1 PUBLIC HEARING TYRONE MINE PUBLIC HEARING 2 3 4 5 6 7 August 16, 2022 5:08 p.m. HYBRID - SOME ATTENDEES APPEARING REMOTELY 8 9 10 11 12 HEARING OFFICER: MS. FELICIA ORTH 13 14 15 REPORTED BY: Peggy Jo Gonzales, RMR, CCR #145 Bean & Associates, Inc. 16 Professional Court Reporting Service 201 Third Street, Northwest, Suite 1630 17 Albuquerque, New Mexico 87102 18 19 20 (7039N-PJ) 21 22 23 24 25 MAIN OFFICE SANTA FE OFFICE 119 East Marcy, Suite 110 201 Third NW, Suite 1630 Santa Fe, NM 87501 Albuquerque, NM 87102 (505) 989-4949 J. Inc. FAX (505) 843-9492

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1	HEARING OFFICER ORTH: Good evening,
2	everyone. Can you hear me at the back of the room
3	there? Can you hear me? All right. Oops, let me
4	turn on my video. There.
5	Good evening, my name is Felicia Orth,
6	hearing officer appointed by the Mining and Minerals
7	Division to conduct a hearing this evening on the
8	Tyrone Mine Emma Project and closeout plan. This
9	regards an application filed by Freeport-McMoRan
10	Tyrone to expand the mine for the Emma Project and
11	revise the closeout plan.
12	The Tyrone mine is a copper mine located
13	approximately 10 miles south of Silver City, near the
14	town of Tyrone in Grant County, New Mexico. The
15	Mining and Mineral Division's permit number for the
16	mine is GR010RE.
17	This hearing is going to be conducted as a
18	hybrid event such that we have some dozens of you
19	here in the room at the Community Center here in
20	Silver City, and there are some dozens on the Cisco
21	WebEx virtual platform, and, ideally, those of you on
22	the virtual platform can see several parts of the
23	room here from the cameras. There's a camera on the
24	podium, there's a camera kind of far away from the
25	crowd here, and there will be well, there's a



1 camera on me.

2	So the hearing is to give the public an
3	opportunity to learn about and comment on the Emma
4	Project. Representatives of MMD are here. You see
5	these gentlemen here, and there are some others who
б	will make a presentation. Representatives of Tyrone
7	will make a presentation. We have some here and some
8	online. And representatives of the Gila Resources
9	Information Project or GRIP, again, some of them in
10	person, some of them online, will make presentations.
11	We'll also accept public comment. I'm
12	going to invite public comment after each of the
13	technical presentations, that is to say, after the
14	division, after Tyrone, after GRIP, and so there will
15	be plenty of opportunities. We'll also invite public
16	comment from folks attending on the virtual platform.
17	If, however, you have a public comment to make and
18	have a time constraint such that you cannot wait even
19	to see the division presentation, just raise your
20	hand and I'll take a few comments before we do even
21	that for folks with time constraints. Otherwise, you
22	can count on me inviting it after each of the three
23	presentations. Okay, I don't see any hands.
24	A few important things before we begin. No
25	decisions will be made tonight or this month. The

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1	testing testimony and comment offered tonight will
2	become part of the larger administrative record on
3	which the division director will base his decision.
4	All of that record can be found on the division
5	website.
6	The hearing will be conducted pursuant to
7	the Mining Commission's public participation rules,
8	which can be found in the New Mexico Administrative
9	Code at Section 19.10.9, especially Section 905.
10	This requires all testimony and comment be taken
11	under oath or affirmation and be subject to
12	questioning.
13	If you'd like to submit a written comment
14	instead, or in addition to your oral comment for the
15	record, you may send that to the division director
16	directly. His name is Jerry Schoeppner, and his
17	address is in Santa Fe at 1220 South St. Francis
18	Drive. That address can be obtained from any of the
19	staff here and, also, on the web page.
20	Please do not for those on the virtual
21	platform, please do not try to use the chat function
22	to offer public comment. The chat function is only
23	to indicate that you'd like to offer public comment
24	or to type out a question you might have for someone
25	else, and it will go only to the technical hosts'

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1	division staff serving as technical hosts on the
2	platform.
3	For all of those offering public comment,
4	please collect your thoughts. I'll invite your
5	comment just once, and for only up to five minutes.
б	If you have something to add, please submit it in
7	your written comment. The deadline for written
8	comments and any post-hearing submissions that the
9	three parties would like to offer is August 31st.
10	August 31st. We already have some written
11	comments, for example, from Representative Terrazas
12	and Representative Dow, but the deadline is a couple
13	of weeks from now.
14	The hearing is being recorded and
15	transcribed by Peggy Gonzales, court reporter, and
16	because we are making a transcript of a hybrid event,
17	it will be a little more awkward and it will require
18	a little more patience from all of us than perhaps a
19	event that was only in person or only on the
20	platform. It's important that we identify ourselves
21	before we begin speaking.
22	And we will be going more slowly, as you'll
23	notice us up here having to turn off and on certain
24	devices for clarity of transmission. We had a very
25	long AV rehearsal this afternoon, and unless we have



1	only one laptop on and turn all the others off,
2	there's a lot of reverb. So you'll see us going
3	through that as as necessary.
4	And, Ms. Gonzales, please be sure to speak
5	up in the event you need to have a statement
6	repeated. We want to make an accurate transcript.
7	There are snacks at the back of the room,
8	along with a copy of the permit application, a few
9	site maps, notepads, pens, and an FMI handout on
10	economic benefits.
11	We will hear from the division first, then
12	FMI Tyrone, and then GRIP. As I said, I will invite
13	public comment between each of these. Please sign
14	in. The sign-in sheets are near the door there, if
15	you haven't done so. No salesmen will call. We use
16	the sign-in sheets well, I use them to call out
17	your names in the order in which you're signed in to
18	offer whatever comment you'd like, and for spelling
19	in the transcript, and as evidence of public
20	participation. And this is a good time to silence
21	your devices, please. They're disruptive if they
22	ring during someone's comment. Or set them on stun,
23	whatever it is you need to do.
24	So let's begin with the division panel.
25	And, Mr. Ohori, will you be introducing yourself



1 or...? Okay, if you would, please. 2 You should be able to see the PowerPoint on 3 the screen here in the room, and, also on the virtual 4 platform. So I'm going to be... 5 MR. OHORI: Thank you, Madame Hearing б Officer. 7 DAVID OHORI, 8 having been, later, duly sworn under oath, 9 presented as follows: 10 MR. OHORI: Good afternoon and welcome. 11 Thank you all for your attendance and participation. My name is David Ohori, that's O-H-O-R-I, and I am a 12 13 senior reclamation specialist for the Mining and 14 Minerals Division, and the permit lead for the Tyrone 15 Mine MMD permit. 16 This public hearing is being held in 17 reference to a permit revision 21-1 application for 18 the Emma Project proposed by the Tyrone Mine operated by Freeport-McMoRan Tyrone Operations. 19 20 This hearing has several purposes. First, 21 the Tyrone Mine will present information on the 22 Tyrone Emma Project and closeout plan. 23 MMD will describe its process to review the Tyrone Emma Project closeout plan in accordance with 24 25 the New Mexico Mining Act Rules.

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1	Next, the Gila Resources Information
2	Project will present their comments. And then as the
3	hearing officer has indicated, the public will be
4	asked to comment and ask questions of any of the
5	presenters in this public hearing.
6	The permit revision application is
7	regulated by the Mining and Minerals Division under
8	part 5 of the Mining Act Rules, which addresses
9	existing mining operations, and as that is mines
10	that produce marketable minerals for a total period
11	of at least two years between January 1, 1970, and
12	June 18, 1993. Tyrone is permitted as an existing
13	mine.
14	A permit revision under the Mining Act
15	Rules proposes significant changes to the MMD permit.
16	Significant changes include environmental impact,
17	significant changes to the financial assurance,
18	and/or significantly departs from the nature or scale
19	of the permit.
20	This application includes
21	closeout/reclamation and FA, or financial assistance
22	cost estimate. The application also includes proof
23	of public notices, a permit application fee, and any
24	additional information that is required by the
25	director of MMD.

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First, I'll briefly go over the permit
revision history of the Tyrone Mine with the Mining
and Minerals Division. The permit GR010RE was
approved by MMD in July 1996.
Revision 01-1, which incorporated the
closeout plan for the mine, was approved by MMD on
April 12, 2004.
Following that, revision 03-1 was approved
for the Copper Mountain south pit expansion in 2005.
Revision 10-1 renewed the open pit waiver;
that was approved in April of 2012.
And most recently, revision 09-1 reissued
the permit and approved the updated site-wide
closeout plan, and that was approved March of 2021.
Permit modifications differ from permit
revisions in that they are for changes to the mining
permit that are not as significant as permit
revisions. Examples of modifications that were
approved by MMD in the past for Tyrone were for
completed reclamation, financial assurance releases,
minor changes to reclamation requirements, addition
of waste rock piles, and changes to the financial
assurance instruments. Those are several examples.
There are other permit modifications that have been
approved.

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1	The application for revision 21-1 was
2	received by MMD in October of 2021. It was
3	supplemented with a closeout plan and third-party
4	reclamation cost estimate in November of 2021, and
5	the application was further updated with technical
6	information in 2021 and into 2022. The application
7	and the supplements are all on the MMD website.
8	For application for the application for
9	revision 21-1, Tyrone will present details on the
10	mining plan and closeout plan in their presentation.
11	The closeout plan supplements the approved closeout
12	plan for the other Tyrone Mine disturbances and
13	affected areas.
14	MMD has provided initial comments and the
15	comments from other state agencies to Tyrone on the
16	Emma Project, and Tyrone has submitted written
17	responses to those comments. MMD may, in the near
18	future, provide Tyrone with additional comments on
19	the proposed closeout plan.
20	Next I'd like to talk a little bit about
21	the MMD reclamation standards. These standards for
22	an existing mine are outlined in part 507 of the
23	Mining Act Rules, and they include the attainment of
24	a self-sustaining ecosystem, which is the goal of
25	reclamation. It is site-specific and it is life-zone

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appropriate.

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2	An additional feature of the part 507 rules
3	is the post-mining land use, or PMLU, and that is a
4	beneficial or multiple use established in the permit
5	area under mining. The PMLU is selected by the
6	landowner, in this case, Tyrone, and may include
7	active management of the land. The post-mining land
8	uses for the Emma Project that are proposed are
9	wildlife management and a water treatment and
10	management system.
11	Next, I'll talk a little bit about part 508
12	of the Mining Act Rules. Part 508 involves new
13	units, and new units are new discrete units that
14	requires consideration of mine operations as well as

having higher revegetation standards for the 15 16 reclamation that will be done. The Emma Project 17 application is being processed as a new unit to an 18 existing mine. New units require consideration of 19 operations to assure protection of human health and safety, the environment, wildlife, and include 20 21 minimizing negative impact to the hydrologic balance 22 of the new unit area and, potentially, affected 23 And as I said, it requires higher areas. 24 revegetation standards or, in this case, wildlife 25 habitat PMLU.

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1	The explication for the normit verticion
1	The application for the permit revision
2	also includes, as I stated previously, a financial
3	assurance cost estimate. In this case, the cost
4	estimate for the proposed Emma Project involves an
5	earthwork, water management and treatment capital
б	cost component of over \$5 million, an earthwork and
7	water treatment operations and maintenance costs of
8	almost \$7 million. And, at this point, the total
9	proposed closeout plan cost estimate is approximately
10	\$12,300,000. This total cost estimate is subject to
11	change based on additional review and comments by MMD
12	and the other state agencies by public comment.
13	I'd like to move on to where we are in this
14	permit revision process. A public hearing, which
15	we're having this evening, was requested by the Gila
16	Resources Information Project and others. MMD
17	requires holding a public hearing as pursuant to
18	part 9 of the New Mexico Mining Act Rules. MMD will
19	consider public comments from the public hearing in
20	its review of this revision application.
21	Moving forward, MMD is continuing its
22	review of the application. MMD's review is not
23	complete as of yet. This public hearing is held for
24	MMD to inform and receive comments from the public.
25	We will accept written comments until a date

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1announced by the hearing officer, which I believe is2August 31st.3Again, moving forward, MMD will review4written comments received after this hearing, and we5will answer relevant questions and address6requirements that the MMD director deems necessary.7In this process, Tyrone is required to8obtain an environmental determination from the9New Mexico Environment Department, or NMED, prior to10MMD's approval of this revision. NMED is also11processing changes to the Tyrone discharge permits,12which they oversee for the Emma Project and other13portions of the Tyrone Mine.14Tyrone will be required to propose a15financial assurance package, including FA16instruments, after MMD deems the application1718191919191910102021222324252526262728292930303132333434343535363637373839 <t< th=""><th></th><th>14</th></t<>		14
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25 application for revision 21-1 may be submitted to the	24	Again, written comments related to this
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1	MMD director at the following address: Director
2	Jerry Schoeppner, Mining and Minerals Division, 1220
3	South St. Francis Drive, Santa Fe, New Mexico 87505.
4	Thank you, and that is the conclusion of my
5	presentation.
6	HEARING OFFICER ORTH: All right, thank
7	you, Mr. Ohori. We did have a request that you leave
8	the mailing address up there a little bit longer.
9	And, Mr. Ohori, I neglected I was my
10	head was spinning from our AV rehearsal, and I
11	neglected to do two things. The first is to swear
12	you in. Put yourself on camera there, raise your
13	right hand.
14	(Mr. Ohori was duly sworn under oath.)
15	HEARING OFFICER ORTH: So the other
16	thing so we will have questions of you in the
17	event folks would like to ask questions.
18	If you are in the room and you have a
19	question of Mr. Ohori, please indicate that with a
20	raise of your hand. We will have to incorporate you
21	somehow into our hybrid sound system. And if you are
22	on the platform and have a question of Mr. Ohori,
23	please indicate what that question is in the chat.
24	The other thing I neglected to do is invite
25	Mr. Ohori's counsel to introduce himself. Mr. Wade,

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1	I believe you're on the platform. Would you like to
2	introduce yourself.
3	MR. WADE: Good afternoon. Gabriel Wade, I
4	am the legal counsel for the Mining and Minerals
5	Division. Can you hear me okay?
6	HEARING OFFICER ORTH: So hold on.
7	UNIDENTIFIED SPEAKER: Okay, Gabe.
8	MR. WADE: Can you hear me?
9	HEARING OFFICER ORTH: Yes, loud and clear.
10	MR. WADE: Should I introduce myself again?
11	HEARING OFFICER ORTH: Yes.
12	MR. WADE: Gabriel Wade. I am the legal
13	counsel for the Mining and Minerals Division.
14	HEARING OFFICER ORTH: Thank you very much.
15	I am not seeing questions typed into the
16	chat box.
17	Let me look around the room to see if
18	there's a questions for Mr. Ohori while we're
19	together this evening. Yes, sir, come on up, please.
20	MR. BECKER: My name is Dave Becker, that's
21	B-E-C-K-E-R, and my question is about the reclamation
22	provision for self-sustaining ecosystem. And it sort
23	of has two parts. One is what does that look like to
24	the MMD, and the second is I'm fairly new to the area
25	and I was driving up from Lordsburg a couple of weeks

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1	ago, stopped on Tyrone Road and saw there was a sign
2	that said, you know, look at the reclamation here.
3	And there was, you know, a little area that used to
4	be accessible that had some signage, but now is all
5	locked off, so I don't have didn't have any way to
6	get in and see what I was supposed to be looking at,
7	but I know high desert ecosystems fairly well, and
8	whatever I was looking at on those slopes was in no
9	way a self-sustaining ecosystem.
10	So when was that reclamation done, what
11	should it look like, and how does that factor into
12	what you folks are going to require for the Emma
13	plan?
14	MR. OHORI: Thank you for your question,
15	Mr. Becker. Questions. I hope I can answer them
16	appropriately and completely. When the requirements
17	for a self-sustaining ecosystem were applied for the
18	area that I believe you're talking about in the
19	southern mine area, that area of former leach
20	stockpiles was reclaimed approximately in the 2008 to
21	2012 time frame. I might be off here by a couple of
22	years either way. MMD has a requirement that in
23	order to demonstrate that a self-sustaining ecosystem
24	has been achieved, there are certain requirements,
25	and currently they include that the



	18
1	reestablishment of vegetation, in this case, for a
2	post-mining land use of wildlife habitat.
3	And the revegetation period is a minimum of
4	12 years. So that means that 12 years after the area
5	was seeded with an approved reclamation seed mix,
6	which includes perennial grasses, forbs, and shrubs,
7	that the area will, at a minimum of 12 years, meet
8	certain standards which, in this case, for Tyrone are
9	a comparison of the vegetation with a reference area,
10	the reference area being an area that is not not
11	impacted by mining and has a similar type of
12	vegetation regime.
13	So the area that you're speaking about has
14	not been approved by MMD for meeting the
15	self-sustaining ecosystem standard. There may be
16	additional reclamation work required in order for the
17	mine to meet that standard in the future.
18	And, hopefully, that answers your
19	questions. Certainly if you have other questions,
20	you may contact MMD and, in particular, me, and I can
21	try and do my best to answer those questions. Thank
22	you.
23	HEARING OFFICER ORTH: Are there any other
24	questions of Mr. Ohori?
25	Other presentations from the division? All



1 right, thank you very much. 2 We will then go to the first of three 3 public comment sessions. I will call off the names in the order in which I see them on the sign-in 4 5 sheets, and you can choose to make your comment now or later on this evening. 6 7 So the first person I have here is David 8 Rose. David Rose. Ah, would you like to make your 9 comment at this time? 10 MR. ROSE: Inaudible. HEARING OFFICER ORTH: Yes, I'm sorry. 11 12 It's the only way we can all hear you. DAVID ROSE, 13 14 after having been first duly sworn under oath, 15 presented as follows: 16 HEARING OFFICER ORTH: Thank you and if you 17 would spell your name and then make your statement. 18 MR. ROSE: My last name is spelled R-O-S-E, just like the flower. Okay, did you get that? Okay. 19 20 I'm a retired game warden from California, 21 and I did have some concerns to wildlife, and I'm not 22 sure that the person from MMD answered them, but the 23 water quality of the pit lake will exceed the water quality standards for selenium, cobalt, copper and 24 25 cadmium, which poses a risk to wildlife and would

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1	require permanent potential treatment and pumping
2	forever, so I think that Freeport should minimize the
3	area of the pit lake to mitigate risk to wildlife in
4	addition to standard wildlife deference deterrent
5	measures. Thank you.
6	HEARING OFFICER ORTH: Thank you very much,
7	Mr. Rose.
8	Diana Edwards is the next person I have
9	indicating a desire to offer comment. Would you like
10	to comment now?
11	(A discussion was held off the record.)
12	HEARING OFFICER ORTH: Ms. Edwards
13	indicated that she'd like to wait until after the
14	next presentation.
15	Harry Browne, would you like to offer your
16	comment at this time? All right, thank you. And I
17	will ask you first to do the oath. If you would
18	raise your right hand.
19	HARRY BROWNE,
20	after having been first duly sworn under oath,
21	presented as follows:
22	HEARING OFFICER ORTH: And please spell
23	your name and then begin your comment.
24	MR. BROWNE: Okay, thank you very much.
25	My name is Harry Browne, B-R-O-W-N is



	23
1	spelled like the color, but with an E at the end, and
2	I don't know that there are two ways to spell Harry.
3	I am a member of the Grant County Board of
4	Commissioners, but I'm not here on their behalf. I
5	want to make that clear. I'm here as myself, an
б	individual. My opinions certainly do not reflect any
7	sort of consensus or vote of the commission. I
8	should let you know that I'm also a board member of
9	Gila Resources Information Project. Again, I'm not
10	here representing them. I'm speaking as an
11	individual.
12	On the Grant County Commission, we have
13	spent a fair amount of time promoting and talking
14	about how to promote outdoor recreation as an
15	economic driver for this area. As we do that, I'm
16	really proud, actually, of my fellow commissioners
17	and myself, frankly, for being thoughtful in doing so
18	and learning from the experiences of other
19	communities where rushing too fast in that direction
20	has actually damaged local communities. I think
21	we're very careful that everything we do towards
22	outdoor recreation has in mind, at the same time,
23	improving the quality of life of our residents.
24	We're not just looking to make tourist dollars, we're
25	looking to improve our quality of life and have



1 additional economic benefits.

2 I would hope the same philosophy applies to 3 how the MMD considers the application for expansion of the Tyrone Mine permit in the sense that we know 4 5 this will bring economic benefits, we need copper, 6 the world needs copper, we need jobs, the county 7 benefits from those jobs and from the taxes that the 8 production of copper generate and that those jobs 9 generate, but we should not expect residents to pay 10 with a deterioration of their quality of life. And in particular, we shouldn't expect any subset of 11 residents to pay. It's just not right to say certain 12 people need to suffer so that the rest of us can 13 benefit. 14

15 And I do trust that that is something the 16 MMD will keep in mind, but in specific I hope that, 17 A, you will approve this application or a slight 18 modification of this application because we do need 19 those jobs and we do need that production. But, B, I 20 hope you will include actual -- requirements with actual teeth for how the expansion affects its 21 22 neighbors and the county as a whole. And in 23 particular I'm concerned about potential impacts on water supply, the water quality, air quality in night 24 25 skies.

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1	I believe we'll be hearing a lot more about
2	all those things. In particular, I hope you will
3	include requirements for regular monitoring of the
4	wells in that area to make sure that they're not
5	being negatively impacted by the mine's operations.
6	I actually hope that you will require an improvement
7	in the data collection and the modeling that's been
8	done so far so that, before we even get started, we
9	have a more accurate idea of what the effects might
10	be. I'm sure more people will be talking to that
11	later on.
12	I hope you will require air quality
13	monitoring. The dust generated by these operations
14	is significant. It has been greatly reduced by the
15	reclamation of inactive units, which has been a huge
16	improvement to this area, but I don't want us to lose
17	sight of the fact that we need to make sure that
18	particulate matter is contained on-site. The
19	particulate matter, among other things, makes worse
20	the effects on the night skies by continuing to
21	refract light even at night if the if the dust
22	remains in the atmosphere.
23	And last, the night skies that I mentioned,
24	we're very proud of our night skies here. We have
25	attracted a large number of folks who are interested



1	in astronomy. Some of them have had professions in
2	astronomy. It's amazing the quality of folks who
3	have moved here, some of their backgrounds, and that
4	is because of our dark night skies.
5	Obviously, we already have the impact of
6	two major mines. I read the light report that's
7	included in the MMD page for this application and I
8	read that it concluded there will be no significant
9	additional impact of this operation. Frankly, I
10	found it a little hard to believe. It's obviously
11	not my area. I'm just reacting with my gut that
12	saying that this additional operation won't have an
13	impact counters my common sense.
14	In particular, it surprises me that it
15	wouldn't have an impact on folks that live a half
16	mile to a mile away. The report made some reference
17	to the nearest neighbor being about a mile away.
18	When I looked at the satellite photo and the scale
19	that was included on that, it looked to me more like
20	a half a mile. I would not want those folks to have
21	to suffer, their dark skies that they bought here and
22	moved here for, just because of this mine's
23	operations.
24	Thank you very much for this time. And by
25	the way, it's really good to see you again after,
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1	like, 20 years or something.
2	HEARING OFFICER ORTH: Thanks.
3	The next person indicating a desire to
4	offer comment is Christine Hess. Ms. Hess, would you
5	like to comment now or later?
6	Ms. Gonzales, Ms. Hess indicated she'd like
7	to wait until later.
8	Tony Trujillo, would you like to comment
9	now? Okay, we have a taker. Mr. Trujillo, I'll ask
10	you about the oath first, and then you can offer your
11	comment.
12	TONY TRUJILLO,
13	after having been first duly sworn under oath,
14	presented as follows:
15	MR. TRUJILLO: Madame Hearing Officer,
16	thank you very much for the opportunity to provide
17	this public comment.
18	My name is Tony, T-O-N-Y, Trujillo,
19	T-R-U-J-I-L-L-O. I am the registered lobbyist for
20	Freeport-McMoRan, and in that capacity am here only
21	to read you a statement that Senator Siah Correa
22	Hemphill asked me to read. She emailed me last
23	night, at 11:07 p.m. to be exact. She's at Chama,
24	New Mexico, at a Legislative Finance Committee
25	hearing; she asked if I would come for the public



1	hearing today, and read her statement into the
2	record.
3	Her statement reads as follows: Mining
4	jobs and tax revenue are the pillar of our economy in
5	Grant County. The Emma Project is very important to
6	extend the life of the Tyrone Mine and to maintain
7	mining jobs. The Emma Project will produce much
8	needed U.Sproduced copper, which is in demand for
9	renewal energy and electrification.
10	Freeport-McMoRan has demonstrated that it
11	takes environmental protection seriously, and does a
12	first-rate job of mine land reclamation. I
13	appreciate that Freeport-McMoRan has also
14	demonstrated a willingness to work with environmental
15	groups to address concerns and minimize harm.
16	I hope that MMD will issue the permit to
17	begin the project. Sincerely, Senator Correa
18	Hemphill.
19	HEARING OFFICER ORTH: Thank you very much,
20	Mr. Trujillo.
21	The next person indicating yes on the
22	sign-in sheet was Art Ratcliffe. Mr. Ratcliffe,
23	would you like to make your comment now?
24	MR. RATCLIFFE: Sure.
25	HEARING OFFICER ORTH: Thank you. I'll

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1	swear you in and then if you would spell your name.	21
1 2	ARTHUR RATCLIFFE,	
3	after having been first duly sworn under oath,	
4	presented as follows:	
т 5		
	MR. RATCLIFFE: My name is Arthur	
6	Ratcliffe. That's spelled A-R-T-H-U-R	
7	R-A-T-C-L-I-F-F-E. And I'm a resident of White	
8	Signal. I live about 2 miles away from the proposed	
9	Emma pit.	
10	Rising temperatures cause water to	
11	evaporate from land faster, making heat waves,	
12	droughts, and wildfires more frequent and intense.	
13	Over the past 50 years, scientists have measured an	
14	increase in the severity of these conditions	
15	worldwide.	
16	The Rio Grande was once a perennial river,	
17	though marked by periods of extreme drought and	
18	dotted by dry stretches. But as agriculture and	
19	municipal use took more and more of the water, the	
20	river slowly became intermittent, and by the mid	
21	1900s only 20 percent of its flow reached the mouth.	
22	This year the river has been hit by unprecedented	
23	drought in the lower Rio Grande; the border between	
24	Texas and Mexico is now dry for hundreds of miles.	
25	The Rhine River in Germany is nearly	



1 unnavigable. Record triple-digit temperatures have 2 been recorded worldwide. So as we find ourselves 3 heading into what scientists are calling a 1200 year extreme drought, we find our dwindling water supply 4 5 further threatened by the climate crisis and by 6 extractive industries. 7 A Freeport representative said to me in a 8 recent meeting, "We have been through droughts 9 before." Well, it's probably so, but not like this 10 one. 1200 years ago is about the time that native people left the area due to drought before this. 11 With triple-digit temperatures in Canada, Europe, and 12

13 North America, and melting ice caps, this is not a14 casual dry spell.

15 We, the residents of Loma Blanca 16 Subdivision, which is 2 miles away from the proposed 17 Emma pit, are naturally concerned about water table 18 levels as the proposed pit will intersect the groundwater table. The effects of drawdown on the 19 20 water table are uncertain. The cone of depression, 21 as per Freeport, will not extend to our subdivision. 22 However, according to the Little Rock MPO Amendment 23 Environmental Assessment of May 2022, Freeport installed a drawdown monitoring well at Burro 24 25 Mountain Homestead, which is 4 miles away from the

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1	Zittle Deck site of the Thursday Mine and which
1	Little Rock site at the Tyrone Mine and which
2	revealed a fluctuating groundwater level of 5 feet,
3	which Freeport maintains is due to climate.
4	It seems reasonable to conclude that since
5	climate change is a scientific fact and is supported
6	by their statement of "due to climate," then
7	subsequent drawdown will occur as the drought
8	worsens. The cone of depression will likely expand,
9	as well. Will any drawdown caused by the expansion
10	be attributed to "due to climate," as well, or will
11	the Emma Project exacerbate an already identified
12	critical condition. And who will ascertain whether
13	it is drawdown caused by the climate or by Emma?
14	According to projections made by Freeport
15	at 16.8 to 20 gallons per minute rate to dewater the
16	pit of combined groundwater and runoff, an
17	additional, approximately, 8 million gallon draw will
18	occur annually. This is unacceptable in an area just
19	2 miles from the site to believe that no additional
20	drawdown will occur.
21	Therefore, the residents of Loma Blanca
22	would like to see a mitigation plan before any
23	further water usage of this magnitude is permitted.
24	Assurances from Freeport are not enough. There needs
25	to be thought given to the possibilities expressed



1	previously, and a plan of mitigated action, should it
2	become necessary, needs to be included. This should
3	be done and a monitoring well should be implemented
4	in the Loma Blanca Subdivision before any further
5	permits are forthcoming.
6	In conclusion, as a military veteran with
7	PTSD, I am not looking forward to hearing the
8	explosive blastings, although I can probably survive
9	that, but no one can survive without water. So
10	please guarantee this precious life source for us,
11	the residents of Loma Blanca. Thank you.
12	HEARING OFFICER ORTH: Thank you. Please
13	hold your applause. Thank you very much,
14	Mr. Ratcliffe.
15	The next person indicating a desire to
16	offer comment is Gerald Billings. Mr. Billings,
17	would you like to comment now? Thank you. I'm going
18	to be asking for the oath first, and then you'll
19	spell your name and make your comment.
20	GERALD BILLINGS,
21	after having been first duly sworn under oath,
22	presented as follows:
23	MR. BILLINGS: My name is Gerald Billings,
24	G-E-R-A-L-D B-I-L-L-I-N-G-S. Thank you, Madame
25	Chair, members.

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1	I'm an elected member of the Grant County
2	Commission. I am not speaking for the commission.
3	Thank you for being here and welcome to Grant County.
4	My family and I own property and live in
5	close proximity to the proposed Emma Project. Our
6	property is directly across Highway 90 south from the
7	Apache Mountain Subdivision. We have several water
8	wells, at least six wells located in close proximity
9	to the Emma Project. Water from our wells is used to
10	water livestock and for domestic use, including
11	providing my family's drinking water.
12	We're not worried in the least that
13	Freeport will contaminate our groundwater or that the
14	water supply or the water table will be threatened.
15	Freeport has proven themselves to be responsible a
16	responsible neighbor. It's their best interest to be
17	so, and, in addition, they are well-regulated by the
18	Office of the State Engineer, the New Mexico
19	Environment Department, New Mexico Mining and
20	Minerals, thank you, New Mexico State Land Office and
21	others.
22	Freeport is continually made a target by
23	scrutiny from special interest groups, and they
24	simply can't afford to contaminate groundwater or dry
25	up someone's wells. Freeport has hundreds of

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1 monitoring wells. They are accountable, and they are 2 held accountable. We monitor the depth of our wells 3 on a regular basis, and we will know if the water table drops. My family has been neighbors with 4 5 Freeport or their predecessors, Phelps Dodge, since 6 1965, and we have known them to be good, accountable 7 neighbors. 8 Now, some have led us to believe that 9 there's little or no responsibility from Freeport, or 10 little or no regulation and oversight from the state, and that simply is not the case. As the world sees 11 the need to move towards more sustainable energy 12 options, I'd like to point out, for example, that the 13 use of electric vehicles necessitates four to six 14 15 times as much copper as conventional vehicles. Green 16 energy needs copper and lots of it. There's no 17 sustainable substitute -- sorry, there's no suitable 18 substitute for copper. Wouldn't we prefer that that copper for a sustainable future be extracted here in 19 20 New Mexico where we can do it safely, where it's 21 extremely well-regulated, even as compared to other 22 states where copper is extracted, but especially as 23 compared to other companies in the world where labor, environmental, and safety standards are lacking. 24 25 (A discussion was held off the record.)

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1	MR. BILLINGS: Freeport-McMoRan's
2	New Mexico operations have generated more than
3	\$366 million in economic impact for New Mexico in
4	2021. That's more than \$1 million per day. We
5	should feel good about that. The mines provide good
6	jobs here in Grant County, and copper mining is our
7	contribution to a clean, sustainable energy future
8	for America and the world.
9	I would ask that Freeport be allowed to
10	continue providing copper, providing jobs here in
11	Grant County, and they won't be able to do that if
12	the regulatory environment becomes unnecessarily
13	(inaudible). Thank you for what you do, and for I
14	ask that you please allow copper mining to continue
15	by approving the application for the Tyrone Mine and
16	the Emma Project.
17	HEARING OFFICER ORTH: Thank you,
18	Mr. Billings.
19	The next person indicating a wish to offer
20	public comment is Glenn Griffin. Mr. Griffin, would
21	you like to speak now? All right.
22	(A discussion was held off the record.)
23	HEARING OFFICER ORTH: Just make sure your
24	mouth and the mic move together and not apart, and,
25	also, remember to speak reasonably slowly, maybe a

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	3
1	little more slowly than you would in conversation.
2	GLENN GRIFFIN,
3	after having been first duly sworn under oath,
4	presented as follows:
5	HEARING OFFICER ORTH: Thank you, and spell
б	your name and then begin speaking.
7	MR. GRIFFIN: Glenn Griffin, G-L-E-N-N
8	G-R-I-F-F-I-N. I'm a resident of Silver City. I am
9	not paid by Freeport. I have no family employed by
10	Freeport, and I was not offered 100,000 to be a PR
11	person for Freeport. I am an individual, and not
12	paid by anyone to speak today.
13	I have a series of questions. I have been
14	in on the Little Rock Mine doubling and the earlier
15	Emma pit hearing. 500-year flood planning for
16	climate change. Freeport is stuck on 100-year flood
17	planning. With the changes in climate and the
18	increasing pulses and surges, Freeport needs to be
19	planning for 500-year flood events. Otherwise, all
20	their \$5.8 million worth of dirt work and water works
21	will get blown out, and the environment will catch
22	that.
23	Acre feet of lost groundwater. If you
24	combine the Little Rock doubling and their, I think
25	it is, 30-acre feet of water or 30 acres on top with

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1 the proposed Emma pit -- I don't know the acre foot 2 of the Emma pit lake, that seems to be hard to 3 find -- that's a lot of groundwater lost. So what amount of groundwater will these two lakes, the 4 5 Little Rock Mine lake and the Emma pit lake, how much fresh groundwater will Freeport be drawing from our 6 7 groundwater. 8 The value of the mine. I've got a little 9 bit of that tonight, 5.8, and I've got the other 10 figures here. Will Freeport actually pay property taxes on these improvements like the rest of us that 11 have businesses, but in millions of dollars. 12 It's a 13 great reduction for Freeport. But will they pay 14 They have a special exemption called property taxes? 15 the copper exemption, and they pay very little, less 16 than a million this year. 17 A cumulative environmental impact effects 18 of 5 feet pits, all adjacent. Are each pit figured 19 separately? It sounded like it tonight. Or do you 20 put them together, since they are all in the same 21 groundwater, the water flows from the Burro Mountain 22 Homestead, towards the Tyrone Mine, through the 23 Little Rock Mine. I believe it's a cumulative effect, not an individual effect. I believe the 24 25 cumulative environmental effects of 5 feet pits

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1 should be figured.

2	Will you have lime tailings? I didn't see
3	that in the Emma works. Lime tailings were here at
4	Cobre Mines in the '90s, and to Freeport's credit at
5	Chino there's supposed to be 500 acres of lime
б	tailings now. Something like the Green Amendment
7	(A discussion was held off the record.)
8	HEARING OFFICER ORTH: Back up just a
9	minute.
10	MR. GRIFFIN: Okay, I was referring to lime
11	tailings. Will the Emma pit, several hundred acres
12	of tailings, be lime. Something like the Green
13	Amendment would protect both mining jobs and
14	neighbors. The Green Amendment would allow for
15	Freeport to do more environmentally good work like
16	the Chino Chino's first lime tailings, keeping
17	heavy metals out of our groundwater and protecting
18	neighbors' groundwater.
19	The Green Amendment was unanimously voted
20	by the Grant County Democratic Party this winter
21	during the past legislative session. The Green
22	Amendment would protect the neighbors whereas what
23	we're talking about tonight may not protect them.
24	I'm going to read what we voted on this
25	winter. "Whereas the State of New Mexico Democratic

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1 Party maintains a safe, healthy environment where the 2 unmatched beauty of our land is preserved for future 3 generations, it is essential to its platform and our belief that the welfare of our community citizens is 4 5 critically important. The Grant County Democratic Party supports HJR2, the Green Amendment, allowing 6 7 voters to decide for themselves whether or not clean 8 and healthy air, water, soil, and environment should 9 be a state constitutional right." Thank you for your 10 time. 11 HEARING OFFICER ORTH: All right, thank 12 you, Mr. Griffin. 13 That is the last of the people 14 affirmatively indicating on the sign-in sheet that 15 they wish to comment. I will, again, solicit comment 16 from anyone, and you can certainly change your mind 17 and comment tonight, even if you said no here. 18 There are two more public comment sessions, 19 one after the FMI Tyrone presentation, which we're 20 about to have and the last public comment session 21 will be after the GRIP presentation. So any reason not to move to the FMI Tyrone 22 23 presentation? No. Let me invite Mr. Moellenberg, who I believe is on the platform, to introduce 24 25 himself.

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1 Hold on one second, Mr. Mollenberg. We 2 have to mute my device. 3 MR. MOLLENBERG: Good afternoon, Madame Hearing Officer, D-A-L-V-A M-O-E-L-L-E-N-B-E-R-G, 4 5 with Gallagher & Kennedy in Santa Fe, and I'm 6 appearing as counsel for Freeport-McMoRan. 7 HEARING OFFICER ORTH: Thank you 8 Mr. Moellenberg for introducing yourself. 9 I believe we turn now to Mr. Shelly and a 10 few other folks. How about if I swear you in, 11 Mr. Shelley, and then you can spell your name and continue with your presentation. 12 13 TOM SHELLEY, after having been first duly sworn under oath, 14 15 presented as follows: 16 MR. SHELLEY: Thank you, Madame Hearing Officer. 17 I will spell my name for the court 18 reporter. My name is Tom Shelley, T-O-M 19 S-H-E-L-E-Y. 20 I'm the environmental manager at Tyrone. Ι 21 really appreciate the Mining and Minerals Division 22 and you, Madame Hearing Officer, for organizing this 23 hearing for us. And I'm really grateful for everybody who came. 24 25 And I'm excited to get to introduce the

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1	Emma Project to my community. The Emma Project is
2	key to Tyrone's ten-year mine plan. It's critical to
3	keep the mine operating and to continue to produce
4	the positive economic benefit for our employees and
5	their families, and our community and state, for many
6	years to come.
7	Tyrone and its employees are part of our
8	local community, and we're very proud of the
9	responsible way that we produce copper, and that's
10	demonstrated recently by our achieving certification
11	under The Copper Mark in March of this year. We're
12	committed to the good business practices of the
13	organizations that we are a member of, and the Emma
14	Project has been advanced and proposed with these
15	commitments in mind.
16	We've held community meetings over the past
17	four years. We very much appreciate those who have
18	attended those meetings and given us comments and
19	concerns. We've listened to that input and have
20	incorporated it into our applications as appropriate.
21	Our Emma applications exceed or exceed
22	(sic) the requirements of important environmental
23	regulations, and others. The key focus of this
24	hearing is the Mining Act application on the top,
25	listed on the top there. It includes, as David

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	40
1	mentioned earlier, a permit application and a
2	closure/closeout plan.
3	I'd like to orient my community to the
4	project area. So the Emma Project is an expansion to
5	the existing Tyrone Mine. It's located in the
б	vicinity. It's just south of Tyrone Mine area. If
7	you you can see it on this figure as the red
8	outline, roughly. And just to give you a sense of
9	the scale of the project, it's that Tyrone Mine
10	area, the pit and the stockpiles immediately north of
11	it north is up on this figure is about 5,000
12	acres, and the area for the Emma Project covers about
13	400 acres.
14	Our closest neighbor to the project is the
15	Apache Mound Subdivision to the south. And the
16	closest resident or residential structure from the
17	edge of the open pit, the proposed open pit, to that
18	nearest residential structure is six-tenths of a
19	mile.
20	So zooming in to the project, I'd like to
21	give you an overview of the actual mine activities
22	that are being proposed. First of all, all of the
23	mine activities that we are proposing are on private
24	surface estate and mineral estate. And those mine
25	activities include, first, development of an open
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1	pit, which is within the area outlined in green on
2	this figure. As we develop that pit, the ore will be
3	transported to the Tyrone Mine on the haul road that
4	is outlined in yellow, and that ore will be processed
5	on existing facilities at Tyrone.
6	Now, the material that's removed or the
7	overburden rock and dirt will be segregated so that
8	the clean rock and dirt that is potentially useful
9	for reclamation in the future will be stockpiled at
10	two stockpiles, and they're outlined in dark red/
11	brown. One is one stockpile is close to the pit,
12	just to the north of it, and the other is located on
13	the current disturbance of Tyrone to the north.
14	Before any of these activities start, the
15	topsoil from the areas proposed for disturbance will
16	be salvaged and placed in a topsoil stockpile that's
17	outlined in light blue on this figure.
18	One other thing I wanted to point out on
19	this figure is the Tyrone Mine permit and design
20	limit boundary. It's outlined in dark blue. That
21	existing permit boundary encompasses about
22	11,000 acres. As part of the application, Tyrone is
23	proposing to expand the permit boundary to encompass
24	the area outlined in pink it's an area of about
25	336 acres to accommodate the mining activities



I've just described.

1

2 So this is a geologic cross-section. 3 Imagine we took a slice through the land, through the pit area, the proposed pit area, so I could 4 5 illustrate the proposed development of the open pit The -- the open pit at full development 6 for you. 7 will be about 550 feet deep. I'll also point out, on 8 this figure, the water table is shown in blue. And 9 that's approximately where it's located and it's 10 based on existing wells, monitor wells that we have at the site. 11 So when the permits are issued, the first 12 year -- or year one mining, we'll be salvaging the 13 14 soils, as I explained, and building the haul road, 15 and building a power line, and other infrastructure 16 needed for mining. If you'll advance one click. 17 During mine years two and three, the pit 18 bottom will advance to a depth of six -- to elevation 19 6150. Advance one more. Again. During mine year four, the pit bottom will 20 21 advance to approximately elevation 6,000. And during year five mining, the pit bottom 22 23 would advance to approximately elevation 5700. And it's during that mine activity that the groundwater 24 25 table will be intersected.

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So the bottom of the pit is approximately 1 2 200 feet below the water table. And during the 3 mining sequence I've outlined, we're required to protect surface water and groundwater, and we will do 4 5 that. So this table lists the key permits 6 7 required for the Emma Project. The water quality 8 protection permit was applied for in October of 2021. 9 It was deemed administratively complete, and it's 10 very common to receive additional comments and questions from the agencies and to interact with 11 them, reply and provide additional information, and 12 13 we're in that process right now as we work toward a 14 technical completeness determination. 15 The Tyrone air quality permit was reissued 16 last year and included the activities proposed for 17 the Emma Project. So this permit ensures that the 18 activities at Emma and Tryone do not cause exceedance 19 of New Mexico air quality standards for our 20 neighbors. 21 One of the key concerns that we've heard 22 about -- and I appreciate all of the comments we've 23 received this evening and before -- is will the project affect my water supply. Our neighbors often 24 25 ask this question. So even though that is the

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1	subject of a separate permit from from the permit
2	we're discussing tonight, I do want to provide some
3	information related to that.
4	So the Emma Project doesn't require
5	additional groundwater pumping. Tyrone has applied
6	for an alternate point of diversion. We have pumping
7	wells in Oak Grove with water rights associated with
8	them that we use routinely, and we've applied to move
9	water right from those wells to the proposed Emma pit
10	so that we can dewater the mine at the appropriate
11	times, but it won't be additional pumping than is
12	occurring already for Tyrone operations.
13	New Mexico water law protects our
14	neighbors' water supply. The Office of the State
15	Engineer examines the application and determines
16	availability of water and impairment of existing
17	water rights. If the state engineer determines that
18	the Emma Project would impair our neighbors' water
19	rights, the permit will not be issued.
20	Tyrone is a good neighbor and we care about
21	this very issue, also. We have tasked well-respected
22	hydrology consultants to evaluate the aquifer in the
23	Emma area and surrounding areas. These studies have
24	indicated that there could be a drawdown in the
25	nearest well, neighboring well to Emma of



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1	approximately 2 to 7 feet. Our experience over and
2	over shows that these models are very conservative
3	and they overestimate the impact, but that is the
4	kind of information the state engineer needs to
5	evaluate. According to their guidelines, this should
6	be considered an acceptable impact, but, again,
7	that's the state engineer's determination, not mine.
8	So I want to have others present on the
9	groundwater characterization around the Emma for
10	the Emma Project. I'm going to I'll just
11	introduce them briefly. Lee Nix will present, and he
12	is an independent consultant to Tyrone. He's a
13	former chief environmental engineer at Tyrone. And
14	then he'll be followed by John Ayarbe, who is a
15	hydrologist with the firm Geologic in Albuquerque.
16	And Madame Hearing Officer, after they
17	present, I do have additional materials to present on
18	the closeout plan, so I'll be I'll be back.
19	HEARING OFFICER ORTH: Thank you very much,
20	Mr. Shelley.
21	This is Mr. Nix? Hi.
22	LEE NIX,
23	after having been first duly sworn under oath,
24	presented as follows:
25	HEARING OFFICER ORTH: Spell your name and

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1	then present.
2	(Portions of Mr. Nix's testimony was taken from his
3	written outline, as portions were unintelligible to the reporter.)
4	MR. NIX: Yes, I'm Lee Nix. That's spelled
5	L-E-E N-I-X. I am a consultant, but in the interests
6	of full disclosure, I was a former employee of the
7	mine where I worked for over 15 years until very
8	recently. I oversaw the groundwater program for most
9	of that 15 years. But I sure didn't do it alone,
10	there was a lot of help for the on-site Tyrone
11	environmental team, and, additionally, we've had the
12	services of the Daniel B. Stephens & Associates
13	hydrology consulting firm out of Albuquerque for all
14	that time, and even prior to my arrival in 2006. They
15	are the true hydrology experts, and I've got John
16	Ayarbe from their firm to co-present this segment
17	with me today. I'll turn it over to him following the
18	next few slides.
19	You neighbors have concerns about
20	groundwater. I understand that. If I was dependent
21	on groundwater for a domestic well, and I lived near
22	a large industrial user of groundwater, I'd want to
23	understand how we're going to coexist with enough
24	water for me and my household. I might not even care
25	about the industrial user. I'd feel my rights to the

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1	water ought to supersede theirs. But that's not how
2	it works.
3	Freeport has worked strategically for
4	decades to secure the water rights needed for their
5	operations, no differently from ranchers and other
6	area landowners and water users. Our aim today is to
7	explain how we can coexist, and if we're successful,
8	help you realize the mine won't be a threat to either
9	the quality or the quantity of your water supply.
10	So first of all, some general information
11	on the nature of the hydrologic cycle in mountainous
12	terrain. Rainfall is typically heavier at higher
13	elevations, as illustrated here. From those
14	highlands, surface water in the form of streams and
15	groundwater below the surface flow downhill. Stream
16	flows are, of course, the way we can best see for
17	ourselves the direction of flow, but groundwater
18	flows are generally running parallel to the majority
19	of stream flows because they're both moving from
20	higher to lower elevations. In other words, both
21	surface and subsurface flows of water follow the land
22	surface topography, especially in terrain as steep as
23	we have in the Emma vicinity.
24	Throughout New Mexico, due to heavier
25	rainfall at higher elevations, the highlands form

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1	high value, distinct recharge zones for groundwater
2	that is then carried to surrounding lowlands,
3	supplying water to well owners and groundwater users,
4	both domestic and industrial, as illustrated. We all
5	count on this phenomenon of highland groundwater
б	recharge zones for our water supplies.
7	So let's apply these general principles to
8	the immediate vicinity of Emma. The highlands are
9	the Burro Mountains seen as the greenish color in
10	this shaded relief topographic map in the lower
11	left-hand corner. Land surface elevations peak at
12	over 8,000 feet above sea level, which is close to
13	2,000 feet higher than the 6,000-foot elevation of
14	Emma and the neighboring subdivisions of Apache Mound
15	and Loma Blanca further to the south, seen here to
16	all be roughly the same elevation.
17	As local residents, we know the Burros
18	receive much more precipitation than our 6,000-foot
19	elevation because, first, we can see the rainfall and
20	snowfall, but, also, because of how forested the
21	mountaintops are in comparison to the lowlands. At
22	higher elevations, the mountains are thick with
23	ponderosa pine and other species that you'll hardly
24	find at 6,000 feet, due in part to much lower soil
25	moisture.



1 In this graphic, we also see the blue lines 2 showing the stream flows down from the Burros. On the north side of the Burros, flows are mostly 3 towards the north, and on the east slope, flows are 4 5 mostly towards the east. Although it's not shown, 6 the same is true for the western and southern slopes 7 of the Burros. This is equally true for the 8 generalized flow direction of groundwater. 9 Groundwater comes off the Burro highlands in all 10 directions. A particularly good source of information 11 that confirms this can be found in the historic 12 13 document produced by the New Mexico State Bureau of Mines and Mineral Resources. 14 It's titled "Water 15 Resources and General Geology of Grant County 16 New Mexico." It was published in 1972, and written 17 by a geologist named Trauger. The report did a 18 thorough job of characterizing our local hydrology, 19 and everything I'm saying is consistent with that 20 report. Even though the report is decades old, since 21 we're talking about a hydrologic system that operates 22 in geologic time, it hasn't changed much, if at all, 23 since the 1970s. 24 This next figure has some additional

overlays on top of the same shaded relief map. The

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1 colored zones show the surface watersheds or drainage 2 basins. The blue arrows show the direction of 3 surface water flows, but, in general, groundwater in 4 such steep topography is traveling pathways parallel 5 to the surface water pathways, illustrated by these 6 drainage basins down from the Burros.

7 The 2,000-foot drop I already mentioned 8 between the top of the Burros and Emma occurs over a 9 distance of only 5 to 6 miles. That's approximately 10 a 7 to 8 percent grade from top to bottom, and in such steep train, there's really no question about 11 the direction of groundwater flow exiting the Burro 12 13 highlands. This is backed up by the 1972 Trauger 14 These flow patterns deliver groundwater from report. 15 the recharge zone high in the Burros, following 16 parallel paths to the drainage basins highlighted 17 Groundwater is directed to Apache Mound and here. 18 Loma Blanca Subdivisions through the general flow 19 pattern following the Cherry Creek watershed in an 20 easterly direction from the primary recharge zone. 21 And as you see, the Emma pit intercepts 22 groundwater primarily flowing toward the northeast

from the Burros, beneath the Oak Grove watershed.
The small greenish basin is a tributary to Oak Grove,
joining the main channel just off the edge of the

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1	figure. Cherry Creek and underlying groundwater flow
2	form a distinct pathway from the recharge zone at the
3	top of the Burros that will not be intercepted in a
4	meaningful way by the Emma pit.
5	So that concludes my portion of the
6	presentation where I've explained how groundwater
7	
	should flow directionally based on local topography
8	and the historic account of the Trauger report, but,
9	in addition to this, we've collected site-specific
10	data following our first two phases of installing
11	monitoring wells at Emma.
12	We conduct our drilling in phases so that
13	we learn from the early stages, informing us how to
14	best conduct the following phases. The first two
15	drilling phases are by no means the end of our plans,
16	as we have in mind several additional wells to help
17	us further characterize and monitor the surrounding
18	aquifer.
19	I'll now turn it over to John Ayarbe to go
20	over what we've learned from the wells drilled so
21	far, and to show our future drilling plans.
22	JOHN AYARBE,
23	after having been first duly sworn under oath,
24	presented as follows:
25	MR. AYARBE: John, J-O-H-N, and then last



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1	name is Ayarbe, A-Y-A-R, B "as in boy," E. I'm going
2	to again, I'm John.
3	I'm a senior hydrogeologist with Daniel B.
4	Stephens & Associates. Daniel B. Stephens &
5	Associates is a geologic company. That's why
6	sometimes you're hearing both names.
7	I'm going to present information regarding
8	the groundwater characterization work that we've
9	conducted at Emma. The work includes the
10	installation of wells and groundwater modeling to
11	predict future conditions.
12	You know what I'm not seeing is the slides.
13	There we go. Perfect. We have installed monitor
14	wells at Emma to determine baseline groundwater
15	conditions, including flow direction and water
16	quality. Two wells were installed in 2021, and three
17	additional wells were installed in 2022. Shown on
18	the slide are groundwater elevations at the wells,
19	along with contours of groundwater elevation, and
20	arrows indicating groundwater flow direction. The
21	contours and flow directions are based on groundwater
22	elevations measured at the wells. Groundwater flows
23	from higher elevations to lower elevations. The
24	general direction of groundwater flow at Emma is to
25	the northeast. This flow direction is consistent



1	with groundwater mapping presented by Trauger.
2	This slide shows water quality at the Emma
3	monitor wells. Wells nearest the Tyrone Mine and
4	Sprouse-Copeland Fault have good water quality that
5	meet standards, and this is shown with the blue
б	wells, MB-44 and 396-2021-02. The natural water
7	quality of the four locations to the south exceeds
8	exceeds standards. These wells are completed in
9	mineralized rock and the exceedances are attributed
10	to natural conditions. And that's these four wells
11	to the south and southeast shown in red. They are
12	attributed to natural conditions because mining has
13	not begun and groundwater between the Tyrone Mine and
14	Emma flows to the northeast, not towards Emma.
15	Additional monitor wells are proposed at
16	Emma. They, along with existing wells, will form a
17	network of wells to monitor future groundwater levels
18	and quality. The proposed network meets the
19	requirements of the Copper Mine Rule. It allows for
20	the monitoring of groundwater conditions around the
21	perimeter of the open pit and downgradient of a
22	proposed waste rock stockpile. The proposed wells
23	are shown in magenta.
24	We have installed the wells at Emma in
25	phases and Lee spoke to this allowing us to

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1	better site and develop specifications for future
2	wells, such as the five new ones that are proposed.
3	Well 396-2021-01 is located to the south. Yup,
4	perfect, there you go. One of the reasons it was
5	placed where it is is because we wanted to establish
6	a monitor a monitoring location between Emma and
7	the Apache Mound Subdivision. If mine impacts were
8	to occur, they would be observed at this location
9	long before they are seen at wells in the Apache
10	Mound Subdivision.
11	Tyrone will conduct dewatering to
12	facilitate mining and limit the accumulation of water
13	in the open pit. The dewatering activities will
14	prevent impact to groundwater. This slide shows the
15	groundwater capture zone associated with dewatering
16	at the Emma water management sump. It is based on
17	simulated groundwater levels. Why stimulated
18	groundwater levels? Because dewatering is a future
19	condition and mining has not begun. We use
20	groundwater flow modeling to predict future
21	conditions to help with operational decisions such as
22	the placement of future monitor wells and sizing of
23	pumps for pit dewatering.
24	Groundwater in this area, defined by the
25	orange line if you could show that, please will

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1	flow to and be captured at the Emma water management
2	sump. Dewatering will occur during operations and at
3	closure to prevent impact to groundwater. The
4	delineated capture zone shown in the slide is its
5	predicted maximum extent. It reaches this extent
6	after approximately eight years of dewatering.
7	Although we are currently basing the groundwater
8	capture zone on simulated groundwater level
9	elevations, the proposed monitoring well network
10	the proposed monitoring well network will be
11	ultimately used to define it.
12	And with that, Ms. Hearing Officer, I
13	conclude my presentation, and I'm going to pass it
14	back to Tom Shelley. Thank you.
15	MR. SHELLEY: Thank you, Madame Hearing
16	Officer.
17	Okay, if you'll click three times now.
18	Thank you. So these are the areas we've heard
19	tonight and, also, in previous meetings with
20	neighbors of additional concerns, and if these are
21	matters are concerns for our neighbors, they
22	matter very much to every Tyrone employee. So Tyrone
23	contracted with a well-respected environmental
24	consultant, Golder Associates, to complete evaluation
25	and studies. They do this in the United States and

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internationally at similar projects, and they do
 these to industry standards.

So the overall finding in each of these 3 areas was that the Emma additional impact is within 4 5 typically accepted levels. We don't really have time to go into detail on explaining the why of that, but 6 7 these studies are available on our Freeport website 8 as well as the Mining and Minerals Division website, 9 and I'm happy -- we have presented on them to our 10 neighbors in the past, and are happy to continue to discuss them. 11

Tyrone is committed to be a good neighbor. 12 So even if this study said these impacts are 13 14 acceptable, we really are committed to have -- and we 15 have an active program to receive input from our 16 neighbors and listen and act on concerns. We'd like 17 to work actively to resolve, and we feel like we've 18 been guite successful. In fact, some of the -- some 19 of the proposed lighting systems for the Emma Project 20 and noise activities that we will implement to reduce 21 noise are the result of having conversations with 22 neighbors at our New Mexico operations, and we really 23 appreciate the feedback and input we've received. So we know -- we are very confident that the project 24 25 will not be a nuisance to our neighbors.

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1 There is another aspect to the project that 2 requires some traffic adjustments. So because the 3 Emma Project is -- basically, portions of it are constructed near to the current county road to the 4 5 Burro Mountain Homestead, the project proposal is to 6 move that road to the south of the project area, and 7 it requires permits with the county and the 8 New Mexico Department of Transportation. And we've 9 also met with the community on this, and our feedback 10 is that this is the best alternative to eliminate the interaction of mine equipment and public traffic, and 11 it has a minimal impact of approximately an 12 additional four-tenths of a mile travel for them. 13 14 So I'd like to provide an overview of the 15 reclamation or closure/closeout plan for the site. 16 After mining, we are required to achieve post-mining 17 land uses, which we have proposed to you for 18 different parts of the site. First, reestablish a 19 self-sustaining ecosystem, wildlife habitat. That 20 will -- and then the other is water management and 21 water treatment for portions of the site, as David 22 Ayarbe explained. 23 So let me talk about the open pit first. During -- after operations and, actually, as part of 24 25 operations, areas of the pit, the upper areas of the

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1	pit will be partially backfilled with clean rock and
2	dirt, meeting our material handling criteria. And
3	then it will be covered with topsoil that we salvaged
4	at the beginning of the project, and then revegetated
5	with native plants.
6	Also, at the pit, during operations, water
7	that accumulates in the pit will be quite good in
8	quality, but we expect the quality to degrade over
9	time after mining operations, so we propose to
10	collect and pump pit water to the Tyrone Mine.
11	During Tyrone Mine's operation, that water will go to
12	our process water system, and post-closure it will go
13	to our water treatment plan. It's already required
14	at the Tyrone Mine.
15	As was mentioned earlier by a commenter, we
16	have received direction both from state agencies
17	and and from GRIP, a desire to minimize the water
18	surface, so we are not proposing to have a pit lake.
19	So we will be partially backfilling the pit bottom to
20	minimize the size of the water surface to be managed,
21	and then what little is left will be fully covered so
22	that to prevent wildlife contact.
23	Now I'll speak about the stockpiles.
24	Remember, there they are constructed of
25	environmentally friendly dirt and rock. Do you see



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1	them sort of shaded in blue just to the north of the
2	Emma pit and over at the Tyrone Mine? These will be
3	regraded to three to one slope, and then topsoil will
4	be placed over the top and they'll be revegetated.
5	The haul roads connecting Emma and Tyrone will be
6	graded and vegetated.
7	The scope of work for this closure/closeout
8	plan includes operations and maintenance of of the
9	site and the water treatment and management system
10	for 100 years, which is analogous to perpetuity.
11	Financial assurance for this work is about
12	\$12 million.
13	These photos illustrate the habitat and
14	soil platform it is based on currently at the Emma
15	site. Tyrone proposes to recreate the soil profile,
16	which consists of a thin soil layer over weathered
17	granite. This will lay the foundation for the
18	self-sustaining ecosystem to reestablish.
19	So Tyrone has a proven record, that we're
20	very proud of, of successful award-winning
21	reclamation. We have an open door policy for our
22	neighbors. We want to keep active conversations
23	going. We invite questions and concerns. Please
24	reach out to us. These are the different ways our
25	neighbors can contact us.

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1	And, finally, Tyrone and our employees are
2	very excited for the project. It's a great event
3	for for Tyrone and our community.
4	And, Madame Hearing Officer, this concludes
5	my presentation.
6	HEARING OFFICER ORTH: Thank you,
7	Mr. Shelley.
8	We would move at this point to the
9	questioning of the FMI panel, but we've now been
10	going a little more than two hours, and staff and I
11	and the court reporter all need a break. So it is
12	7:04. Let's come back at 7:20. That's a 15-minute
13	break, and we'll have whatever questions are had of
14	the FMI panel, starting with the division and GRIP
15	and anyone else. If you are on the platform and you
16	have a question of the FMI panel, please put it in
17	the chat. Thank you.
18	(A recess was taken from 7:04 to 7:22 p.m.)
19	HEARING OFFICER ORTH: So we have a few
20	more folks prepared to answer questions, as
21	appropriate, for the FMI panel. Any questions posed
22	will be answered by the appropriate person. And
23	Mr. Shelley, because we have to do our excruciating
24	maneuvers up here every time we switch from in-person
25	to on-platform, I'm going to ask you to affirmatively

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identify those questions that you want Mr. Ayarbe or 1 2 Mr. Stein to -- to answer. 3 So it's you and Mr. Nix, and who is this gentleman? 4 5 Adam Offutt. And is it A-D-A-M б O-F-F-U-T-T? All right. 7 And Mandy Lilla? All right. M-A-N-D-Y 8 L-I-L-A. 9 Mr. Offut, and Ms. Lilla, and Mr. Stein on 10 the platform, please raise your right hands. Do you, and each of you, swear or affirm that you will tell 11 12 the truth? 13 (Acknowledgment of the oath.) 14 And, Mr. Stein, put in the chat, if you 15 would, please, that you swear or affirm to tell the 16 truth so that I can put that on the record. 17 (A discussion was held off the record.) 18 ADAM OFFUTT, MANDY LILLA & TODD STEIN, after having been first duly sworn under oath, 19 20 presented as follows: 21 HEARING OFFICER ORTH: So this is going to 22 be, I think, even a little more awkward, but we're 23 going to get through it, we're going to get through it together, and thank you, again, for your patience. 24 25 When we have gotten through the

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1 cross-examination, we will, then, go to the next 2 public comments section. Anyone who hasn't yet 3 offered their public comment will have an opportunity 4 to do that. 5 So I had asked Mr. Ohori if he had б questions of the FMI panel, and he said no. 7 Ms. Siwik, let me ask you next, do you have 8 questions of the FMI panel? 9 We did have a question pop up in the chat 10 from those on the virtual platform. It was from Mr. Brence, and his question was if you could clarify 11 the tailing issue or address the tailing issue. 12 13 Mr. Shelley is going to go to the podium, 14 and I'm going off. 15 MR. SHELLEY: This is Tom Shelley 16 responding to this question. So one of the public 17 commenters asked if there were going to be lime 18 tailings at the Emma Project area, and the answer is no, there are no tailings associated with the 19 20 project. 21 Tailings is a mining term of art that relates to processing ore, crushing it up, extracting 22 23 the copper, and then the residual crushed rock material is called tailing, and Tyrone does not 24 25 process ore that way, so there are no tailings.

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1	HEARING OFFICER ORTH: All right, let me
2	ask if anyone in the room has a question of the FMI
3	panel? Let me take anyone in the room, since I
4	already started that. I will take questions from the
5	virtual chat just momentarily. I see a hand there.
6	Hold on, we need you to come up.
7	MR. GRIFFIN: Glenn Griffin, resident of
8	Silver City. So for clarification and not to get
9	hung up on technical terms, will there be lined
10	overburden rock pile stockpiles? In other words, if
11	it hits the ground, there should be matting down,
12	dirt, and piping to pull away the toxic heavy metal
13	water, pregnant leach solution, whatever, away from
14	the groundwater and into a precipitation plant or
15	into a solvent extraction electrowinning plant for
16	the next hundred years. In other words, to protect
17	our groundwater. This is something Cobre Mines did
18	in the '90s, and Chino is now beginning to understand
19	lined overburden stockpiles.
20	MR. SHELLEY: Thank you. This is Tom
21	Shelley responding to that question. No, there won't
22	be lined overburden stockpiles. As I the reason
23	is there is no need for it, and the reason there's no
24	need for it is because the stockpiles that Tyrone is
25	proposing to construct are are non-discharging

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1	units. The material will be segregated to ensure
2	that they do not have acid-generating potential or
3	acid-generating qualities, and there so that will
4	not be necessary.
5	There will be material encountered there
6	will be waste rock encountered at the site that could
7	be potentially acid-generating, and that will be
8	placed on existing permitted stockpiles for that, to
9	receive that kind of material.
10	HEARING OFFICER ORTH: Other questions to
11	the FMI panel?
12	Give your name first and then the responder
13	do just as Mr. Shelley did. I'll get off.
14	MR. BECKER: Hello, Dave Becker,
15	B-E-C-K-E-R, again. And I think I have three
16	interrelated questions probably for Mr. Nix and
17	Mr. Shelley. One and they all relate to the
18	hydrogeology slides that were presented. One was
19	just a question about whether there's anything in the
20	subsurface geology that separates the Oak Grove and
21	Cherry Creek watersheds?
22	There was a slide that was titled
23	"Simulated groundwater capture zone," and it showed a
24	couple of arrows to the southwest of the Emma pit
25	that showed a water flow to the northeast, where in

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the earlier slides of the Cherry Creek watershed it 1 2 showed flows to the southeast. And am I interpreting 3 that correctly that the Emma pit is going -- because it's being dug underneath the -- you know, below the 4 5 water table, that that's going to change the 6 direction of the flow of the subsurface water in the 7 Cherry Creek watershed? 8 And I think the third question that sort of 9 relates to these, that is, if the Emma pit is 10 changing the direction of the groundwater flow south of the Emma pit in the Cherry Creek watershed and 11 private wells drop by 2 to 7 feet, what is 12 Freeport-McMoRan going to do about that for the 13 14 private well owners? 15 Okay, so I'll -- Madame MR. SHELLEY: 16 Hearing Officer, this is Tom Shelley. I'll respond 17 to the last question first, and then I think if John 18 Ayarbe heard that -- the first two questions, he 19 could bring that slide up, or Kevin could, and John 20 could probably respond to them best. 21 So the first question is, okay, if -- if the drawdown occurs that is predicted, 2 to 7 feet, 22 in the neighboring well, what does Freeport plan to 23 do about it? So the answer to that question is, that 24 25 much drawdown is not going to -- if that -- if that

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1	occurs and the state engineer determines that that is
1 2	not or if it's a significant impairment to that
3	well, then they won't issue the permit. If what I
4	expect will happen is that they will determine that
5	isn't a significant impairment to that well and
6	they'll issue the permit. That means that the water
7	user can continue to use their well and that level of
8	drawdown is not going to significantly impact their
9	operation of their well.
10	So with that, I will allow John to respond.
11	I think there were two questions. One was, is there
12	any geologic structure separating Cherry Creek and
13	Oak Grove? And then the other one was flow
14	directions and how they are affected by pit pumping.
15	MR. AYARBE: All right, great, I will try
16	to answer these as best I can. It would be great if
17	we could pull the slides back up.
18	UNIDENTIFIED SPEAKER: Wait one moment.
19	Let me pull up the slide.
20	MR. AYARBE: It's simulated groundwater
21	capture zone. That's it.
22	Yeah, so to answer the question of is there
23	a change in groundwater flow direction due to
24	pumping. The change is local. So the change in
25	groundwater flow direction is going to be right



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1	around the immediate vicinity of the water management
2	sump. It is not going to reverse groundwater flow
3	directions over at Cherry Creek.
4	And then the next question was the divide,
5	some hydrogeologic divide between Oak Grove and
6	Cherry Creek, I believe was the question. There are
7	a few faults of significance, we're showing one here
8	on this slide, this Sprouse-Copeland Fault, it tends
9	to act as an impediment to groundwater flow, and so
10	water tends to flow parallel to this feature rather
11	than across it.
12	There's also another fault that's located
13	further south of Emma, between Emma and the Apache
14	Mound Subdivision, it's an unnamed fault. It may
15	have the same influence, I don't know for certain,
16	but that would be the only feature I'm aware of
17	between Emma and Apache Mound that might have that
18	behavior.
19	(A discussion was held off the record.)
20	Sprouse-Copeland Fault. And then the other
21	one located to the south of Emma, between Emma and
22	the Apache Mound Subdivision, is unnamed.
23	And that information is presented in the
24	hydrogeo report that was submitted to NMED as part of
25	the DP396 permit package.



1 HEARING OFFICER ORTH: Thank you, 2 Mr. Ayarbe. 3 MR. AYARBE: Thank you. HEARING OFFICER ORTH: Are there others 4 5 with questions of the FMI panel? We're checking with б the Smiths, because I believe Mr. Ayarbe's testimony 7 addressed the other online question that we had. So 8 we're checking on that. Anyone else in the room? 9 All right, so Mr. Ayarbe, we need you back. 10 I'm going to ask the question as I see it here from the chat, and then I'm going to get off so that you 11 12 can answer. Mr. Ayarbe said they would locate two wells 13 14 between the Emma pit and the nearby Apache 15 Subdivision. Would that -- what would be done if 16 they found that the water level or quality was being 17 adversely affected during the mining period? 18 Give me a moment to get off, if you would. MR. AYARBE: All right, so I'm going to 19 20 have you flip the slides and we'll go up one. All 21 right, perfect. 22 So the proposed well locations, I quess the 23 individual is asking about maybe the proposed locations or maybe they're thinking about PMW-03, 24 25 which is one of the proposed locations, and then this

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1	existing well, 396-2021-01, and what would happen if
2	some sort of impairment or effect was seen at one of
3	these wells. I'll probably need FMI's support in
4	answering this, but generally what we do in terms of
5	a water quality impairment is we would implement some
б	sort of groundwater abatement measures such as
7	groundwater pumping.
8	In terms of drawdown, I Tom, do you have
9	anything you want to add?
10	MR. SHELLEY: This is Tom Shelley
11	responding to that last part of that question. So
12	just to rephrase a little bit what John said, so
13	these wells between the Emma Project and Apache Mound
14	are not expected to be impacted quality-wise because
15	they're upgradient of our facility, so it would be
16	hard to understand how they could be impacted
17	quality-wise.
18	If it were, then that is an issue that we
19	would address with the New Mexico Environment
20	Department Groundwater Quality Bureau, and they
21	typically would require some either a corrective
22	action or an abatement process.
23	The other part of the question was what
24	about drawdown in those wells, and that's the
25	reason that is a great question because that's

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1	part of the reason those wells are installed there.
2	Because what they can do for us is we we will be
3	monitoring them. These are not wells that are
4	pumped. They're only designed to be monitor wells.
5	So those are wells that we will be measuring water
6	levels. We do expect there to be drawdown in those
7	wells, and the great thing about them is we can as
8	we monitor them, we can compare them to the to the
9	modeling that geologic has completed, and that will
10	tell us if if our model is correct and confirm
11	that our drawdown predictions are either on or off,
12	and then we can react to that once we know that
13	information. But we do expect to see drawdown. Yes,
14	that's all I have to say.
15	HEARING OFFICER ORTH: All right, thank
16	you.
17	Are there other questions of the FMI panel?
18	If not, we will move to the next public comment
19	section. Other questions? Okay.
20	Anything else to say at all, gentlemen, and
21	female? Thank you very much, Mr. Shelley, Mr. Nix,
22	Mr. Offutt, Ms. Lilla, Mr. Stein, and Mr. Ayarbe.
23	Going to go through the sign-in sheets
24	again and read out the names of those who said yes,
25	but didn't speak in the first session. Again, you



1	can change your mind, and we'll make an open
2	invitation, as well. And if you are on the platform
3	and would like to offer comment, please just say so
4	and give us your name in the chat.
5	Diana Edwards?
6	DIANA EDWARDS,
7	after having been first duly sworn under oath,
8	presented as follows:
9	HEARING OFFICER ORTH: I'm going to go off,
10	but if you would spell your name and then make your
11	comment.
12	MS. EDWARDS: Diana Edwards, Dr. Diana
13	Edwards, D-I-A-N-A, E-D E-D-W-A-R-D-S.
14	I have lived in Grant County for more than
15	20 years. I'm a family counselor and an
16	anthropologist. My cabin and the 7 1/2 acres that I
17	am restoring or I thought I was before Emma
18	that I'm restoring is 11 Apache Mound Road. So I'm
19	one of those who's half a mile from the Emma pit.
20	And I have many concerns about it.
21	One thing, how do you propose to monitor
22	the air quality, because we have a lot of wind out
23	there, and you certainly will be, not just with the
24	blasting, but with everything else, stirring up a lot
25	of dust particles, which Harry Browne mentioned, as

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well.

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2	And I don't know what you will do to
3	mitigate some of the other damage. Nobody has
4	mentioned insects, and we now do know how important
5	these little creatures are to the survival of all of
6	us, even with climate change and birds not being able
7	to get insects that they usually have or whatever.
8	So how does the light affect that? How does the
9	noise affect the smaller creatures?
10	So, yes, I have questions about almost
11	every part of it, and I was glad that Tom said
12	something about covering the pit lake, because I
13	will I want to say a little bit more about that,
14	too. The open pit, he Tom just said, you know,
15	that it will be covered completely. I don't
16	understand you know, when mining operations stop,
17	I don't understand how that would happen, and I would
18	like to know about that, too. But the toxic
19	chemicals in this water are poisonous forever, and
20	one thing I did notice about the report was, okay,
21	for the closeout report, almost 7 million was
22	designated for earthwork and water treatment. Well,
23	even 100 years is going to take more than 7 million,
24	and so I don't quite see how the toxic I mean,
25	water is life. Toxic water is death, and I don't see

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1	how it can possibly be mitigated enough not to be
2	poisonous.
3	I mean, the birds of course, the
4	birds I keep bird baths out all the time because
5	so many months we have no water; the birds have no
б	water. So they're going to love seeing a big lake
7	there. Yeah, let's go, you know, get water out of
8	the lake. So anyway, I don't I don't see how they
9	can that's one thing I don't see how it can be
10	mitigated. And I don't question that it will far
11	exceed the state water quality standards, and then
12	how can it be approved if it isn't going to meet
13	that?
14	(A discussion was held off the record.)
15	MS. EDWARDS: That was the concern I wanted
16	to focus on was the toxic pit lake, and that the
17	water will always have to be in at least the very
18	bottom of it. And so it's just a great concern to me
19	that we will have in perpetuity. And they say 100
20	years. Is that no, no, that's not analogous to in
21	perpetuity. One hundred years is not enough, and
22	certainly \$7 million is not enough.
23	Anyway, I will end with that, but those are
24	some of my concerns. But I would also like to ask a
25	question about the environmental report, because Tom

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1	, said that typically acceptable levels and, you know,
2	the environmental effects, and I'm wondering
3	typically acceptable to whom, because what I read in
4	the environmental report was, of course, they expect
5	deaths of animals and disruption of all of the life
б	cycles, and they expect plants to die and not be
7	recovered. So how do you decide what's typically
8	acceptable? I guess I'm not typical, because that's
9	not acceptable to me, but
10	Anyway, I thank you and I thank all of you
11	for coming and allowing us to speak, and I would like
12	to say about Freeport that they have everybody
13	there has always been very open to my calling up and
14	saying, What are you doing? So they've been very
15	courteous and very polite, and I do appreciate that.
16	HEARING OFFICER ORTH: Christine Hess.
17	CHRISTINE HESS,
18	after having been first duly sworn under oath,
19	presented as follows:
20	HEARING OFFICER ORTH: I'll ask you to
21	spell your name and then go to your statement.
22	MS. HESS: Christine with a C-H, last name
23	is Hess, H-E-S-S. Christine Hess.
24	Thank you to everybody from New Mexico
25	Minerals and Mining Department and Freeport for all



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1	your time and information regarding mining operation
2	and its impacts. Also, to Allyson Siwik and GRIP for
3	all your energy and cares in protecting this earth.
4	We only have one earth. Thank you.
5	We have major concerns with the drawdown
6	map illustrating predicted water drawdown due to the
7	Emma open pit dewatering. This map totally fails to
8	show the huge tract of land which includes the Loma
9	Blanca/Collum Subdivision area and what impacts it
10	may have. There are a good number of families living
11	here, myself included, and this land tract is also
12	very close to the proposed Emma expansion, as is
13	Apache Mound area. We all need consideration,
14	protections, and commitments.
15	This drawdown map needs to be extended
16	showing this Loma Blanca/Collum Subdivision and other
17	areas in proximity. The studies done by Freeport
18	fall far too short, and I will never believe, along
19	with fellow residents, that there won't be any
20	impacts here. These studies have also failed to take
21	each of our private wells into account. That needs
22	to be a commitment put into writing that this map
23	will be extended.
24	There will be a lot of water gradually
25	running down to this proposed 600 foot plus/minus



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1	, deep open pit area, which will also be going 200 feet
2	below the groundwater level. How will this affect
3	our water supply, the land, and the wildlife?
4	We have been informed there will be five
5	different monitoring wells located around Emma open
6	pit. A monitoring well, or more, must be installed
7	here. We will know nothing about any possible
8	impending or growing water issues here unless, of
9	course, our wells begin to fail. These monitoring
10	wells need to be placed in other areas besides just
11	around the open pit so we can correctly watch for any
12	impacts to our water supply. Again, there needs to
13	be a commitment and put into a legal written
14	agreement.
15	The earth's environment and weather has and
16	is changing. It is majorly affecting not only this
17	area in New Mexico, but also encompasses our entire
18	glorious earth. Listen and observe the facts. And
19	so severe drought in New Mexico, along with
20	surrounding states, has been a major environmental
21	impact this year, causing some of the largest fires
22	in history. So we have been dealing with drought,
23	and may now also have a mild expansion which will use
24	millions of gallons of water in this semi-desert
25	area. I fear there's never enough water to also



1 support further mining.

2	If this Emma expansion may eventually be
3	allowed to progress, then there needs to be a legal
4	written agreement with all the residents that our
5	private wells will be repaired, whether it's a deeper
6	or new well if needed. And there is also the water
7	quality, too. If Freeport plans an expansion, then
8	they need to become responsible for all who are
9	sharing this precious area's land and water.

10 I feel this mining company has done more than enough expansion already. In this area, there 11 12 are views of miles upon miles of mining piles. 13 There's a lot of nature that will disappear entirely 14 if this expansion is allowed, its precious and scenic 15 land, trees, and the wildlife. Upon the mine 16 expansion's closing some day, this 600 foot deep, 17 plus or minus, open pit will need to be dewatered, 18 have its water pumped out perpetually, forever. 19 Forever is rather frightening and becomes a huge 20 question mark. Is Freeport's forever plan adequate? 21 Will there be -- is there enough money set aside to 22 cover the cost of forever? Not sure how one sets a 23 monetary amount for the continual forever cares 24 required for this massive open pit, wow, again 25 requiring perpetual forever pumping.

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1	We also have major concerns regarding air,
2	dust pollution, noise and light pollution. In just
3	beginning to study the released 245-page permit
4	application, it speaks of blasting all seven days a
5	week and how many times daily. I don't believe
6	blasting is even considered in the noise study. I
7	truly fear all possible impacts to this area and our
8	properties. What will happen to the air quality?
9	How much dust will there be including during all this
10	blasting? Then, we enjoy some of the most glorious
11	dark night skies. What impacts will affect us with
12	all Freeport's lighting?
13	And the noise pollution, what will we truly
14	hear and experience? With noise coming from
15	blasting, operating the mine, all the way down to
16	trucks and heavy equipment backing up, are we going
17	to hear the very impactful backup beeping? How much
18	of what we so cherish in our lives and this area may
19	be entirely destroyed?
20	I have met a lot of incredibly beautiful
21	neighbors in my short time residing here, and not one
22	of them deserves these impacts or change of life. My
23	inner voice and heart tell me there's huge potentials
24	for adverse impacts to this glorious semi-desert
25	area, to our properties, as well, our health, and our



1 quality of life.

2	Further studies and communication need to
3	be accomplished and committed to, put into legal
4	written agreement. I am requesting another hearing
5	covering commitments, along with new plans that need
6	to be met. Will they be and when? Also, we need
7	time to study this newly released 245-page permit
8	application. If Freeport wants to move, expand into
9	this area, sharing this land and life with us, there
10	must be responsibility, along with legal commitments
11	agreed to. Thank you for your time.
12	HEARING OFFICER ORTH: All right, thank
13	you, Ms. Hess.
14	I have someone down as a maybe, Peter
15	(inaudible). Peter Rankaitis? No? All right.
16	(Inaudible) who identified as wanting to
17	make a comment on the virtual platform. First we
18	have Carol Martin. I have to get off in order
19	okay, count to 15, Ms. Martin. I'm going to ask you
20	to swear or affirm that you will tell the truth, and
21	spell your name, and then offer your comment. Thank
22	you.
23	CAROL MARTIN,
24	after having been first duly sworn under oath,
25	presented as follows:

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1	MS. MARTIN: I swear to tell the truth.
2	C-A-R-O-L M-A-R-T-I-N.
3	And in reading through the
4	UNIDENTIFIED SPEAKER: I'm sorry, I have to
5	switch one more thing. You'll have to start again.
6	MS. MARTIN: I swear to tell the truth. My
7	name is Carol Martin, C-A-R-O-L M-A-R-T-I-N.
8	In reading through the habitat impact
9	assessment taken from the GSA in 2021, I saw a couple
10	of things I wanted to bring to your attention. It
11	says that there are no springs, wetlands, or streams
12	in the area. (Unintelligible due to audio
13	distortion.) Bullfrogs are found near water or
14	(unintelligible due to audio distortion).
15	Also on the maps, listed Oak Grove as a
16	wash. It's listed on the topo map as Oak Grove
17	Creek. So that's a conflict.
18	Also, on pages 8 to 10 of the habitat
19	impact assessment, there's attachment 1 of 114 plant
20	species encountered in the assessment area, and their
21	abundance. There's three pages listed, which is
22	fabulous. Thank you for doing that. However, it's
23	my hope that these are the only plants that will be
24	used in the reclamation and restoration of the area,
25	with the exception, of course, of non-native and



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1	invasive species that are also included in the
2	report.
3	In dealing with the Little Rock reclamation
4	list of plants, there were approximately 20 plants
5	that either are not found in the area, are not
б	native, or do not grow in the state of New Mexico.
7	The seed mix, then if you read down farther to
8	be used in the reclamation of Emma, "many parts of
9	New Mexico." So it's not specific here to the Burro
10	Mountains. It's a generalized seed mix that can be
11	used anywhere, in any parts of New Mexico. So I hope
12	you pay attention to this, because why waste the time
13	and money to plant things that aren't even going to
14	grow here? Thank you.
15	UNIDENTIFIED SPEAKER: Ms. Martin, are you
16	finished? I'm going to have to switch my microphone
17	back. Hopefully you can hear this.
18	MS. MARTIN: Yes, thank you very much. I
19	am finished.
20	HEARING OFFICER ORTH: Thank you,
21	Ms. Martin.
22	The other person I saw on the platform who
23	wanted to offer public comment, I believe, is C.
24	Smith. C. Smith, can you hear me? C. Smith. I
25	don't know what the first name is there, just C.



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1	Smith is the identifier on the platform. He has no
2	microphone? All right, we're not doing panelists for
3	public commenters. It's a security measure. Some of
4	these hearings have been bombed, Zoom bombed, as they
5	say, and I'm not suggesting that Mr. Smith would be
6	such a person, but that's why we don't have public
7	commenters as panelists. I'm sorry if you don't have
8	a microphone, Mr. Smith. Let me invite you to offer
9	your public comment in writing sometime before
10	August 31st. And if you have other communication
11	on the platform with Mr. Myers here, your technical
12	host, please go ahead and do that.
13	So let me ask just as an open invitation
14	I don't see anyone else expressing a desire on the
15	platform to offer public comment. Is there anyone
16	who has perhaps said no originally and then changed
17	their mind here in the room? Okay, I'm not seeing
18	any hands here.
19	We will move, then, to the presentation by
20	GRIP. This is Gila Resources Information Project.
21	As I understand it, Ms. Siwik we're going to hear
22	from Ms. Siwik, by way of introduction, and then from
23	Dylan Duverge, and then from Jim Kuipers, and then
24	you'll wrap us up, wrap up the GRIP presentation at
25	the end of that. So we have Mr. Duverge in person,



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1	and you're in person, but then Mr. Kuipers is on the
2	platform, right? There will be a little bit of
3	awkward maneuvering, but we're going to get through
4	it.
5	So, Ms. Siwik, if you would please raise
6	your right hand.
7	ALLYSON SIWIK,
8	after having been first duly sworn under oath,
9	presented as follows:
10	MS. SIWIK: Thanks, Kevin and DJ.
11	Good evening, Madame Hearing Officer. My
12	name is Allyson Siwik, A-L-L-Y-S-O-N S-I-W-I-K. I'm
13	executive director of Gila Resources Information
14	Project, otherwise known as GRIP. And thank you for
15	the opportunity to provide technical testimony
16	tonight on Freeport-McMoRan application for the Emma
17	expansion project.
18	For those of you who are not familiar with
19	GRIP, our organization was founded in 1998. Our
20	mission is to promote community health by protecting
21	our environment and natural resources in Southwestern
22	New Mexico. GRIP's role is meant to facilitate
23	informed public participation and natural resources
24	decisions that will have profound and long-lasting
25	impacts on the region's environmental and economic

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1 health.

2	And for nearly 25 years, we've pushed mine
3	operators and state regulators to ensure that copper
4	mining is done responsibly in Grant County. I should
5	say, we are a member of the Initiative for
6	Responsible Mining Assurance, IRMA for short. IRMA
7	is an international set of standards for socially and
8	environmentally responsible mining. Anglo American,
9	Ford, BMW, Microsoft, Tiffany, Hornig have all joined
10	IRMA. All of these companies recognize that having
11	responsibly sourced metals is an important societal
12	goal and critical to their bottom line.
13	GRIP's responsible mining program is not
14	anti-mining. We recognize the economic importance of
15	Freeport-McMoRan to local families and businesses, to
16	Grant County and the state, as well as the
17	significance of copper production to renewable energy
18	development. However, we believe that company
19	profits should not come at the expense of healthy
20	communities and environmental quality. Freeport's
21	mining operations must respect their neighbors and
22	mitigate risks to our water supplies, our
23	environment, our wildlife, and public health.
24	As noted by Mining and Minerals Division,
25	the Emma pit is a new unit and must, therefore,

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1	comply with additional requirements under the Mining
2	Act. Under the part 5.508 mining and tools, the Emma
3	operation shall be designed and operated using the
4	most appropriate technology and the best management
5	practices, and the Emma operation and completed
6	reclamation shall meet requirements established to
7	assure protection of human health and safety, the
8	environment, wildlife, and domestic animals.
9	Now, we believe Freeport's operations and
10	reclamation of Emma should meet industry best
11	practice standards for socially and environmentally
12	responsible mining as defined by IRMA.
13	Now, our comments tonight respond to the
14	Mining Act new unit requirements, in addition to the
15	other Mining Act regulations that all mining
16	operations must comply with. And with me tonight are
17	two of our technical consultants, Jim Kuipers of
18	Kuipers & Associates. Jim is online from Montana.
19	And, also, Dylan Duverge of Stratus Environmental
20	who's here in the room. And I'll let them each
21	introduce themselves.
22	Jim and Dylan, they're going to be
23	outlining our technical concerns with Freeport's
24	application, and recommendations for reducing impact
25	to nearby residents, water supplies, the environment,



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1	and wildlife. So I'm going to hand it over to Jim,
2	and I know we're going to have to do a little
3	maneuvering here.
4	HEARING OFFICER ORTH: Welcome,
5	Mr. Kuipers. This is Felicia Orth and nice to see
6	you again.
7	I'm going to ask you to swear or affirm
8	that you will tell the truth and ask you to spell
9	your name and then give your statement.
10	JAMES KUIPERS,
11	after having been first duly sworn under oath,
12	presented as follows:
13	MR. KUIPERS: I swear to tell the truth.
14	My name is Jim, or James, Kuipers. Last name is
15	spelled K-U-I-P-E-R-S.
16	And, Kevin, are you going to put up my
17	presentation or should I try and share it
18	HEARING OFFICER ORTH: Mr. Kuipers, you
19	should share.
20	MR. KUIPERS: Can we can we see that?
21	Whoops. Can you see my screen?
22	HEARING OFFICER ORTH: Yes.
23	MR. KUIPERS: Okay.
24	Good evening, Madame Hearing Officer, and
25	others in the audience that have still stuck around.

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1	Appreciate everybody's patience, and appreciate the
2	patience of folks to try to make a hybrid meeting
3	like this work. Hopefully, technology will get
4	better. It can't get much worse sometimes, so
5	Just to start with, I mentioned I've been
б	working with GRIP for more than 20 years now, and in
7	that process also had the chance to work with the
8	folks at Freeport-McMoRan, the Mining and Minerals
9	Division, the environment department, and others
10	during that time. We've had a good conversation, I
11	think, over the years and things have improved
12	significantly.
13	I do work, have done for the last 25 years,
14	work for public interest groups and communities
15	throughout the United States, Canada, and elsewhere,
16	and I find the questions, the input that are being
17	provided by potentially impacted community members to
18	be particularly helpful here. I think it's very good
19	input to to have gotten. But oftentimes we don't
20	get that, and so I really appreciate people's
21	comments tonight.
22	Why don't we go to the next slide, and I'm
23	going to keep my comments fairly brief. And I'm
24	going to start by saying this slide is not meant to
25	impugn or otherwise suggest that the process that's

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being undertaken, nor Madame Hearing Officer's deadline in two weeks, is not respected, but I do think it's important to point out a couple of things in this situation.

5 One, as has been mentioned, the application б itself is not technically complete. There's still 7 questions between the agencies, the company going on, 8 and that, also, is an opportunity typically for us to 9 talk with the agencies informally, with the company, 10 and others, as well. One of our goals is always, by the time we submit formal comments, we'd like to have 11 those comments be fairly succinct, substantive, and 12 not have to throw literally the whole kitchen sink at 13 14 the Mining and Minerals Division, as well as others.

15 The second point here is the environment 16 department discharge permit application. That 17 application is presently under review, but we don't 18 yet have a draft discharge permit. And in most 19 cases, that's something -- we have at least had a 20 draft discharge permit to review and comment on at 21 the same time, and we expect the closure/closeout 22 plan to also reflect the DP. 23 So it's -- and I just mentioned one other

24 thing that, ideally, in the conversations we have, 25 even going to the next point and talking to Freeport



about Tyrone, one of our goals that I think folks can appreciate that have gone through the process is to avoid a discharge permit hearing. Those hearings are much more onerous than what we're all going through tonight, and so part of our goal in this whole process, and discussions, and other things is to try and avoid that.

8 We've also -- I want to make sure on my 9 third point, GRIP has had the opportunity to meet 10 with Freeport, Tyrone, and discuss the CCP. What I really meant to suggest here is we need one or two 11 more opportunities to really get to the point of 12 13 where I think we've had the kind of discussion and 14 clarification that we would desire, that would get us 15 to that point of being fairly succinct in what we all 16 expect of the Mining and Minerals Division, other 17 regulatory agencies to do or address.

18 And then, finally, just quite simply, this 19 has been a record summer for being busy, as well as a 20 few other things. Our technical comments are still 21 in the process of being developed, and they're 22 pending, and so trying to do this in the next 14 23 days, I'll just say it will be interesting, to say the least. Ideally, and, again, what's very 24 25 important here is New Mexico has a great deal of



1	respect for the Mining the Mining Act, as well as
2	the people who work in the Mining and Minerals
3	Division have a great deal of respect for public
4	comment. Ideally, to really take that the whole way,
5	we would have more time. And I do think we do
б	note that we can always submit comments to the Mining
7	and Minerals Division, they will address those, et
8	cetera, but this is really the opportunity to
9	formally submit those and have those submitted on to
10	the company. So just want to mention that, and it
11	wouldn't break my heart if you were to consider
12	perhaps giving us four weeks instead of two. I'll
13	just go so far as to make that recommendation.
14	So moving on to impact on local
15	communities. And and, again, I think the
16	discussion tonight that you've heard really reflects
17	a lot of the different things that I would plan on
18	commenting on in detail. But importantly here, what
19	we have in the case of Emma, because it's a new unit,
20	we essentially have a different situation where,
21	through the process of the Mining Act, and as I
22	mentioned, Section 69-36-5B here, there actually is
23	an analysis of the mining operations impact on local
24	communities. And that's something we haven't seen
25	previously, at least in my experience, at Chino,



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1	Tyrone, Cobre, and/or Little Rock. And so we're
2	really seeing the first studies, if you will, that
3	have been generated to look at these issues relative
4	to Tyrone, as well as to the Emma Project. And I
5	think that's something important.
6	As Allyson mentioned, one of the real key
7	parts of the act that we look at is the fact that it
8	requires most appropriate technology, best management
9	practices. And I'll touch on that a bit more, but
10	that's really the heart of what we all want to see
11	happen. We want to see the mining done, but we want
12	to see it done right, and it's using these best
13	practices and most appropriate technology, those are
14	the best ways to get us there.
15	So I've listed here some of the potential
16	impacts, specifically the non-water impacts because
17	my colleague, Dylan, will talk about those in a
18	moment here. But you've heard about things like
19	noise, lighting, air impacts, dust, blasting.
20	Haven't heard about safety, but I'd add that to the
21	list. In my experience, all these things, what they
22	lead to is an overall well-being, and way of life,
23	and a question about that, and a change in that and
24	people's either perception or actual well-being can
25	be affected.



1	Now, we look at the studies that have been
2	done. It is notable that they all come back saying
3	existing conditions, additional conditions are all
4	within acceptable levels. Noise is a really good
5	example. It was mentioned by somebody, but I'll use
6	it as an example.
7	Twenty-one years ago now, I was asked to
8	put together my first mitigation plan, a formal
9	written, legally agreed to mitigation plan between
10	Stillwater Mining Company and three environmental
11	conservation groups in Montana, but that plan dealt
12	with noise and lighting. And we did really pretty
13	much the same thing that Golder has done here in
14	terms of doing an assessment, a survey of the
15	potential noise and lighting, but what we discovered
16	was until we actually reached out to the community,
17	not waited for them to get to us, but actually went
18	to them and said, Tell us what your issues with noise
19	and lighting, those type of things, are, that's when
20	we learned that the studies we were doing really
21	didn't hit the mark. And noise being one of the best
22	examples.
23	The study that Freeport's done, the typical
24	study, it's based upon noise levels measured as
25	decibels. And that works very well in an industrial



1	setting. What happens in a quiet or quieter
2	nighttime setting and we discovered this, again,
3	when we actually went out and surveyed residents
4	was it was that backup alarm. And somebody mentioned
5	that, I think, earlier in the testimony. The backup
6	alarm, which didn't register hardly anything in
7	decibels, but was high-pitched, very annoying, and
8	happened to come on in the middle of the night and
9	wake people up, that turned out to be the biggest
10	issue. And, interestingly, the backups were
11	occurring where we had vehicles going forward,
12	parking it, and then having to back up when they were
13	leaving the workplace. We just simply put a
14	roundabout so they didn't have to back up.
15	That noise issue was addressed. Lighting
16	similarly addressed. All these things have very
17	individual impacts. One thing I would mention is the
18	studies also talk about the present and, really,
19	the impacts that they talk about are predicated on
20	the present existing best management practices by the
21	company.
22	And while they mention a couple of those
23	practices, we actually don't have any formal document
24	or an actual, what are these BMPs, how you know,
25	what do they entail, how are they enforced, what kind

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of expectation should people have from those BMPs, 1 2 and are they, in fact, reflect current best practice? 3 So these are just some of the aspects that we want to get to, and comments, in much more detail that will 4 5 take a little bit of time and effort to put together. Go ahead to the next slide. So there's a 6 7 number of other things, and, again, I think it's 8 interesting how many folks have brought up a lot of 9 these different aspects. But this is just kind of a 10 bullet list of the other aspects that we'd like to talk with the company about and/or comment on. 11 We talked -- you know, we heard from Tom, and I 12 13 appreciate Tom's presentation, always appreciate the 14 information that Tom provides. In terms of project 15 duration, I now understand this to be a five-year 16 I actually wasn't sure if it was a six- or project. 17 seven-year project, and the CCP, I wasn't sure, 18 reflected that, but appreciate the clarification on 19 the project duration. I think if I were a local 20 community person, somebody who might be affected by 21 this mine, two things I'd want to really know are is 22 there a potential for further expansion. Could it 23 be, the price of copper goes up, that you widen the pit and go even deeper? Are there other projects, 24 25 pods and mineralization located in the vicinity? Ιt

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would give folks some idea of whether this is truly a 1 2 five-year project or perhaps just the beginning of something more. And I realize that's up to the 3 company to provide that information, but it is 4 5 something I think potentially impacted folks deserve б to know. 7 It also leads to some ideas I would share 8 with the company and talk with other folks about in 9 terms of post-mining land use and, in particular, 10 open space. One thought might be that after the five years of mining and reclamation, could the area 11 surrounding the mine be put into a conservation 12 13 easement and held for not being developed in the 14 future, actually serve that purpose of wildlife 15 habitat that's mentioned more fully. 16 Climate change is something that's also 17 been mentioned. I do a lot of work on climate change 18 throughout the country, as well as elsewhere, trying 19 to come up with best ways to address build 20 robustness, build resiliency into the system. It's 21 always been surprising to me that Freeport itself 22 hasn't viewed this issue from a risk standpoint a 23 little bit differently, but that's certainly something we have some ideas on, and would like to 24 25 see some data that's been talked about and due for

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that.

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2	People are talking about waste rock and
3	potential for leaching of metals, various other
4	things. That's all part of the geochemistry. In
5	particular, we want to discuss the implementation and
6	carrying out of the company's waste management plan,
7	because that's how you make sure that if a pile isn't
8	supposed to generate metals, it doesn't, and that the
9	material that might generate metals goes to the
10	Tyrone Mine where they're already dealing with a lot
11	of it. It's not so much what we think we do, but
12	what we actually do on the ground in terms of that
13	waste in terms of the waste management plan that's
14	very important.
15	Pit reclamation, a pit lake sump, that's a
16	whole subject that we have talked with the company
17	about, the agencies about, as well. There's just
18	some additional discussion there, and I think
19	involvement with folks on the Fish and Wildlife, Fish
20	and Game side that needs to occur.
21	A subject that I always bring up,
22	particularly having my mining background and having
23	some particular experience with open pits, et cetera,
24	is we need to be concerned about high wall stability,
25	as well as public safety. Mining features become

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1	attractive nuisances to young folks and others, and
2	it's just one of the unfortunate realities.
3	As I mentioned, the discharge permit's
4	still under review.
5	And then I'll just close with one other
б	area that we worked a lot with the agencies, as well
7	as Freeport-McMoRan, is financial assurance so that
8	we make sure that there's always money available to
9	see these mines reclaimed and closed. One of the
10	issues we've talked about frequently is the 100-year
11	net present value and the use of that approach.
12	Other places are looking at as much as 500 years.
13	And the reality is while I I hesitate to use
14	the word "perpetuity" because that's well, that's
15	forever, it's going to be a long time, and we're
16	talking centuries, tens of centuries into the future.
17	We do need to make sure we've got that money.
18	And then, finally, one of the things that
19	we've worked together on over the last 20 years has
20	been a reduction of the corporate guaranty, which is
21	essentially a promise by the company to provide the
22	funds for some of this financial assurance. I think
23	it's very laudable that we have seen the company
24	reduce, and I think the agencies, as well as GRIP
25	have been a part of this, the financial guaranties



1	from as much as 75 percent the company could place,
2	presently it's 25 to 30 percent, I believe in that
3	range. We'd like to see that worked down to zero.
4	And if we're going to see the company, and I hope
5	they do see some financial benefit from the green
6	energy kind of revolution going on, that some part of
7	that profit does go into eliminating those corporate
8	guaranties over time.
9	So that's another subject we'd like to talk
10	about. So, again, appreciate everybody's time,
11	patience, and everything else, and look forward to
12	answering any questions if I can.
13	HEARING OFFICER ORTH: Thank you,
14	Mr. Kuipers.
15	I see Mr. Duverge at the podium.
16	Mr. Duverge.
17	DYLAN DUVERGE,
18	after having been first duly sworn under oath,
19	presented as follows:
20	MR. DUVERGE: My name is Dylan Duverge.
21	That's D-Y-L-A-N D-U-V-E-R-G-E.
22	Good evening, everybody. And everybody
23	who's still here, I applaud you. It's been a tough
24	evening.
25	I'm here to talk about the water issue that

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1	has come up a lot. I think it's worth getting a
2	little bit of background on myself. I'm working on
3	behalf of the Gila Resources Information Project as a
4	professional licensed professional geologist in
5	the state of California. I think it's worth saying
б	that I've got a lot of very specialized experience
7	working with well interference, investigations, and
8	fractured rock and granite specifically that looks a
9	lot like the geology out there at Emma.
10	I've put together a groundwater monitoring
11	and mitigation plans, and I've seen how groundwater
12	modeling can oftentimes differ from reality. So I've
13	seen how long-term modeling, future modeling of
14	groundwater conditions have differed from what we see
15	on the ground after five, ten years have gone by.
16	And that is normal for science.
17	So my role here today is to give a
18	technical review of two reports that I've reviewed
19	for GRIP, and just give my perspective as my
20	independent perspective as a geologist. Can we go to
21	next slide?
22	So to be clear, I want to show the two
23	specific reports that I've reviewed, which was the
24	D.B. Stephens & Associates report in 2021 that, as I
25	understand, was submitted in support of the discharge



1	permit application. There was another report that
2	also provided a drawdown analysis, by John Shomaker &
3	Associates in 2022, and that report was submitted in
4	support of the OSE water rights application.
5	So these are two reports that address very
6	similar questions that come up with very different
7	results for drawdown at the nearest domestic wells.
8	I'm going to do my best to give the sort of headlines
9	of these rather than go through them in detail
10	because you are all tired, and so am I.
11	So what I have found is that and this
12	is this is normal for a report that takes a
13	different technical approach, that makes different
14	assumptions, and that applies different values to
15	their analyses, but I want to point out the very
16	large differences between results of these two
17	reports. The D.B. Stephens & Associates report
18	modeled 2-foot drawdowns after 40 years at the
19	closest domestic wells. And the John Shomaker $\&$
20	Associates report modeled 10 feet of drawdown after
21	ten years at the closest domestic wells.
22	The difference here is are few. I've
23	highlighted I've bolded some of the major ones,
24	which is the simulat the time period that was
25	simulated, as well as the other water rights that

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1	were incorporated or not incorporated into the
2	prediction of drawdown at the nearest residential
3	wells. So the 10 feet for the water rights
4	application attachment that's the one on the
5	right that was 7 feet due to the exercise of
6	Tyrone's existing water rights, and 2 feet overlaid
7	on top of that because of Emma's pumping in order to
8	keep their mine pit dry well, as dry as they can.
9	Go to the next slide. Well, actually wait.
10	There's one other major difference I want to point
11	out, which is the assumed inflow rate. And both were
12	model simulated, but D.B. Stephens found a 10 gallon
13	permanent average inflow rate, which in both analyses
14	decrease over time, which makes sense. As
15	groundwater conditions reach closer to equilibrium,
16	that's a lot more likely that's more likely to be
17	seen the longer you model groundwater conditions.
18	But John Shomaker modeled about 62 gallons per minute
19	on average, which, for reference, is about 100 acre
20	feet per year. So there's an extremely large
21	difference in the assumed inflow rate in both of
22	these reports. And like I said earlier, it's not
23	necessarily because they did something wrong, it's
24	simply to point out that your assumptions, your
25	methods, will always produce different results, and



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1	this if you can go to the next slide this
2	doesn't really inspire confidence in the drawdown
3	results that have been reported to the model.
4	So in reviewing both reports, I found that
5	there's a real lack of adequate baseline data when
6	you're looking at the area south of the Emma pit, and
7	as you guys have heard, there are a large number of
8	residents that have concerns about access to their
9	water. So if you're going to try and address those
10	concerns, you would want to get gather more data
11	from the wells of the concerned residents. And the
12	only data in either report for the residents' wells
13	are OSE lots. Neither analysis incorporates the
14	exercise of domestic water users' water rights, which
15	tend to be around 3 acre feet a year. It's small,
16	but it ignores a very important user group in the
17	surrounding area. Both reports present results
18	without discussing data gaps or sources of
19	uncertainty, which is critical when you're talking
20	about hydrogeology, because our margins of error are
21	humongous.
22	So what I have seen in the past is a
23	presentation of a range of scenarios based on
24	acknowledged uncertainty. Neither report, as I've
25	read them, acknowledges the sources of uncertainty in



their results.

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2	I won't spend too much time on this, except
3	we heard from Freeport's consultants, and I don't
4	actually disagree with most of what they have said.
5	I just want to point out that they have they
6	presented the hydrogeology at the 35,000-foot level.
7	This is a very complex, intrusive igneous aquifer,
8	which is heterogenous. For those in the audience
9	that don't know what that means, you can drill a well
10	in one area, get no water whatsoever, cross the
11	street, drill a well, and have a well that produces
12	30 to 60 gallons per minute. What that shows is that
13	groundwater is moving in fractures, and it's moving
14	in unpredictable ways.

15 I want to direct attention to the bottom 16 middle area of the slide which shows the orientation of fractures and foliations in the rock that I've 17 18 lifted directly from the source map, which is Hedlund 19 1972 source map, which the regional geology is based 20 off of. And there's much more detailed geology for the Emma pit itself, including remapping of the 21 22 Sprouse-Copeland Fault.

What this shows is intersecting fractures that intersect in many different directions. So my main comment on the hydrogeology reports is that the



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1	geology in this case has been painted with a very
2	broad brush, especially when you're talking about the
3	area south of the Emma pit. I want to also point out
4	that I've added the two blue dots on that map which
5	indicates springs that actually by mapped by the
б	USGS, and the reaches south of or downstream of
7	those springs are mapped as perennial reaches. These
8	aren't shown on most of the figures well, any,
9	actually that I reviewed in the two reports
10	(inaudible) south of the unnamed fault that was
11	mentioned earlier, and those are indications of
12	surfacing groundwater.
13	In terms of this unnamed fault, we know
14	very little about it as to whether it facilitates
15	groundwater flow or impedes it. The Sprouse-Copeland
16	Fault is being characterized as an impediment to
17	groundwater flow in both of the reports. It's
18	probably accurate, but we don't know until it's been
19	validated. The reports I reviewed were after the
20	drilling of two of the very first monitoring wells,
21	so I have not reviewed what has occurred since the
22	drilling of the next, I don't know, three or four
23	monitoring wells. But the hydraulic properties of
24	the monitoring well that was drilled closest to the
25	Sprouse-Copeland Fault indicate an increase in



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1	hydraulic connectivity rather than a decrease.
2	I've tried to summarize the elements that,
3	at the very core, a hydrogeological model should
4	reflect. It's essentially a computer running
5	calculations and equations, but if you don't have
6	these elements right, it becomes very difficult to
7	provide a validated model. The geologic formation
8	and the hydrologic properties are fairly well-known,
9	so I would say that they were adequate, but with a
10	big caveat that they're based on monitoring wells and
11	well pump tests that were done only in and near the
12	Emma pit. It provides a very sort of a smaller
13	picture of a larger aquifer as a whole.
14	There are some questions about the faults,
15	like I just mentioned in the previous slide. There
16	is data, there is groundwater level data that was
17	gathered by Freeport in the last two years. These
18	are a small snapshot in time. As somebody pointed
19	out earlier, the groundwater level contours change,
20	and that can be for one of two reasons. Either it's
21	because the actual groundwater flow has changed
22	direction or because they are slowly getting a higher
23	resolution of detail on what the groundwater is doing
24	in that local area. In either case, there's no
25	ground current groundwater level information south



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1	of the pit or at Emma or at the Apache Springs
2	Subdivision, or any of those subdivisions south of
3	there.
4	I've covered those next two, which I think
5	should have been shown and discussed in greater
6	detail in both of the reports.
7	This is a cross-section of the mine that
8	was shown earlier tonight. That cross-section was
9	sort of a southwest to northeast cross-section, which
10	shown here is in a near perpendicular direction from
11	the northwest to the southeast. This shows the
12	residents' wells, and what I really want to highlight
13	here is the left of the cross-section the left
14	half of the cross-section shows in black stairsteps
15	the mine pit and the bottom, which we've covered is
16	500 feet deep and intersects the groundwater table
17	level by 200 feet. What I have added to the figure
18	are the red boxes and the blue dots, which show the
19	springs, as well as the date critically, the date
20	ranges for the water level data at the domestic wells
21	on the right-hand side of the cross-section. They
22	range from 1995 to 2009, basically, 10 to 20 years
23	old, and while groundwater levels in a fractured rock
24	aquifer don't change rapidly, they do change within a
25	20-year period, and the blue arrows indicate the



1	groundwater levels at the time those wells were
2	drilled, and they're all over the place. So that
3	shows that this is a dynamic system that changes and
4	that follows the fractures in the rock.
5	So one of the major steps when determining
6	how accurate a model is in predicting future
7	groundwater levels is a calibration, and you do that
8	based on the past, and past groundwater levels.
9	How how accurate is it in predicting groundwater
10	levels that we know have already occurred. There's
11	one groundwater monitoring well with a long-term
12	record in the vicinity of Emma, and that's well
13	MB-44. I noticed that the calibration did not extend
14	past 2010 and that MB-44 is completed in a different
15	type of granitic rock. It's much younger, it's
16	mapped as a different geological formation than
17	the than what would be than the pit would be
18	completed in.
19	There are always differences in simulated
20	versus observed conditions and models. Small
21	differences are acceptable. What I found is that a
22	really important difference is a difference in the
23	trend. The measured groundwater levels in the last
24	10 years at MB-44 has been stable. The model
25	predicted a decrease in groundwater level. I can't

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1	say why, but it's a very important difference to
2	point out.
3	This is probably my second major comment on
4	the drawdown analysis that I've reviewed. When both
5	of these consultants have reported the result, you
6	know, 2 to 7 earlier, but I've seen 2 to 10 feet
7	depending on the source, that sounds like not a lot
8	because they're comparing it to the total water
9	column that they know of that was measured when those
10	drill when those wells were completed or drilled.
11	And that can be any time between 1999 and, you know,
12	close to present day.
13	This figure right here is not my figure.
14	All of the colored arrows and the notations are mine,
15	but the figure itself is from OSE's drawdown
16	assessment guidelines. The reference for that is
17	Morrison 2017. What this figure is showing is that
18	the total drawdown that you can expect in a well has
19	many components. Only one of those components is the
20	drawdown caused by the dewatering well, by heavy
21	pumping. There's and, also, a component of
22	drawdown due to other water rights being exercised.
23	Some of them have got have one
24	report, like the John Shomaker report, did
25	incorporate the exercise of Tyrone's water rights as



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a whole, but for only 10 years, and we've heard 1 2 tonight that that is not a realistic assessment. 3 Once this pit gets dewatered, it will need -- those pumps will need to be running forever. So what I'm 4 5 trying to show here is that we don't know where the б well pumps are. We don't know what -- the 7 self-induced drawdown that happens in a resident's 8 well when their pumps turn on. But what I know from 9 experience is that when you have low-yielding 10 aquifers where water is coming from 2 feet, that drawdown is very large. 11 So my major point here is that there's not 12

13 been a survey of the residents' wells to get a better 14 understanding of what the lowest practical pumping level is. 15 The benchmark that has been applied is a 16 blanket benchmark that says, you can draw down these 17 wells as much as you want, as long as it's 20 feet 18 above the bottom of the casing. That's a blanket 19 threshold that, in this case, in a fractured rock 20 aquifer that's low yielding and low producing, is inappropriate. It could be appropriate in an 21 alluvial aquifer, but the OSE quidelines state that 22 23 that threshold is a suggestion, and can be stricter based on site-specific conditions. 24 And here I'm 25 arguing that the site-specific conditions are -- sort

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1	of ask for stricter guidelines.
2	I'm going to go to the well, I just said
3	this. It's not appropriate to compare the drawdowns,
4	the results to the total water column. You've got to
5	compare it to what's actually happening in the
б	domestic wells.
7	So, in my career, I've developed several
8	groundwater monitoring and mitigation plans. These
9	have been critical in actually protecting water
10	rights because when you're talking about
11	hydrogeological analysis, you're always talking about
12	a very large level of uncertainty. The only way to
13	really know what's happening in a system this complex
14	is to actually measure what's happening in the
15	domestic wells. Verbal assurances and data
16	collection don't mean much without a written and
17	enforceable purpose or plan.
18	The sentinel wells and the drilling of
19	additional monitoring wells is very welcome. I think
20	that's great. However, I worry that a sentinel well
21	might work in an alluvial aquifer, but may be
22	ineffective in an aquifer like this where groundwater
23	moves through fractures, and faults, and mineral
24	zones. And like like somebody mentioned earlier,
25	like, the model domain should be extended further



south to ensure the protection of every neighbors'
 water rights. That includes Butterfield Trail and
 Cullum Ranch.

I've indicated the major components of a 4 5 written and enforceable groundwater monitoring and 6 mitigation plan that includes a well-inventoried 7 survey to really understand where the pumps are, what 8 the dynamic drawdowns are, and where the current 9 water levels are critically. The lowest practical 10 pumping levels should be well specific, not a blanket 20 feet above the bottom threshold. There should be 11 two monitoring wells installed in residents' wells 12 who allow them, one being closest to the Emma Project 13 14 and a second one being the one who is determined to 15 be closest to the threshold or an impact.

Like I said earlier, MB-44 is the only long-term record of water levels. There should be an establishment of baseline conditions to know what happens at Apache Mound, and in between, without active mining, because how will -- how will they know what -- what is the cause of changes in water levels detected.

Finally there should be an action plan to -- to take if there are impacts detected, and that could mean deepening water wells, it could be use --

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like, using water trucks or other measures to ensure
continued access to water for these property owners.
That concludes my presentation. Sorry if
it went a little bit long.
MS. SIWIK: Thank you, and thank you so
much to the audience for still sticking with us.
I just wanted to quickly wrap up. I think
the bottom line from GRIP's perspective is and I
think, as you see, from Jim Kuipers' testimony, as
well as Dylan's testimony, is we need plans, we need
written plans. We need monitoring and mitigation
plans for to make sure that domestic wells in the
vicinity of Emma are not impaired by dewatering of
the pit.
We need to see written plans, mitigation
plans for noise, dust, lighting, and we need to see a
formal grievance mechanism. I know, and I appreciate
that Freeport does have a grievance line, and they do
their best to deal with with grievances. However,
there needs to be accountability to the community.
The community needs to know what those grievances
are, how many grievances, and what were the nature of
the grievances, no matter what, and how were they
taken care of. We need to see that. It's a it's
a measurement, really, of accountability and how the



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1	mine is doing in their environmental management
2	systems.
3	We've provided this feedback for many, many
4	years. We make this comment all the time. We hope
5	that Freeport will take the next step really to be
6	responsible to their neighbors, and especially with
7	the (inaudible) as this new unit.
8	So with that, I will close. Thank you very
9	much for the opportunity to comment. And I guess we
10	can take comments or questions. Is that right?
11	HEARING OFFICER ORTH: Thank you very much,
12	Mr. Duverge, and Ms. Siwik, and, of course,
13	Mr. Kuipers.
14	This is the time when questions can be put
15	to the GRIP panel. I know, Mr. Ohori, you don't have
16	a microphone in front of you, but if you just answer
17	the question as to whether you have questions of
18	them, I'll convey that for the transcript.
19	All right, Mr. Ohori just said he does not
20	have questions at this time.
21	I would (inaudible) at Mr. Shelley.
22	Mr. Shelley, I know you're not mic'd. Do you have
23	questions of the GRIP panel?
24	HEARING OFFICER ORTH: Thank you.
25	Mr. Shelley has indicated that he does not



1 have questions of the GRIP panel at this time. 2 If you're on the platform and you have a 3 question, please put it into the chat. If you're in the room and have a question, please raise your hand 4 5 now. Okay, I'm not seeing hands. And let me 6 7 check the chat. Thank you for looking. With that 8 being the case, we will thank the GRIP panel for 9 their presentation. 10 Let me turn one more time to throw the 11 floor open for public comment. This is the last 12 opportunity verbally. 13 Sir, come on up. 14 You do have a chance to put whatever you'd 15 like in writing between now and August 31st. 16 RANDY CHULICK, 17 after having been first duly sworn under oath, 18 presented as follows: 19 HEARING OFFICER ORTH: Give us your name, 20 spell it, and then make your comment. 21 MR. CHULICK: Yeah, my name is Randy 22 Chulick, and -- C-H-U-L-I-C-K. 23 My comment is can you extend the comment period for two more weeks after the 31st of August? 24 25 HEARING OFFICER ORTH: The question was

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1	whether the public comment period could be extended.
2	That's not, as I understand, a decision that would be
3	made tonight. I need to check with the division to
4	see if it can be extended beyond August 31st. That
5	was what they wanted me to announce tonight.
6	Mr. Shepherd or Mr. Ohori, what would be
7	the best way to convey to folks whether there would
8	be any extension? Would that be to put it on the web
9	page?
10	Okay, so the Mr. Ohori just indicated
11	that he doesn't have an answer this evening. If it
12	is extended, or regardless of whether it's extended,
13	the deadline will be on the web page. Will be on the
14	web page. Mr. Ohori?
15	Okay, so a decision on a possible extension
16	of the public comment period will be made very soon
17	and will be posted to the web page very soon. We
18	would certainly also convey it to GRIP and to FMI,
19	regardless.
20	All right, is there anything else at all?
21	Really, thank you all for your patience tonight. I
22	know it was was not elegant procedurally, but I
23	think we we have a reasonable record, and you
24	weren't forced to listen to a lot of reverb on the
25	way there.



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1	Anything else we can do? Thank you very	
2	much. Have a safe drive home.	
3	(The hearing concluded at 9:10 p.m.)	
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1	STATE OF NEW MEXICO	
2	COUNTY OF BERNALILLO	
3	REPORTER'S CERTIFICATE	
4	I, Peggy Jo Gonzales, New Mexico CCR #145, DO	
5	HEREBY CERTIFY that the hearing in the above-entitled	
6	cause was reported by me stenographically on August	
7	16, 2022, and that the foregoing is a true and	
8	accurate transcription of my shorthand notes.	
9	I FURTHER CERTIFY that I am neither employed by	
10	nor related to any of the parties or attorneys in	
11	this case, and that I have no interest in the final	
12	disposition of this case in any court.	
13		
14		
15	Creace Queales	* *
16	Peggy Jo Gonzalles Certified Court Reporter #145	
17	License Expires: 12/31/2022	
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