 17 73:23 74:5 75:8,14 78:11 81:17 83:7 program 33:24 40:9	project 33:10 43:8, 10,23 projects 33:12 36:24 42:13 43:19 promised 22:15,16 promptly 10:11,12 pronounced 55:18,20 proper 91:2 93:21 property 9:10,20 10:4,7,11,13 11:14,17,21 12:8 48:20, 22 51:18 53:7,19 59:12 66:14 89:19 90:21 92:24 proposed 30:8 protect 16:17 provided 12:2 16:8 25:12 29:25 31:6 44:8 providing 59:21 provisions 11:11 proximity 9:23 public 4:6,14 8:1 12:5,13,23 13:13 14:8 26:20 publication 56:11 publicly 58:1
---	--	--	--

Transcript of The Public Hearing
March 31, 2022

removed 80:15	required 67:12 84:15	reviewed 17:8 48:23	20 27:20
removing 86:20	85:20 86:17, 24	reviewing 18:15 46:16	29:9,14,15, 18 31:20
reorient 50:10	requires 41:21	Revised 11:1,7,10	32:3,6,8,17, 24 33:1
repeat 20:22 21:1	resolve 20:5	12:3,9 13:14 17:21	34:11 45:3, 19 46:5,11
replace 82:8	resources 12:5 33:3 41:2 42:23	rice 54:14	47:15 49:12, 19 87:5 88:25
report 43:23 47:5 49:3,11 70:13 74:19 75:3 84:20, 22 85:2	response 5:23 42:9 87:23	Richard 12:18	river 93:15,21
reporter 23:10,20 24:3 31:25 32:7 94:23	responsibilit ies 33:12 35:6, 10 36:1,25 43:15	Richards 21:5	road 9:1 51:25 52:4,8 65:3 89:19 91:4
reporting 37:1	responsibilit y 35:3	rig 34:19	roads 65:22
reports 36:3 44:8	responsible 10:1,2 11:20	right 5:9 6:15 14:11 20:1 23:25 25:8 34:3,9 36:14 49:2 51:3 52:25 53:3 55:1 56:6 57:20 59:7, 8,10 60:24 62:4,13 63:8 64:22 65:18 66:25 67:15 72:1 73:1 74:3,18 77:11,16,19 81:12 86:10 90:5	Robertson 62:19
reposition 23:13	responsive 42:9	right-hand 52:9 64:24 74:10	robust 83:6
representatio n 66:10 72:6 74:1 77:2,8 78:25	restoration 42:12	rights 16:20,24 17:9	rocks 51:8
representatio ns 71:5	restore 10:11	rigidity 79:24	rod 69:19
representativ e 68:10 90:18 91:9,20 92:3,15 93:10	restoring 67:13	Risk 56:22	Rogers 37:17
represented 4:7	result 63:6	Ritchie 6:11 21:5 23:7 24:10,	role 18:18 19:25 33:8
reproduction 58:17	results 84:2,5,6		roles 36:25
request 27:6	retains 15:5		roll 4:18 20:16
	return 90:21 91:13		roommates 39:15
	reupped 42:20		root 29:10 33:9 37:3,4,6 44:1,13 47:16,21 48:25 49:14, 25 55:1,2, 10,13 57:18, 23 58:13,14, 15 62:10
	revealed 9:21		
	review 14:1 16:13 49:13		

63:6 64:10, 14,18,20 67:13 68:22 69:6 70:7 71:9,13 72:14,20 74:5 75:1,2, 6 76:4 78:10 80:1,11,13 81:5,6 83:11 84:7,9 85:11 90:15,18,19 92:2 94:3	ruling 20:25 rulings 19:23 rural 50:12,21 Ruston 33:19	scientific 64:9 76:2 scientist 33:8,11,21 34:24 35:4 41:14 scientists 16:7 28:8 41:18,21 screen 23:24 41:13 55:12 58:11 scribe 19:12 season 89:20 second 5:4,17 33:5 38:2 83:3 Section 8:12 sedge 76:25 77:1 sedges 65:11 77:5 see 16:3 24:16 29:23 31:19 34:5,19 41:13 44:21, 22 50:16 51:20,22 52:1,3,4,5, 12,15 53:1, 15 54:10 55:17 60:13 61:4,25 62:4,10,11, 18 63:1,23 65:2,7,12,21 68:4,14 69:8,19 70:7 72:11,16 73:24,25 74:2,23 75:17 76:18 77:10 78:17 80:4,14 81:3	82:2,3 83:5 87:2,15,19 91:24 95:17 seeing 51:16 61:13 63:5 76:13 seeking 8:5 Seiler 6:24 7:1,2, 5,6 select 94:2 selected 67:25 68:7, 12 73:14,16 74:12 77:7 78:16,23 83:3,8 90:11 91:7,21 92:5 93:9,20 self-evident 46:12 senior 33:8 September 9:17 48:19 89:23 series 54:5,6,7 served 11:3 20:13 service 9:1 28:13 servitude 9:2,4 set 8:8 11:11 12:9 14:3,23 43:11 50:3 sets 14:7 setting 48:23 49:22 50:4 52:19 53:14 58:5 93:5
rooting 57:25 58:8, 24 60:4,17 73:6 74:8 75:12,16,17, 21 76:11 77:6,7 78:4, 12 81:9 82:12 83:9, 11,18,22 85:10,15 86:1 92:12	safe 95:25 safety 16:17 salt 9:21 sample 67:2 82:24 samples 30:3 sampling 56:21 65:16 says 17:14 37:3 scale 71:7 schedule 14:23 24:17 scheduling 28:16 scholar 38:7 scholarship 38:7 school 33:18 39:8 40:18 Schuurman 55:18 56:13 63:20 science 39:24,25 40:22 41:18 59:8	roots 55:23 57:12 58:18,19,20 60:2,8,19 62:10,18 63:1,13 69:1,7,13, 17,22,23 71:16,18,19, 24 72:10 74:3 75:10 76:9,13,18 77:10 79:3, 9,10,11,20 85:12,13 93:12	
roughly 30:3 35:20, 21 rule 19:22 rules 22:24			

setting-specific 94:1	Shingle 44:5	sir 6:15 7:3	skip 42:25
settings 92:1,21	shoo 66:25 73:20	25:4 26:6	slice 62:25
seven 78:5,11 83:11	short 21:4	38:17 46:23	slide 43:1 50:5 54:1 56:19 64:23 72:16
several 17:4 35:15 36:3 37:9 41:4 50:22 74:4	short-bristle 76:23	47:13,23 95:1	small 28:25 30:2 48:21 59:12
Shaddock 4:9	shortly 6:12	site 25:16,18 27:6 28:23, 25 30:2,4,9, 11 34:14,16 48:11,12,18, 23 49:21,22 50:4,10,13, 16,17,19,23 51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	smaller 74:5 78:1
shade 68:3 70:25 72:25	shovel 62:6	16,17,19,23 51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	snapshot 69:3
shades 31:23	shovels 60:6	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	Snelgrove 12:19 18:8 23:4,8,22,25 32:19 34:6 88:2,5,10, 21,23 89:3, 7,13,25 90:4,14 92:16 93:23 94:7,11,15
shallow 83:9,10 84:9 85:12	show 54:2 60:16 61:8 67:19	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	society 41:17,19 42:3,15
shallower 83:14	showed 52:23	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	soil 9:23 30:2 39:25 40:22, 23 47:16 53:5,10 54:6,12,13 56:14 58:4, 16 62:3,9, 13,14,24 63:8,13 64:1 74:6 75:7 80:15 82:7,8 86:6,9,22
sharp 21:11,12,15 22:7	showing 34:16 53:17 63:19,21,25 76:3 83:8	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	soils 40:24 42:10 53:13,21,22, 23 57:18 58:16
Shaw 33:21 34:24 35:2	shows 56:11 67:20	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	sort 19:12 28:3
Shawn 6:18,21	side 19:24 24:2 31:18 52:9 59:17 61:25 62:4,5,7 64:24 68:14	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
she'll 95:12	signed 11:24 12:11	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
sheared 62:5	signs 52:23	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
sheathing 79:25	similar 41:20 63:5 72:8 77:6	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
sheet 70:4	simply 19:12 30:8	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
sheets 72:18	single 68:2	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
Shell 51:8	sinkhole 43:12	51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
shells 51:6		51:10,19 52:2,6,17,19 53:9,14,16 54:9,12 64:19,25 65:6,14,19 66:2,3,22 67:6,11,21 68:1,9 70:5, 6 71:6 73:11,22 74:1 77:2,9 81:9,10 83:3,10,12 84:18 85:12, 16,17,22 86:17 87:3 89:17 90:24	
		site-specific 57:21,22 58:4,9 83:16,20 93:25	
		sites 35:7,15 36:20,22 37:15 66:13 83:19	
		sitting 6:15 21:14	
		situation 58:3 61:4	

52:20	33:22 64:12	standing	stepping
sounds	95:4	23:25	48:14
22:8 96:3	specimen	standpoint	sticking
south	61:20	30:10 66:15	73:3
8:13 34:16	spelled	star	Stokes
35:22 50:14	8:15	65:1	4:10
79:17	spending	start	stop
southwest	95:8,12	7:25 21:10,	22:16 30:15,
51:19 65:4	spent	12,15 25:1	23 31:1
spades	35:19 39:16	28:4 32:5	stopped
60:7	48:12,19	40:12 48:14	76:13
sparse	84:3	78:6 88:15	strand
75:13,14,23,	Spiehler	95:20	93:7
24 76:15	4:10	started	stressed
78:7	spoil	39:18,20	52:20
speak	92:10	starting	strike
71:21 93:17	spoke	29:8 35:7	13:6
speaking	23:11,21	62:1	structure
19:1 48:18	spoken	starts	13:22,23
85:7	58:12	46:6	16:15 92:12
specialized	spot	state	structuring
38:23	72:23 77:22	10:14,18	17:16
species	spots	16:18 17:2,	stuck
35:14 38:25	53:3 94:18	12 36:8	76:8
52:14 58:8	spotted	43:5,16	studied
65:10,13,17	50:24 53:18	90:22 91:14,	24:22 53:6
66:7 70:9	spray-paint	24	studies
72:6 73:16	70:11	statement	33:10 36:8
77:1,4,9,12,	spray-painted	11:19 42:5	37:3,4,6
16,21 78:12,	60:11	46:2	56:1 59:10
19,23,25	square	states	64:17 91:25
80:14,21	35:14	8:11,20,25	study
82:3,4,24	stage	9:6,11,15,25	29:10,11
84:8 85:11	50:3	10:5 11:4,25	35:24 44:14
86:1 90:10,	stand	Statewide	49:1,14,25
11,17,23	70:11 73:21	18:1	54:8 55:2
91:1,7,10,	77:3 78:18	statistics	56:8 58:4
15,21,24	stand-alone	38:22	64:10 90:15,
92:15,21	47:3	statute	18 94:4
93:8,13 94:2	standard	11:1,7,10	studying
specific	17:19 51:8	12:3,9 13:14	38:18 67:23
11:21 36:5	standards	14:3,23	stuff
40:22 41:8	10:24 13:21	17:22	57:21 92:11
55:7 58:3	17:12,13,15,	step	stunted
61:20 66:13	24 18:3	20:8 32:12	68:19
67:16 83:19	31:16	Stephen	submissions
specifically		18:9 24:2	26:9

Transcript of The Public Hearing
March 31, 2022

25:4 28:13, 15 29:21 31:17 32:22 34:3,9 42:16 47:2 48:6 54:23 57:8 74:21 87:11, 18 88:15,17, 24 89:4,6 94:14,16 96:5,7,10	thought 65:15 thousand 60:24 thousands 86:13 three 16:6 24:19 28:10 53:20, 24 thrown 5:9 tighter 26:7 time 12:11 13:18 14:2,23 15:20 21:22 22:1 24:11 25:10 26:1 27:9 29:22 30:13 34:23 35:2,19 39:16 40:11 43:6 47:14 48:12,19 52:13,17 54:17 57:2 59:11 61:11 68:5 69:3 70:1 72:22 79:20 80:9 87:11 90:9 95:8,13 timely 12:14 13:17 Timothy 6:24 today 5:16 21:4,17 22:9 28:16 29:8,18,19 31:4,7,13 56:15 87:7 told 20:18 tools	60:8 top 70:5 75:10, 12,18 total 25:11 Touchet 37:9 44:17 Town 8:13 Township 8:13 trade 94:18 training 45:12 transcript 19:13 46:16 transect 35:15 transition 39:23 tree 53:18 60:2 65:13,17 67:24 68:2, 3,4,6,12,13, 19 70:12,18, 19,22,23,25 72:1,2,9,20 90:10 91:5 92:8,22 trees 50:24 53:18 60:5 63:7 65:15 66:1 68:9 70:21 72:4 78:17 90:25 92:4, 5,6,7,9 93:20 trench 56:13 61:13, 15,16,22 62:2,15,23 63:2,7 73:23 78:9 80:16	81:3,6 82:5 triggered 14:10 trucks 52:15 trunk 70:12,18 Trustees 4:8 try 20:4,15,24 21:20,22 22:20,23 25:9 26:6 40:12 44:19 45:2 61:8 69:12 81:17, 20 82:9 86:15 trying 69:1 Tuesday 22:12 Tulane 38:10 40:8,9 43:4 twice 51:14 82:20 two 16:4 33:19, 22 48:19 59:11 65:13, 15,25 72:2,4 75:11 79:2 90:10 92:5, 20 Tyler 7:9 type 26:9 40:19 56:17 63:18, 25 64:20 66:10 68:15 76:18 77:12 78:19,25 93:17
thereof 14:25 thing 28:12 64:5 72:17 79:7 81:2 86:11 95:2 things 38:18 39:22 41:5 42:23 46:7 54:8 58:1,2 60:14 63:18 64:3, 4,6,8,15 69:23 70:21 72:19 76:2 79:17,18,25 84:13 86:18 93:16 think 9:18 15:16 17:24 18:23 20:14 23:1,2 28:19 29:4, 13 31:12 37:11 43:1 44:23 60:21 68:24 76:21 86:8 87:9 95:19,24 thinking 39:13 86:9 THOMAS 4:2 thorough 30:5			

types 38:18 53:5, 10,13,21 54:13 57:16 58:4 66:5	various 27:16	visible 77:14	waterbodies 92:10
typical 68:15	vegetation 29:10 34:17 35:6,11,12 47:25 48:1 49:14,25 50:23 52:6, 11,12,20 55:1 57:23 58:7,21 61:19,21 64:6 65:8 66:4,5,11, 16,17 68:1, 10 73:12,15 79:4 80:2 83:6,10 84:10,17 85:8 87:2 93:8	visibly 61:4	waterbody 42:11
typically 17:25 19:19 22:21 61:16 92:9	vernacular 16:10	visit 27:6 66:22 90:24	watering 64:14
<hr/> U <hr/>	Veron 87:20,22	visited 48:18 52:22	way 20:8 32:13 35:8,16 59:14 63:18 66:24
Uh-huh 80:19 90:3	Verret 4:25 5:1,2, 7,8,13,14	visiting 53:9	ways 83:22
ultimately 14:22	vicinity 91:2	visual 60:13	wear 20:19
underneath 37:2 69:15, 19	video 23:23	visually 76:18	webbed 69:9
understand 4:18 16:21 60:22 68:6	Vidrine 54:5	<hr/> W <hr/>	weedy 78:19
understanding 13:25 14:19 47:20 51:1 69:16 76:4 85:22	view 81:22	wait 30:17 66:23	week 25:13
Understood 42:16 80:8	viewed 85:12	walk 49:21 59:6	weekend 95:12
University 38:11 39:25	views 89:19	walk-through 50:4	welfare 16:18
unknown 38:25	vintage 28:25	wall 56:14 60:20 61:14,15,24 62:15 63:7 73:23 83:7	went 26:22 36:10 39:7 40:4, 16,17 51:15 68:24 81:5
upset 86:14	violated 10:17	want 15:23 28:2, 12 31:5,8 34:23 44:20, 25 67:7,8 68:21 80:25 81:22 86:15 88:8 92:9	west 8:13 50:12 52:2 65:4
USDA 53:5,9		wanted 40:6,16 79:1 95:9	wet 77:4,5,15
User 5:21,22		water 39:25 40:25 41:2 42:10, 13 71:22 77:15,19 78:3	wetland 33:11 34:24 35:4,5,7 41:14,17,18, 20 42:10
<hr/> V <hr/>			wetlands 33:21,24 37:18 40:22, 24 41:1,8,10 42:2,23 47:16
varieties 82:25			

Transcript of The Public Hearing
March 31, 2022

wetter 77:23	20,22 35:4,5 36:17,25	younger 62:20
widely 56:4	39:14 40:17 42:1 43:6,8, 25 81:16	
Wiggins 6:18,19,20, 21	87:11	<hr/> Z <hr/>
wire 51:5 52:5 67:5	world 39:21	Zeringue 6:1,2,3
witches' 68:18	worth 59:13 60:23	zone 29:11 33:9 37:3,4,6 44:1,14 47:17,21 48:25 49:25 55:2,11,13 58:13,14,15, 24 62:10 64:10,14,18, 20 67:13 68:22 71:13 72:15,20 73:6 75:16, 21 76:11 78:4,12 80:12,13 81:9 82:12 83:11,22 84:7 85:11, 15 86:1 90:15,18,19 94:3
witness 21:19,23 24:18,19 25:2 30:14 32:7,14 46:10 87:15 89:5,11,22 90:2,12 91:17 93:14 94:5,13	wrap 70:18 82:18	
witnesses 15:22 18:23 19:2 27:17 30:6 95:17	wrestler 39:8	
woody 72:6	wrestling 38:8,9	
word 31:10	write 19:7 61:10	
words 58:23 60:24 90:21	written 14:25 19:10	
work 22:13 33:2, 10 35:21 37:6,14 43:3 56:9,24 57:16 79:13 84:3	wrote 30:22	
worked 36:19,23 37:16 43:3, 4,9,12,13 78:10	<hr/> Y <hr/>	
working 28:16 33:15,	y'all 29:13 30:13 31:4,14 32:1 69:1	
	yard 81:1	zones 57:23 92:2
	yeah 6:21 23:16 44:23,24 51:17 66:22, 25 81:18	Zoom 7:19 15:18 87:19
	year 52:14 72:22 89:21	
	years 33:16,19,22 36:19,23 42:1,19 76:6,9 79:13 86:13	
	yellow 52:13 65:9	