

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 APRIL 4, 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:

DAVID G. ANGLE
ANGELA LEVERT
PATRICK RITCHIE
BRANDON M. VERRET
LANCE COOPER
NELL FALGOUST
SHAWN WIGGINS
TIMOTHY SCHROEDER

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(EXHIBITS RETAINED BY COUNSEL)

1 (The following proceedings took place before
2 THOMAS E. BALHOFF, HEARING OFFICER, on the
3 4th day of April, 2022.)

4 THE HEARING OFFICER:

5 Okay. Good morning, everyone. And
6 this is the second day of the hearing in the
7 Neumin Limited Admission Plan matter. And,
8 Mr. Angle, are you all set to go?

9 THE WITNESS:

10 We are.

11 THE HEARING OFFICER:

12 I don't remember. I didn't
13 double-check your CV. Is it Dr. Angle or
14 Mr. Angle?

15 THE WITNESS:

16 Just Mr. Angle.

17 THE HEARING OFFICER:

18 Okay. That's fine. Well, this is
19 Mr. Balhoff speaking to you.

20 THE WITNESS:

21 Good morning.

22 MS. KOSTAL:

23 Good morning.

24 THE HEARING OFFICER:

25 Okay. We're all set.

1 MS. KOSTAL:

2 The witness --

3 THE HEARING OFFICER:

4 John Funderburk or whoever is going
5 to do the examination, you can proceed.

6 MS. KOSTAL:

7 This is Tyler Kostal. I'm going to
8 be doing the examination of Mr. Angle today.
9 Has he -- he has not been sworn in yet. So,
10 if you would like us to go forward with that,
11 Mr. Balhoff . . .

12 (DAVID G. ANGLE, P.G., CGWP, having been
13 first duly sworn, was examined, and
14 testified as follows:)

15 MR. BALHOFF:

16 I'm having a little trouble with the
17 volume.

18 MS. KOSTAL:

19 Can you hear Mr. Angle? Because he's
20 the one in front of the microphone, and me and
21 the court reporter are on either sides of him.

22 MR. SNELGROVE:

23 You want me to mute Angle?

24 THE HEARING OFFICER:

25 No.

1 MR. SNELGROVE:

2 What did she ask?

3 THE HEARING OFFICER:

4 No. I'm not sure. Tyler, what did
5 you say? I'm sorry.

6 MS. KOSTAL:

7 The microphone is in front of
8 Mr. Angle. So --

9 THE HEARING OFFICER:

10 Okay.

11 MS. KOSTAL:

12 -- can you hear me okay?

13 THE HEARING OFFICER:

14 Yeah, we can hear -- we -- yeah, we
15 can hear you as long as you keep the volume
16 up. Go ahead. Please proceed. Okay.

17 MS. KOSTAL:

18 Okay. This is Mr. Dave Angle. He's
19 been involved in these previously. He's going
20 to be directing us through his PowerPoint. So
21 he's just pulling that up right now. Can you
22 all see that okay?

23 MR. SNELGROVE:

24 Yes.

25 MS. KOSTAL:

1 Dave, I see your next slide as well.

2 So --

3 THE WITNESS:

4 Okay.

5 MS. KOSTAL:

6 -- just -- I'm sorry. Just one
7 minute so he can figure out the viewing.

8 THE WITNESS:

9 Okay. How is that?

10 MS. KOSTAL:

11 There. Perfect.

12 EXAMINATION

13 BY MS. KOSTAL:

14 Q Okay. Good morning again, Panel and
15 Mr. Balhoff. I am Tyler Kostal. I represent
16 Neumin Production Company. This is
17 Mr. David Angle. Dave, next slide, please. We'll
18 get started with your qualifications. Could you
19 give the panel a summary of your background?

20 A Yes. I have a BS and master's degree in
21 geology and continuing studies in hydrogeology, 34
22 years of site investigation and remediation
23 experience, extensive Louisiana experience,
24 beginning in 1990. Got superfund experience. And
25 you might ask, well, why is that relevant. And

1 the superfund program, it's a -- I gained a lot of
2 experience early on in site investigation and
3 remediation techniques in different -- not only in
4 Louisiana but other states. And then, finally, I
5 have worked in quite a few different states across
6 the country, but really the -- probably the bulk
7 of my work, I would say, since 1990 and probably
8 more -- most recently has been primarily in
9 Louisiana.

10 Q Okay. And here are your professional
11 registrations. Can you tell the panel a little
12 bit about this?

13 A Yes. I'm a registered geologist in
14 Louisiana, in 2014. That's when the Louisiana PG
15 program, I think, was started or shortly there --
16 there -- you know, right before then. I
17 registered in Mississippi. In Texas I'm a
18 Certified Groundwater Professional through
19 National Groundwater Association and then a
20 Certified Professional Geologist through the
21 American Institute of Professional Geologists.

22 And the reason why the -- the dates range
23 from 1996 through 2014, it's kind of how the
24 geologist registrations have evolved, not only
25 nationally but in different states, and, you know,

1 the -- my low number here indicates I was one of
2 the early ones to register in the state of
3 Louisiana.

4 Q And these registrations and certifications
5 are correct -- current. Correct?

6 A Yes.

7 Q Okay. And then here is a little bit about
8 your experience in Louisiana. Can you give the
9 panel some highlights?

10 A Yes. In 1990, one of my first projects in
11 Louisiana was a large refinery site in
12 Bossier City. Subsequent to that, I've worked
13 on -- and I know the panelists heard me -- well, I
14 don't know -- I don't know if that's good or --
15 good or bad.

16 But, anyway, I have worked on a tremendous
17 number of oil and gas field sites, basically, from
18 North Louisiana to South Louisiana, three
19 Louisiana superfund sites, twenty other Louisiana
20 sites, and, you know, those range from underground
21 storage tanks to refineries, terminals, you know,
22 kind of different types of sites, in all, about 31
23 years of Louisiana experience.

24 And I know the panel has been involved in
25 a couple of these here at the bottom, these legacy

1 cases where I've actually provided deposition and
2 trial testimony. Really the first trial was the
3 Marrin trial back in 2007, and, of course, most
4 recently was the Hero Lands trial in '20 and '21.

5 Q So with you having said that you've
6 testified in court in Louisiana in those trials,
7 or at least a couple of them, what areas were you
8 qualified in?

9 A Site investigation and remediation,
10 geology, hydrogeology, --

11 Q Site assessment?

12 A -- site assessment, groundwater and soil
13 fate and transport, application of regulatory
14 standards, and I think oilfield environmental --
15 or oilfield contamination issues, something like
16 that.

17 Q And have you ever been excluded as an
18 expert by a Court?

19 A No.

20 Q Have you published any articles on
21 remediation?

22 A Yes, one primarily on installation of a
23 horizontal recovery well up in North Louisiana,
24 one other publication that has some relevance,
25 which was evaluating the concentration of metals

1 and soil samples and identifying the matrix
2 variability and the variability when the
3 laboratory runs actual samples from a sample
4 container.

5 Q Okay. And have you testified before LDNR
6 as an expert?

7 A Yes, I have. And --

8 Q They know the answer to that.

9 A Yeah. I'm sure the panel has been
10 involved -- some of the panel members in some, if
11 not all, of these, starting back at
12 Tensas Poppadoc in 2008, which is the first one on
13 the list here. Moore vs. Denbury was 2015, I
14 believe, and the same way with Vermillion Parish
15 School Board, which is, you know, commonly
16 referred to East White Lake. Hero Lands and
17 LA Wetlands and Jeanerette Lumber are recent
18 Act 312 hearings that -- actually, I think all
19 three of those happened last year.

20 Q And in those six hearings, you were
21 called -- you were offered as an expert in
22 generally the same areas as in court in Louisiana?

23 A Yes.

24 Q Have you ever been excluded as an expert
25 by LDNR?

1 A No.

2 Q And in those six LDNR hearings, you had a
3 similar role as here?

4 A Yes, I did, although in this particular
5 site, I am actually -- myself and
6 Ms. Angela Levert, who you will be hearing from
7 shortly, worked together, but I -- I actually
8 looked at the soil data from 29-B, as well as the
9 groundwater data. I think the panel has heard in
10 the past, Mr. Pisani has taken the soil role; I've
11 taken the groundwater role. I'm kind of taking
12 both roles here so Mr. Pisani can retire.

13 So -- but, you know, I will let the panel
14 know, on every one of these sites that's listed
15 here, I've taken a pretty large role both in soil
16 and groundwater. It's just how we've divided it
17 in the past. But since this site, I'm the soil
18 and groundwater man from a 29-B perspective.
19 Ms. Levert is the RECAP person from a soil and
20 groundwater standpoint. So that's kind of how we
21 separated it.

22 Q Okay. And is it fair to say that you used
23 your experience and the panel's input from those
24 six LDNR hearings in evaluating this case?

25 A Yes, I have. And -- and that experience,

1 you know, extends from these -- not only these
2 hearings, but, you know, after the hearings end
3 and these legal matters settle, you know, we
4 continue to work with the agency kind of following
5 the same -- you know, same procedures.

6 Q Okay. At this time I'm going to refer the
7 panel to your CV, which is included as Exhibit 48,
8 and I would just ask you, does it reflect your
9 education, training, and experience?

10 A Yes.

11 Q And is it kept current in your normal
12 course of work?

13 A It is.

14 MS. KOSTAL:

15 So at this time, I would like to
16 offer, file, and introduce the CV of
17 David Angle, which is included as Exhibit 48,
18 with the Bates label N_LDNR_HCDE_02419-2424.

19 THE HEARING OFFICER:

20 Yeah. His CV is accepted. In the
21 future, if you refer to Bates numbers, you can
22 leave everything off except for the number, --

23 MS. KOSTAL:

24 Okay. Great.

25 THE HEARING OFFICER:

1 -- because we know -- if you -- if
2 you just say Bates number and give us the
3 number, that's fine.

4 MS. KOSTAL:

5 Okay.

6 THE HEARING OFFICER:

7 Thank you.

8 MS. KOSTAL:

9 Thanks, Mr. Balhoff. Okay. At this
10 time I would like to offer to qualify
11 Mr. Angle in the following areas: Geology,
12 hydrogeology, site assessment, remediation,
13 application of environmental regulatory
14 standards, and soil and groundwater fate and
15 transport.

16 THE HEARING OFFICER:

17 Yeah. He's accepted as -- as an
18 expert in all of those areas.

19 MS. KOSTAL:

20 Thank you.

21 BY MS. KOSTAL:

22 Q Okay. Mr. Angle, can you please provide
23 the panel with a summary of what you intend to
24 cover with today's presentation?

25 A Sure. On the screen right now, we kind of

1 have a list of bullets. And I'm going to walk
2 through each one of these, starting with the
3 chronology, which will kind of provide the panel
4 with an idea of where we started and kind of where
5 we are today.

6 We'll talk about site setting. I know
7 Mr. Ritchie has already gone into that a little
8 bit. The panel has been out there; so we won't
9 spend a lot of time there, but there are a couple
10 of things that we want to point out in regards to
11 that in terms of my -- my part of the
12 presentation.

13 Applicable regulatory standards, we'll go
14 through those. Primarily we've looked at 29-B
15 RECAP. We've also -- we'll touch on EPA SMCL's,
16 sanitary code in LA Title 56. We're going to
17 review the soil sampling plan. And the soil -- or
18 both soil and groundwater.

19 It's an extensive plan -- an extensive
20 amount of data for a site -- this site only had
21 one well. It's what I would call a modern site.
22 It's -- really the well was -- wasn't drilled
23 until 2001, no pits. That has relevance to, I
24 guess, the site, but it -- it didn't stop us from
25 doing a really extensive investigation, probably

1 the most extensive investigation we've done on a
2 site like this. It was such a small site,
3 probably less than an acre in terms of the former
4 operational area. So we'll talk about that.

5 Soil -- soil results, we've got an
6 extensive set of data and maps that we'll review,
7 and I -- I encourage the panel to look at all
8 those data tables and, you know, detailed maps in
9 the plans, the same way with the groundwater
10 results. And then we'll get into the most
11 feasible plan that we're presenting.

12 And then, finally, we received some --
13 some comments from the plaintiff's consultant,
14 RBBC. That's Mr. Robert Brent Bray -- I think he
15 goes by Brent, and those are fairly recent, in
16 February. And so we've reviewed those and will
17 have some -- some responses to those at the end.

18 Q Okay. So before we get started on the
19 chronology, could you just give the panel a little
20 hint of what this is a picture of?

21 A Yes. This is a picture of the --
22 basically, the cattle pasture around the
23 operational area, and the white tent here you see
24 on the screen -- hold on, let me get my -- I'm
25 sorry -- get the little laser pointer. This

1 little red laser pointer, if you can see that,
2 this was a setup where the soil cores that were
3 being gathered by the drill rig over here were
4 opened up and logged and described, and this is
5 just looking back to the -- toward the operational
6 area.

7 Q And now let's talk about how we got here
8 today.

9 A Okay. Unlike probably every other site in
10 the past half-dozen limited admission hearings
11 I've been involved in, the oil and gas sites
12 typically go back to the 1940s or 1950s. They're
13 very old. They have multiple wells, multiple
14 pits. We don't have that here. We have a site
15 where the well was not drilled until February of
16 20 -- or 2001. This is the serial number. That
17 well operated for about 15 years. It was plugged
18 and abandoned in 2015.

19 And then starting in 2015 and working
20 through the present, the site has been
21 investigated first by a couple of consultants,
22 Commercial Maintenance Facil -- or Services and
23 Acadian Engineers, and then subsequently by
24 Southland, who was the plaintiff expert in 2018.
25 The petition was filed in 2019.

1 And I'm not going to read all of these,
2 and, you know, the panel can see each one of these
3 entries. But I will focus y'all on the ones that
4 are highlighted in bold here. Neumin filed the
5 limited admission in October of 2021. Again,
6 additional data gathering. The ERM site
7 investigation report and closure plan and limited
8 admission was submitted in November of 2021;
9 however, we did not have the opportunity to
10 include a lot of the data that was gathered in the
11 supplement. And so we have some -- prepared a --
12 a supplement to the original limited admission,
13 and that was submitted in January. So -- so we've
14 got two key documents for the panel to review.
15 One was the initial submittal in November and then
16 the supplement, and the supplement data tables are
17 complete with all of the data going back in time,
18 because there was an extensive amount of data
19 gathered by the plaintiff's consultant here in
20 November, and we wanted to make sure we had it all
21 in the record prior to, you know, the final
22 limited admission.

23 So -- and then, I guess, the DNR had the
24 opportunity to go out and look at the site in
25 February. Right before then, we got the

1 plaintiff's comments on our plan, and we'll talk
2 about those at the end. And then, finally, you
3 know, here we are at the limited admission
4 hearing.

5 Q Okay. So let's talk about the site
6 setting. What is this a view of?

7 A Yeah. This is a view of the geoprobe
8 drilling rig here out, again, in the pasture, just
9 to, you know, give a little perspective in terms
10 of the -- you know, the work that we did relative
11 to the vegetation. I think the panel heard from
12 the -- Mr. Ritchie about the -- you know, the
13 vegetation and, you know, his root zone analysis.

14 Q And here is another slide that we saw from
15 Mr. Ritchie, but can you reacquaint the panel with
16 the site location?

17 A Yes. The site is located here where the
18 star is, and some of these pictures, or the
19 slides, we've used a star just as kind of a
20 central point. Since the -- you know, the site
21 really only has one well and had a tank battery
22 and production area and no pit, we just kind of
23 used a -- you know, this star.

24 The site is actually closer to Vince --
25 Vinton, Louisiana. Sulphur is over here, and it's

1 not far south of I-10. But it is a quite rural
2 area, as the panel saw. It's a, you know,
3 agriculture area, and the -- you know, the field
4 in and around the site is used for cattle grazing.

5 Q And here is another one that the panel saw
6 in Mr. Ritchie's presentation. But can you
7 briefly refresh them on the site setting?

8 A Yes. It's about a one-acre well site.
9 There was a fence that was placed around the site,
10 which is this boundary you can see here. This is
11 a more recent photograph, again agricultural land.
12 And the former gravel pad that was used to access
13 and the -- and the temporary road that was built,
14 you can still see the remnants here, the remnants
15 of the berm. This is the tank battery down here,
16 the operational area. The oil -- oil and gas well
17 was located about here. So, again, a quite small
18 site.

19 I'm going to refer the panel throughout
20 the presentation -- if I -- if I forget, please
21 remind me --

22 Q Yeah.

23 A -- of the scale of this site. It's
24 important, because I know the panel has heard on
25 some of these other sites that are, you know,

1 1,000 acres or multiple square miles. Here, we're
2 talking about a very small-scale site. So we've
3 had to blow up some of our sample location maps.
4 Because the spacing of the -- the sample points
5 were so close together, the only way to see them
6 was to blow up the scale. And so you'll see down
7 here in the bottom we've provided a scale bar, and
8 that's important relative to understanding the
9 spacing and exactly how many samples we've
10 collected in such a -- excuse me -- small area.

11 Q So this is a predominantly rural area?

12 A It is. And the nearest residence is about
13 three-quarters of a mile to the south along
14 Gum Island Road. I think the panel may have seen
15 it, you know, coming on to the property. But --
16 but, by and large, you know, this property and the
17 surrounding properties are agricultural.

18 Q And this particular property is used for
19 cattle grazing?

20 A It is.

21 Q And here we have the site topography.

22 Can --

23 MR. SNELGROVE:

24 I don't see a slide.

25 MS. KOSTAL:

1 I'm sorry?

2 THE HEARING OFFICER:

3 You're ready? Tyler -- Tyler,
4 Mr. Snelgrove has a question for the witness.

5 MS. KOSTAL:

6 Okay.

7 MR. SNELGROVE:

8 Yeah, if you don't mind.

9 THE HEARING OFFICER:

10 Here. Hang on for a second. Put the
11 speaker over here.

12 MR. SNELGROVE:

13 Thank you. What is the date of the
14 photograph that you were showing, and what was
15 the origin of the source? Was it an aerial,
16 or was it taken by some other means?

17 THE WITNESS:

18 Yeah, that's a good question, Gary.
19 No, it's a -- it's an aerial -- aerial
20 photograph. It's not a drone photograph. And
21 I think the date on this is about 2019 or
22 2020. We may have it later in the
23 presentation. We walked through the
24 historical aerials. But it's a -- I'm
25 thinking 2019 or 2020.

1 MS. KOSTAL:

2 I think it might be 2020. You'll see
3 it.

4 THE WITNESS:

5 Yeah. I'm thinking it's 2020.

6 MR. SNELGROVE:

7 Okay. Perfect. Yeah. You -- I was
8 really trying to find out if it was aerial or
9 was it maybe a drone or some other type of
10 fly-by photography.

11 THE WITNESS:

12 Yeah. No, it's an aerial that we got
13 from probably USGS, but when we get into
14 those, I think we -- we'll see this again, and
15 I think it will have a date on it.

16 MR. SNELGROVE:

17 All right. Perfect. Thanks.

18 THE WITNESS:

19 Uh-huh.

20 MS. KOSTAL:

21 No problem.

22 BY MS. KOSTAL:

23 Q Okay. So here we are. Can you describe
24 the site surface topography for the panel?

25 A Yes. Again, the site location here is the

1 star, and this is a USGS topographic map, and,
2 again, pretty much all of these images that you're
3 seeing are in our limited admission report or
4 supplement. But, anyway, the average elevation
5 out here -- it's fairly flat -- is about 13 feet
6 above mean sea level. And, you know the road --
7 the Gum Island Road is down here to the south
8 about three-quarters of a mile. And, you know,
9 basically, the site is flat.

10 And when we -- oh, the one thing I wanted
11 to point out, this is Wing Gully over here to the
12 northeast. It's relatively shallow. And then
13 there's a canal down here, and we'll -- we'll talk
14 about those in a little bit when we talk about,
15 you know, the nearest surface waterbodies. Again,
16 they're quite some distance from this site, but I
17 wanted to point those out.

18 Q Okay. Here we have the LIDAR elevation.
19 What does this tell you about the site?

20 A Yeah. The LIDAR elevation data is a -- is
21 a much higher resolution model of the ground
22 surface topography. As the panel is probably well
23 familiar with, USGS topographic maps have,
24 typically, five-foot or maybe even ten-foot
25 contours. These have -- LIDAR has one-foot

1 contours.

2 So -- so here is the site, and it's,
3 again, relatively flat, but the resolution on
4 LIDAR is so good that you can actually see the
5 road that the panel drove into the site. It's
6 this curvy feature here. And then the temporary
7 road that was added to the drill site and the
8 operational area, you can -- you can see the trace
9 here.

10 Of course, higher elevation areas are
11 shown in orange or yellow, and the higher
12 elevation -- you know, there's kind of a ridge
13 down here at 16 feet. Again, that's -- that's not
14 a whole lot higher than the land surface in the
15 site area, but it is a little bit higher. So,
16 again, I think the LIDAR is telling us the
17 majority of the property here is relatively flat
18 and level.

19 Q And that's consistent with the topo map
20 that we just saw?

21 A Correct.

22 Q Okay. So you've also included a map of
23 the flood zones. Why do you look at these?

24 A Yeah. We routinely use the FEMA flood
25 mapping information to tell us whether a property

1 is susceptible to, you know, a 100 year flood, 500
2 year flood, and that's relevant to potential
3 future uses of property and/or current uses, for
4 that matter.

5 And what it tells us in green here, which
6 is a large part of the property, is it falls
7 within the 100 year floodplain. There is a little
8 tongue that comes up here which actually
9 encompasses part of the former operational area,
10 which has been reported to be outside the 100 year
11 floodplain. Again, it encompasses part of the
12 oper -- former operational area. And you can see
13 the -- kind of the trace of the fence line, this
14 kind of rectangular feature here.

15 Q And this figure identifies wetland areas.
16 Can you tell us a little bit about why that's
17 important?

18 A Yes. Again, it's -- this is relevant to
19 us determining the 29-B standards to apply,
20 whether we apply wetland, upland, or -- or
21 elevated, wetland, or submerged. And in this
22 case, we've used a Fish -- Fish & Wildlife wetland
23 map. And what it tells us is there's really no
24 wetlands on or in the near vicinity of the site.

25 So we've applied the 29-B upland standards

1 as part of our analysis of the soil data. There
2 are a couple of wetland areas identified by the
3 US Fish & Wildlife Service, but they're quite some
4 distance from the actual site area. So, again, I
5 think the takeaway here is that the site is an
6 upland area, and we've treated it as an upland
7 area as part of our 29-B analysis.

8 Q And here we have the LDQ drainage basin
9 subsegment. How does that affect your
10 investigation?

11 A Yes. And this is -- there's two -- two
12 things that are really helpful for us to
13 understand is, number one, where does surface
14 water drainage from the site end up -- what
15 drainage basin, and its drainage basin 031001.
16 And it's classified as estuarine, meaning that
17 it's -- at times it's naturally salty, or saline.

18 Designated uses are here, as I point out
19 that there's no designated use as a drinking water
20 source, and that makes sense since it is
21 estuarine. It doesn't have any numerical criteria
22 for chloride and TDS. Again, it makes sense since
23 it's naturally saline.

24 Ms. Levert uses this information to
25 evaluate, as part of RECAP, you know, looking at

1 the -- the potential for shallow groundwater to
2 surface water connection. And so she's also
3 looked at this in her analysis.

4 And then, finally, this subsegment is
5 impaired by low dissolved oxygen and bacteria from
6 natural sources. You know, typically agricultural
7 treatment systems are septic type systems.

8 And so, again, these are -- these are uses of
9 properties within this drainage basin that can
10 natural -- well, I say "naturally." They're not
11 really naturally, but they degrade surface water
12 quality. They're really non point -- point source
13 type degradation sources.

14 Q And here we have the surface water
15 features. Can you please tell the panel the
16 importance of these surface water features?

17 A Yes. And this is very important to
18 Ms. Levert's analysis relative to RECAP, but
19 this -- this map, -- although it's a -- it's a
20 Public GIS map -- it has a lot of blue lines on
21 here, and these -- all of these blue lines are
22 really not all filled with surface water. The
23 fact of the matter is most of these are dry, with
24 the exception of -- of the canal down here,
25 Drew Canal, and then I pointed out the -- the

1 gully up here to the -- to the northeast.

2 The -- the nearest down-gradient surface
3 waterbody is -- is this one to the south here,
4 and, again, I'll point the panel to the scale
5 here. Again, we're quite some distance from --
6 distance from that nearest surface waterbody. And
7 this nearest surface waterbody really just doesn't
8 have much in the way of water in it. And so we
9 don't really believe there's a viable connection
10 to the shallow groundwater, but nonetheless, we
11 wanted to identify that.

12 We also -- you might see this blue line
13 over here, and this is a -- a tree line, a fence
14 line. And when we go through the aeriels, you'll
15 see this, but I'll point it out when we -- when we
16 get into them. And, of course, as the panel
17 remembers, and I just showed on LIDAR, this is the
18 road coming in. So it's got a blue line on it,
19 and the only thing I can think of is the imagery
20 picked up maybe, you know, on the sides of the
21 roads or some -- some lower area for -- you know,
22 like a bar ditch, but there's really no standing
23 surface water there.

24 Q And that nearest down-gradient surface
25 water that -- that you have pointed to, is it your

1 understanding that that's what the panel looked at
2 on their way off the property?

3 A That's my understanding, yes.

4 Q All right. And I was with them that day.
5 From talking to you, I -- I agree that's it.
6 Okay. And here we have the surface soil types,
7 which Mr. Ritchie did cover this as part of his
8 investigation. But why is this important also to
9 your investigation?

10 A Yeah. And I know Mr. Ritchie covered --
11 covered this pretty well. So the only thing I
12 want to hit on is that the -- the site, which is
13 where my pointer is, that pretty much the majority
14 of the sampling was conducted -- there was a
15 little bit, you know, in the surrounding area, but
16 it was conducted in the prairieland silt loam.

17 And the thing that -- that we wanted to
18 point out, that the natural EC range, as defined
19 by the USDA, is from a 0 up to a 4 millimoles per
20 centimeter. Of course, the 4 is the 29-B upland
21 standard for EC. And so the natural soil range
22 within the prairieland silt loam, which, by and
23 large, is -- encompasses all the operational area,
24 has an EC range that's -- on the high end, is
25 equivalent to 29-B EC standard.

1 Q Okay. So, in addition to looking at the
2 soil types, you also did some testing. What does
3 this slide show us?

4 A Yes. This slide shows some cross-section
5 lines, A-prime to A is the north-south
6 cross-section line, and B to B-prime is the
7 northwest to southeast. And I point out that
8 the -- the different colored dots and labels, the
9 orange are the ERM boring locations and monitoring
10 well locations, and the blue are the Southland
11 locations.

12 And so we have used boring logs from both
13 locations, or both parties, and we've tried to do
14 that throughout our analysis. We've -- we've used
15 all of the data from both part -- well, all three
16 parties really, Acadian, Southland, and ERM.

17 And I wanted to point out, also, there's
18 three red boxes on this slide. One is the former
19 wellhead area. Again, you can look at the scale
20 down here to get a feel for the size of these
21 boxes. They're quite small. The production area
22 here is in red. And you'll see these very clearly
23 when we look at the aerial photos. And the tank
24 battery area is -- is this red outline here. And
25 so we have -- we have not only, you know, borings

1 in each one of these areas, but we have, you know,
2 soil and groundwater samples that we'll talk
3 about.

4 Q And here we have the first cross-section.
5 What is being shown here?

6 A Yes. This is a -- this is the A/A, and
7 this extends from north to south. And, basically,
8 what it shows is a very shallow water-bearing
9 zone. The top of this zone, I think, in one place
10 is as shallow as seven feet below the ground
11 surface. And -- and, again, you might say, well,
12 why is that important. It's important relative to
13 surface infiltration from any drainage ditches or
14 the use of the property for agriculture or for
15 cattle grazing, and the limitations on the use of
16 a zone that shallow.

17 But, nonetheless, the zone is relatively
18 continuous, although, as the panel can see, it's
19 variable in thickness. And sometimes
20 composition -- the yellow is a sand or silty sand
21 symbol. The brown is a silt symbol, and green is
22 clay. And you can see predominantly the soil
23 types out here, with the exception of the
24 water-bearing zone, are predominantly clay and
25 sodic clay to the maximum depth investigated,

1 which is about, you know, 30 -- I think, 36 feet
2 or so.

3 And so the importance of that is that
4 these fine-grained soils tend -- tend to limit
5 infiltration of water, and they're part of about a
6 120- to 140-foot-thick clay confining unit that --
7 that overlies and protects the underlying Chicot
8 aquifer.

9 Q And what do we see on this one, the
10 cross-section B to B-prime?

11 A Yeah. B to B-prime, very similar. The
12 water-bearing zone here is identified with the
13 dashed lines on the top and the bottom. And one
14 thing I forgot to point out on A/A-prime, you'll
15 see the -- this little symbol here to the right of
16 some of the borings. It looks like railroad
17 tracks. Well, that's the well screens.
18 Typically, they're five-foot well screens that
19 were put in since this zone is so -- so thin in
20 places, only a couple of feet. Many places it
21 doesn't make any water. But, anyway, that's
22 the -- you know, that's the first
23 groundwater-bearing zone, which was the focus of
24 really both investigations.

25 You do see a little bit on the top of a

1 few of these borings -- in some cases the borings
2 that were in the operational area, you might see
3 some reports of gravel. There's a gravel pad out
4 there I'm sure the panel saw when, you know, it
5 did the tour around, encountered some of that in
6 the upper part of the borings. But, by and large,
7 with the exception of the water-bearing zone,
8 these are fine-grained clays and sodic clays to
9 total depth, and you can see in the bottom of each
10 boring.

11 And I -- I encourage the panel to look at
12 all the boring logs we've provided as an appendix
13 to the -- the plans. There's more boring logs
14 than you see on these two cross-sections, and they
15 all have an extensive clay layer below the first
16 water-bearing zone demonstrate -- demonstrating
17 protection of the underlying Chicot.

18 Q Okay. And here we have the water wells.
19 What does that red circle around the site
20 indicate?

21 A Yeah. The red circle is a mile radius
22 around the -- the site center here, which, again,
23 is the star. And, as you can see, being a rural
24 area, there are very few water wells. And,
25 actually, the water wells that have been drilled

1 out here are predominantly rig supply wells.
2 That's this red symbol here with the line through
3 it.

4 There's only one registered water well
5 that's been identified as a domestic well, which
6 is shown right here, the 019-471, and up here in
7 the right-hand corner of this slide, if you -- if
8 you see the 019-471 well, it's 254 feet deep. It
9 actually was drilled in 1948. It's quite old.

10 Based on our analysis of this location,
11 this is plotted based on SONRIS -- the data in
12 SONRIS. We believe, actually, this well location
13 is about here where my pointer is. We don't
14 believe this well is still active. But, anyway, I
15 think the point here is this well, obviously, is
16 deep. It's not in a shallow water-bearing zone,
17 and it's in the Chicot.

18 The other wells listed in the table extend
19 from 160 feet on down within the mile radius, and
20 those are all rig supply wells. And you might
21 ask, well, why did you -- why did you use a mile
22 radius. Well, of course, we have analyzed the
23 groundwater relative to RECAP in terms of
24 classification, and it specifies looking at
25 groundwater use in a one-mile radius, and that's

1 what we've done here.

2 But I think the most important point is to
3 identify that there are no water wells screened in
4 this, you know, shallow water-bearing zone
5 underneath the property. All of the water wells
6 are screened in the Chicot aquifer.

7 Q Okay. And one other thing I would like
8 you to point out is that Neumin Production rig
9 supply well, it was identified as active. But is
10 it your understanding that that's not the case?

11 A Yes. And that's -- that's this
12 019-12299Z, and it's on the table here. The panel
13 can see it. I'll use my little pointer. It's
14 listed -- it was listed as a 160-foot rig supply.
15 It's listed as active, but when you actually look
16 back in the drilling -- the driller's log and
17 records, it's identified in a handwritten note
18 that it has been plugged and abandoned.

19 And in our work on the property, and in
20 particular in the former operational area, we have
21 seen no evidence of any existing water well out
22 here, which tells us that -- it's consistent with,
23 you know, the description on the -- the driller's
24 log that the well has been plugged and
25 abandoned -- the rig supply well.

1 Q Okay. And there --

2 MS. LOVE:

3 Dave, this is Jamie. If you can,
4 just sometime, let me know where that can be
5 found exactly in the records.

6 THE WITNESS:

7 Oh, yeah.

8 MS. LOVE:

9 That way, we'll have the --

10 THE WITNESS:

11 That's in appendix -- ooh, I can't
12 give you the exact letter. It has a letter
13 designation, Jamie. We -- we have all of the
14 available driller's logs for, I think,
15 everything in the one-mile radius in that
16 appendix.

17 MS. LOVE:

18 Okay. And it was in the driller's --
19 you said it was in the log for it?

20 THE WITNESS:

21 Yes.

22 MS. LOVE:

23 Okay. I'll look. Thank you.

24 THE WITNESS:

25 If you can't find it, let me know.

1 Yeah, I'll -- I'll --

2 MS. KOSTAL:

3 We'll try to locate that for you.

4 MS. LOVE:

5 All right.

6 BY MS. KOSTAL:

7 Q And then one other thing, Dave, before we
8 move off of this one. That domestic well, is it
9 your understanding that that's the well that the
10 panel stopped and looked at on its way off the
11 property?

12 A Yes.

13 Q Okay. And then here is a little bit more
14 about that.

15 MS. KOSTAL:

16 Sorry. We're having a little
17 technical --

18 THE WITNESS:

19 There you go.

20 MS. KOSTAL:

21 Okay. There you go.

22 BY MS. KOSTAL:

23 Q I think you -- so this is about that
24 domestic water well, and it shows the 1948 date, I
25 believe, and the location. Is that part of the --

1 the location is the section township range. Is
2 that part of the reason you think it maybe is
3 identified in the wrong area --

4 A Yes.

5 Q -- on the other map?

6 A This -- this is the actual USGS datasheet
7 from this well that was installed 1948. You can
8 see the depth here. And, you know, back then --
9 obviously, this is way before handheld GPS. And
10 so the driller typically would identify the
11 section, township, and range. Sometimes they
12 would attach a handwritten map.

13 And so the accuracy of plotting these
14 locations -- and, of course, you know, how it ends
15 up in the database is how it ends up. But that's
16 why I think -- and we've seen this before, and I'm
17 sure the panel has, too, is some of these
18 locations are close, but they're not in the exact
19 location, you know, if you try to verify it in the
20 field.

21 I think the importance of this location is
22 that -- number one, is it was drilled in 1948.
23 Number two, it was drilled, you know, into the
24 Chicot, 254 feet deep. And then, finally, as we
25 saw in the previous slide, all of the wells within

1 a mile radius are either -- you know, as shallow
2 as 160 or as deep as 465, well into the Chicot
3 aquifer and not into the -- you know, the shallow
4 water-bearing zone.

5 Q So there are no shallow water wells in
6 this area?

7 A No.

8 Q And has this shallow groundwater ever been
9 used?

10 A No.

11 MR. SNELGROVE:

12 Dave, on that domestic well, if you
13 go back and look at the aerial photography, do
14 you see a structure at that location where --
15 where we saw it -- where we saw that well that
16 would indicate that it likely could have been
17 a domestic well?

18 THE WITNESS:

19 Yeah, Gary, that's a -- that's a good
20 question. I think just talking with Shawn --
21 unfortunately, I wasn't out on the site
22 inspection with you guys, but we think it's a
23 three-inch PVC well. This is identified as a
24 three-inch here. We haven't -- I haven't gone
25 back and looked, but -- but that's something

1 that we could -- we could take a look at to
2 see if there was a pump house that we can
3 actually see in the aerials.

4 I mean, our -- one of the things
5 about this site, which is a little bit
6 different than a lot of the sites, we focused
7 on our aerial review starting in 1998 since
8 oil -- oil and gas operations didn't start
9 until 2001. And so, like you guys have
10 typically seen from us, historical photos that
11 go back to the 40s, we didn't -- we didn't
12 compile them that far back because of the --
13 you know, the more recent operations, but we
14 can -- we can see if we can take a look and
15 see if it -- it might show up but -- see if
16 it, you know, tells us anything.

17 MR. SNELGROVE:

18 Okay. Thanks.

19 MS. KOSTAL:

20 We can't -- we're having a technical
21 issue. It won't go to the next slide.

22 Maybe --

23 THE WITNESS:

24 Let's see. How about that?

25 MS. KOSTAL:

1 Oh, there we go.

2 THE WITNESS:

3 I guess that did it.

4 BY MS. KOSTAL:

5 Q Okay. Here we go. And this shows us the
6 thickness of the confining unit over the Chicot.

7 Why is that important to your investigation?

8 A Yes. And, I think the panel has seen a
9 map like this, and this is -- again, we have this
10 in the -- in the plan. It's from an author named
11 Sargent -- I think there are several authors --
12 from 2004. And it's a -- it's a map showing the
13 thickness of the -- the clay confining unit that
14 overlies the Chicot.

15 And it's important for us to understand
16 what kind of thickness that consists of underneath
17 the site which is, again, the star here, and what
18 this map tells us -- and, again, this is more of a
19 regional map, but it's helpful in kind of getting
20 the range of the thickness of the confining unit,
21 and it's -- it's between 120 and 160 feet here,
22 which is the -- kind of the gray color. And
23 that's consistent with the water wells that have
24 been drilled out here. They're typically drilled
25 from 160 feet on down, and that makes sense. And

1 so what we have here is, you know, a thick
2 sequence of -- of confining unit overlying the
3 Chicot.

4 BY MS. KOSTAL:

5 Q Okay. And what does the low recharge
6 potential tell you?

7 A Yeah, the low recharge potential -- again,
8 it's an analysis by Louisiana Geologic Survey of
9 the ability of the -- the confining unit to
10 transmit water. And what it tells us is where the
11 site is located, it has the -- the character of
12 that confining unit is so fine-grained, it has a
13 low potential to recharge the Chicot. The Chicot
14 actually is recharged in parishes north of this
15 parish. And so this site is located in this
16 yellow area that has, you know, a low potential.
17 And -- and you can understand that because of the
18 thickness of the confining unit and the -- you
19 know, the clay-rich character of the unit.

20 Q Okay. Let's talk about groundwater
21 classification. I see RECAP here. Why are you
22 using RECAP equations and RECAP classifications?

23 A Well, 29-B does not provide any
24 methodology for classifying groundwater. So we
25 have to look for a mechanism to classify

1 groundwater, and that mechanism is RECAP. RECAP
2 has prescribed procedures in -- I think it's
3 Section 2.10 and in Appendix F. And we followed
4 that starting with our evaluation of the water
5 wells within a mile radius. And, basically, what
6 we have done out here is tested wells using slug
7 tests, and I think the panel is familiar with
8 those. And we have used slug tests which are
9 recognized by RECAP on other sites.

10 But -- but we slug tested four -- or three
11 wells -- I'm sorry -- three of the ERM wells. You
12 might ask, well, why didn't we slug test the
13 fourth one, which is MW-1 here. And -- and that
14 well yielded so little water -- to slug test
15 wells, you have to basically institute a change in
16 the water level and then allow it to reequilibrate
17 to its original water level. And MW-1 was going
18 to take, you know, the better part of a half-day
19 or day just to recover since it was slow -- so
20 slow to recover as part of our sampling process.
21 So we focused on the wells that were actually the
22 more permeable, although none of these wells out
23 here made a lot of water.

24 So we focused on these three, and the slug
25 test results were analyzed with a confined yield

1 equation. This shallow zone is confined -- as the
2 panel saw, its -- you know, clay layer above and
3 below, and the water elevations are just a few
4 feet below the ground surface. And I followed
5 Appendix F, and that resulted in a geometric mean
6 yield of 103 gallons per day, you know, quite low.
7 You know, the RECAP Class 3 standard is 800
8 gallons per day. So, you know, by and large,
9 these wells -- many of them didn't make much
10 water, and so it's really not a viable zone for,
11 you know, any future use just to the low yield.

12 And you can see -- one thing I didn't
13 point out here at the top, these wells are quite
14 shallow in terms of their screen interval --
15 intervals, 8 to 14 feet. And so as we saw in the
16 cross-section, that -- that water-bearing zone is
17 quite close to the ground surface.

18 Q Okay. What do you mean by monitoring
19 wells that went dry or exhibited low yield?

20 A Yeah. That's important to us. Even
21 though these -- all of these wells shown here on
22 the property -- and -- and I forgot to point out
23 on the previous slide there's a well way up here,
24 and you might say, well, you know, why was that
25 put up there. That was originally put up there --

1 there's a couple of wells that were put up there
2 for background purposes. Acadian put the first
3 one, TW-6. Subsequently, Southland -- Southland
4 put one up here.

5 But each of these wells that are shown on
6 this slide, in the process of developing the wells
7 and sampling them, that they would purge dry,
8 meaning that the well had difficulty making enough
9 well to fill, you know, a few quart jars for
10 samples. And even though all of these were not
11 slug tested, what it tells us, that the ones that
12 go dry would -- would be equivalent at least, if
13 not even yield less water than the ones that were
14 slug tested.

15 So -- so we're quite confident in our
16 classification, not only for the wells that we
17 slug tested but the supporting information. And
18 there are actually 18 wells out here, if you can
19 believe it -- 18 monitoring wells for one well
20 site with no pit, quite extensive testing, and the
21 majority of them went dry.

22 Q Okay. Can you explain the purpose of this
23 map and how you put it together?

24 A Yes. This is a potentiometric surface
25 map, again. The ERM wells were the only wells

1 that were permanent that were surveyed, and so, of
2 course, it's important for us to understand the
3 groundwater flow direction relative to RECAP.

4 And so you might ask, well, where's all 18
5 wells, and that's why the rest of them were put in
6 as temporary wells. We put in ours as permanent.
7 And I think the panel probably saw them when they
8 were out there. They had the yellow posts on them
9 and . . .

10 But, anyway, we had them surveyed. We
11 measured the water levels, and what it tells us is
12 the average water elevation out here is about ten
13 feet mean sea level. And, if you remember, the
14 elevation of the property is about 13 feet. So
15 the water table in these wells, or water
16 elevation, is about three feet below the ground
17 surface, pretty shallow.

18 And then the -- the yellow arrows on this
19 figure show the -- the groundwater flow direction
20 based on the -- the surveyed wells and the water
21 elevations measured on September 10, 2021.

22 Q And because that upper arrow and lower
23 arrow, 10 feet and 9.5, does that show us that the
24 water isn't moving very fast?

25 A Well, yeah. We look at the -- we look at

1 the spacing of these contours, and we look at the
2 hydraulic conductivity of how permeable the -- the
3 water-bearing zone is, and we can make
4 calculations of -- of how fast the groundwater is
5 moving. And at this site, groundwater is moving
6 quite slowly, on the -- on the order of a few feet
7 per year, because the site is relatively flat.
8 There's not much gradient, and the water-bearing
9 zone is -- is not very permeable.

10 But it is important for us to understand
11 this, because Ms. Levert wants to know, obviously,
12 is the groundwater moving to a surface waterbody.
13 And we've, you know, done a full delineation in
14 the down-graded direction, all of that, and -- and
15 we -- we have done that here. So that's why we,
16 you know, went to the effort of surveying these
17 wells and put them -- putting them in a -- in what
18 we call a permanent basis, until, you know, the
19 decision on the -- on the final plan is made, and
20 then we'll plug and abandon them.

21 Q And you mentioned earlier one of the
22 things you do in your site-specific investigation
23 is to look at the historical site use. So what
24 did you find in this case?

25 A Yes. In this case -- and we'll run

1 through the historical eras, at least back into
2 the '90s. So the site has been used for
3 agricultural pasture use, just kind of like, you
4 know, my trips out there or -- or the panel's trip
5 out there. The unique thing about this site --
6 and I say it's unique because, you know, of all
7 the sites I've worked on, it's probably one of the
8 most recent sites in terms of E&P operations.

9 The first well wasn't drilled till '01.
10 There was no pit, and the well was plugged in
11 2015. And so you can kind of see the progression
12 of this site in, you know, a fairly short suite of
13 more recent era photos, unlike -- you know, a lot
14 of sites, we've got to go back to 1940 to
15 understand what was going on.

16 Q So it's been used for agricultural and
17 pastureland for decades, and with Neumin's most
18 feasible plan, it can continue to be used for
19 that?

20 A That's right, or -- or other uses for --
21 you know, beyond that, if, you know, so desired.
22 Of course, you know, whatever -- whatever uses it
23 might be used for, there's always limitations
24 relative to location, in a flood zone, or
25 sometimes the USDA soil properties will identify

1 limitations on use that have nothing to do with
2 oil and gas operations or any other operations.
3 It's just -- you know, sometimes clay soils --
4 it's difficult to build certain foundations on
5 them, you know, a high water table in terms of
6 putting in deep foundations. There's a lot of
7 things that, you know, come into play in terms of
8 future development.

9 Q Okay. Here we have the well again, and
10 then you show nearby wells.

11 A Yeah -- yes. And -- yeah.

12 Q Go ahead.

13 A This is the -- this is the well right
14 here, the 225207 that was drilled in '01. There
15 were a couple of other well locations, one to the
16 east and one to the southwest, but these are both
17 identified as dry holes in SONRIS. So -- so the
18 focus of the original complaint and the original
19 investigation by the plaintiff's expert was in and
20 around this location. And the -- and the testing
21 that you'll see has been focused in and around
22 here and radiating from this one location.

23 Q And, unlike some of the other slides, this
24 one is zoomed out much further. So you --

25 A Yes. Yeah. And that's a good point.

1 Again, the scale down here, the location to the
2 east is -- I don't know -- 750 feet. The one to
3 the southwest is over 1,000 feet.

4 Q Okay. And here we are now to the historic
5 aerials. I'm just going to let you talk us
6 through what's important on each of these,
7 starting with 1998.

8 A Okay.

9 THE WITNESS:

10 And, Garrett, this is just getting
11 back to your question, which I think was a
12 good question, you know, have we looked down
13 there historically on that -- in that well
14 location.

15 A And this is kind of where we started in
16 the plan is '98, because, obviously, about where
17 my, you know, circular pointer is -- I'm making a
18 circle -- is where the well location was drilled
19 in 2001. And so that's been kind of our focus
20 since really there was nothing here historically
21 prior to that other than, you know, agriculture.

22 One thing I'll point out here on the slide
23 is this -- kind of this tree line. Now, this tree
24 line has changed over time, and you'll see that as
25 we walk through the aerials. But -- but right

1 about here is where the -- you know, the former
2 well location was and the operational area, and it
3 will become obvious once we get to the next photo.

4 This is 2003. And, again, all of these are
5 in your -- in the plans; so feel free to go back
6 to the shop and take a look at them.

7 Unfortunately, the resolution on this one isn't
8 very good. The tank battery is here. You can see
9 some of the dark shadows of the tanks, which are
10 right here. You can barely see the berm around
11 it. The operational production equipment was in
12 this little rectangle here. The well site is
13 probably here. The gravel pad is here, which you
14 guys probably parked on. And then the road coming
15 in is here. Here is the tree line again for, you
16 know, kind of perspective. You can barely see
17 kind of the outline of the fence on here, but,
18 again, this resolution is not very good in this
19 photo.

20 2012, obviously, this is three years
21 before the well was plugged and abandoned. This
22 is a high resolution. This is a good photo here,
23 and so we'll spend a little bit of time on this
24 one. You can see the fence line. Here is the
25 gate that comes into the -- you know, the fenced

1 area around the former operational area.

2 The bulk of the operations were just on
3 the western portion of this fenced area. Here is
4 the gravel pad. You can really see the tank
5 battery here. The shadows to the north here --
6 north is straight up on the slide here.

7 Production, you know, equipment area with the
8 berms and -- you know, keep in mind the scale down
9 here. I mean, we're not talking -- of course,
10 these areas on the slide look, you know, good
11 because of the high resolution, but the size of
12 them is quite small.

13 Here is the scale down here. And really
14 this western part of the property, or the -- you
15 know, the operational area with the one well,
16 which was about here is, you know, a little less
17 than a half an acre. The fenced area is a little
18 more than a half -- a little more than a half --
19 I'm sorry -- a little more than an acre, but, you
20 know, the operational area is quite small.

21 I think the panel probably had a chance to
22 walk over here to the west -- or the eastern side.
23 There was a -- there was a pipe here and a really
24 small flare, which was, I think, right about here.
25 You can see there's a dark line which is a shadow

1 from a pipe that goes up to the top. There was no
2 pit here or anything, but I wanted to point that
3 out. That area was tested back, I think, in 2016
4 by Acadian. Didn't find anything. You know,
5 obviously, there's no pit there. But I wanted to
6 point that out. Here is the tree line again
7 that -- that we saw in the preceding photo. So I
8 think that's everything I wanted to point out on
9 this one.

10 MR. SNELGROVE:

11 Dave, I have a question.

12 THE WITNESS:

13 Yes.

14 MR. SNELGROVE:

15 On that 2012 photo --

16 THE WITNESS:

17 Yes. Go ahead.

18 MR. SNELGROVE:

19 -- okay, to the north and east of the
20 tank battery area, what's that dark -- it
21 looks like two oval -- like an oval-shaped --

22 THE WITNESS:

23 (Indicating)

24 MR. SNELGROVE:

25 Yeah, that. What is that?

1 THE WITNESS:

2 Yeah. Gary, I -- it looks like
3 almost a tank-like feature with a shadow, but
4 it's hard to tell. I see -- and let's look at
5 the next photo. See, it's -- it's there, and
6 then it's -- it's gone. It looks like a --

7 MS. KOSTAL:

8 A tank at the bottom and then a
9 shadow.

10 THE WITNESS:

11 Yeah. This looks like the tank and
12 then a shadow.

13 MR. SNELGROVE:

14 Okay. Yeah. I -- I can see that.
15 You think maybe it might have been just, like,
16 a chemical tank that was put out there for --

17 THE WITNESS:

18 It -- yeah. The more I look at it,
19 it almost looks like a tank, you know, with a
20 shadow that, you know, may have even had a --
21 a line coming over here.

22 MR. SNELGROVE:

23 Something servicing the well maybe?

24 THE WITNESS:

25 Yeah. It looks like it was, you

1 know, connected to the well.

2 MR. SNELGROVE:

3 A simulation or something?

4 THE WITNESS:

5 Yeah, because in 2013, we don't see
6 it at all.

7 MR. SNELGROVE:

8 Okay. Yeah. I see it. And, plus,
9 the shadows of the tank battery are in the
10 same -- they're kind of -- it looks similar to
11 the shadows from the tank battery.

12 THE WITNESS:

13 It does.

14 MR. SNELGROVE:

15 Okay. Good. All right. That's
16 about it.

17 THE WITNESS:

18 All right.

19 MR. SNELGROVE:

20 Thank you.

21 THE WITNESS:

22 Yeah. You're welcome.

23 A The 2013, obviously, we just looked at
24 that, and it's clearly not there. This is, you
25 know, a really good photo, too, probably the

1 middle of the day. Don't see much in terms of
2 shadow. You can see the tanks very well. The
3 tank battery -- or the tank berm around the tanks
4 is here. And then the tank berm, which is around
5 the production area process equipment, is here.
6 The well location is over here. That tank is
7 gone. You can still see the line out here if you
8 follow my cursor. You can see a pipeline and then
9 the flare right there. The tree line here is, you
10 know, still to the east.

11 2015, this -- this photo is -- I can't
12 remember the exact month of this, but it -- as I
13 pointed out earlier, the well was P&A'd in, I
14 believe, July. And so well location, tank
15 battery, processing area, pretty much the same.
16 You can see the fence line. So this is close to
17 plug and abandonment and, you know, removal of the
18 processing equipment.

19 Okay. 2017, obviously, this is after the
20 well was plugged and abandoned. The processing
21 equipment and tank battery was removed. Still see
22 remnants of these berms, and, as the panel
23 probably saw out there, these are relatively low
24 berms and kind of hard to find a lot of the
25 vegetation around them. We plan on, you know,

1 leveling those as part of the plan. But, anyway,
2 you can see those.

3 This looks like a trailer. Looks like
4 it's being used, and I think it's -- this area is
5 being used as a turnaround for the farmer and the
6 cattle. Obviously, this one -- this photo, you
7 can see quite a few of the cattle on -- on the
8 property. But this trailer here is -- you can see
9 it, I think, in the next photo.

10 BY MS. KOSTAL:

11 Q And going back to that --

12 A Oh, yeah.

13 Q -- 2017, that tree line is gone?

14 A Yeah. This tree line has been, you know,
15 cut down, which was located over here to the east,
16 not -- not sure why, but it's -- it's been cut
17 down for some reason.

18 December 2017, you can still see this kind
19 of trailer that's parked here, you know,
20 revegetation going on. You can see the
21 revegetation of the tree line that has been cut
22 down. The fence line is still here in a
23 rectangular shape.

24 This is 2018, a year later. The
25 resolution on this photo is not -- not as good as

1 some of the other ones. But, again, you can
2 see -- when you cut things down out here, they
3 start growing again pretty quickly. This is 2018.
4 The site is being revegetated pretty quickly. You
5 know, obviously, the gravel pad is not. It's
6 still, you know, a gravel pad. It looks like this
7 is a trailer and almost a truck, maybe some hay
8 bales or something. I think, again, this -- this
9 area is accessed by the farmer, and cows can come
10 in here as well. But I think the point here is in
11 a relatively short amount of time, this site is
12 being revegetated around the, you know, gravel pad
13 area.

14 December 2018, this looks brown because
15 it's, you know, obviously, the winter but not a
16 lot of difference other than, you know, different
17 time of year.

18 And here is the 2020.

19 THE WITNESS:

20 And, Gary, I think, going back to
21 your question, I think this is the same photo
22 as the earlier one. We can double-check in
23 the plan.

24 A But again, this is more revegetation.
25 Even the -- you know, some of the gravel pad area,

1 the tank battery, and production area are getting
2 vegetated. And this is probably fairly close to
3 what it looked like when you guys were out there.
4 You know, even -- even more vegetation has
5 happened over time.

6 BY MS. KOSTAL:

7 Q Okay. And that brings us to the
8 applicable regulatory standards. Before we get on
9 with that, can you tell us what this is a picture
10 of?

11 A Yes. This is a picture of a -- you know,
12 the typical geoprobe drill rig. We used the
13 geoprobe rig, and Southland did as well. And,
14 again, it's track-mounted. It gives us the
15 ability to get off of the roads into locations.
16 We had a few locations outside of the -- kind of
17 the fenced area. Allowed us to get to those. And
18 we used this piece of equipment to collect --
19 "we," both parties -- to collect soil and
20 groundwater samples, continuously collecting the
21 soil samples with depth, which gives us the
22 ability to collect cores that we can describe, we
23 can field screen.

24 And I will point out that on the boring
25 logs, all the field screening records, including

1 the field EC and any kind of descriptions, are on
2 those records, and those were all gathered
3 using the geoprobe continuously sampled, you know,
4 drilling equipment.

5 Q Okay. And, first, we have statewide order
6 29-B. Why do you use -- why did you look at that?

7 A Well, obviously this is a -- it's an
8 oilfield site. Not much of a site, one well. But
9 we looked at Chapter 3, Pit Closure Standards,
10 their numerical standards that we have applied on
11 many sites across the state, their numerical
12 standards for metals, oil and grease, and salts,
13 electrical conductivity, ESP, exchangeable sodium
14 percentage, and sodium absorption ratio, SAR. So
15 we looked at all of those to compare the data.
16 And, as I said earlier, this is an upland site; so
17 we used the upland standards relative to salt.

18 Dr. Holloway and Mr. Ritchie -- you heard
19 from Mr. Ritchie -- have done a vegetation
20 analysis and a root zone analysis and determined
21 that the root zone is -- I think they came up with
22 10 or 11 inches. We've considered soils within
23 the upper two feet and -- to make it easy, because
24 some of the samples were collected from zero to
25 two feet, and it didn't have a separation at one

1 foot.

2 So we evaluated the soil data in the upper
3 two feet relative to the 29-B salt standards, but
4 we've also presented all of the 29-B salt data
5 with depth on figures, and I'm going to walk you
6 guys through some of those, so -- to demonstrate
7 that we've completed the horizontal vertical
8 delineation for 29-B salts, as well as, you know,
9 metals and oil and grease.

10 And, finally, I guess, on this slide,
11 there are no numerical groundwater standards
12 provided in 29-B, and so we've looked to RECAP for
13 numerical standards for our analysis. Actually,
14 I'm going to present some of the constituent maps.
15 Ms. Levert will get into details of the RECAP
16 analysis.

17 So we've -- we've looked to RECAP for
18 those. We've also looked to EPA SMCL 250 for
19 chloride as kind of a screening tool for us to
20 evaluate groundwater quality, and -- and also iron
21 and manganese in terms of secondary MCLs and --
22 these shallow water drain zones tend to be
23 naturally high in those; so we looked to EPA for
24 those standards.

25 Q And I think that's what this slide is

1 getting to. So you looked at RECAP and EPA?

2 A That's -- that's correct.

3 Q Anything further to add? I mean, I think
4 we just covered this.

5 A Yeah, I think we did. Sort of got ahead
6 of ourselves. But Ms. Levert has done an
7 extensive analysis of the -- of the RECAP soil
8 data, and I'm not going to get into that at all.
9 There's been a lot of data collected out here, and
10 you're about to see how many samples. So she's
11 done that. I looked at 29-B. And, you know, I
12 think you will hear from her shortly on her
13 analysis of both soil and groundwater.

14 Q Okay. And here we have RECAP's
15 groundwater classification. Why is that important
16 to your analysis?

17 A Again, like I said earlier, there's no
18 mechanism in 29-B for classifying groundwater; so
19 we looked to RECAP. RECAP has a prescribed
20 procedure, which, you know, we've applied on many
21 sites across the state using, you know, this --
22 this Section 2.10 in RECAP.

23 And we followed this -- and I'm not going
24 to read this whole thing, but we followed this
25 pretty much to the tee in making our determination

1 of the groundwater classifications at this
2 property, and it's clearly Class 3 supported by,
3 you know, all the slug testing, our analysis of
4 the water -- groundwater usage, or lack of usage.
5 The shallow water-bearing zone is not used,
6 so . . .

7 Q So you've completed all those
8 requirements?

9 A Correct, everything. And all of the --
10 all the information that supports this, including
11 the slug tests, are in appendices in our plan, if
12 the panel wants to, you know, look at the backup
13 for all of that.

14 Q And here we have Title 51 and Title 56.
15 Why do you -- why did you look to those?

16 A Yeah. We -- we typically look to the
17 sanitary code in LA Title 56 for some guidance
18 on -- you know, RECAP and 29-B, they -- they have
19 provisions to evaluate groundwater, but from a
20 practical standpoint -- you know, from a water
21 well driller standpoint, they look to the sanitary
22 code in terms of providing a source of potable
23 water that might be -- or could be affected by,
24 let's say, shallow groundwater or infiltration
25 from surface water.

1 And the sanitary code has a provision
2 here, or a couple of provisions, that -- that
3 putting a very shallow water well in can be
4 problematic if you don't have enough filtration of
5 the earth's surface to filter rainwater. And you
6 can imagine, if one of those big cows dies out
7 there and the rainwater that it would infiltrate
8 into a shallow zone, it would not be -- if you've
9 only got a few feet of soils for the water to
10 filter through, it's not a very good filter. And
11 so that water could have bacteria. It could have
12 all kinds of things in there, whether it be cattle
13 grazing or agriculture or pesticides, herbicides,
14 or, you know, whatever.

15 And so that's important from a sanitary
16 code perspective. And, also, there's a provision
17 to -- if you really wanted to put a water well in
18 here, the sanitary code says you've got to have at
19 least a ten-foot thickness of a cement sheath
20 around your well to protect any of that
21 infiltration.

22 Unfortunately, or, you know, I guess, from
23 a practical standpoint, this shallow water-bearing
24 zone really is not -- doesn't meet these
25 requirements. It's too shallow to provide a

1 viable source for a water well driller to install
2 a well, not only from a water quality standpoint,
3 which the sanitary code, I think, is more focused
4 on, but from a yield standpoint.

5 And then Title 56 -- there's a provision
6 in Title 56 for -- for installing wells in -- in
7 areas that routinely flood, that -- that they
8 should be grouted to 50 feet below the ground
9 surface. Again, it gets to the concept of, you
10 know, when a property floods, it holds standing
11 water for a long time. That infiltration of that
12 flood water -- and I know this happened in Rita
13 and Katrina. When these wells get sheered off and
14 if they're -- you know, have a connection to the
15 deeper zone, in particular the Chicot, then that
16 can be problematic.

17 And so this Title 56 provides a provision
18 to, you know, make sure that you actually, you
19 know, have a -- an adequate amount of soil above
20 your -- your zone that you're producing your water
21 from that the driller can be confident, when he
22 comes to drill a well at your property, that
23 you're going to get a well that makes, you know,
24 enough water to use and also a high enough
25 quality.

1 So I think the point -- you know, the main
2 point of this slide is that this shallow
3 water-bearing zone as shallow as seven feet below
4 the ground surface, you know, clearly can't --
5 can't meet these requirements and, quite honestly,
6 can't meet even the RECAP requirements for -- for
7 a Class 2 zone. I mean, it yield -- yields so
8 little water. So you can't get potable water out
9 of this zone.

10 Q Okay. And that brings us to sampling.
11 Before I move on, what is this a picture of?

12 A Yeah, again, the same drill rig that was
13 used to put in the soil borings was used to put in
14 the monitoring wells, and I'm sure the panel saw a
15 couple of these out there. These are the four --
16 one of four ERM monitoring wells with the yellow
17 posts. We put these posts out here to try to keep
18 the cattle off, but they're hard to stop
19 sometimes.

20 You might say, why did you put a long
21 piece of pipe on one of them? Well, we tend to do
22 that in these fields. Sometimes, you know, over a
23 growing season, you'll get vegetation growing up
24 higher than the lower post, and so the farmer can
25 see them. This is particularly relevant sometimes

1 for cane areas that -- that grow quite high.

2 But, anyway, that's an example of one of
3 the flush mount monitoring wells that we put in.

4 Q Okay. Here is your sampling program and
5 that from Acadian and Southland. Can you give us
6 some highlights on this extensive sampling down
7 here?

8 A Yeah. And you can see -- I think the
9 point -- the main point here -- and, again, I
10 encourage the panel to look at both -- both
11 submissions, because they include summaries of all
12 of this, but there were over 250 soil samples that
13 were collected out here from 74 borings. There
14 are actually two -- four more borings that soil
15 samples weren't collected from but monitoring
16 wells were installed in, so 18 groundwater samples
17 from 18 monitoring wells.

18 We have not even included the splits. If
19 we included the splits of the soil samples, we're
20 up to about 375 soil samples and 24 groundwater
21 samples. Again, this is -- you know, the main
22 operation over here is about a half-acre; so you
23 can imagine the density. And I'll show you a
24 slide here in a minute with a sampling density.

25 You might say, well, why did you do all of

1 that sampling at such a small site? I mean, I
2 know the panel has heard, you know, the -- some of
3 the other sites we've worked on -- multiple --
4 multiple wells, multiples pits. And we wanted to
5 try to be as sure as we can that we had full
6 delineation of soil and groundwater both
7 vertically and horizontally, and -- and that's
8 what we did. And, again, this wasn't all ERM
9 borings. This was a combination of Acadian, ERM,
10 and Southland. So, again, we used all parties.

11 Slug tests, we've already talked about
12 those. Numerous site inspections that were
13 conducted by, you know, our people, Southland
14 people, extensive ground level photography. The
15 photographs and field notes during those
16 inspections are provided in your attachments, or
17 appendix to the plan. So I encourage you to look
18 at those.

19 One of the photos here, this is just a
20 soil core from MW-2. It's a monitoring well
21 location. The 8 to 12 is the interval that was
22 sampled. That's 8 to 12 feet below the ground
23 surface. I will point out, you know,
24 predominantly clay soils, but you can see there's
25 a little bit of difference here where my pointer

1 is, a little bit of water. That's actually the
2 water-bearing zone, not much of a water-bearing
3 zone, but I wanted the panel to see that's kind of
4 what we're talking about when we're talking about
5 the water-bearing zone.

6 Q Okay. And here is the zoomed-out location
7 of the soil samples. Can you tell the panel a
8 little about -- about this?

9 A Yeah. We -- usually, we try to get all
10 the samples on one figure, and due to the density
11 and the scale of the small area that we had to
12 focus on down here, and then we had one location
13 clear up here, we couldn't -- we couldn't put all
14 the labels on.

15 And so we have -- the next figure you're
16 going to see will be focused on this orange box.
17 But there was a Southland bore hole and monitoring
18 well that was installed up here, SE-SB01, which
19 is, you know, from the main area, probably almost
20 1,000 feet to the northwest. But, by and large,
21 all of the sampling -- let's just say the majority
22 was focused in this really small operational area
23 with a few bore holes and wells distant as part of
24 the investigation for delineation purposes --
25 process.

1 Q Okay. And this is the zoomed-in version.
2 And if you look at this scale, it really shows the
3 density. Can you -- of the sampling locations.
4 Can you tell the panel a little bit about this?

5 A Yes. And let me orientate everybody, I
6 guess, in terms of, you know, the -- the wellhead
7 area, which is the red little square here, the
8 production area, which is the red rectangle here,
9 and the tank battery area here.

10 Again, I'll refer the panel down to the
11 scale here to, you know, put some perspective on
12 the spacing. And you can see the density of some
13 of these points are -- you know, some of these
14 points are less than ten feet apart in the area of
15 some of the former operational areas. And then
16 you can see, as we moved away -- when I say "we,"
17 again, both parties, or all three parties -- have
18 moved away as part of the delineation process.
19 The farthest locations here were done in November
20 of 2021 after we made the first submittal by
21 Southland. These are the locations distant. And,
22 again, we've incorporated all these data.

23 There are three locations here that are in
24 purple. One of these locations is to be
25 resampled, this SB31, which is slightly outside

1 the -- the fenced area. It's a little unusual
2 location. We got a slight EC exceedance but -- at
3 zero to two feet, but once you go below two feet,
4 there's nothing there. We're not sure what the
5 cause of this or if there's really any cause, but
6 we're going to resample that, if need be. If
7 there's still an exceedance, we've got a couple of
8 locations here for delineation purposes. But, by
9 and large, all of these samples have been used to
10 demonstrate horizontal and vertical delineation of
11 soils.

12 And I don't know if I pointed out -- I
13 think I did earlier -- the blues are Southland.
14 The oranges are ERM. Some of them have Rs on
15 them. Those are resamples. We've gone back and
16 resampled some locations, and then Acadian's are
17 the -- the yellow.

18 Q Okay. And here we have the groundwater
19 sample locations, and like the soil, we have the
20 two outliers up there.

21 A That's -- that's correct. Again, these
22 are two temporary monitoring wells. The blue was
23 put in by Southland. You can see the screening
24 intervals here next to the labels. Again, these
25 are quite shallow.

1 And then we -- we did a blowup of the box
2 here to show all of the monitoring wells. There
3 are 18 wells total. And we'll get to the next
4 one, which shows the blowup area. Again, the --
5 the orange locations here were the ERM permanent
6 wells, MW-1 through 4. We've surveyed those. The
7 blue ones are the temporary wells installed by
8 Southland, and the -- the yellow were the
9 temporary wells installed by Acadian.

10 And so you can see each of the former
11 operational areas, the wellhead areas, that had
12 been tested, and then wells have been installed
13 around those with distance to complete the
14 horizontal and vertical delineation of
15 groundwater.

16 Q So this zone has been extensively tested?

17 A Yeah. For a -- for a one -- one oil well
18 location, no pit, one -- one small tank battery
19 and process area, this is probably the most
20 extensive investigation of an individual oilfield
21 site in -- in such a small scale that we've
22 completed.

23 Q Okay. So now we're going to talk about
24 the results. But, first, what is that a picture
25 of?

1 A Yeah. Again, just another picture of the
2 geoprobe drill rig and, you know, working in the
3 vegetation area outside of the -- the fenced area.

4 Q And here we have the EC probe logs. What
5 does that tell you?

6 A Yeah. We went back to three locations
7 that were originally tested, either by Acadian or
8 Southland, to make sure that we had enough data to
9 vertically delineate any -- any salt with depth.
10 And these are EC probe logs. We did three of
11 them, and each one is an "R," meaning we went back
12 to the original location, pushed an EC probe
13 between 20 and 30 feet.

14 And -- and I'll refer the panel to the
15 scale on these logs. Again, we provide these in
16 the -- in the plan. So if you have trouble
17 reading the scale, it goes from 0 to 500.

18 Typically, elevated EC in an EC probe, for
19 clay-rich soils, you don't really get an
20 indication until you get, you know, well over 500.
21 We don't have any of these that extend to that
22 level. So these E -- EC probes -- and one thing
23 you want to look at, too, at the bottom, they --
24 they come back toward, you know, a really low EC.
25 But even -- even the highest parts of these curves

1 are still only about, you know, 400 or so, which
2 clay rich soils can be in that range naturally.

3 And so these EC probe logs in each of
4 these locations tells us two things: Number one,
5 not a lot of salt in the ground; number two, that
6 we are vertically delineated.

7 Now, we have not only relied on these.
8 There's, obviously, only three of these, but there
9 is an extensive amount of 29-B salt testing, down
10 to 30-something feet. This is lab samples.
11 This -- what you're looking at here, this is just
12 a screening tool. We've -- we've used these,
13 we've used lab data, and we've actually used field
14 EC data on the boring logs as part of our vertical
15 delineation and as well as horizontal.

16 Q Okay. And so here we have the salt
17 exceedances in the upper two feet. What does this
18 show us?

19 A Yes. We -- we have -- we've given you
20 probably more salt figures than you want to look
21 at, but we've done -- done it for two reasons.
22 Number one is to show the panel all the exceedance
23 we have in the upper two feet, which is -- falls
24 well within Dr. Holloway and Mr. Ritchie's defined
25 root zone, and that's what you see here.

1 We've identified all of the EC, ESP, and
2 SAR data that's been collected generally in the
3 upper two feet. A couple of these extend a little
4 bit, you know, deeper. We've bolded the ones that
5 have any kind of exceedance. I'll just start
6 with, 31 down here has a slight EC exceedance of
7 just a little above four. That's a location we're
8 going to resample. We have B19, which is right
9 here, slight EC exceedance and SAR and ESP.
10 Propose to resample that one. And then there's
11 one more, SB27, barely an SAR exceedance.

12 And -- and you might say, you know, on
13 some of these, why do you have two numbers. One
14 is the first set of results from ERM. The second
15 would be the split from Southland. We considered
16 all of the -- the samples, both our original
17 samples, Southland's splits, and then when
18 Southland collected a sample and we got a split,
19 we -- we, you know, analyzed all of that.

20 I think the point on this slide is --
21 number one, is that the -- the density of this
22 testing -- and, again, it's such a small scale
23 here that some of these points are probably less
24 than ten feet apart, and the focus around the
25 operational features, and then, quite honestly,

1 the lack of salt in the upper two feet in terms of
2 exceedances of 29-B.

3 Q Okay. And here we have the stepout
4 locations. What do you mean by "stepout"?

5 A Yeah. We -- we assigned a name,
6 "stepout," because these are locations that were a
7 little bit distant from the -- the three main
8 operational areas, the wellhead area, the
9 production area, and the tank battery. And so
10 these are our soil samples that were collected the
11 most distant; so we just called them stepouts.

12 And I apologize for these boxes and the
13 numbers. These are all in your -- in your reports
14 that we've submitted. And you might say, well,
15 why did you put all those numbers on there. And
16 the main reason why is to demonstrate that -- that
17 this site has been extensively tested for 29-B
18 salt parameters. These are all lab results.

19 And I'll -- I'll point you to the fact
20 that there's only one location here, the SB31,
21 where I pointed out earlier we had a slight
22 exceedance of EC, and we've highlighted it in
23 yellow in these -- in this set of figures that
24 we're going through. So when you see a
25 highlighting in yellow, that's an exceedance of a

1 29-B salt standard.

2 So -- so in the case of SB31, we had an
3 exceedance. Both splits were slightly above four.
4 Of all of the locations, including depths down to
5 30 feet on these stepouts, they're all below 29-B
6 salt standards for all parameters. So we've used
7 these stepouts, as well as other -- other testing
8 inside of these, to complete our horizontal and
9 vertical delineation.

10 Q Okay. And here we've zoomed into the
11 production area.

12 A Yes. And, again, I'll point out the
13 scale. Now we're really zoomed in. So you can
14 see these boxes. You can see the scale down here.
15 You know, this -- this whole bar is 50 feet. And
16 so -- so we're really zooming in. And so you do
17 see some other yellow exceedances.

18 I will point out that the SB27 location,
19 which is right here, has an exceedance that I
20 pointed out of SAR in the upper two feet. Then
21 the next exceedance is -- exceedance is three to
22 five. But then below that, you know, we'll get a
23 few salt exceedances down at depth 8 to, let's
24 say, about 15 feet.

25 So most of these yellow boxes that you see

1 on here -- yellow highlighted boxes, are salt
2 exceedances that are down well below the root
3 zone, in some cases as deep as -- as 15 feet. We
4 have vertical delineation data either at the
5 specific location or in the immediate vicinity in
6 many cases within, you know, tens of -- 10 or 15
7 or 20 feet that we feel provides vertical
8 delineation for any of these salt exceedances with
9 depth.

10 We also have gathered SPLP data. SPLP
11 is -- is in this blue box here where my pointer
12 is. And so we've taken the samples that exhibited
13 the highest EC. This has an EC of 7 at 15 feet,
14 obviously, well below the root zone. We went
15 ahead and ran SPLP on that -- at that sample.
16 Subsequent samples with depth show clearly we're
17 well below the 29-B salt standard. So we
18 vertically delineated with the lab data. The EC
19 data of 7 has been evaluated using SPLP and
20 demonstrates protection of deeper groundwater. So
21 we've hit those locations, but we've had elevated
22 EC with depth run SPLP.

23 And when I say "elevated," I think the
24 panel has seen on other sites that have had pits
25 that have been open and used for 50 years, EC is

1 much higher than we see out here. These ECs we're
2 seeing, -- in particular, I'll move back up to
3 SB27 -- they're barely above the 29-B standard of
4 four. We see some fours, slightly above four. I
5 think we have one at five here.

6 So these tell us that, again, the residual
7 salts out here are quite low, which is to be
8 expected considering the time period the site was
9 used and how it was used.

10 Q Okay. And here we have the wellhead area
11 results.

12 A Yeah. Wellhead is the same -- same thing.
13 Again, small scale density of sampling. And, you
14 know, there's only really one location, the 12
15 location, which had an EC, originally tested by
16 Acadian, of 10 and an elevated ESP and SAR.

17 So we went back -- that was, I think, our
18 highest salt location. We went back and -- and
19 Southland split at both this depth and subsequent
20 depth. We couldn't reconfirm these high salt
21 concentrations. Nonetheless, we went back and ran
22 SPLP as well.

23 And so, with the exception of this, the
24 resampling demonstrates -- the wellhead and the
25 surrounding area, you don't see any other yellow

1 here. That demonstrates full delineation for salt
2 both horizontally and vertically.

3 Q Okay. And that brings us to the tank
4 battery area.

5 A Yeah. Tank battery area, again, you know,
6 a small scale, lots of testing. The B -- B19
7 location is -- is where I pointed out we had a
8 slight exceedance of EC, ESP, SAR. We're going to
9 go back to that and resample that to make sure
10 that -- if it's still elevated, we're going to --
11 we'll do some blending as part of the removing of
12 the berms to get that back in compliance.

13 But -- and then you've got a couple again
14 with depth, you know, 12 down to 15 feet here.
15 Again, these numbers aren't very high. The ECs
16 that we look at are in the fours and fives. Go
17 over here to this location, too, the SB19. These
18 other yellow highlights are all down deep, you
19 know, 12 or 15 feet. But, again, they're not --
20 they're not very elevated and well below the root
21 zone.

22 So -- so I'd encourage the panel to look
23 at each of these figures and also look at the
24 stepouts, because -- you've got to look at them in
25 concert, because they're so small scale to -- we

1 had to do both to demonstrate, you know,
2 horizontal and vertical delineation due to the
3 tight spacing of the -- the testing.

4 And, oh, I forgot to point out SPLP. We
5 did run SPLP, too, on this location. That was the
6 B19. Not only ran SPLP, we went back and we
7 retested it. There's an "R" right here, and we've
8 got the SPLP. And all the SPLP data is very low
9 and demonstrates that any residual salt
10 concentrations out here are protective of
11 groundwater.

12 Q So even with the slight exceedances that
13 we're seeing, the tight spacing allows you to
14 determine that we're fully delineated?

15 A Correct. Not only the tight spacing but
16 the number of soil borings, the number of field EC
17 readings, the conductivity probe logs, the
18 character of the clay confining unit underneath
19 the water-bearing zone, all of those lines of
20 evidence tell us that we are well delineated both
21 from a horizontal and vertical standpoint, both
22 for soil and groundwater.

23 Q Okay. And that brings us to the
24 groundwater results.

25 THE HEARING OFFICER:

1 Okay. Tyler, let's take a 15-minute
2 break. Okay?

3 MS. KOSTAL:

4 Okay. Sure.

5 THE HEARING OFFICER:

6 Okay. We'll come back at 10:15.

7 Thank you.

8 MS. KOSTAL:

9 Okay. Thank you.

10 (RECESS TAKEN)

11 BY MS. KOSTAL:

12 Q Okay, Mr. Angle. Could you describe
13 what's in this picture before we move on to the
14 groundwater results?

15 A Yeah. This is just one of the monitoring
16 wells here with the guard posts, the yellow poles,
17 and then this is a flush mount well. The actual
18 well was right in the small aluminum cover,
19 which -- surrounded by a two-foot -- a two-foot
20 concrete pad.

21 Q And here we have the chloride in
22 groundwater. Could you --

23 MR. SNELGROVE:

24 Can you put it back on?

25 MS. KOSTAL:

1 Oh, it's not --

2 MR. SNELGROVE:

3 We can't see the slide.

4 THE HEARING OFFICER:

5 We can't see any slides on the
6 screen, if you're intending to be showing
7 something.

8 MS. KOSTAL:

9 Oh, we are. Give us just one minute,
10 please.

11 THE HEARING OFFICER:

12 We've got it. That's good.

13 MS. KOSTAL:

14 Okay. Thank you. There we go.
15 Okay. So that last slide, it was just a title
16 slide. It's okay that you couldn't see it.
17 Here -- oh, give us one minute. Dave, it's
18 still showing the -- both slides.

19 THE WITNESS:

20 Yeah.

21 MS. KOSTAL:

22 So we need to change the view.
23 Sorry, it must have reset during the break or
24 something.

25 THE WITNESS:

1 Okay. How is that? Everybody see
2 the ground -- chloride in groundwater?

3 MS. KOSTAL:

4 There we go.

5 THE HEARING OFFICER:

6 Yeah, we can --

7 MS. KOSTAL:

8 Yeah.

9 THE WITNESS:

10 Okay. Sorry about that.

11 BY MS. KOSTAL:

12 Q Okay. What is this slide showing us?

13 A Okay. We have -- we have mapped chloride
14 as kind of an indicator constituent for
15 delineation purposes, because chloride, you know,
16 is infinitely soluble in water. It's basically
17 table salt. And so we've used -- we've used
18 chloride here to help us for -- for delineation
19 purposes and also to help us identify what's
20 background. We believe we've identified what
21 background water quality it is.

22 But, anyway, so this map shows chloride
23 concentrations in milligrams per liter. Up here
24 to the far northwest are the two background
25 locations, one installed by Acadian, which is the

1 TMW-6. These were temporary wells in the
2 Southland location. And you can see the chloride
3 range here. The well screen intervals are next to
4 the labels, and the chloride concentrations in the
5 two background wells installed by those two
6 parties range from 118 to 144.

7 So keep those in the back of your mind.
8 Another thing to keep in the back of your mind,
9 that the EPA SMCL was 250. So they're, you know,
10 a little less -- or about half of the MCL for EPA.
11 Again, it's not a -- we look at it more of a -- a
12 screening to determine what's background.

13 So -- so the next figure here, we are
14 going to show you the chloride concentrations,
15 both in the operational area, in the heart of the
16 operations, quite honestly, -- excuse me -- in the
17 wellhead area here, production area here, tank
18 battery here. And the chloride concentrations
19 here, you know, range from 300 or so, slightly
20 above the SMCL to the highest concentration, and
21 this was -- 7,200 was in a temporary well by
22 Acadian back in, I think, 2016.

23 And so -- you know, and I think the panel
24 is familiar with other produced water analyses
25 that you've heard us talk about in the past. You

1 know, a lot of times you'll see produced water
2 have chloride concentrations of -- you know,
3 upwards of 50 or 60,000. This, obviously, is not
4 in that range.

5 And probably the most important thing here
6 is, number one, again, the spacing here of the
7 scale, and the monitoring wells that then have
8 stepped out -- have been installed in locations
9 not very far from the operations. And you can --
10 you know, you can look at each one of these, and
11 obviously, in the plans on -- you know, back at
12 your office, you can study this a little bit more
13 in detail.

14 But as you -- as you go away from the
15 operational area, you see these outer wells. All
16 of these outer wells fall well below the EPA SMCL
17 of 250. And -- and I'll also point out that the
18 chloride concentrations in each of these -- and
19 you might -- again, just like the soil data, we've
20 presented the ERM numbers first and then the
21 Southland splits second.

22 And you can see the variability. And
23 that's not a typical in chloride analysis. We
24 typically see a pretty good amount of variability,
25 because the chloride analysis is not a real

1 sophisticated analysis, for example, like benzene.
2 Different labs can run benzene, and they can get
3 fairly close to the same result. Chloride, you
4 see some variability, but -- I apologize. The
5 chloride values that we see here don't vary
6 greatly.

7 But I think the most important thing is
8 these outer wells all are quite low. And if you
9 remember what I pointed out on the background
10 wells, they're actually in the same range, if not
11 lower than those. So, clearly, these outer wells
12 demonstrate delineation, and they also demonstrate
13 background water quality. And so we have used
14 that as part of our analysis to determine -- you
15 know, when Ms. Levert looks at groundwater --
16 she's gone through the whole RECAP evaluation, but
17 we've looked at these as -- as being able to
18 demonstrate that we have an adequate dataset to
19 determine background water quality.

20 Q And just so the panel is clear, the TW-2
21 and TW-1, those have "NA." Why is that?

22 A Yeah. Those -- those are early wells put
23 in by Acadian, and they weren't analyzed for
24 chloride. And so we posted them there, but we
25 didn't have any chloride data. So we -- you know,

1 we do have -- again, I'll point out to the scale
2 here. I mean, TW-5 is almost right next to TW-1,
3 and TW-3 is very close to TW-2. So, you know,
4 those would be representative of -- of that area.

5 Q And considering all of the evidence and
6 your investigation, is there any threat to a USDW
7 in this case?

8 A No, not at all. You know, both -- and
9 that's reliant on multiple lines of evidence, salt
10 boring logs, field EC readings, SPLP data, lab EC
11 and ESP, SAR, lab 29-B testing. All of that tells
12 us that, you know, we're -- we're protective of
13 any deeper groundwater.

14 Q And that thick clay confining --

15 A Correct, the 120- to 140-foot-thick clay
16 confining unit.

17 Q Okay. And that brings us to Neumin's most
18 feasible plan.

19 A Yes. That's -- and, again, I think this
20 is that same 2020 photo here, aerial, on the left.
21 So the Neumin most feasible plan basically is --
22 is reevaluating three locations. And the original
23 plan, when you guys read it, had one location, but
24 we had to add two more locations based on
25 subsequent Southland testing, and those three

1 locations are shown here.

2 We have, as I pointed out, slight
3 exceedances of one or more 29-B salt parameters in
4 the -- in the root zone. We're going to go back
5 into these locations, retest them, and if -- and
6 if we still have those exceedances, as part of the
7 removal and blending of the berms and restoring
8 the site, including pulling off the gravel pad --
9 I mean, these are only -- these are shallow, and
10 so any -- any exceedances will be addressed by
11 blending in the area. And that enables us to not
12 haul off a bunch of soil, haul in non-native soil,
13 and, you know, meet the 29-B salt standards.

14 And so that would all be done as part of,
15 you know, basically, restoring the -- the site,
16 you know, following the DNR review of the plan
17 and, you know, ultimate selection of the plan.

18 Q So you mentioned that the original plan
19 just had one site to resample, but because
20 Plaintiffs participated in the investigation, you
21 actually adjusted your plan and added two
22 additional sites?

23 A Yes. And I probably should have pointed
24 out, the original plan, I think it was just B19,
25 which was an Acadian location. The SEs are the

1 Southland locations. They went back in November,
2 I mean, right before we had to submit our plan.
3 And so we have taken those data and provided the
4 panel with those in our supplement. And so that
5 caused our original cost estimate from 14 to go to
6 23,000 to make sure that we had enough dollars in
7 there allocated to address each of these
8 locations, if ultimately necessary.

9 Q And why do you plan to resample rather
10 than remediate?

11 A Well, I think, as I pointed out on a
12 previous slide, some of our resampling efforts
13 have documented -- you know, we haven't been able
14 to reproduce the salt concentrations. And -- and,
15 if you can imagine, in some of these locations,
16 you know, samples within the upper couple of feet,
17 with the amount of water the site receives, and it
18 changes over time, and we don't have -- we never
19 really had high salt concentrations out here. We
20 didn't have a pit. And so you can see over time,
21 I mean, these concentrations are only going to get
22 lower and the variability we see, too. So it's
23 not -- it wouldn't surprise me on some of these
24 that are going to result in -- the resampling is
25 going to result in no exceedance.

1 Q And what do we have for Neumin's most
2 feasible plan in terms of groundwater?

3 A Yeah. Well, obviously, I think we've
4 demonstrated through extensive testing, actually
5 18 monitoring wells in a small site like this,
6 that, clearly, this groundwater is Class 3, has no
7 utility. Future utility, it just doesn't yield
8 enough water. That's kind of the bottom line.
9 It's so close to the ground surface as well.

10 The four monitoring wells we have out here
11 MW-1, 2, 3, and 4, screen intervals are shown.
12 We'll plug and abandon those. We've provided a
13 cost to do that. So we won't leave those posts
14 out there and the flush mount completions, and
15 we'll bring each of those locations back and --
16 you know, to -- to native pasture.

17 Q And plaintiffs -- their monitoring wells
18 are temporary. Right?

19 A Correct.

20 Q So there's no need to address --

21 A That's why they -- they're not shown on
22 here.

23 Q Okay. And this is the last element of
24 Neumin's most feasible plan is removal of the
25 gravel pad, road, and fence. Why do you plan to

1 do that?

2 A Well, we plan to do that because we
3 understand that, you know, the plaintiff -- or
4 "plaintiff" -- the landowner wants to use the
5 property for any -- any use. Although, as we've
6 seen, they're using this gravel pad area as a
7 truck turnaround area. You know, I guess, if
8 necessary, the gravel pad, the fence, and the
9 temporary road will be all removed to bring it
10 back to, you know, kind of a cattle pasture status
11 of the area surrounding. And so we've provided a
12 cost to do that in the plan, 43,000.

13 Q And then the removal of the gravel pad, if
14 that was done, that really eliminates the need for
15 the berm leveling, or it will be done at the same
16 time?

17 A It would be done in conjunction. No,
18 we're going to level the berm. No question about
19 that.

20 Q Right.

21 A We're going to take it back. But we
22 would -- I think the -- we're not going to do two
23 mobilizations when we do the berm removal and, you
24 know, follow-up and take out the gravel pad, the
25 road, and the fence. All of that will be done at

1 once, because it wouldn't make sense to go out --
2 it's such a small -- small, little job that it
3 doesn't make sense for two mobilizations. So that
4 would be done in one.

5 Q Okay. And that brings us to the
6 plaintiff's comments to Neumin's most feasible
7 plan. And so you received comments from
8 Brent Bray of RBB Consulting, which is abbreviated
9 as RBBC. And before we move on to those comments
10 on your plan, what is this a picture of?

11 A This is a picture of, actually, the
12 Southland Consultants during some soil logging
13 here. They're -- they're, you know, evaluating --
14 this is a section of soil core here you can see on
15 the table, and they're basically -- their people
16 were making visual descriptions and recording
17 field notes, and that's -- that's what they're
18 doing. And then we've got, you know, our guy.

19 Basically, the way this works is, you
20 know, in this case, when Southland does their
21 work, they provide the drill rig. They collect
22 the samples. We do our own independent
23 observations, make our own boring log for this
24 particular location. Then we'll collect splits
25 where there's enough soil provided. And I think

1 the vast majority of these locations, the -- the
2 recovery of the soils from the continuous sampling
3 process was good enough that, most of them, we
4 were able to obtain splits. So we got a split and
5 they got a split of the same sample interval.

6 Q Okay. And here is the first comment.
7 What did plaintiff's consultant, Brent Bray, say
8 about the depth limitation of 29-B soil standards?

9 A Yes. Mr. Bray pointed out in his comments
10 on -- on the depth limitation, he cited a quote
11 from the 2013 DNR written reason in support of the
12 most feasible plan for Agri-South. And I think
13 this is the quote -- I don't think. I know it
14 is -- that was provided in that. There's no depth
15 limitation.

16 And so -- so -- and we -- we understand
17 that; however, the thing that we wanted to point
18 out in Agri-South, and I think some of the panel
19 members were on the Agri-South panel, is that
20 there actually were two competing root zone
21 studies in that -- in that case. That -- that
22 case is quite different from this one.

23 But -- but, nonetheless, I think the --
24 the conclusion of the most feasible plan that was
25 determined was a depth of eight feet, but it

1 wasn't the maximum depth, the 29-B salt
2 exceedances. There were 29-B salt exceedances at
3 much greater depths. When I say "much greater," I
4 think down to 20 feet or so. But it was a
5 determination made by looking at all of the
6 evidence in terms of what was presented to come up
7 with a -- I guess, the most reasonable remediation
8 plan for soils.

9 And so this second line here, number
10 one -- so, basically, the exception was
11 incorporated -- or any need for exception, if
12 there was, was incorporated in the MFP that was
13 written by DNR. Of course, number two here,
14 Neumin is the only party here that has conducted
15 an effective root zone study, and we have
16 presented that evidence, and not only the root
17 zone study. I encourage you to look at all of the
18 data, even the data below the root zone because
19 it's -- it's quite telling in terms of what would
20 be the most reasonable remedy that -- that needs
21 to be done out here.

22 Q Okay. And Mr. Bray's next comment that
23 we're going to address is about the groundwater
24 remediation standard in Neumin's most feasible
25 plan.

1 A Yes. The two comments that Mr. Bray
2 meant -- or not "meant" -- wrote --

3 Q Yeah.

4 A -- are the bullets on the left of the
5 slide here that groundwater -- contamination of
6 groundwater aquifer USDW with E&P waste is
7 strictly prohibited. And I know the panel is
8 well-familiar with both that one, as well as the
9 MOU, the use of RECAP as an exception.

10 And I -- you know, I, obviously, listened
11 to the panel and Mr. Balhoff's opening comments
12 last -- last week. And when we get to a hearing
13 like this, we look for -- an agency, I believe,
14 looks at all regulations relevant to the
15 determination of what's the most feasible plan.
16 And so that determination relies on 29-B, it
17 relies on RECAP, and it relies on, you know, any
18 other regulation. And so -- and we've done that
19 here.

20 And so in -- in direct response to
21 Mr. Bray's two bullets here, as -- as the panel, I
22 think, has seen on other sites, the plaintiff
23 typically will collect RECAP type data, TPH-D and
24 O. We can't evaluate that using 29-B; so we have
25 to use RECAP. And so we -- we can't be hamstrung

1 by being able to use RECAP, because I can't -- me
2 or Ms. Levert can't evaluate TPH-D or O using
3 29-B. So we look to RECAP for that. 29-B does
4 not provide any specificity regarding future
5 remedial response to existing groundwater
6 contamination.

7 So that kind of gets -- is a response to
8 the bullet here to the left. Groundwater
9 contamination is strictly prohibited. That --
10 that bullet to the left doesn't tell us what to do
11 about, let's say, a 1940 instance where something
12 is in groundwater. How do you respond to that?
13 There's no specificity. And so we looked to
14 numerical standards in the RECAP process to
15 provide some of that specificity. We also,
16 obviously, have relied on 29-B, but -- but since
17 this statement doesn't provide us anything in
18 terms of what to do about what's in the
19 groundwater, we -- we go to RECAP.

20 And then, finally, and I know the panel is
21 familiar with Mr. Adams' memo, in 2018 it confirms
22 the use of RECAP when we go through the 3 Act --
23 or Act 312 process. You know, when -- when both
24 parties provide either a plan or comments on, in
25 this case our plan, then, obviously, you know,

1 RECAP comes into play, and -- and that's kind of
2 where we are here.

3 Q And I think it's important to point out,
4 also, that what we're dealing with is a Class 3
5 groundwater. Correct?

6 A Yeah. That's correct, all -- all day
7 long. I mean, it's -- yeah.

8 Q And no use of this groundwater has been
9 impaired?

10 A Yeah. That's the biggest thing is that --
11 is there's no use. I mean, we've done -- we've
12 done the search. We've evaluated the -- you know,
13 the classification. And -- and, quite honestly,
14 there's really no utility of this groundwater zone
15 for future use.

16 Q Okay. Mr. Bray's next comment about
17 Neumin's most feasible plan is in regards to the
18 hypothetical plan provided at Appendix N. Can you
19 give us a little bit of a response to his
20 comments?

21 A Yes. And, you know, I encourage the panel
22 to take a look at our hypothetical plan, and it's
23 not -- again, it's one of these things that we
24 provided to make sure that, you know, we have a
25 provision in there to be consistent with Act 312.

1 And he's critical of that hypothetical plan, even
2 though we're not -- we have put it in there, but
3 it's not like we're endorsing it or -- or
4 embellishing it, but we have put it in there.

5 And he says it doesn't -- doesn't address
6 soil below the root zone -- I'll talk about that
7 in a minute -- and it fails to propose groundwater
8 sampling in all potentially impacted areas. I
9 think we disagree with that comment -- and it does
10 not include the collection and analysis of
11 background groundwater necessary for development.

12 And, I think, as we've demonstrated -- and I think
13 when the panel looks at the dataset, I would -- I
14 would disagree with this last bullet on the left,
15 that we do have enough data at this site for
16 background. We've got 18 monitoring wells. We've
17 got parameter wells. We've got wells distant from
18 the property. All of that goes to, you know,
19 support for a background water quality analysis.
20 And so, if we look to the right here, we believe
21 the soil sampling data demonstrates that we -- we
22 have met Statewide Order 29-B.

23 You know, we only had a one metals
24 detection above the 29-B standard. It was an
25 arsenic detection. Subsequent splits of that same

1 location couldn't confirm that. No other metals
2 exceedances of 29-B. We had no 29-B oil and
3 grease exceedances. As the panel saw, we had
4 three locations that -- that exceeded -- slightly
5 exceeded the 29-B salt standard in the root zone.
6 We're going to reevaluate those.

7 I pointed out that exceedances below the
8 root zone are slightly over at best. A resampling
9 on some of them demonstrated that they're --
10 they're not repeatable, you know, no open pit, one
11 well. All of those things lend themselves
12 to we've done a thorough evaluation of -- and,
13 also, considering what the property could be
14 used -- or might be used for in the future.

15 Number two here, we have proposed
16 resampling two wells. I mean, it's -- well, I say
17 we "proposed" it. We put it in a hypothetical
18 plan. We wouldn't -- we wouldn't suggest doing
19 this, but there are two locations out there, TW, I
20 think, 3 and 5 that have, I'd say, slightly
21 elevated metals concentrations mainly because they
22 were temporary wells. They weren't developed.
23 They were stuck -- basically stuck in -- in the
24 ground, no filtration, no filtered samples to
25 compare it to.

1 If -- you would really never do this on a
2 Class 3 zone that meets RECAP. We put it in there
3 for the panel to look at it. We're clearly not
4 endorsing that or proposing that. And, finally,
5 you know, the classification, the lack of use
6 and -- all demonstrate no need for any additional
7 groundwater remediation or any -- any additional
8 sampling at all.

9 And then finally here, we -- we actually
10 have a good dataset for determining what
11 background is out here, and I think I pointed out
12 those wells. I've listed them on this slide.
13 There are eight of them, including those two that
14 were distant up to the northwest. But these other
15 ones are distant from the area and have low
16 chloride that I pointed out. I encourage the
17 panel to look at that dataset. We believe we have
18 background established here for groundwater.

19 Q Okay. And that brings us to Mr. Bray's
20 last comment, and that's about failure to consider
21 future uses of the property. Is that the case
22 here?

23 A Yeah. We -- we've done a -- probably a
24 really thorough job in -- in addressing this one.
25 And you might say, well, how did you do it. Well,

1 we did it through a lot of testing, quite
2 honestly. We presented, you know, over 250 soil
3 samples, collected almost 375, including splits,
4 18 monitoring wells, 24 groundwater samples.

5 When you look at all of that dataset,
6 clearly, we feel very strongly that all
7 future of -- uses of this property have been
8 considered, and the property can be used for
9 unrestricted use. Ms. -- you're going to hear
10 from Ms. Levert here shortly that her RECAP
11 assessment is telling us that the property can be
12 used for unrestricted use.

13 You might say, okay, what about these salt
14 concentrations that -- at some -- a few locations
15 that I pointed out below the root zone, what if we
16 bring those up, or what if, you know, somehow
17 those manifest themselves in something. Well, as
18 I pointed out, they're very low, and -- and
19 they're very localized. Due to the density of the
20 sampling, we know they're localized. We know
21 there weren't big pits out here.

22 And so any movement of those soils with
23 any kind of excavation would bring those up, and
24 part of that blending process, clearly those
25 concentrations would then become lower. And so

1 to -- as we look at it, that would not impair the
2 use of the property in any shape or form.

3 As you guys well know, this site in South
4 Louisiana receives, you know, upwards of five feet
5 of rain a year. That's 60 inches of rain. Any
6 residual salt concentration from this, you know,
7 one well location site would quickly attenuate.

8 I know the plaintiff's comments have said,
9 well, we want to use it for potential commercial
10 use, or potential zoning for commercial use.
11 That's fine. You could do that. Maybe we want to
12 put a stormwater retention pond in as part of
13 developing the property. That's fine, too. You
14 know, again, these residual salt concentrations
15 are not going to slow down any of that. We might
16 want to convert it to wetlands. Fine. Have it --
17 you know, the panel well knows that the 29-B
18 wetland standards are even higher than the upland
19 standards. And those wetland standards, you know,
20 wouldn't be -- they actually would encompass
21 almost all of our data that -- that's out there
22 right now.

23 So we feel like this property has been
24 extensively tested, and it meets the requirements
25 for unrestricted use.

1 Q Is Neumin's most feasible plan the most
2 reasonable remedy to address this site?

3 A Yeah, no question. I think in this case,
4 from a reasonableness standpoint, for a site like
5 this, the Neumin plan, backed up by, you know, a
6 tremendous amount of data on closely spaced
7 testing centers, it clearly is the most reasonable
8 and the most feasible plan.

9 Q Have we covered everything you think we
10 need to talk about with regard to your
11 presentation?

12 A I think that's it.

13 Q I think so, too.

14 MS. KOSTAL:

15 That's all I have. So if the panel
16 has anything for you, I turn it over to them.
17 Thank you for your time, Mr. Angle.

18 THE WITNESS:

19 Thank you.

20 THE HEARING OFFICER:

21 Do you want to go back out for a
22 second? Okay. We're going to take a -- what
23 do you want? Ten minutes? We're going to
24 take a ten-minute break for the panel to
25 confer, and then they'll be back with

1 questions.

2 THE WITNESS:

3 Okay. Thank you.

4 THE HEARING OFFICER:

5 Thank you.

6 (RECESS TAKEN)

7 THE HEARING OFFICER:

8 Okay. Let's start with
9 Mr. Olivier -- with his questions.

10 MR. OLIVIER:

11 Hey, Mr. Angle. This is
12 Steve Olivier.

13 THE WITNESS:

14 Hey. Good morning.

15 MR. OLIVIER:

16 Hey. How are you doing?

17 THE WITNESS:

18 All right. Thanks.

19 MR. OLIVIER:

20 I've got a couple of questions. It's
21 going to be more related a little bit to the
22 cost analysis, but in the cost analysis that
23 y'all provided, is disposal of that gravel
24 pad -- so I remember in your plan it
25 mentioned, if necessary, y'all might be

1 disposing of possibly up to maybe a foot of
2 that gravel pad area and removing it?

3 THE WITNESS:

4 Right.

5 MR. OLIVIER:

6 Is disposal of that material included
7 in the -- in the cost estimate?

8 THE WITNESS:

9 Yeah. I think -- I think that cost
10 estimate contemplated two things. One, you
11 know, that gravel typically has a demand.
12 Someone wants to use it. So either -- either
13 the landowner might want it, or it would be
14 taken off and, you know, recycled or reused.

15 So it's my understanding
16 Dr. Lance Cooper, who actually cited the
17 limited admission, too, helped out on that --
18 on that cost estimate. But that's what I had
19 remembered, those two alternatives, depending
20 on how that gravel wanted to be, you know,
21 possibly reused.

22 MR. OLIVIER:

23 Okay. So it's reused/recycled, not
24 necessarily disposed of?

25 THE WITNESS:

1 I think that's right, because it --
2 you know, quite honestly, it has some utility,
3 including the road that's -- that's coming in
4 that -- I actually still have the first slide
5 up on the screen. But that road coming in,
6 if, you know that's scraped up, that material
7 typically has some utility if someone wants
8 to, you know, make a pad somewhere than
9 putting it in a landfill.

10 MR. OLIVER:

11 And that would also include the
12 material from the -- from the pad location
13 itself?

14 THE WITNESS:

15 Correct, just a -- you know, kind of
16 the gravel. That's -- that would be it.

17 MR. OLIVIER:

18 And then, also, too, I know we saw in
19 the plan, too, where it mentioned there is a
20 potential that -- may or may not, but y'all
21 could bring in backfill. Was it in the plan,
22 or did y'all have intentions of testing any
23 backfill prior to application, if that were to
24 be brought in?

25 THE WITNESS:

1 Oh, no question, if -- if we had to
2 bring in backfill, but we don't anticipate
3 having to do that, but you're exactly right.
4 We would test -- if we brought in backfill, we
5 would bring in, you know, fully tested
6 29-B-compliant material. But we believe based
7 on, you know, the low concentrations, that
8 localized blending of the soil out there
9 would -- would get us to where we need to be
10 without bringing in any non-native soil.

11 MR. OLIVER:

12 Okay. And, also, too, in regards to
13 blending or any kind of mixture of soil, did
14 y'all anticipate doing that with or without
15 amendments added to that soil blending
16 process?

17 THE WITNESS:

18 I would -- I would say, based on the
19 concentrations that we currently have right
20 now, unless the resampling tells us something
21 different, that we would probably not do any
22 amendments, although, you know, depending on
23 those concentrations, would -- you know, could
24 we need to add maybe a little gypsum to adjust
25 SAR and ESP? Possibly. You know, maybe some

1 organic matter. But I think as you guys, you
2 know, study those salt concentrations in the
3 upper two feet, you'll -- you'll see how low
4 they are. And so if -- if possible, we
5 would -- we wouldn't bring any amendments in,
6 but if we needed to adjust the SAR and ESP, we
7 would, obviously, go with gypsum.

8 MR. OLIVIER:

9 Okay. And I do have -- one remaining
10 question, kind of on the same topic, is, are
11 y'all going to have any investigation of
12 derived waste from the landowner that would
13 possibly need to be disposed?

14 THE WITNESS:

15 That's a good question, too. I think
16 there were a couple of drums out there from
17 the landowner who did the last investigation
18 work, and I think there were a couple of drums
19 identified as being drums of their soil
20 cuttings, as I remember. And so we don't have
21 anything -- any residuals from -- from our
22 investigation. So I assume that they will
23 take care -- Southland and Brent Bray, they'll
24 take care of those. So -- so there wouldn't
25 be any -- anything left to be, you know,

1 handled after they take care of theirs.

2 MR. OLIVIER:

3 Okay. And I think that -- that was
4 all the questions that I had for you, but I
5 think Garrett had a couple to ask.

6 THE WITNESS:

7 Okay. Thank you.

8 MR. OLIVIER:

9 Thank you.

10 THE WITNESS:

11 You're welcome.

12 MR. SNELGROVE:

13 To follow up on Steve's questions,
14 Dave -- again, thank you for your
15 presentation. Always informative and
16 well-done. I have a question on -- following
17 up on cost estimation. Should there be some
18 amendments necessary or -- or some type of
19 cost associated with the gravel, does the
20 20 percent contingency on Table 10-A on the
21 soil remediation plan cost estimate include
22 the anticipated cost that may exceed some of
23 the other line items that you had in your --
24 in your cost estimate?

25 THE WITNESS:

1 Yeah, Gary. That -- and that's a
2 good question, good point. Yeah, that
3 contingency is put in there, because, you
4 know, gypsum is a relatively cheap amendment.
5 And so these areas are relatively small. So
6 any -- any amendments would fall within --
7 clearly within that 20 percent contingency to
8 bring in, because, you know, these -- again,
9 these locations are -- are small, and we're
10 not talking about a lot of depth. So, yeah,
11 we feel like we've got enough in there to --
12 to deal with some minor additions, if we had
13 to make them.

14 MR. SNELGROVE:

15 Okay. Going back to your
16 presentation in the earlier part of it, you
17 mentioned that the -- that this site and
18 the -- you know, the areas of interest, what
19 have you, the clay -- the soil, you know, down
20 to the -- the water-bearing zone, groundwater
21 area, was sodic clay. Can you just provide a
22 little bit of education for us about what it
23 means to be sodic clay with respect to
24 mineralogy but as well as to its expectations
25 of plant growth, what have you, and soil --

1 THE WITNESS:

2 Yeah.

3 MR. SNELGROVE:

4 -- perhaps, root zone -- you know,
5 roots? And, also, how did you derive to that
6 conclusion that these -- that the -- this
7 material was, indeed, a sodic clay? What type
8 of analytical process was involved?

9 THE WITNESS:

10 Yeah. I won't get into too much of
11 the soil sciences response, but I will tell
12 you this: Sodic clay, you know, is -- it
13 could be naturally elevated in sodium. And so
14 the data we relied on is really from the USDA,
15 and -- and then -- and the USDA soil surveys,
16 they -- they typically run some analyses on
17 individual soil types, and they'll provide
18 some of that data far in the back -- you know,
19 like in the appendix of that.

20 So that would be the data that we
21 would rely on in terms of, you know,
22 conducting any evaluation of -- of the natural
23 soil properties. You know, it's kind of
24 separate from the E&P testing. And in that
25 same section in the back, not only are there

1 some physical property test results, and
2 sometimes, you know, when you'll get some of
3 this -- EC test results, you'll also have a
4 section on evaluating those soil types for
5 development purposes. And so that's where
6 that would come from.

7 MR. SNELGROVE:

8 Okay. When you keep talking about
9 the "back," are you talking about something in
10 the -- in the most feasible plan, or was
11 that --

12 THE WITNESS:

13 No, that would -- that would be --

14 MR. SNELGROVE:

15 -- in the -- or the US --

16 THE WITNESS:

17 Yeah, that would be in the USDA soil
18 survey reports that we referenced in the most
19 feasible plan.

20 MR. SNELGROVE:

21 Okay. So you were relying upon
22 that -- that general information in that
23 document that referenced this particular area.
24 You've got the slide on. This is Bates 61,
25 graphic. And so is that -- that's where

1 you -- where you derived that -- that this
2 clay material would be sodic?

3 THE WITNESS:

4 Yes. Yes. And, actually, there's
5 two -- two ways to do that. One, there's --
6 there's published USDA soil surveys for each
7 parish, and I think -- I can't remember the
8 date of this one. You can get -- download a
9 PDF document relatively easily. That's one
10 source. And then the second source, you can
11 go into, you know, the web survey -- soil
12 survey and set up a custom search for the
13 soil -- soil types in this area. And when you
14 do that, you -- it pops up this EC range for
15 the prairieland silt loam. And so that's a
16 determination they have made most recently on
17 the web soil survey.

18 MR. SNELGROVE:

19 Okay. And is it -- is it correct
20 that the sodic clay could have an effect on
21 the -- the growth of certain species due to
22 the sodicity and uptake in the roots and what
23 have you? And, I mean, obviously, they have
24 growth out there. I'm not saying that there's
25 not something that can grow there, but I'm

1 thinking more on agricultural development and
2 growth, --

3 THE WITNESS:

4 Right.

5 MR. SNELGROVE:

6 -- I mean, and use of the property,
7 because we have information that indicates
8 from the landowner's affidavit that the land
9 was used for various crops in the past,
10 sorghum and -- I'll just read that. But from
11 his testimony, or this affidavit, that
12 indicates that the land was previously used
13 for rice, soybeans, wheat, milo. Scratch
14 the sorghum. So that's around line 20. And
15 then, of course, they go on and talk about the
16 property being used for, you know, perhaps
17 other crops and what have you.

18 But -- so, anyway, what I'm asking
19 you is, is there an expectation that, being
20 sodic -- does that mean something to be a
21 sodic clay, when it comes to being able to --
22 does it limit the type of agricultural
23 production that you can expect on a piece of
24 property, or is there a beneficial -- is there
25 a benefit to being sodic?

1 THE WITNESS:

2 Yeah, those all are good questions
3 and probably more in line with -- you know,
4 probably a more technical response from --
5 from Patrick on -- on that in terms of the
6 vegetation and the -- the future use of the
7 property for vegetation. But -- but, you
8 know, I guess, what I can say is that the
9 native soil types out here, irregardless of
10 the -- you know, the oil and gas area,
11 obviously, would have some limitations in
12 terms of, you know, the vegetation that could
13 or may grow.

14 And, mainly, I look at it, from my
15 area of expertise, as the depth to the -- you
16 know, the shallow depth to the water table,
17 potential for flooding, standing water. I
18 think when you guys were out there, as you --
19 when you get off of that pad, those are
20 limitations that are natural limitations. How
21 they affect different, you know, species and
22 trees and plants is probably beyond -- you
23 know, I'm getting outside of my area of
24 expertise.

25 But I think based on, you know, the

1 testing that we have done out here and the
2 data that we've seen, we don't feel like, you
3 know, would be any -- anything that would
4 limit the use of the property for, you know,
5 what you have described in terms of that
6 affidavit. I guess that's the best I can say.
7 But keep in mind that, you know, I'm not
8 the -- you know, the plant guy, and -- and I
9 don't have that piece of the expertise.

10 MR. SNELGROVE:

11 Understood. And, yeah -- and --
12 understood. But I think you answered the
13 question for me.

14 THE WITNESS:

15 Okay. Thank you.

16 MR. SNELGROVE:

17 Yeah. And so kind of on a similar
18 line of questioning, and it may be more -- may
19 have been more appropriate for Patrick, but
20 there was a tree line just due to the east,
21 right, that was taken out in 2018, 2019, I
22 believe?

23 THE WITNESS:

24 Yes. I'll -- I'll get to that slide,
25 and we can take a look at it again.

1 MR. SNELGROVE:

2 Perfect. Yeah.

3 THE WITNESS:

4 Okay.

5 MR. SNELGROVE:

6 That's the slide. Right. Okay. So
7 now it's gone. And we certainly did not see a
8 tree line there when we were there in our site
9 visit. But the question that I had -- and,
10 again, this may be more appropriate for
11 Mr. Ritchie, but the type of trees that were
12 in that tree line, was that more of a shrub
13 type of tree, or did you visit the tree at any
14 point when you were there or, you know, any of
15 your staff that was out doing any soil
16 sampling or what have you?

17 THE WITNESS:

18 We -- we clearly were in and around
19 there. Man, I can't personally tell you any
20 specific tree out there. I think Patrick and
21 Luther probably would have considered that
22 area as part of their, you know,
23 investigation, but I can't personally tell you
24 that -- and, again, I'm no tree expert. I
25 couldn't tell you, you know, any specific tree

1 along that tree line, but I would -- I would
2 assume that whatever is growing there would
3 be -- its properties would be adjusted to the
4 soil type. That's probably all I can say, but
5 I can't testify to, you know, what specific
6 trees are along that line.

7 MR. SNELGROVE:

8 Yeah. And, well, I'll just say for
9 the record, the reason for that question is as
10 somewhat of a follow-up to the questioning for
11 Mr. Ritchie with regard to the species that
12 were selected for the root zone study,
13 specifically the trees, the live oak and the
14 sugarberry, hackberry, and so just, you know,
15 being that these trees were very close to the
16 AOIs, more so than maybe the ones that were
17 selected to the north, as I recall, from the
18 graphics of the presentation, where the live
19 oak and the sugarberry area was located.

20 THE WITNESS:

21 Right.

22 MR. SNELGROVE:

23 So if we don't know the answer, we
24 don't know the answer, but I wanted it to be
25 clear why I was asking the question because of

1 making a determination that we have a
2 representative of tree specie, or species, for
3 making that effective root zone evaluation.

4 And then, just to reiterate -- well,
5 to supplement that conversation on the
6 effective root zone, so they -- as I -- as I
7 recall, they had -- "they," meaning
8 Patrick Ritchie and Dr. Holloway --
9 established the root zone -- effective root
10 zone to be, what, 11 inches -- 10, 11, 12, no
11 greater than 20 foot. So -- but ERM is going
12 to address the -- you know, to be
13 conservative, down to two feet. Is that -- is
14 that --

15 THE WITNESS:

16 Yeah. That --

17 MR. SNELGROVE:

18 -- what I understand?

19 THE WITNESS:

20 Yeah, Gary. And, actually, we're --
21 we want to make sure, you know, since some of
22 the original testing had, like, zero- to
23 two-foot intervals, and so it's hard to
24 determine, you know, what that's really
25 measuring. So we're going to go back when we

1 do the retesting, you know, like, ten samples,
2 zero to one, one to two, two to three, to
3 better define that. But it's just as easy to
4 blend the upper couple of feet of soil than it
5 is to try to tease out 12 inches, and, you
6 know, it's not a material difference in cost
7 to do that. And so that's kind of what -- how
8 we've looked at the 29-B salt data. And we
9 presented that one slide, and I can bring it
10 up again, to kind of -- otherwise, we're just
11 looking at a really thin piece of the data.
12 We wanted to make sure we were more
13 encompassing. So it kind of goes above and
14 beyond Mr. Ritchie and Dr. Holloway's root
15 zone evaluation, but we wanted to make sure
16 that, you know, we looked at all of that data
17 even below the upper one foot. So that's how
18 we're looking at it.

19 MR. SNELGROVE:

20 Okay. That's what I thought I heard
21 in your presentation earlier, and what I read
22 earlier as well. Okay. So -- okay. Here is
23 another -- another question on soil sampling
24 in your testimony and, of course, what we
25 read, of course, in the -- in the reports, but

1 there were soil samples that were collected
2 and tested for salt parameters that -- that,
3 of course, went into, you know, ten feet and
4 below, and we know based on your groundwater
5 evaluation that the groundwater begins in the
6 shallow groundwater-bearing zone to --
7 anywhere from seven or so feet down, you know,
8 varying to, again, ten, fifteen feet or so.

9 So the question would be, you know,
10 the soil -- soil samples were collected and
11 tested for salt parameters, and it showed that
12 there were elevated concentrations of EC, SAR,
13 ESP, chloride, in that satur -- let's call it
14 saturated soil, because that's where the
15 groundwater is. So would these samples really
16 be more representative of the soil samples for
17 these parameters, or are we talking more
18 representation for groundwater?

19 THE WITNESS:

20 Yeah.

21 MR. SNELGROVE:

22 You know, the samples that were
23 collected, they reported as -- you know, from
24 ten to, say, fifteen, twenty feet.

25 THE WITNESS:

1 Yeah --

2 MR. SNELGROVE:

3 In your opinion, what -- you know,
4 are we in a gray area there with respect to
5 analytical and -- are we sampling and testing
6 for water or soil?

7 THE WITNESS:

8 Yeah. Well, that's a good question,
9 because, you know, when you think about it,
10 you take a -- an interval out of one of those
11 tubes, and so it's got in the -- in the --
12 let's just focus on the saturated zone. It's
13 got water-filled pores in the soil. And so
14 you cut out that section, and you put it in a
15 sample jar. So it's got entrained water
16 within that section. Obviously, cores above
17 it and below it, which are just in clay and
18 not in the water-bearing zone, have water in
19 them but not as much.

20 And so I would say you could look at
21 it two ways. Number one is that you could
22 look at it as a true depiction of what's in
23 the soil, but, also, it's -- you know, it's
24 got more water in it. And so could that
25 influence the concentration? Possibly. You

1 know, the good news is that we have monitoring
2 wells in a lot of those areas, you know, or
3 around them, and so -- so we kind of have
4 both. We know what's in the -- the soil, and
5 we also know what's in the groundwater.

6 And so it's -- it's more reasonable
7 to assume that a lot of the chloride in -- in
8 water, and if the zone is -- you know,
9 contains a lot of sand, then, obviously,
10 you're getting a lot of water in the sample.

11 MR. SNELGROVE:

12 Yeah. And so -- I don't disagree,
13 but I'm also going to ask this, and I'm just
14 asking to see whether or not you would agree,
15 that there's an expectation if -- if you have
16 a mobile substance -- constituent such as
17 salt, wouldn't the expectation be that if you
18 took a soil sample or a saturated soil sample
19 in the very first water-bearing zone at such a
20 shallow depth that you would -- you would
21 expect to see elevated EC, SAR, ESP in that --
22 at that depth in that sample that's going to
23 have soil but yet also all the water in -- in
24 the core, the porosity aspect of it? I mean,
25 does it -- help me out there.

1 THE WITNESS:

2 Yeah. I -- I think so, though,
3 typically, you know, if you get a real sandy
4 sample, a lot of times, it's -- and it's an
5 artifact of the collection process and the
6 drilling process, there's no way around it.
7 Some of that water comes out of the sample,
8 not all of it, but it -- it can. And so the
9 residual water within the soil sample is
10 probably, you know, fairly representative,
11 unless it's a sand or gravel.

12 And I think -- if I can -- we don't
13 have sand -- you know, we don't have course
14 sand and gravel out here, but, if -- if we
15 did, you tend not to see those concentrations,
16 because they get more in the water, and
17 they're disbursed. But it -- I would say it's
18 fairly accurate, these soil samples, of -- of
19 probably in a couple locations where we have
20 those, you know, little higher EC readings
21 that there -- you know, there is some salt
22 there relative to the soil column.

23 MR. SNELGROVE:

24 Right. And because of the leach --
25 the leachate aspect of it, I mean, that's what

1 you would expect. It's almost sort of as a
2 sieve, if you will.

3 THE WITNESS:

4 Yeah, kind of like -- that's right.
5 I agree. And it's -- and so, you know, it's
6 kind of a -- it gives you this residual
7 effect. And, you know, unlike a lot of the,
8 you know, other sites with, you know, open
9 pits and that we see -- on those other type of
10 sites, you see those really high salt -- salt
11 concentrations, you know, well down into the
12 soil column. We just don't see that here. We
13 see some very slightly elevated concentrations
14 that, you know, don't go very deep and don't
15 go laterally because there's just not much in
16 the way of source to drive that, I think, what
17 you're referring to, any kind of migration.
18 You know, it's just not there.

19 MR. SNELGROVE:

20 And then, of course, where -- where
21 you do see the elevated salt parameters at
22 depth -- in this ten foot or so, they're
23 far -- far removed from the effective root
24 zone, which the plan addresses, even so, with
25 whatever is within the first two feet, where

1 the areas are showing at the shallower zone,
2 salt -- soil horizon that needs to be
3 addressed.

4 THE WITNESS:

5 Yeah. And I think that -- and what
6 you just said gives us, you know, a lot of
7 confidence in terms of, if we -- you know,
8 don't -- don't look at the root zone. Let's
9 just look at the data. When you look at the
10 data, those -- those slight exceed -- EC or
11 SAR, ESP exceedances at 10 or 15 feet,
12 obviously, you know, we don't have a root zone
13 that deep, even -- even if we didn't have a
14 root zone.

15 And so -- but -- so we looked to zero
16 to two, and even -- you know, I would
17 encourage you guys to look at that data going
18 down. You just don't see much except a few of
19 those that go, you know, well deep in the soil
20 column. And those really don't have any
21 material effect relative to further migration
22 based on the SPLP data and, you know, based on
23 the geologic logs, and, also, the same way
24 with the lateral, because of the fine-grained
25 nature of the whole -- you know, the whole

1 soil column really.

2 MR. SNELGROVE:

3 And you -- and you delineated, of
4 course, -- I think, to answer the prior --
5 advance that a little bit further -- with
6 respect to groundwater in that shallow
7 groundwater zone with the monitoring wells
8 that were installed on the periphery to show
9 the lower concentrations of chlorides below
10 the secondary standards.

11 THE WITNESS:

12 Yeah. We -- we feel really good
13 about the groundwater delineation. And that
14 chloride slide not only delineate to below --
15 well below 250 but delineate to background.
16 And I think -- I encourage you guys to look at
17 the -- you know, look at the chloride data,
18 but look at the whole groundwater testing
19 dataset and -- because we have circled this,
20 you know, small area with the whole group of
21 wells. It gives us a lot of confidence that
22 we have not only delineated for -- for -- to
23 250, but we've actually delineated in the
24 background range. So . . .

25 MR. SNELGROVE:

1 I don't have any further questions.

2 Thank you, Dave.

3 THE WITNESS:

4 Thank you.

5 MR. SNELGROVE:

6 Jamie's got --

7 MS. LOVE:

8 I just wanted -- back on the soil
9 standards questions again, you would have used
10 as well the descriptions to compare between,
11 you know, the midland and the prairie --
12 prairieland. Right?

13 THE WITNESS:

14 Right. Right.

15 MS. LOVE:

16 With, you know, the descriptions, the
17 colors, the fields, all those just to verify,
18 because I know there's -- it's a tight little
19 spot there --

20 THE WITNESS:

21 Yeah. No, that's right. Yeah. And
22 I'll go back to that map for you. But, yeah,
23 those soil descriptions -- and I think in the
24 original plan they're provided, but, you know,
25 if you guys want to get into more detail, I,

1 you know, would encourage you to look at -- at
2 the historic publications. And then those
3 have been supplemented with a web -- web
4 survey. In some cases, the descriptions have
5 been slightly modified, and -- and some
6 changes have been made. So I would encourage
7 you to look at both of them so you can
8 understand, you know, the refinement process
9 that the USDA goes through.

10 MS. LOVE:

11 Okay. That's it.

12 THE WITNESS:

13 Hey, Jamie, I got -- I got an answer
14 to your -- your earlier question. You had
15 asked about the -- the driller's log
16 for the -- the well documenting plugging and
17 abandoning.

18 MS. LOVE:

19 Yeah.

20 THE WITNESS:

21 I think that was -- that was you.
22 It's Bates No. 380 in Appendix D.

23 MS. LOVE:

24 Okay.

25 THE WITNESS:

1 It is for that rig supply well that
2 was documented to be plugged and abandoned.

3 MS. LOVE:

4 Yeah. And I went ahead and pulled it
5 up on our system, and I did see that it is
6 just basically a handwritten note in the
7 upper --

8 THE WITNESS:

9 Yeah.

10 MS. LOVE:

11 And that would have been -- I guess
12 DOTD missed that when it came in back in 2000.

13 THE WITNESS:

14 Yeah. And, quite honestly, I -- we
15 missed it at first, too. So, you know, with
16 all of our work going on out there, we went
17 back and looked at those records, like, man,
18 there's no water well still out here, and
19 that's when we found that note and was, oh,
20 okay, it's plugged and abandoned. But, yeah,
21 I --

22 MS. LOVE:

23 Yeah.

24 THE WITNESS:

25 -- I think it was just missed.

1 MS. LOVE:

2 Yeah. I'm going to reach out to the
3 driller to see if they have more information.
4 They usually -- the driller keeps some pretty
5 good records. So they may have more
6 information on that, --

7 THE WITNESS:

8 Yeah. Okay. Good.

9 MS. LOVE:

10 -- I guess, to tighten that up.

11 THE WITNESS:

12 Yeah. That would be good if we could
13 get that P&A in the -- in the database.

14 MS. LOVE:

15 Yeah.

16 THE WITNESS:

17 Okay. That's all I wanted to point
18 out. Thank you.

19 MS. LOVE:

20 Thank you.

21 THE HEARING OFFICER:

22 Okay. Thank you, Mr. Angle.

23 THE WITNESS:

24 Okay. Thanks, everybody.

25 THE HEARING OFFICER:

1 Are we ready with the next
2 witness, --

3 MS. KOSTAL:

4 Could we get about --

5 THE HEARING OFFICER:

6 -- Ms. Levert?

7 MS. KOSTAL:

8 Could we get about ten minutes to get
9 Ms. Levert set up in here and get her
10 PowerPoint on the computer and everything?

11 THE HEARING OFFICER:

12 Okay. A ten-minute break? That's
13 fine. Thank you.

14 MS. LOVE:

15 Thank you.

16 THE WITNESS:

17 Thank you.

18 (RECESS TAKEN)

19 THE HEARING OFFICER:

20 Okay. We're on the record.

21 Mr. Funderburk, go ahead.

22 MR. FUNDERBURK:

23 On behalf of Neumin Production
24 Company, we will call Ms. Angela Levert.

25 (ANGELA LEVERT, having been first duly

1 sworn, was examined, and testified as
2 follows:)

3 MR. FUNDERBURK:

4 Let me work on a couple of technical
5 things real quick, Ms. Levert.

6 THE WITNESS:

7 Okay.

8 MR. FUNDERBURK:

9 First, start your video.

10 THE WITNESS:

11 Share -- start my video.

12 MR. FUNDERBURK:

13 And then share.

14 THE WITNESS:

15 (Complying with request)

16 THE HEARING OFFICER:

17 Good morning.

18 THE WITNESS:

19 How about that?

20 MR. FUNDERBURK:

21 Can everybody --

22 THE HEARING OFFICER:

23 Good morning, Ms. Levert.

24 THE WITNESS:

25 Good morning. Good morning. Are you

1 guys seeing my screen now?

2 THE HEARING OFFICER:

3 Yeah, we can see you. We're ready to
4 go. Thank you.

5 THE WITNESS:

6 Oh, excellent. Okay. All right.
7 Let me make that full size.

8 MR. FUNDERBURK:

9 Yeah. Perfect.

10 THE WITNESS:

11 Okay. And let me get a little laser
12 pointer here. Okay. All good?

13 EXAMINATION

14 BY MR. FUNDERBURK:

15 Q All right. Good morning, Ms. Levert. How
16 are you?

17 A Good. Thank you. Good morning.

18 Q Good. I know that the panel is very
19 familiar with you from your prior work, both in
20 litigation and non-litigation, limited admissions,
21 trial, and the whole -- the whole run. But, if
22 you could, just give a little bit of background on
23 yourself, please.

24 A Sure. Sure. I'm going to use this slide,
25 if you guys don't mind. So my educational

1 background is in chemistry and environmental
2 chemistry, and that work -- that graduate work was
3 actually done in a School of Public Health, and
4 that was really valuable, because it really laid
5 the foundation for my training in health
6 assessment, human health risk assessment, and that
7 was really my start in the work that I've been
8 doing for the last 30 years, which is focusing on
9 human health risk assessment.

10 Q And let me stop you for a second. Do you
11 have any interest in that basketball game tonight
12 based upon what I see on the screen there?

13 A As a matter of fact, I do. I do.

14 Q So that master's is from University of
15 North Carolina?

16 A Go Heels. Go Heels. Yeah.

17 Q And you also, it appears, have admitted
18 the degree that you got from the esteemed
19 Spring Hill College?

20 A That would be our shared alma mater, --

21 Q That's correct.

22 A -- Mr. Funderburk.

23 Q And what was that degree in?

24 A That was chemistry and my undergraduate
25 degree.

1 Q Great. And so you have over 30 years'
2 experience in human health assessment -- risk
3 assessment. You have worked with the agency on
4 RECAP assessments in the past. Correct?

5 A That's correct, since its inception back
6 in 1998, so a couple of decades worth of RECAP
7 implementation under both the DEQ and DNR -- DNR,
8 yeah.

9 Q You've given testimony at Act 312 limited
10 admission hearings in the past?

11 A I have.

12 Q And you've done that recently, too, as
13 well?

14 A I have. I have. Correct.

15 Q You've been qualified as an expert in
16 environmental chemistry and data evaluation, human
17 health risk assessment, and RECAP. Correct?

18 A That is correct.

19 Q In fact, you've done hundreds of these
20 risk evaluations in your career?

21 A Yes. I've been fortunate to -- to work on
22 that kind of work for a long time, yes.

23 Q We provided the panel with your recent --
24 your up-to-date CV. That is Exhibit 50. It is
25 Bates labeled 2519 to 2523. And you had an

1 opportunity to review that CV. Correct?

2 A I did, yes.

3 Q And it is up-to-date and current?

4 A It is correct, yes.

5 MR. FUNDERBURK:

6 We would offer, file, and introduce
7 Ms. Levert's CV, Exhibit 50, at this time.

8 THE HEARING OFFICER:

9 Accepted into evidence.

10 MR. FUNDERBURK:

11 And at this time we will tender
12 Ms. Levert as an expert in human health risk
13 assessment, environmental data evaluation,
14 RECAP, and environmental chemistry.

15 THE HEARING OFFICER:

16 She's accepted as tendered.

17 MR. FUNDERBURK:

18 Thank you, very much.

19 BY MR. FUNDERBURK:

20 Q Ms. Levert, you had an opportunity to
21 listen to both Mr. Ritchie and Mr. Angle's
22 presentations here today. Correct?

23 A I have.

24 Q And you also had an opportunity to review
25 all of the data that was collected in this case.

1 Correct?

2 A Yes.

3 Q So let's talk about what your presentation
4 will be here today. Can you give just a brief
5 summary of what your brief presentation is going
6 to be?

7 A Yes. Yes. So I prepared the RECAP
8 evaluation for the property for both soil and
9 groundwater. And Mr. Funderburk is right. I --
10 this presentation will actually be relatively
11 short because the RECAP evaluation for this
12 property was not particularly complex. It was
13 pretty straightforward. So our discussion today
14 will be, again, pretty -- pretty brief.

15 But I also do want to -- in addition to
16 talking about the methods and the outcome of the
17 risk evaluation, I do want to take this
18 opportunity to respond to a comment from the
19 plaintiffs that I believe also relates to RECAP.
20 So that will be the content for this discussion.

21 MR. FUNDERBURK:

22 And as a planning point for the panel
23 and Mr. Balhoff here, we -- we do expect to be
24 done in, roughly, about -- you know, under 40
25 minutes or so just for any planning purposes

1 we might be doing on lunch, et cetera.

2 THE HEARING OFFICER:

3 Okay. Thank you very much.

4 MR. FUNDERBURK:

5 Yes, sir.

6 BY MR. FUNDERBURK:

7 Q If you'll advance that, Ms. Levert, what
8 were your basic conclusions and recommendations
9 regarding soil on this site from a RECAP
10 perspective?

11 A Let me touch on soil first, and then
12 I'll -- I'll move on to groundwater. The
13 concentration of the constituents detected in soil
14 or in soil leachate were less than the RECAP
15 nonindustrial screening standards. So that
16 includes the standards protective of both direct
17 contact and groundwater protection.

18 And so there wasn't a need to move on
19 beyond screening for further RECAP evaluation for
20 soil. We're demonstrating that concentrations are
21 protective for ongoing land use, for alternative
22 residential land use, and for unrestricted land
23 use at the screening level.

24 Of course, there's not a screening
25 standard for salt, not a lookup standard, and salt

1 is not a concern in soil for direct contact, but
2 our focus under RECAP for salt in soil is
3 groundwater protection. There's not a promulgated
4 standard for protection of Class 3 groundwater in
5 this site setting given that the surface water
6 subsegment is an estuarine subsegment. So the
7 salt that remains in soil is not a concern in
8 terms of a threat to groundwater and ultimately to
9 potential surface water receptors.

10 So based upon that quantitative risk
11 assessment, the soil risk assessment, remediation,
12 corrective action, is not required to achieve
13 protection of human health for residential or
14 unrestricted land use and ongoing land use.
15 Additionally, corrective action isn't required to
16 comply with RECAP.

17 Q Okay. So no corrective action for soil
18 from a RECAP perspective?

19 A That's correct.

20 Q Let's move on to groundwater.

21 A Good. For groundwater -- an
22 important first conclusion is that the groundwater
23 beneath the site, the shallow groundwater, is not
24 being used for any purpose. It has not been used
25 in the past. It's not used for any purpose within

1 a mile of the site, and based upon its low yield
2 and for many of the factors that Dave described,
3 it's not a viable water supply.

4 Q So no reasonably intended purpose for this
5 groundwater zone?

6 A That's correct. Of course, that isn't a
7 reason to ignore the groundwater. It is
8 Class 3, and we do have guidance under RECAP on
9 how to evaluate risks for potential pathways for
10 Class 3 groundwater, and I've done that as part of
11 this risk assessment.

12 Our focus, then, for Class 3 groundwater
13 is the potential pathway of groundwater transport
14 and discharge to surface water. Groundwater flow
15 at this site is generally to the southwest. We've
16 identified a potential receiving waterbody for the
17 purposes of a quantitative assessment and, for the
18 nonsalt parameters, have demonstrated that the
19 concentrations in groundwater are less than the
20 RECAP standards. They are GW-3 and DW standards,
21 less than the RECAP standards protective for a
22 receiving waterbody.

23 When it comes to salt, again, we don't
24 have a numeric standard given that were located in
25 an estuarine subsegment for surface water;

1 however, we still do look at delineation. And
2 based upon our delineation of salt in groundwater,
3 we find that there is not likely a discharge
4 period to surface water, and the groundwater --
5 the salt concentrations in groundwater, again, are
6 not a threat to surface water quality.

7 All that tells us that corrective action
8 is not required, again, for protection of human
9 health or for compliance with RECAP for
10 groundwater.

11 Q So with both soil and groundwater, the two
12 media you're looking at here, no corrective action
13 required for RECAP?

14 A Under RECAP. That's correct.

15 Q So let's talk about how you got there,
16 Ms. Levert.

17 A Okay.

18 Q And why are we applying RECAP in the first
19 place?

20 A For a couple of reasons, and a primary
21 reason is that the Neumin Company has committed to
22 leaving this property in a safe condition, and
23 RECAP provides the methodology for us to evaluate
24 whether the concentrations in soil and groundwater
25 are, in fact, safe, protective of human health.

1 So that is the primary reason.

2 In addition, the plaintiff's investigation
3 and, ultimately, the investigation by both parties
4 generated data that goes beyond those constituents
5 that are covered in 29-B. And examples of that
6 are, of course, TPH and barium, for which we've
7 collected data.

8 And it's our experience that DNR has
9 required that we evaluate those constituents under
10 the applicable regulation, that being RECAP. It's
11 also our experience that DNR considers risk -- has
12 considered risk, risk to human health, when making
13 decisions about what is the most reasonable and
14 feasible plan for a site and that DNR does that by
15 use of RECAP, the state-specific guidance for
16 conducting risk assessment. And that, of course,
17 is facilitated by the MOU between the DEQ and the
18 DNR that allows DNR to apply RECAP to sites under
19 the DNR's jurisdiction. And so that is the reason
20 we're applying RECAP here.

21 Q And there are certain steps that you take
22 when you are applying RECAP to a site. Correct?

23 A That's right. That's right. And for this
24 particular site, I just wanted to point out that
25 I've taken the -- the standard steps, again, not a

1 complex evaluation. So I would not point to
2 anything unusual in this particular evaluation
3 for -- for the Neumin property -- I'm sorry -- the
4 Drew Estate property.

5 You can see the steps of the RECAP
6 evaluation listed on the left in this slide, and
7 then on the right are the outcomes of the
8 individual steps that allowed us to move through
9 the quantitative RECAP evaluation.

10 A couple of things to point out, we did
11 perform a data usability evaluation for this
12 particular site, and I'll talk a little bit more
13 about that, because there was a historic dataset
14 from 2015 that we had to make some decisions
15 about. For both soil and groundwater, I did step
16 through a screening step. Again, soil, really
17 that evaluation was complete at the screening
18 standard; for groundwater, advanced into MO-1 to
19 incorporate the site-specific classification of
20 the shallow groundwater.

21 And the outcome of that process -- RECAP
22 process in general is to identify whether or not
23 there are any constituents, any concentrations,
24 any locations, where the concentrations exceed
25 final RECAP standards. And, if that is the case,

1 of course, that defines what we would term final
2 AOIs that warrant some kind of action, whether
3 that's institutional control, risk management, or
4 remediation. For this particular site, we did not
5 identify any AOIs relative to the final
6 standards -- the final RECAP standards.

7 Q And I know we'll discuss this in a little
8 bit more detail, but with -- with what you just
9 mentioned about the AOIs, there's -- you have
10 found that there's no restrictions on the future
11 use of this property?

12 A That's right. Conveyance notices it
13 required. Restrictions on -- on any usable
14 groundwater are not required; so that's an
15 accurate statement, yeah.

16 Q Well, let's go on to the data collection
17 here. There's a couple of things that you will
18 talk about on the data collection side, and one of
19 them is, just kind of generally, the
20 RECAP-focused data collection, and the second one
21 is the data quality review that you did. So let's
22 talk to the panel real quick about the data
23 collection.

24 A Good. Dave covered, in some detail,
25 the -- the collection methods and a good bit about

1 what kind of data was collected, too; so -- so I
2 will talk about it in the context of RECAP. As
3 you saw in the data distribution figures that Dave
4 shared, the investigations by both parties, all
5 parties, were largely focused on identifying and
6 delineating salt in soil, as well as groundwater.
7 There was a subset of the data that was also
8 analyzed for metals and hydrocarbons, and those
9 data, of course, are the data that support
10 quantitative RECAP assessment, risk assessment.

11 And if I were to generalize about this
12 site, I would say this is not what we would refer
13 to as a hydrocarbon site, and the reason I say
14 that is, there's very -- there was very limited
15 evidence of hydrocarbons during the field
16 exercise, limited evidence in terms of visual or
17 odors, but where evidence was identified, samples
18 were collected, and those samples were analyzed
19 for mixtures and, when we were present, for
20 fractions.

21 And I'm going to go into that in a little
22 bit more detail in just a bit. In fact, ERM
23 returned to get some samples where that wasn't
24 collected. So let me get back to that in a bit --
25 in a bit, but I would say, just in general, it

1 isn't a hydrocarbon site as we sometimes see.

2 Q And let me jump in --

3 A Sure.

4 Q -- real quick, Ms. Levert, because one of
5 the things we talk about in a lot of these
6 hearings and a lot of plans that, either within
7 litigation or outside of litigation, go to the
8 agency is about whether the constituents have been
9 delineated on the site. So I just want you to
10 keep that in mind as we're walking through this.
11 And that was done here, stepout samples for
12 delineation. Correct?

13 A That's right. That's -- in fact, that was
14 part of the focus of our investigation. You know,
15 the process includes the -- the landowner's
16 representative generating a dataset initially that
17 we study really hard to make decisions about,
18 where to go back and fill in any sort of data gaps
19 that we see. And I, from a RECAP perspective,
20 will identify what data needs I have in order to
21 support my specific evaluation, and delineation is
22 almost always a piece of that, and was at this
23 particular site.

24 So that was a big part of our
25 investigation focus, also collecting data that

1 specifically support RECAP, like the fractions and
2 indicators -- indicator constituents at select
3 locations where fractions were the highest. We
4 did collect that data for hydrocarbons.

5 We also elected to return to certain
6 locations to collect SPLP data for chlorides.
7 That was not something -- that was not a dataset
8 that was generated initially by the landowner's
9 representatives, and so we used their information
10 to guide our decision about where to go and
11 collect that data.

12 Q And so when -- and you note here the
13 biased design of the sampling program. Can you
14 just explain a little bit what you mean by biased
15 design?

16 A Right. That, in fact, is a design that
17 applies to pretty much every one of the E&P sites
18 that we study with the DNR, because we are
19 specifically going to the operational areas,
20 collecting samples within those areas, and doing
21 so in a way where we are seeking to characterize
22 those locations that are likely to have the
23 highest concentrations, and, generally, we move
24 out from there. And that is an accurate
25 description of -- of this investigation, too.

1 Q Right. And, specifically, with your SPLP,
2 you went back and looked at the highest results of
3 chlorides. Correct?

4 A That's right. We replicated those
5 locations. And the same would be true, for
6 instance, of where we elected to analyze for the
7 hydrocarbon indicator constituents. That's
8 another example of that biased design, too.

9 Q Right. So almost a double layer of biased
10 design on that?

11 A Right. Right, and by design. By design.

12 Q Good. So let's move on to the next slide
13 here. And this is data quality review. You
14 mentioned a few minutes ago about data collected
15 in 2015. So can you discuss that with the panel,
16 please?

17 A Yes. So looking at all the data that had
18 been collected for the -- for the site, we
19 identified that the data that meet the definition
20 of "definitive data" as defined in RECAP, are the
21 data that were collected between 2016 and 2022.
22 Those are the data that I would identify as valid
23 for the quantitative RECAP assessment.

24 The dataset that was collected in 2015 was
25 collected by a company called Commercial

1 Maintenance. We did supply that data to the
2 agency as an attachment to our supplemental
3 report, the supplement submittal, and I -- it does
4 not meet the requirements of definitive data
5 for -- for two reasons. One is that the data were
6 not depth discrete samples. They were collected
7 using solid flight auger, which does not generate
8 discrete depth samples, or they were collected
9 from an excavator bucket. So -- so that's one
10 piece we would not have confidence in assigning
11 the -- the depth.

12 But the second thing is, they were
13 collect -- those data were collected before the
14 P&A and equipment removal happened. And so there
15 certainly was some soil disturbance at the surface
16 that would render those data to not be
17 representative of the current conditions.

18 Now, I am not concerned about that leaving
19 us a gap in terms of the site characterization,
20 because the data were collected within the same
21 operational areas where the 2016 to 2022 datasets
22 were generated. But I did, you know, look at that
23 data, and I can tell you that the analytes that
24 were included were metals and oil and grease.
25 There were no fractions or mixtures analyzed

1 during that 2015 event, and all the metals
2 concentrations were less than screening standard,
3 so actually consistent with the current dataset.
4 But in terms of the quantitative evaluation you're
5 going to see in my tables, it reflects the 2016 to
6 2022 definitive dataset.

7 Q And Mr. Angle talked about this a good
8 bit, but there were -- there were a lot of samples
9 out there.

10 A That's right.

11 Q So, you know, you have what you need for
12 your RECAP assessment -- your full RECAP
13 assessment. Correct?

14 A I agree with that. And I would say that
15 that gives us confidence in the conclusions that
16 we're making. It certainly does for me from a
17 RECAP perspective.

18 There's just a couple of additional things
19 I would point out in terms of the data quality, or
20 data choices, that I make in performing the RECAP
21 evaluation. We do have fraction data for the
22 locations where mixtures were analyzed, and that's
23 true for both soil and groundwater, and so I am
24 using the fraction data in the quantitative
25 assessment in accordance with RECAP, Appendix D.

1 The other thing, and this, to me, is a
2 data -- data quality question, there are samples
3 that were collected from temporary wells, as Dave
4 talked about, by Acadian and Southland. In the
5 case of Acadian, we don't have turbidity
6 measurements for their groundwater samples.

7 In the case of Southland, when I examined
8 the field notes for their data collection for --
9 for groundwater, the turbidity actually remained
10 elevated -- quite elevated in some of their
11 groundwater samples. And so what that tells me is
12 the metals detections in the unfiltered samples in
13 those temporary wells likely have been affected by
14 somewhat elevated turbidity, and that wouldn't be
15 a surprise with, you know, this kind of fine grain
16 zone, this very silty zone. And where we do have
17 filtered samples, we do not see those elevated
18 metals. And so that, to me, is a -- is a data
19 quality question, or issue.

20 Out of an abundance of caution and to give
21 you guys, you know, the panel, the ability to
22 really look at all concentrations and all data, I
23 did include those metal results in the RECAP
24 evaluation for groundwater under MO1, but I don't
25 believe that they would be representative of

1 site-related COCs.

2 Q And, Ms. Levert, we're about to move into,
3 you know, some details on your soil RECAP
4 assessment.

5 MR. FUNDERBURK:

6 And I would encourage at any time, if
7 the panel has any questions about what we're
8 going through here, to go ahead and ask, and
9 you won't be interrupting us. Don't worry
10 about that. So if you have anything and need
11 to jump in, please do so.

12 BY MR. FUNDERBURK:

13 Q We will get to -- to the details of this
14 soil RECAP assessment here. So I will let you
15 explain what we're looking at on this map, which
16 is a busy one, and talk about your soil RECAP
17 assessment.

18 A Good. The scope of the RECAP assessment
19 for soil really involves four study areas, or in
20 RECAP terminology, I would say that these are the
21 four AOCs. So it is the three former operational
22 areas, plus what Dave referred to as the stepout
23 area.

24 So Dave was showing you in his figures the
25 red outline of the operational areas, meaning the

1 footprint of where the equipment was historically,
2 but what I'm showing you in these blue, larger
3 boxes includes both the actual equipment areas,
4 the former, you know, features, and the samples
5 that we collected -- the sample locations where we
6 collected data to delineate around those areas.

7 And so the -- the blue boxes really
8 express the grouping of data that you will find in
9 our data tables that were included as part of the
10 supplement, and it's also the grouping that I am
11 using as the headers in my RECAP table. So you
12 can refer to this figure and this presentation if
13 you're thinking about what are the sample
14 locations that are included in the production
15 area. Now, the things that are outside of the
16 blue boxes are what we would refer to as the
17 stepout. So that -- it would fall under that
18 header in the data table and in my RECAP tables.

19 Q And we're about to get into those RECAP
20 tables, and as we do, let's just give the panel a
21 little background on why we have Exhibit 45, which
22 are your --

23 A Oh, good.

24 Q -- your data tables here.

25 A Sure. Yeah. So this Exhibit 45 included

1 an updated version of the RECAP tables that were
2 provided to you in the limited admission plan, and
3 I wanted to provide that as part of the hearing
4 presentation. The difference between those tables
5 in the limited admission plan and Exhibit 45 is
6 that it incorporates -- Exhibit 45 incorporates
7 the data that was collected after submittal of the
8 plan. So Southland went out and collected their
9 additional data, and these tables incorporate
10 that.

11 Q Okay. And those data tables, Exhibit 45,
12 can be found at Bates labels 2419 through 2424.

13 A And so I've used the -- the numbering
14 system in that exhibit, and you can see it here on
15 the screen, of 6-A. The original screening Table
16 was 6, and as we move through this, you'll see an
17 8-A, if I remember correctly, and a 9 or a 10-A.
18 So in each instance where I have updated a
19 table, -- the "A" is for amended -- I have
20 provided an "A," an amended table to you.

21 Q And here we see that you're going against
22 nonindustrial screening standards, --

23 A That's --

24 Q -- and that is going to be a conservative
25 approach. Correct?

1 A That's correct. Obviously, the property
2 right now isn't used for residential purposes, and
3 my purpose in using the nonindustrial standard,
4 which is represented by a residential scenario, is
5 to allow us to demonstrate protection for
6 unrestricted use, so no conveyance, no limitation
7 required.

8 Q Right. And that's even though it has been
9 zoned now as a light industrial site?

10 A That's correct. I do understand it has
11 been zoned that way. Right.

12 Q So what can you tell the panel from this
13 data table here?

14 A Yeah. I know that the panel members have
15 seen very similar tables and structures. So just
16 to -- to remind of the structure quickly, the
17 first couple of columns here are the standards,
18 the direct contact, the groundwater protection
19 screening standards. And I'm identifying a
20 limiting screening standard here and then
21 comparing to the maximum concentrations for each
22 of the areas that we just described.

23 I'll come back to arsenic in just a
24 minute, because that's -- of course, we look at
25 arsenic just a little bit differently. But when I

1 compare the maximum concentrations in each of the
2 areas to the limiting screening standards, the max
3 concentrations are below the limiting screening
4 standards in each of the areas.

5 There's one exception to that, and that is
6 right here for naphthalene. I'm hoping you can
7 see my -- my cursor. But right here in this line
8 for naphthalene, what you'll see here for the max
9 concentration is a concentration of
10 1.57 milligrams per kilogram compared to a
11 limiting screening standard of 1.5, which is the
12 groundwater protection screening standard.

13 Now, under the screening option, RECAP
14 also offers additional -- an additional step, and
15 that is performing SPLP. If you go into
16 Appendix H of RECAP, you'll see that SPLP is
17 actually offered as an option -- an optional
18 demonstration method under each of the options,
19 screening MO-1, MO-2, MO-3.

20 So I took that step -- we took that step
21 here. And for the sample in which that
22 1.57 milligram per kilogram was reported, we
23 requested that the lab run SPLP for naphthalene,
24 and that result is reflected here in the final row
25 of this table. So the units right here on the

1 standard and the results are milligrams per liter.
2 And you can see that the result in concentration
3 for SPLP was less than the screening standard for
4 leachate, meaning protective of any classification
5 of groundwater.

6 Q You also did a supporting comparison to
7 MO-1 soil for -- in the limited admission report
8 for naphthalene. Correct?

9 A I did. And I -- I wanted to do that
10 simply as a supporting piece of evidence. That
11 analysis does not rely on the SPLP result. It
12 independently identifies the soil concentration of
13 1.57 to be below the MO-1 soil to groundwater
14 protection standard, recognizing Class 3 for that
15 shallow zone.

16 I mentioned that I would come back to
17 arsenic. So I just wanted to -- to mention that
18 for arsenic, we are allowed to and encouraged to
19 use an average value to compare to the screening
20 standard, which is a background number that DEQ
21 has identified, a state-specific background
22 number.

23 And the details on arsenic -- Dave touched
24 on it quickly, but there was a single sample in a
25 single interval in which arsenic exceeded the

1 value -- the screening value of 12 milligrams per
2 kilogram. The overlying samples, the deeper
3 samples, in that same boring were less than 12.
4 We resampled that location, an interval, where
5 12 -- the number -- I think it was about 13 parts
6 per million had been identified, and the resample
7 location -- the resample results for both splits
8 were below.

9 And so the number you see reflected here
10 is an average of that original sample and the
11 resampled results, which is below 12, indicating
12 that the concentration is no different from
13 background on average. Okay. So this meant that
14 I really did not need to proceed to further risk
15 evaluation to demonstrate that concentrations in
16 soil are compliant with RECAP.

17 Q Thank you, Ms. Levert.

18 MR. FUNDERBURK:

19 And, Mr. Balhoff, at this time --
20 we'll be talking about this Exhibit 45 as we
21 go through this. I would like to offer, file,
22 and introduce Exhibit 45 into evidence.

23 THE HEARING OFFICER:

24 It's accepted into evidence.

25 MR. FUNDERBURK:

1 Thank you.

2 BY MR. FUNDERBURK:

3 Q All right. Let's talk about your summary
4 of your soil assessment.

5 A Okay. I think we covered it pretty well
6 in the last slide, but one thing I'll mention here
7 is, in addition to recognizing that the soil or
8 leachate concentrations are below the screening
9 standards and, therefore, demonstrate protection
10 and compliance, we always have an objective of
11 delineation, and -- under RECAP, and I know that's
12 part of the DNR's charge as well. You -- in this
13 particular instance, then, I would describe that
14 we are delineated relative to screening standards
15 for the constituents in soil, again, corrective
16 action not being required for soil to comply with
17 RECAP.

18 Q And there's a couple of things as we
19 bridge the gap here between soil and groundwater
20 for us to talk about from a site-specific
21 standpoint related to hydrocarbons and related to
22 salt. So let's start off with the hydrocarbons in
23 the soil. What considerations did you want to
24 outline for the panel here?

25 A I do want to provide a little bit of

1 detail on those two constituents. I know those
2 are constituents that we are regularly focused on
3 as part of these E&P investigations and RECAP
4 projects; so I wanted to make it really clear how
5 those constituents occur at this site and how they
6 have been evaluated specifically at this site.

7 So for hydrocarbons in soil, let me start
8 with the Acadian investigation. They did not
9 identify any evidence either in their boring logs
10 or any sort of notes that they saw evidence of
11 hydrocarbons. So in terms of the Acadian
12 investigation, no evidence there.

13 Southland did identify some evidence in
14 the form of odors and, in one location, a
15 potential sheen in their investigation. It was
16 just a handful of locations. I mentioned
17 previously that where they saw that, they did in
18 fact, collect samples, with one exception.

19 And so when we, ERM, were planning our
20 investigation, I -- we and I poured through the
21 boring logs to look for the rationale for their
22 hydrocarbons sampling and their other sampling,
23 and, identifying that they had identified odors in
24 the SB-9 location but did not collect any soil
25 samples there, we elected to go back and complete

1 SB-9R, the replicate sample, and analyze multiple
2 intervals for hydrocarbon fractions.

3 We also ran indicators, the PAHs, in that
4 location and all the samples from that location.
5 We did detect fractions there. That was, in fact,
6 the highest result -- fraction results we saw at
7 the site, although they were below screening
8 standards. We do have PAH data available then for
9 the location where the highest fractions were
10 reported. PAHs were below screening or, in the
11 case of leachate, below the screening for
12 leachate.

13 Q And so that's another indication of your
14 biased sampling plan. Correct?

15 A Correct, and an appropriate one for the
16 selection of PAH analysis. Right. Now, the other
17 location where they identified some evidence of
18 hydrocarbon but did not collect a sample was SB22.
19 They did identify some odor -- hydrocarbon odor in
20 soil. They collected a sample for oil and grease,
21 not for TPH mixtures. They also identified a
22 potential sheen on the groundwater, but they
23 didn't install a well.

24 So in our investigation, we elected to go
25 back to that location and install a boring and

1 install a well. That well is MW-4. We did screen
2 with a PID. So I would say, you know, in addition
3 to odor, which sometimes can be subjective, we
4 used a PID for our screening. We did not identify
5 PID readings in our screening of that boring; so
6 we didn't collect any additional soil samples
7 there.

8 We did install the well. We did sample
9 for hydrocarbon fractions, and, in this case, the
10 more soluble indicators, BTEX. The results in
11 that -- we didn't see a sheen on the groundwater,
12 and the results -- the laboratory results were
13 nondetect for the fractions and BTEX.

14 In addition to that location, in all of
15 the groundwater samples that we were present to
16 split or that we initiated, that is, in our MW-1
17 through 4 installations, we also analyzed those
18 for fractions and BTEX. Concentrations were below
19 either nondetect -- were nondetect or below
20 screening.

21 Q And so that also supports your conclusion
22 earlier that you mentioned about this not really
23 being a hydrocarbon site?

24 A Right. Right. And so that's a lot of
25 detail, but I wanted you to have this as a

1 resource when thinking about how the hydrocarbons
2 were addressed at this site. And for me, the real
3 takeaway was, where there was evidence, sampling
4 was done, or we returned to get the data. We ran
5 the right kind of analyses to -- to support a risk
6 assessment, and there was a consistent conclusion
7 with the data from the lab, which was the
8 concentrations were low and, in fact, below
9 screening standards. So I think the hydrocarbon
10 characterization is appropriate for the site.

11 Q Then let's move on to your site-specific
12 considerations regarding salt.

13 A Okay. Our focus for salt in soil is
14 soil-to-groundwater protection given that direct
15 contact is not a human health concern for salt.
16 We've addressed that -- that potential pathway in
17 two ways for this salt. One is through our
18 vertical delineation in soil, and the second was
19 through SPLP test -- testing. I know that Dave
20 talked a good bit about the multiple lines of
21 evidence that provide us confidence about the
22 vertical delineation; so I won't -- I won't repeat
23 that or go back over that.

24 With regard to the SPLP testing, we
25 elected to go to those locations where the maximum

1 EC had been reported by the initial investigations
2 and collected a sample specifically for SPLP
3 analysis at that interval where the maximum had
4 previously been reported, as well as an interval
5 below that, that is, deeper than that. And that
6 was the rationale for our SPLP sampling design
7 for -- for salt.

8 The results for all of those -- and we did
9 that in -- let me say we did that in each of the
10 operational areas, and the results for all of
11 those samples in leachate were less than
12 250 milligrams per liter. Now, you know, that is
13 not a standard for this Class 3 groundwater, but
14 what that indicates to -- to me is that the salt
15 remaining in soil at the site is not a threat to
16 the shallow groundwater, ultimately to potential
17 receiving surface water, or to the underlying
18 USDW, for which a 250 aesthetic standard would be
19 applicable.

20 Let me move to groundwater and what we --
21 how we studied and what we know about salt in
22 groundwater. It was a focus of our investigation.
23 I believe it's actually the only site-related COC
24 in groundwater, and that is chlorides, TDS. While
25 we don't have a numeric standard, our -- for

1 groundwater for salt, because of this being a
2 Class 3 groundwater in an estuarine subsegment, we
3 then focused on confirming the lateral
4 delineation, and that's -- we'll move into that
5 right now.

6 Q Yeah. Absolutely. So we are, Ms. Levert,
7 going to move now into the groundwater RECAP
8 assessment and again, encourage at any time for
9 the panel to stop us if there are any questions,
10 as this will -- the groundwater piece will be
11 the -- the kind of last big piece before we get to
12 your response to the landowner comments.

13 A Right.

14 Q So let's talk about your groundwater RECAP
15 assessment.

16 A Okay. Okay. The scope of our groundwater
17 assessment included addressing the shallow
18 water-bearing zone that, as Dave talked a lot
19 about, is encountered within the upper ten feet.
20 In general, it's less than five feet thick. We
21 have a dataset for 18 wells across this -- this
22 area -- this piece of property, and the data was
23 evaluated using a screening option as the first
24 step and then moving into MO-1 to incorporate our
25 groundwater classification.

1 And, again, the dataset collected between
2 2016 and 2022, I would describe as meeting the
3 requirements of definitive data with the -- with
4 the acknowledgment of that -- that concern about
5 turbidity for the metals. There was actually no
6 groundwater data collected by Commercial
7 Maintenance in that 2015 work.

8 Q Thank you. And let's -- you've got
9 another screening evaluation table, Table 8-A.
10 That is -- bears Bates label 2422. And can you
11 describe for the panel and highlight what you have
12 here in this table?

13 A Good. So, of course, same structure as we
14 saw previously with the soil. And the screening
15 standard here is the RECAP screening standard, you
16 know, straight out of Table 1 of RECAP, but I have
17 also included the SMCLs as part of the screening
18 evaluation.

19 The maximum concentrations you see
20 reflected in two columns, one being the total --
21 or unfiltered samples, and where filter samples
22 were collected, and that is when we, ERM, was --
23 was present to split for sampling, we do have the
24 dissolved results reflected in the final column.

25 Now, the way that this table differs --

1 8-A differs from Table 8 that was provided as part
2 of the limited admission is, again, we've
3 incorporated -- there were two new wells installed
4 by Southland after the limited admission was
5 submitted, and so this incorporates the two new
6 wells. It also corrects some units for some
7 fractions that in the original table just were in
8 the wrong unit; so there was a correction there.

9 Q Okay. We've talked a couple of times
10 about supplemental -- the need for supplemental
11 tables based upon the Southland testing that was
12 done after the limited admission plan. You
13 analyzed all of that data. Correct?

14 A That's right. That's right. And it did
15 include Southland's own results from their
16 laboratory, and we were there for splitting, and
17 so it did bring some additional data into the mix,
18 yes.

19 Q And from your RECAP perspective, even
20 though there was additional data, which I know,
21 gives you, Ms. Levert, some comfort, it did not
22 change your conclusions from a RECAP standpoint.
23 Correct?

24 A That's correct. And so in the
25 supplement -- in the narrative of the supplement,

1 that is, in fact, what we, you know, submitted to
2 the agency, these tables provide the quantitative
3 backup for that conclusion. That's right.

4 Studying -- you know, based upon my study of
5 the laboratory results, the sampling methodology,
6 the notes on the turbidity, I have concluded that
7 the site-related COCs as defined by RECAP for --
8 for this property are the salt indicators,
9 chloride and TDS.

10 I want to give you a little bit of detail
11 on the metals, and I have highlighted them where
12 the metals concentrations do exceed the screening
13 standard but to fill in some of those details and
14 so you have it, you know, for your review. In the
15 case of mercury, here, the concentration that was
16 above the screening standard, there was a split
17 unfiltered sample that did not confirm an
18 exceedance of screening. There was also a
19 filtered sample that did not -- our filtered
20 sample that did not confirm the exceedance.

21 In the case of the max concentrations for
22 arsenic, chrome, and lead, the concentrations
23 reflect samples -- they are from samples that were
24 collected by Acadian in their temp wells. There
25 were no splits; there were no filtered samples.

1 So, unfortunately, we don't have that data to --
2 to share or examine. But we, ERM, installed a
3 well in the location where the maximum
4 concentrations were reported for these metals, you
5 know, in that -- as close as we could to that
6 area, and that is, again, MW-4, and our sample
7 from our properly constructed or permanent monitor
8 well did not reflect elevated metals, and that was
9 true in both the totals and the -- the dissolved
10 results for -- for that well.

11 So, again, I think that those are an
12 artifact of sampling, and I -- to me, that is
13 supported by the fact that the metals were not
14 elevated in soil, not arsenic, chrome, lead,
15 mercury, and not even barium. This is a site
16 where we're -- we're not identifying barium as a
17 COC in soil or in groundwater. So site-related
18 COCs are the salt indicators. But, as I
19 mentioned, I did prepare for the agency's review
20 and -- and, for the record, an MO-1 that looked at
21 the metals.

22 Q And go back to that last slide, please, --

23 A Yep.

24 Q -- if you can. I think that says down
25 there in that note that the MO-1 evaluation of

1 metals was performed in Table 7.

2 A That's right.

3 Q But I think -- and I'm showing you part of
4 Exhibit 45 now. I think it was table 9-A.
5 Correct?

6 A Yes, it is.

7 Q That's okay.

8 A So that's an error. Sorry.

9 Q That's okay.

10 A 9-A.

11 Q 9-A is the table that has the MO-1
12 evaluation for metals; so I just --

13 A Yeah.

14 Q -- wanted to point that out. Don't feel
15 bad. You're all right. So let's move on to your
16 groundwater MO-1 assessment that was part of 9-A.

17 A Good. So let me give you the -- the quick
18 details on that as the basis for what we will look
19 at in just a minute, which is that -- that
20 Table 9-A. Moving into the management option,
21 here we incorporate the classification, which, as
22 Dave described, is Class 3 based upon our slug
23 testing and the absence of use of this zone at the
24 site or within a mile. That means we're looking
25 at the groundwater-to-surface-water pathway. Flow

1 is generally to the southwest. We have assumed
2 that groundwater may discharge, could discharge,
3 to the nearest down-gradient surface waterbody.
4 So that is this feature running east-west. And so
5 that was the basis for developing the numeric
6 standards for the nonsalt constituents.

7 Now, this subsegment is designated for
8 primary and secondary contact recreation and fish
9 and wildlife propagation, so not a drinking water
10 supply. This would be an NDW segment. And so our
11 numeric standards for the metals are GW-3 and DW
12 standards and, again, no promulgated standard for
13 chloride for the surface water subsegment and,
14 therefore, not for groundwater.

15 Q Ms. Levert --

16 A This is 10-A.

17 Q This is 10-A. You got it.

18 A Am I wrong?

19 Q No, ma'am.

20 A Is it 9-A?

21 Q No, ma'am. Oh, yes. Yes, it's 9-A.

22 That's okay.

23 A Okay.

24 Q Look, we are -- because I know how much of
25 a stickler you are, we are going to correct those

1 before we send it --

2 A Thank you.

3 Q -- on Bates labeled to the panel.

4 A Okay. Thank you.

5 Q So this is that MO-1 evaluation table that
6 we discussed. Correct?

7 A That's correct.

8 Q And you put this together. Right?

9 A I put this together.

10 Q And that's true of all of the tables?

11 A I prepared the tables. That is correct.

12 Q Okay.

13 A That's correct. And I know this will be
14 familiar to the reviewers. We have the initial
15 GW-3 and DW value for the metals, the dilution
16 attenuation factor based on distance and thickness
17 of the water-bearing zone to arrive at our final
18 standard. And the maximum concentrations in those
19 unfiltered samples are what you see here in this
20 final column as the compliance concentrations.

21 And you can see my "H" notation here
22 indicating no numeric standard for the surface
23 waterbodies for chloride and TDS, and this
24 supports the conclusion that there is no threat to
25 down-gradient surface water quality based upon the

1 potential presence of these metals and the
2 presence of the chlorides and TDS remaining in
3 groundwater in the area of the former facility.

4 Q Thank you very much. So with all of that
5 analysis, and you know that we like to -- as
6 lawyers involved here, you know, we like to say it
7 and then say it again. And so, if you could, just
8 quickly go through your groundwater summary based
9 on all of that analysis.

10 A Important to me is the fact that there is
11 no direct exposure to groundwater. This is not a
12 viable water supply, the shallow groundwater.
13 There is no current direct exposure. There is no
14 risk associated with that. It's not a potential
15 future water supply.

16 Given that it's Class 3, we have evaluated
17 the potential groundwater-to-surface-water
18 discharge pathway and find the concentrations to
19 be protective of potential receiving waterbodies.
20 Based upon that, corrective action for groundwater
21 is not required to comply with RECAP.

22 Q And so with both the soil and groundwater,
23 no corrective action required?

24 A That's correct.

25 Q All right. So let's talk about the

1 groundwater chloride delineation as you have on --
2 on your next slide. And Mr. Angle talked about
3 this a lot, too; so I don't want you to spend a
4 whole lot of time on it.

5 A Right.

6 Q But, you know from your RECAP standpoint.

7 A Right. So we -- we talked about the fact
8 that there is not a numeric standard that we are
9 working with for this Class 3 groundwater given
10 the subsegment. But, again, delineation remains
11 an objective of RECAP, and I know it's a --
12 something that the panel looks at very closely,
13 and I -- we are able to demonstrate that we are
14 delineated for chlorides, the site-related COC,
15 relative to screening standards, and it suggests
16 to me the fact that we are delineated basically
17 to -- to what we believe to be background, that,
18 in fact, there -- there is not a discharge of
19 chlorides to any receiving surface waterbody.

20 Q And so your delineation here from a RECAP
21 standpoint is to screening standards on both soil
22 and groundwater?

23 A That -- that's correct. Right.

24 Q So the last thing that we're going to
25 discuss is -- and Mr. Angle talked about a few of

1 the things that were brought up by Brent Bray on
2 behalf of the landowner in his letter on
3 February 14 to LDNR. You had one additional thing
4 that you wanted to point out here. Correct?

5 A I did. I did.

6 Q And that is the -- you know, the comment
7 was that the restoration of soil and groundwater
8 background concentrations is the only way to
9 ensure unrestricted future use of the Drew
10 Estate tract -- Drew Estate tract. You disagree?

11 A Correct. I do not agree with that -- with
12 that statement, and I -- I don't see a basis
13 provided for that statement. And we have a basis
14 for responding to that, and that is that RECAP
15 provides an objective scientific methodology for
16 evaluating whether the concentrations that remain
17 at the site are protective for future land uses.

18 It's applicable. It's -- it's relevant
19 scientifically and by regulation. Background is
20 not the standard for unrestricted use. RECAP
21 provides risk-based standards in the nonindustrial
22 standard methodology for determining whether
23 concentrations are protective for unrestricted
24 use. So we've applied that here and the
25 concentrations are less than the risk-based

1 standards, protective for residential, for ongoing
2 use, and for unrestricted use.

3 In addition, with regard to groundwater,
4 there is not a reasonable beneficial use for this
5 Class 3 groundwater that has been impaired, and so
6 I do disagree with this, and I believe that RECAP
7 provides a -- an objective method for responding.

8 Q Thank you, Ms. Levert. So in the future,
9 this property can be used for any purposes under
10 RECAP?

11 A That's correct. No restrictions.

12 Q So let's move on to your summary of your
13 opinions here. Ms. Levert, after all of your
14 study of the data and your analysis here based
15 upon RECAP, can you please provide the panel with
16 your opinions?

17 A Uh-huh. For both soil and groundwater, I
18 do think that the delineation that was performed
19 here is appropriate. I think it complies with
20 RECAP; so I don't believe that further
21 investigation is really needed to -- in order to
22 support a full RECAP evaluation or to meet the
23 requirements of RECAP.

24 The quantitative evaluation indicates that
25 concentrations in soil and groundwater are

1 protective of human health. They comply with
2 RECAP at the screening, or MO-1 level in the case
3 of groundwater, and that these conditions are
4 protective for the ongoing use and for a full
5 range of potential future uses.

6 Q Ms. Levert, as always, thank you very much
7 for your very detailed RECAP analysis and
8 explanation supporting that.

9 MR. FUNDERBURK:

10 At this time I would say I'm done
11 with my questioning of you, and we'll pass it
12 to the panel for any questions that they may
13 have.

14 (TECHNICAL DIFFICULTY)

15 THE HEARING OFFICER:

16 . . . ask questions?

17 THE WITNESS:

18 There they are.

19 THE HEARING OFFICER:

20 I presume that . . . Mr. Ritchie.
21 Also, before I turn it over to . . .

22 (TECHNICAL DIFFICULTY)

23 THE COURT REPORTER:

24 Mr. Balhoff --

25 MR. FUNDERBURK:

1 Mr. Balhoff, you're -- I'm not sure
2 if it's just us, and we'll find out, but I'm
3 only getting bits and pieces of what you're
4 saying right there. It was kind of garbled.

5 THE HEARING OFFICER:

6 Can you hear me?

7 MR. FUNDERBURK:

8 I could hear that, but it sounds like
9 it's still kind of pausing. I don't know if
10 it's an internet connection issue or
11 something.

12 THE HEARING OFFICER:

13 Can you hear me now?

14 MR. FUNDERBURK:

15 More or less.

16 MR. SNELGROVE:

17 Can you hear me . . .

18 MR. FUNDERBURK:

19 It's still doing that kind of
20 in-and-out thing with an internet type
21 bandwidth issue, and I don't know if it is us
22 in this room or if it's everyone.

23 THE HEARING OFFICER:

24 Can you hear me?

25 MR. FUNDERBURK:

1 Yes.

2 THE COURT REPORTER:

3 It's still cutting in and out.

4 MR. FUNDERBURK:

5 I think it's --

6 THE HEARING OFFICER:

7 We'll try one more time.

8 MR. FUNDERBURK:

9 We are having a -- I'm sorry. We're
10 having the problem here in this room and,
11 apparently, nobody else.

12 THE WITNESS:

13 We'll just need to disconnect and
14 reconnect?

15 MR. FUNDERBURK:

16 Yeah. Maybe if you shut yours down,
17 Angela, I can turn mine on.

18 THE WITNESS:

19 Okay. Let's give that a try.

20 (OFF THE RECORD)

21 THE HEARING OFFICER:

22 My question was, last week when
23 Mr. Ritchie testified -- and I forgot to ask
24 it this morning. Is anybody for the landowner
25 on the feed? If so, I would invite them to

1 ask questions. I'm assuming they're not on
2 the feed, but if they are, please speak up.

3 (NO RESPONSE)

4 THE HEARING OFFICER:

5 Okay. Second thing I was going to
6 say, I know we got the PowerPoint sent to us
7 for Mr. Ritchie, and I presume PowerPoints for
8 the two witnesses today will be sent to us.
9 Is that correct?

10 MR. FUNDERBURK:

11 Yes, sir.

12 THE HEARING OFFICER:

13 Okay. So I'm going to ask
14 Mr. Snelgrove, do you want to -- you want a
15 couple of minutes to talk privately before you
16 start, or you want to proceed?

17 MR. SNELGROVE:

18 Just give us about -- you know, just
19 a couple of minutes.

20 THE HEARING OFFICER:

21 Well, just -- I'm going to step
22 outside. They're going to -- they're going to
23 shut it down and mute it, and they'll take
24 about two minutes or three minutes, and we'll
25 be back.

1 MR. FUNDERBURK:

2 Thank you very much.

3 (RECESS TAKEN)

4 THE HEARING OFFICER:

5 Okay, John. Can you hear me?

6 MR. FUNDERBURK:

7 Yes, sir.

8 THE HEARING OFFICER:

9 Okay. So there is going to be a
10 question for Ms. Levert in a second. I have
11 another question before we start that.
12 Because there was a question from one of the
13 panelists, maybe Mr. Snelgrove, -- I can't
14 remember -- about some testimony -- he was
15 asking Mr. Angle something, and maybe it was
16 deferred to Mr. Ritchie. Mr. Ritchie is
17 listening on the line. Will he be able to
18 answer a question if Mr. Snelgrove or one of
19 the panelists has a question for Mr. Ritchie
20 after we finish with Ms. Levert?

21 MR. FUNDERBURK:

22 I'm sure that he can. I -- I don't
23 know that he necessarily dressed for the
24 occasion. So --

25 THE HEARING OFFICER:

1 That's okay. That's okay.

2 MR. FUNDERBURK:

3 -- we'll have to cut him a little
4 slack.

5 THE HEARING OFFICER:

6 We're not -- we're not worried about
7 that.

8 MR. SNELGROVE:

9 Don't have to see him, just hear him.

10 THE HEARING OFFICER:

11 Yeah. Why don't we see what he looks
12 like? I mean, seriously. I mean, we have a
13 panelist here wearing jeans. I want you to
14 know that.

15 MR. FUNDERBURK:

16 Okay. Good deal. And --

17 THE HEARING OFFICER:

18 Okay. Okay. The question -- we're
19 going to direct the question to Ms. Levert
20 right now. Go ahead.

21 MR. SNELGROVE:

22 Good morning -- good afternoon.

23 THE HEARING OFFICER:

24 Wait a minute.

25 MR. SNELGROVE:

1 And thank you for your testimony, --

2 THE WITNESS:

3 Thanks, Gary.

4 MR. SNELGROVE:

5 -- your presentation. Just a point
6 of clarification that we had on the data that
7 you -- when you went through your validation
8 process for soil data, there -- there was a
9 set of data that you had concluded that would
10 not be useful for the reasons you explained.

11 It -- I was going back and reviewing
12 through the -- the plan and the documents and
13 the appendices that were provided. I don't
14 recall seeing that dataset. Was it included
15 in here? And, if so, can you just tell me
16 where to go to find it?

17 THE WITNESS:

18 It's attached to the supplement. It
19 is the data, and it literally is just data
20 sheets provided by Commercial Maintenance.
21 I'm trying to remember which appendix it is to
22 the supplement, but, yes, it's attached to the
23 supplement. And, Gary the only data that
24 they -- I wouldn't say the only data. The
25 data that they generated was entirely soil.

1 It was metals and oil and grease and -- and
2 salt. And salt, yeah.

3 MR. SNELGROVE:

4 Okay. I think I see it. It's
5 Attachment 3 maybe of the supplement?

6 THE WITNESS:

7 That's it. That's it.

8 MR. SNELGROVE:

9 25 -- 2016 -- "2015-2016 Data," it's
10 titled?

11 THE WITNESS:

12 That's it. And, look, --

13 MR. SNELGROVE:

14 Okay.

15 THE WITNESS:

16 -- you see the -- the company name
17 under Petroleum Labs, "Commercial Management"?
18 That's it.

19 MR. SNELGROVE:

20 Yeah, I see it. Perfect. Yeah. It
21 was just eluding me. I couldn't find it. And
22 not that I was questioning the process that
23 you went through, I just wanted to make sure
24 we had -- had a record of it.

25 THE WITNESS:

1 Yeah. And then the figure -- the
2 figure associated with that that shows where
3 those samples were collected, you have to go
4 pretty far back, I think, into that appendix
5 to find it, but it's there.

6 MR. SNELGROVE:

7 Okay.

8 THE WITNESS:

9 Yeah.

10 MR. SNELGROVE:

11 And thank you very much for that
12 clarification. That's all we had.

13 THE WITNESS:

14 You're welcome. Thank you for the
15 opportunity.

16 THE HEARING OFFICER:

17 Yeah, Ms. Levert, thank you very
18 much.

19 THE WITNESS:

20 Thank you.

21 THE HEARING OFFICER:

22 If you could, provide Mr. Ritchie
23 now. Thank you. Thank you.

24 MR. RITCHIE:

25 Yeah, I'm here, if there are some

1 questions for me as well.

2 THE HEARING OFFICER:

3 Who is that?

4 MR. SNELGROVE:

5 Okay. This is --

6 MR. RITCHIE:

7 This is Mr. Ritchie.

8 MR. SNELGROVE:

9 Okay. So I can now proceed with
10 asking questions to Mr. Ritchie?

11 MR. FUNDERBURK:

12 Yes. From our end, absolutely.

13 THE HEARING OFFICER:

14 Okay. Go ahead.

15 MR. SNELGROVE:

16 Okay. Thank you very much. Yeah.

17 So I -- well, let me ask, first, were you
18 on -- were you listening in whenever the
19 question was asked of Mr. Angle about the tree
20 line to the east of the property?

21 MR. RITCHIE:

22 I was, yes. And if you have some
23 questions about that, I do have some responses
24 to that questioning.

25 MR. SNELGROVE:

1 Okay. So I don't really need to go
2 through the details of the question per se,
3 but just for the record, the question was,
4 in -- you know, in summary, --

5 THE HEARING OFFICER:

6 Before you say that, Mr. Ritchie,
7 just for the record, you were sworn in the
8 other day. You're continued to be sworn in.
9 Is that fair?

10 MR. RITCHIE:

11 That is, and I still abide by that.

12 THE HEARING OFFICER:

13 Okay. That's fine. Go ahead, sir.

14 MR. SNELGROVE:

15 Okay. So the question about the tree
16 line, the tree -- the tree -- there were trees
17 that existed to the east of the property
18 that -- and were removed sometime in 2018,
19 2019, as I recall. The question was -- and I
20 had asked -- I had asked you in your testimony
21 the day before, on -- on Thursday, about the
22 representativeness of the species that were
23 selected to -- for you to make your root zone
24 study and in particular about the two types of
25 trees, the live oak and the sugarberry they

1 had there.

2 So not knowing if you were able to
3 see the trees that were in the tree line to
4 the east, which would have been nearest, as I
5 appreciate it, even nearer to the property
6 under investigation than the two tree -- the
7 trees that were selected to the north where
8 the live oak and the sugarberry were -- the
9 question was whether or not the trees that
10 were in that tree line would have been
11 different than -- or would have -- have
12 changed your selection of species
13 representative of the effective root zone --
14 would there have been -- were those brush, or
15 were they similar type of species, like
16 live oak and sugarberry, or -- you know, I'm
17 just looking for some information to
18 understand what was there, obviously growing,
19 and, to some extent, maybe not thriving -- we
20 don't know because we didn't see it. I
21 didn't -- but just -- just looking for
22 representativeness of -- of what was selected
23 versus what was perhaps growing, and would
24 there have been any difference in the species
25 selected if you would have had the opportunity

1 to go to the tree line that was removed.

2 MR. RITCHIE:

3 And thank you for that question. And
4 just -- just to discuss this point, we --
5 "we," being, again, Dr. Holloway and I.
6 During our investigation, we did go to the
7 fence line. We did observe some trees that
8 were along the fence line, and they were
9 live oaks. So they were representative of the
10 species that we selected.

11 I'm thinking now and kind of
12 referencing and looking at my -- our expert
13 report. We did take some photos that, I
14 believe, were not provided because they were
15 outside of our investigation, but we could
16 provide some of that information and some of
17 those photos of those areas supplement to this
18 at a later date, if -- if needed.

19 But, yes, they -- they were
20 representative, similar growth habit. Yeah.
21 So the photos you could see small -- they were
22 smaller trees than the one that we
23 investigated by observations. Again, we
24 didn't take measurements of these trees but
25 just based on our general observations, but it

1 had similar rooting patterns. We saw the
2 roots growing all along the surface there,
3 which, again, like, I said, if needed, we
4 would be able to provide some additional
5 photographs that we took of that site that
6 were not included in our report, like I said,
7 because it was not part of our site
8 investigation on site, just general
9 observations that we took.

10 MR. SNELGROVE:

11 Okay. Well, I think your opinion
12 certainly would be -- and what you did observe
13 and you reported on the record is acceptable
14 for -- for proof, or evidence, you know,
15 having -- having been under oath and
16 testifying.

17 MR. RITCHIE:

18 Yes.

19 MR. SNELGROVE:

20 So I'm not too sure that we can
21 receive anything -- any additional information
22 of such. I don't -- don't know procedurally
23 if that -- if we could do that. Yeah. So I
24 guess I'm okay with -- with where we are --
25 with what you've testified --

1 MR. RITCHIE:

2 Okay.

3 MR. SNELGROVE:

4 -- on that particular issue. I
5 believe that's all I had. Did I have another
6 question other than the tree line? I know
7 that was --

8 MS. LOVE:

9 I don't have any questions.

10 MR. OLIVIER:

11 I'm fine.

12 MR. SNELGROVE:

13 The specie representation. Okay.

14 Okay. Thank you, Mr. Ritchie.

15 MR. RITCHIE:

16 Thank you.

17 THE HEARING OFFICER:

18 Okay. Back on the record. John,
19 are you there?

20 MR. FUNDERBURK:

21 Yes, sir.

22 THE HEARING OFFICER:

23 Okay. We -- any other evidence
24 before we close the hearing? Once we close
25 the hearing, I want to make a comment off the

1 record. I want to -- I want to understand
2 procedurally where we're at. But any other
3 evidence before we close this record?

4 MR. FUNDERBURK:

5 No, there's no other evidence. I was
6 just going to give a brief closing just to
7 wrap this up on our end.

8 THE HEARING OFFICER:

9 Okay. That's fine. Go ahead.

10 MR. FUNDERBURK:

11 And really I just wanted to thank the
12 panel, and thank you, Mr. Balhoff, for your
13 time and attention in this -- really what
14 amounted to be about a one-day hearing. And I
15 hope that we were able to answer any questions
16 that you had. The presentations here, we
17 believe, showed a very robust set of sampling,
18 full delineation on the property. And we do
19 believe that, you know, the Neumin limited
20 admission plan is the most feasible plan to
21 address the environmental damage on the site.
22 So thank you again for all of your time, and I
23 think that can close it up.

24 THE HEARING OFFICER:

25 Okay. So we're going to -- okay.

1 Everybody stay on the feed, but we're going to
2 close the record for this proceeding. Thank
3 you very much.

4 (OFF THE RECORD AT 12:43 P.M.)

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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 4th day of April, 2022, as set forth in the forgoing 196 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.

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