RECEIVED 2025 MAR 24 8:00 AM (E)

Technical Conference

IN THE MATTER OF

THE PETITION FOR INVESTIGATION INTO WASHINGTON GAS LIGHT COMPANY'S SYSTEM LEAK REDUCTION PRACTICES

Formal Case No. 1178

Moderated by Angela Parsons

Tuesday, March 18, 2025

2:03 p.m.

Public Service Commission of the District of Columbia

1325 G Street, Northwest, Suite 800

Washington, D.C. 20005

Reported by: Samuel Pachon

Job No. CS7228115

A P P E A R A N C E S

List of Attendees:

Angela Parsons, PSC Staff

Bryan Henning, PSC Staff

John Dodge, WGL

Jessica Rogers, WGL

Jacob Waller, Manager Codes and Standards, WGL

Brian Caldwell, DOEE

Kevin Murphy, WGL

Katya Botwinick, DOEE

Frann Francis, AOBA

Bob Ackley, DOEE

Nathan Phillips, DOEE

Thomas Bartholomew, DOEE

Sean MacMullin, WGL

Jason Cumberbatch, OPC

Aleksandra George Ruiz, OPC

Kevin Carey, AOBA

Hussain Karim, DOEE

Yohannes Mariam, OPC

Laurence Daniels, OPC

Tim Oberleiton, Sierra Club

A P P E A R A N C E S (Cont'd)

List of Attendees:

Richard Marsh, WGL

Francois Rongere, WGL

P R O C E E D I N G S

MS. PARSONS: All right. Good afternoon. I'm Angela Parsons with the commission. Welcome to all the participants in this now fourth technical conference in the matter 1178.

We are going to start with about 30 minutes or so on ALD procedures in response to the request from last time. And then we're going to move into the next topic, which is going to be on leak identification and categorization.

So I just want to remind everyone again of the ground rules. It's okay to ask clarifying questions but try to hold hypotheticals.

And because we are using a transcription service, please remember to not speak over each other if you can. It makes it very garbled on the transcript, and to identify yourself before you begin speaking. And that's also for the people online in particular, because we can't see you. Please state your name before you ask a question.

We're going to start. Identify everyone in the organization. Can we start with

staff? Bryan.

MR. HENNING: Sure. My name is Bryan Henning. I'm with the PSC staff.

MS. PARSONS: And then Washington Gas. Move around, like --

MR. DODGE: Good afternoon. John Dodge, Associate General Counsel and Director of Regulatory Matters for Washington Gas.

MS. ROGERS: Good afternoon. Jessica Rogers, Vice President of Regulatory and Climate Strategy for Washington Gas.

MR. WALLER: Hello. Jacob Waller, Manager of Codes and Standards, Washington Gas.

MR. MURPHY: Kevin Murphy, Vice President of Engineering, Asset Management, and Gas Supply Operations for Washington Gas.

MR. CALDWELL: Brian Caldwell, Senior Assistant Attorney General, Office of the Attorney General.

MS. BOTWINICK: Katya Botwinick, Energy Policy Analyst with Department of Energy Environment.

MS. RUIZ: Aleksandra George Ruiz, the

Office of People's Counsel.

MS. FRANCIS: Frann Francis, AOBA.

MR. CUMBERBATCH: Jason Cumberbatch, General Engineer, OPC.

MS. PARSONS: Yes. Actually, could we add anyone online that's from the organizations if you're a panelist, could you also introduce yourself?

MR. ACKLEY: Bob Ackley here at Gas Safety Inc.

MR. MACMULLIN: -- from Picarro.

MS. PARSONS: Okay. So we wanted to talk about ALD at the beginning. There were some questions. So who would like -- would you like to start? Do you have some information or --

MS. ROGERS: I guess I turn that over to Bob -- and is Nate on the line, too?

MR. ACKLEY: I don't see Nathan. What information are you trying to get from Gas Safety Inc.?

MR. CALDWELL: I should add a little bit of background. Gas Safety Inc. is the consultant that DOEE contracted with to perform the fugitive

emission studies back in, I believe it was 2023. Well it was submitted in formal case 1130 and 1154. I believe it was in late October, early November 2023.

And so Mr. Ackley is with Gas Safety Inc. Nathan Phillips, who assisted him with the study, is also supposed to be on the call, but he may be running late or maybe he'll be on momentarily.

MR. PHILLIPS: I'm here.

MR. CALDWELL: Oh, okay, great. Nathan Phillips is also on the phone. So those are the two individuals who are primarily responsible for performing the study using ALD, I should mention.

MR. PHILLIPS: Happy to answer any questions that the -- anyone has there on the study that Gas Safety Inc. did in -- in 2023. So we -- we've already furnished all the information to District DOEE, and I think the -- your office will probably have it as well.

MR. CALDWELL: Yeah. Yes, that's correct. We did submit a couple of letters that were authored in response from Mr. Ackley and Mr. Phillips that were in response to issues that were raised

previously regarding, like, sensitivity levels and the like.

MR. PHILLIPS: Yes. Happy to answer any questions about sensitivity levels. And I guess there's somebody here from Picarro as well. Happy to answer any questions.

MS. ROGERS: Hi, Mr. Ackley. My name is Jessica Rogers. I am with Washington Gas. And this is more just an informational question. When you think about the best use of ALD for a system like the one in the District, what do you recommend?

MR. ACKLEY: What would Gas Safety Inc. recommend?

MS. ROGERS: Yes.

MR. ACKLEY: To use that equipment to conduct annual surveys and potentially more if -- if needed, and test every deviation from the baseline. That's what I would do.

These -- the idea that the analyzer can tell you the size of the leak or the location of the leak has been really elusive to Picarro and to the other ALD folks using this equipment. I've been using

it since 2012, I believe, and done many cities and many surveys.

The repeated deviations indicate a leak. Might just be half a part per million, you know, a few ppb's really. But when you get that repeated deviation, we found leaks at foundations a hundred feet away, 200 feet away from the analyzer.

So if you really want to have a safety survey and -- and by the way, every one of these deviations were from a car, and we had to go out with traditional gas detecting equipment and find these leaks, you know, with either a flame unit or a portable gas detecting equipment.

So all of these leak indications, no matter how small they are, all come from a source that is actually a hundred percent gas, a million parts per million. I mean, do you realize that as well?

MS. ROGERS: That makes sense to me.

MR. ACKLEY: Yeah. I mean, we get leaks up in meters, meter sets, underground leaks. You know, it could be from another street, leaks you're getting. I've gotten leaks on streets that

were actually coming through the woods from another street. It's probably 300 feet away. It sounds crazy, but it's the truth.

So we -- we've gotten leaks on top of buildings that were blowing down from -- from rooftop air conditioners. There's all kinds of crazy stuff. This -- this equipment is fantastic. It really is.

So it's really up to the personnel that's using the portable equipment to go out and pinpoint these leaks that I've been training people for 40 years to do this kind of thing, to find the leaks with portable equipment which WGL uses, the Old Boston Gas uses, Detroit Energy uses.

I mean you're all using the same kind of stuff that picks up gas in a couple of parts per million, and you should all be able to find these leaks. Does that make sense?

MS. ROGERS: It does. Is there anything that you think of as like an industry best practice or the, you know, sort of going for the low hanging fruit as we introduce the ALD with our existing leak survey process?

MR. ACKLEY: Well you know, it's a great question. The -- the federal regs say you got to do the services periodically and the mains periodically. Some do the three-year on the federal, some do the five, you know, the five-year on the services. Most of them are doing the three-year so they don't have to parse things out.

And that was all done with portable walking equipment on the services and flame ionization units or some other technology on the mains. And if you did a good job, you could really find all the leaks on those surveys.

ALD has really made the workers and the leak detection people on their toes because these repeated deviations indicate leaks. And that's the real killer on these, is they find a lot of leaks on the first go round, and they should be finding these on the traditional gas leak survey.

And I spent the last ten years of my career in leak survey, chasing personnel to make sure their equipment was working, they were actually on the job doing it and finding stuff, that their equipment

was working.

And that's what we found when we did audits that a lot of the equipment wasn't working. It was poor practices. So -- so all this -- all these leaks really have to be found with traditional equipment. And what the -- what the ALD tells you is that there's a leak there with that repeated deviation from the baseline.

So I would suggest for any gas company you bite the bullet on the first go round, get those leaks. You're going to get your grade 1s up by -- up by the houses, and they're not going to be your third-party hits and broken gas lines, you know, from cracks in the -- in the mains.

What you're going to get is the -- the rotted-out services of which in the District, WGL doesn't have that many. I think you only have 6,000 bare steel services left in the District. So your problem is your steel mains and whatever casts you have left.

So yeah. Run that over, get all those leaks, get them on the books. You'll spend a lot less

money than chasing super-emitters. Our protocol on super-emitters is the bigger the footprint of the leak, the more the emission. And this is for grade 3s. You're going to put your 1s and 2s on -- on repair anyway.

You should not have any super-emitter grade 3 leaks -- I mean grade 1 leaks. They should all be leaks that you've got on your record that, you know, aren't explosion hazards, but you can prioritize the emissions by the size, you know, the estimated volume of the gas coming out.

And there are protocols out there with the drive-by, by the analyzer to say, oh, it's emitting so many cubic feet a day. Well it's a guess, it's an educated guess. And I've been working with these. We ran the same protocol, you know, to get a flux rate on that. And Nathan has a little more detail on that.

But this is what I would suggest in -- on any distribution system. And I've overseen pretty much the entire grid area, Eversource area up in New England for years throughout Connecticut Eversource

down through New York.

And now on research, I've done cities around the country using this ALD stuff. And you'd be surprised. You look at our study of Cincinnati, Ohio, where they replaced the system with plastic, and we only had about 250 leaks or so on a city with the same size of -- maybe a little bit bigger than -- than the District. And that had -- I can't remember, Nathan. Maybe it was -- it was under 300 leaks in about 1,800 miles or so.

MR. PHILLIPS: Sounds about right.

MS. ROGERS: So just one more question. You mentioned -- I think you used the phrase maybe "repeated." I know I'm not getting the phrase right now, even though you said it a couple of times, and it definitely starts with an R. Essentially, like, repeated hits above baseline. How do you --

MR. ACKLEY: Correct.

MS. ROGERS: How do we get the repeat process? So is it one pass-through? You drive the system, or you drive the system month over month? Like, in your mind, how do you develop that, and

what's the baseline? What's the appropriate baseline to use?

MR. ACKLEY: Well the baseline varies during the day. So you kind of, you can actually watch that baseline all day long depending on weather patterns.

Really, you can go down the -- down the street that's a quarter of a mile long and go down that street and get a hit, and turn around and come back and you get that -- you let the machine clear -- make sure it's cleared out, which it will in a matter of seconds. You go back. You get that hit again. That's your verification right there.

You can go over streets -- I can go over streets for hours and not get a hit. They're all plastic or there's no gas. There's no leaks, you know. But you get into these old areas, you get a lot of hits from joints. You get a lot of hits from the corrosion. You get a lot of hits from the meters.

I see a lot of pressure down there. I don't know the system as well, but I see the regulators. So this -- they -- there could be a lot

of regulators going. There could be, you know -- and we are finding stuff that's coming from inside buildings as well. So I hope that helps.

MS. ROGERS: It does. Thank you very much. I don't have any further questions.

MR. DODGE: Not a question but -- not a question, but we want to make sure that we give the parties time to pose questions to Mr. MacMullin from Picarro.

MR. CALDWELL: Oh, sorry. Does the staff have questions?

Mr. Phillips, this is Brian Caldwell with the Office of the Attorney General and representing DOEE. You are familiar with some of the findings that Washington Gas has submitted to the commission when they performed a survey of the area that you all performed in the fugitive emission study. Have you seen those submissions at least --

MR. PHILLIPS: Yes. Yeah, yeah. My -- you know, I haven't studied it recently, but the big takeaway is I think that the leak count by Washington Gas was quite a bit lower than the leak count that we

obtained in our study.

MR. CALDWELL: Correct. Yeah. And do you have any sort of explanation for, you know, why there might be, you know, a difference in the number of leaks that you've found versus the number of leaks that Washington Gas found?

MR. PHILLIPS: Well I have a speculation. But I do -- I want to start by thanking Washington Gas for providing some crucial initial information after having read the filing that I submitted a few weeks ago. Because it allows us to start eliminating possibilities that could explain the discrepancy between our results.

And so one thing that has to be compared among methods is what's the kind of size of the search window in which you average peaks in concentration of methane, because, like, two peaks that are, like, 5 feet apart, for example, are probably related to the same leak and not two different leaks.

And so in our study we were clear that we used a 30-meter averaging window, so around a

hundred feet. And I think that we heard that the Washington Gas Light study used 25 meters as an averaging window. So that's -- those are approximately the same, and that allows us to put that factor to rest as something that would explain the discrepancy.

And so I think what we're left with is in -- in so many words, I think Washington Gas Light's filing says that they were focused on super-emitters and the largest leaks, where we were in our study looking at leaks of all sizes down to, you know, the smaller leaks and, you know, for -- for both greenhouse gas emissions and losses, but also for safety because we know that small leaks are not necessarily safe leaks.

So I think, you know, that that is probably the difference is just the threshold at which we are counting what is a deviation or not. And that I think Washington Gas is using a higher threshold for what they -- for their purposes for that study. They made it clear that they're looking mostly for super-emitters, which comes back to the question of

why use advanced leak detection for the biggest leaks.

In fact, I think advanced leak detection, it's like taking a -- an X-ACTO knife to something that you could use a butcher knife to -- to find out, if -- if that analogy kind of helps.

The -- the CRDS technology, as Bob said, is fantastic. It's so sensitive and precise, and it's a bit of overkill to be using it only for the super-emitters where the traditional equipment would do just fine.

MR. CALDWELL: I see. So it's really, it sounds like -- it sounds -- it's a question of what it is that you're -- the size of the leak that you're looking for? I mean if you're -- if you're out there trying to find super-emitters, would that necessarily impact your ability to find smaller leaks as well? Or is it just what -- what you're deciding to count as a leak?

I guess, is that, like, more of a subjective level rather than like, you know, something that's -- the equipment would indicate?

MR. PHILLIPS: Yeah. You know, I'd

like to hear Bob's opinion on this, but I -- I think, like, the more traditional flame ionization unit equipment from years' past would do just fine to find the super-emitters. And that the precision and sensitivity of the CRDS technology is way above what's needed if the object of the study is -- is really focused on those largest leaks. Those are not too hard to find. You don't need to have advanced leak detection for leaks that are very big.

MR. ACKLEY: We -- we used to -- we used to find them by vegetation by looking at them, believe it or not. But I would be interested in what -- is it Sean from Picarro -- what they're using for their protocol now to indicate what a leak is.

And I'll tell you -- I'll strengthen what Nathan -- I -- I've shown him with the leak surveys is the big leaks are the easiest ones to find. It's no problem. You can walk around with pretty much any piece of equipment and find a -- find these big leaks.

In Massachusetts, we had, a few years ago, we had over 20,000 outstanding gas leaks that

were grade 3s mostly. So I don't know what Washington Gas has for outstanding grade 3s. I think we did see some numbers, but I think a lot of these leaks are non-hazardous for explosion that we've detected on our survey. It's just that there's been a lack of -- Picarro is using the same equipment.

We -- we are basically using the same sensitivity of having a baseline where we use a zero air and can get zero methane up to about 20 to 30 ppm depending on which equipment you're using. It's an unbelievable detection tool.

And then some algorithms have been developed to say, oh, the longer you're getting the leak into the analyzer, the bigger the leak is, which is true. But if you just go over a -- a leaking valve that's really blowing pretty hard, you can mess that up. There's always going to be exceptions to that rule.

But what is Picarro and WGL using to say they have a leak? I -- I use a repeated deviation and that's how I showed Picarro to use it with the original chief technology officer Eric Crosson. And

he showed me as well.

We agreed that it -- just about every deviation is -- is a leak somewhere. Could be a hundred -- I had one 150 feet away on a survey I did in Acton in Massachusetts last year up on a meter set off a road. So it could have been an underground leak and explosion hazard. But it -- it wasn't on that one. So anyway, thank you.

MS. ROGERS: Jessica Rogers. I will jump in before Sean provides sort of his thought about the repeated deviation and the settings on the equipment that we've been using. I do want to make a point of clarification here.

The company is not currently doing a super-emitter program. When we -- we run the ALD on the DOEE list that we have been been using going ward by ward, we are looking at any leak. And the lack of confirmation of the leaks does seem to be a bit of a problem.

So we do the drive. We, I believe, look for the repeated deviation. So we -- and Sean can probably speak to this better than me -- we do

multiple passes on the streets. We then check for those places where we see repeated deviation. We go out and ground truth it. And when we are ground truthing these same routes that DOEE ran, we are not getting hits for leaks.

And so that's the part to me that is where I would like to see us refine this, use this technology in the most effective way possible, including using our ground truthing process effectively and not sending out our employees to ground truth phantoms, because that's not a good use of their time or the resources of the customers.

So to me that's kind of where I -- and I am not a technical person, so I am really enjoying hearing Mr. Phillips' and Mr. Ackley's thoughts on how we can do this better. And again, Sean will provide Picarro's side of the equation. But to me it's honing the technology to effectively ground truth.

Okay. Sean, it's your turn.

MR. BARTHOLOMEW: Well I was just --

MR. MACMULLIN: And -- and --

MR. BARTHOLOMEW: Sorry. This is

Thomas Bartholomew with DOEE. So that was just a statement, not a -- not a question; right?

MR. MACMULLIN: That -- that's correct. You know, Ms. Rogers is not a witness. She is, you know, basically testifying or, you know, giving her a version of, you know, what was performed, you know, in the study. But she was not actually out there, I don't -- do not think out there performing the study herself. Just want to make that statement clear.

MR. DODGE: What Washington Gas -- Washington Gas understands this to be a technical conference and that everybody is welcome to speak.

MS. PARSONS: This isn't a hearing so we --

MR. MACMULLIN: I'm just pointing that out.

MS. PARSONS: That's fine. Thank you.

MR. MACMULLIN: Yep. Since you know anyone is welcome to speak

MS. PARSONS: OPC. For point of clarity, it would be important to know if lawyers are claiming to make testimony. So just please clarify

that for the record.

MS. ROGERS: I'm not a lawyer here on behalf of the company. I am the regulatory person, and since our company person, Mike Upshaw, isn't here but was here previously and testified to this very thing at what I believe the second technical conference, I'm just reminding everybody what he said in that technical conference because Mr. Ackley and Mr. Phillips both asked from Washington Gas's perspective what we are doing and suggested that what we're doing is a super-emitter program.

Mr. Upshaw made it very clear that's not what we're doing. And so I just wanted to bring that up. Mike was actually on the signup list but couldn't make it today,

MR. CALDWELL: Was that -- he was actually -- that question was actually directed to the Picarro representative, not to --

MS. ROGERS: He said both Picarro and Washington Gas, and Picarro's position is not -- Sean is not here to speak to exactly what Washington Gas has been doing with the Picarro data after the run.

That is all a Washington Gas effort.

The ground truthing is Washington Gas out there with Washington Gas's people and then Washington Gas's follow-up.

MS. RUIZ: I'm sorry. That's a -- so I'm a bit confused. So Picarro is not running the ALD testing for Washington Gas?

MS. ROGERS: The ALD runs are done with Picarro and Picarro's technology. The ground truthing after is Washington Gas employees.

MS. RUIZ: So Washington Gas is ground truthing super-emitter data that's picked up by Picarro?

MS. ROGERS: It's not just super-emitter data. It is leak data, deviation, repeated deviation data.

MS. RUIZ: But your answer is yes?

MS. ROGERS: Yes. We do the leak detection and repair. The ground truthing is a standard practice at Washington Gas, and so that is part of our practice. Advanced leak detection isn't the ground truthing piece, it is the car or other

technology that's used to go out in advance of the ground truthing.

MS. RUIZ: This is my question and more so a request. So this is extremely confusing for OPC during the last conference. Washington Gas shared that Picarro is the only entity involved that has the capacity to test super-emitters. So if there is some other capacity Washington Gas has, it would be important for the rest of us to be aware.

MS. ROGERS: I think we're talking about two different things then.

MR. CALDWELL: Could I just ask one question for clarification because the -- the number of leaks that are reported by Washington Gas in those reports that map DOEE study area, are those the number of leaks that the ALD itself is -- is picking up, or are those the number of leaks that have been ground truthed by Washington Gas?

MS. ROGERS: It is both. So the study shows the general number of hits from ALD and then shows the ground truth hits. And then the ground truth hits are the number that's compared to the DOEE

list, because the DOEE list was essentially the same front-end piece of ALD drive done slightly differently without the follow-up ground truthing piece.

MR. CALDWELL: So you're comparing -- sorry -- you're comparing the ground truth to DOEE's ALD leaks, sounds like.

MS. ROGERS: Well I think we -- subject to check because I haven't looked at one of those in the last couple of weeks -- I believe what we do is confirm to both.

MR. HENNING: Just so I make sure that I understand correctly, you keep using the phrase "ground truthing," and I want to make sure that -- that I understand correctly what that process is because it sounds, as I understood it to be an awful lot like what Bob described as the follow-up to an ALD pass.

So when you say "ground truthing," that is Washington Gas personnel going out with traditional equipment like the flame ionization sensors or handheld equipment to go seek out where there might be indications to actually locate the leak itself, which,

as Bob said, might be several hundred feet from where the peak was in that process.

So is -- is that what you're talking about, that process that they described where you go seek out and identify the actual leak associated with that peak on the ALD process?

MS. ROGERS: Yes. It's exactly like Bob described. So I -- I completely agree with Bob. That's how the process works. You do the ALD run, and then you do that handheld on the ground effort. And both pieces are needed in order to make the ALD effective.

MS. PARSONS: So essentially someone -- personnel, they're walking the -- the route with the handheld equipment to check it?

MS. ROGERS: Yes.

MS. PARSONS: I want to make sure OPC understands that's what -- what they're talking about. It's basically a two-step project -- process to get to the leak.

MS. RUIZ: I understand that, and that's extremely helpful. It was my understanding

from previous conference that that traditional equipment or ability to pick up leaks was not available to Washington Gas for super-emitters.

So I guess there is some confusion there, and OPC would love clarity on whether that is the case or not because it's -- it's unclear at this point.

MS. PARSONS: That was not my understanding, but -- but you clarify for --

MS. ROGERS: Sure. We have the traditional technology, and the traditional walking approach. We continue to do that. We do it pursuant to PHMSA's requirements. And that is a capacity that allows you to find super-emitters.

I think that what ALD adds, especially on a small system like the District, but even on bigger systems, like our system in Virginia, because the technology is car mounted, it's so much faster than walking the system. And so you can drive the system, you know.

Kevin, correct me if I'm wrong, but isn't it every three years of the walking survey is

required, but we could do it so much faster with ALD?

MR. MURPHY: The federal regulation is -- is five years for survey but three years for visual inspection for atmospheric corrosion. So we take the lower that means more than mandated leak survey. We -- both activities done at the same time. Its boots on the ground.

You're obviously not going to get a atmospheric corrosion survey if you're driving by in a car. But that's our -- our current practice is to use the same type of equipment Mr. Ackley described to do the leak survey on a three-year cycle.

MS. BOTWINICK: I have just a question from DOEE; just a couple points of clarification. I think the thing that we established -- I don't remember if it was the second or third leak detection conference -- was that WGL didn't have the equipment to do flow rates, is that right, which is part of identifying super-emitters; is that correct?

MR. MURPHY: That -- that is correct.

MS. BOTWINICK: Okay.

MR. MURPHY: Our equipment won't do a

flow rate. And you heard Mr. Ackley describe kind of the inferences that are used to determine a flow rate using the ring-down spectroscopy.

MS. BOTWINICK: And then the other point I wanted to clarify what I think Bob and Nate were trying to talk about when they suggested that WGL was just looking for super-emitters, the filing I think that they were referring to was the one that WGL filed on January 30, 2025. This was in the response to the Picarro settings.

There's language in there that says methane concentrations greater than 20 ppm above background or high persistence. These are the detections that are prioritized, and there's a lot of other language that just -- that suggests that the ALD surveys are prioritizing these bigger leaks.

So it's unclear if the smaller leaks are just not being counted or reported. And I think that's what Bob and Nate were trying to get at. So that language is -- was a bit confusing.

MR. BARTHOLOMEW: And Thomas Bartholomew from DOEE. Just as a matter of process,

we invited Bob and Nate to come to this conference to answer questions. I don't think it's actually a great use of time. I think one of those -- one of them has to drop off, like, early from this meeting anyways.

I don't think it's a good use of time to sort of debate back and forth stuff we've talked about at previous conferences. If folks have questions for them, that's what they're here to answer. They're not getting paid more to do this. Like, they're off their contract.

So if we could use the time here to ask them questions about the work they did and the statements that they've made, I think that would be the most helpful use of our time today.

MR. HENNING: I -- I don't have a question. But I think think actually that they had a question for Washington Gas and Picarro on what they were using and the setting that they had for the sensitivity that defined a deviation from baseline that was done during the course of their ALD survey so they can establish whether or not that minimum threshold, before you constituted a deviation, might

be the cause for why you have discrepancies between the two.

I don't want to put words in either of their mouths, but I believe that that was the question that they posed. So if they can confirm that that's the case, then we can pass that question back to both Washington Gas and Picarro.

MR. PHILLIPS: Yes. That is a -- you've captured it quite well. This is Nathan. Thank you.

MS. ROGERS: I'm handing it over to Sean.

MR. MACMULLIN: So I can speak a bit to the -- the thresholding and sensitivity. So on the Picarro system, anything that's triggering at a minimum of 35 ppb or 0.035 ppm above a background level is considered as a signal. We do have an algorithm which automatically corrects for fluctuations in the ambient background. So ambient background is about 2 ppm but can fluctuate.

And so if there's areas of high background or variable background, the threshold

automatically adjusts to that. So we're -- so the system is not triggering on -- on background indications.

From there I think it's really mostly a matter of how the signals are prioritized in terms of their -- of their response. So using flow rate as a criteria is something that the Picarro system does using the concentration as a criteria.

We talked about the repeatability of detection. I call that signal persistence, but I think that's another -- I -- I agree with -- with Bob's statement that that's an important characteristic, is looking for -- for signals that will detect more than once across multiple passes.

And also for the Picarro system is using the simultaneous measurement of the ethane and methane where ethane is a trace gas for -- for natural gas. And so if we see ethane in the signal, we're confident that that's from a natural gas source versus no ethane in the signal would be more likely from a biogenic gas source.

So I -- that's -- that's a bit of

the -- the different parameters that -- that we think about from the perspective of prioritization of -- of signals. But from a peer detection perspective, it's -- it's a minimum of 35 ppb above that fluctuating background. Thank you.

MR. DODGE: Yeah. Thanks a lot. That's really great. That's probably similar to using our modified tower approach, Nathan, about 30, 35 ppb?

MR. PHILLIPS: Yes. And also it's -- it's reassuring to hear that you are allowing for a moving background value because we do know that it shifts over the course of the day, as Bob said.

And in different regions of the city you might have a -- a -- kind of like a moving background. So it's really important to account for that. So it's good to hear that you are accounting for that.

One remaining thing that I -- I wonder about is if you're correcting for time lags from the inlet of the -- of your analyzer to the machine. You know, like, is that a matter of a few seconds or a second or -- and how do you correct for that when

you're -- when you drive one way down the street and back the other way. You can get a shift in the apparent location of the -- of the spike because of the time that it takes the gas peak to get into the analyzer.

So we corrected for that by doing tests and, you know, correcting for that lag. And it helps us to more precisely locate where the deviation is, you know, from multiple passes. Just wondering if that could be another reason for discrepancy. Thanks.

MR. MACMULLIN: Yeah. That -- that is part of our installation and calibration procedure is to measure that time delay from the inlet to the analyzer for every installation. And so that's corrected for automatically in the software after the installation and calibration has been done.

We usually see that -- that time delay depending on the -- the tubing length of -- in the car between three and four seconds.

MR. ACKLEY: Sean, just one last question from me is I tried to solve the mystery with Eric on, you know, getting these flux rates from

various locations and how we can get a flux rate when we don't know where the emissions point is, meaning a hundred feet away from the inlet of the analyzer in the car.

So this whole idea that these small leaks are not -- these small deviations are not large leaks some distance away or non-hazardous is really incorrect in my opinion. And I don't know how we can prioritize.

I would prioritize every deviation from baseline from the leaks that I've seen with slight deviations up on service lines and -- and far away. But I don't know if Picarro has -- has now been able to prioritize that. I -- I don't know if that's true. Is that true, Sean?

MR. MACMULLIN: From -- Bob, you're asking from a -- from a flux or a flow rate perspective?

MR. ACKLEY: From safety. Actually, from both, from safety and from flux, because it indicated in some writing that, you know, this is prioritizing safety and flux. And I disagree -- I

disagree with that. I think that all the deviations should be investigated in what we call odor complaint investigation. You can call it ground truthing.

But it's the same as a public odor complaint. Somebody calling in on the phone and saying, "I smell gas" at a certain location. So you would -- our protocol at Gas Safety Inc., since I've been doing this, has been to do 300 feet in every direction from the deviation, you know, from the repeated deviation, try to hone in on it.

And luckily now I have a portable backpack as well along with flame ionization units and rovers and all -- all kinds of stuff to find these things. But it's really pretty basic to find the leak after once you get their repeated deviation.

But still, you haven't been able to do that; have you?

MR. MACMULLIN: Well, we have a -- we have the -- the detection and an object to be investigated, which we call LISA or leak indication search area, which -- which prescribes which particular pipelines based on the multiple detections

over multiple passes should be inspected with handheld equipment in order to find the leak. But that protocol has been developed by Picarro and its customers and tested across the industry.

In -- in terms of the flow rates, we -- we do have the ability to measure directly the flow rate of each source. It's based on the concentration and the wind. It's about -- sort of the precision of that is about one order of magnitude.

So because leaks can come in so many different ranges of sizes across four or five orders of magnitude, it gives that course prioritization. So it's allowing the -- the system to say this is a big leak or this is a small leak. And that's a relatively distant independent quantification.

MR. PHILLIPS: If -- I'm sorry to interrupt, but I -- I think I have an idea of what might be going on here, but I didn't mean to cut you off if you were still speaking.

MR. MACMULLIN: Go ahead, Nathan. Yep. Sounds right.

MR. PHILLIPS: Yeah. So I -- I think

maybe I understand what's going on. So with a 35 part per billion lower limit to your -- what you're using as, you know, a deviation, a lower threshold for what counts as a deviation, we're -- we go lower than that. We go to, you know, 10 ppb approximately.

And what that means is that, let's say that there's a very flat baseline of 2.00 parts per million. That's the background. That means that your work -- you -- you have to see a 2.035 ppb elevation in order to count.

We, when we're doing it, if we see a 2.020 or a zero point -- a -- a 2.025 or a zero point -- a 2.030, we will count that if it's repeated and in the same location. And we already know that -- and I think Picarro knows this well as well, that the distribution -- the statistical distribution of leaks is a long tail distribution, which means that there's many more small leaks than there are large leaks.

It's not a bell-shaped curve. It's a skewed curve. So there are lots of small leaks and I think that 35 ppb threshold that you're using is a threshold that's higher than the one that we're using.

And that may -- there may be a lot of those leaks in that in between range.

MR. MACMULLIN: It -- it's possible that's the case. Ten ppb is about the noise threshold of the system itself. So within a -- a fluctuating background of -- of about 2 ppm there -- there may be false positives that are generated from using that low of a threshold based on the noise -- noise floor of the analyzer itself.

So that's why we -- that's why we pick 35 ppb as we go a little more than three sigma above the -- the noise threshold.

MR. PHILLIPS: And I can see you're being conservative. I appreciate that with the equipment, but I do want to also qualify that we don't do that unless it shows up as a repeated signal in a very flat background. And so the chances of having a repeated deviation from, you know, a -- a flat background is very low.

So we don't just arbitrarily go with a 10 ppb. We see if it's a repeated deviation and we are, you know, we are pushing the -- pushing the

limits of the technology, which is great technology. But yeah, I -- I think this could be where the discrepancy may lie.

MR. HENNING: This is -- this is Bryan Henning with the commission staff.

Do you happen to recall -- and -- and it's been a while since I read your report and -- and it was rather detailed, so I want to make sure that I'm remembering correctly and -- and you may have to go back and verify.

Do you recall if the background conditions when you did that survey would have supported using that 10 ppb consistently through D.C., or were there enough variances that you had to use a more conservative approach just to deal with the -- the atmosphere conditions of the city itself?

MR. PHILLIPS: Well I will -- I'll give you my recollection. Bob can chime in as well. But what we do is that the background itself can vary from, you know, on one -- one day you can go out and it's 2.000 as a background, flat as a pancake. You go out the -- the next day or a different part of the

city, and that background could be 2.5000 flat as a pancake.

So the background level can shift even though it's very, very flat, but it can shift by way more than, you know, 10 or 35 ppb. But within that period of time that you're doing that survey in that space, if you have a very flat and stable background, you're not seeing the noise that you're just picking out noise. You're seeing a clean deviation from a flat background.

And in those cases when you see it on repeated passes, even if you're down to 15 or 20 ppb, you can see it.

MR. HENNING: Yeah. I -- I appreciate that. I think my question was, do you happen to recall if when you did your study in the city that it had that nice clean flat background, or was it -- was it subject to a little more variance as you move through it, given that I know that the -- the city and conditions can change pretty significantly?

I'm -- I'm less concerned about exactly where that level was, but I just want to make sure

whether or not the conditions at the time matched to those that you've identified where you would use that lower sensitivity level since it -- it sounds like you believe that may be the cause of the discrepancy.

MR. ACKLEY: Nathan, I can -- I can jump on this here and say that the -- the baseline level throughout the District was really good. This moving of the baseline occurs really in the morning. At night the mixing layer shrinks, and the methane is compressed.

And then as the sun comes out, you could get baselines pretty high, 3, 4 ppm at night. And then at sunrise it'll pop up and then it'll come down to a -- a -- close to 2 part per million baseline unless we have an atmospheric pressure change.

And you could get really crazy stuff happening on an -- on an atmospheric pressure change with gas coming out of the ground that has been held in. It's kind of like a burping day. Some days we have a lot of gas coming out of the ground and other days you won't.

But the -- the equipment and what

they've done, as you heard from Sean and you heard from us, we -- we developed a moving baseline with our data, and it works really great.

And I will say, according to what you asked your -- your specific question, I'll compare it to Manhattan, which I've done, which had a lot of compromised sewers. So the baseline shifted around from neighborhood to neighborhood depending on how bad the sewer system was. And you could smell the sewage, especially up in the upper west side.

I've been up and down every street in the District twice now -- well actually four times. because I -- we did multiple passes, and there weren't areas in the District that were really, you saw that this baseline was corrupted by the sewage system. And that's really one thing that will -- will corrupt it midday as you go into an area and the sewage system will be compromised.

So our data, I think, was really good and I stand behind it, and I think it's really -- I don't know what the protocol is for Washington Gas on a public odor complaint at a street address. And

that's how I would handle every one of these deviations as you go down the street.

So somebody would be dispatched to a location, and they should be checking every direction 300 feet. And they would have a map of all the facilities in their truck to do a flame ionization gas detector survey of every pipeline within 300 feet.

And typically, if they're still getting a deviation, if they had the analyzer, it -- they -- they would be going inside houses because there might be gas inside a house that's coming out a window, which we've had before as well. So there was gas loading up in a basement.

So if you're getting that repeated deviation, you should be able to find it. So I -- I look at the equipment and the procedures for the public order complaint investigation is where I see the problem.

MS. RUIZ: The commission covered my question.

MS. PARSONS: All right. Any other questions or should we go ahead and move on? We'll

let the -- the people on -- on virtual step off if they -- if they don't want to attend the rest of it. Thank you for your time.

UNIDENTIFIED SPEAKER: Thank you. Appreciate it.

MR. CALDWELL: Thank you. For the record, I just want to say that the fugitive emission study was -- it was submitted at the end of 2021. I think I said 2023.

MS. PARSONS: Thank you. Yes. I believe was -- wasn't it submitted in 1154, the matter?

MR. CALDWELL: Yes. In 1130 as well.

MS. PARSONS: Oh, also 1130. Thank you.

MR. ACKLEY: I'll stay if there's any other questions and drop off in a bit. Thanks.

MS. PARSONS: Thank you. It's almost three o'clock. I know we usually power through. Does anyone want to take a break this afternoon or are you okay to go ahead and start the next step?

UNIDENTIFIED SPEAKER: That would be

fine, five minutes.

MS. PARSONS: Yeah, that's fine. All right. Can we take a five-minute break?

UNIDENTIFIED SPEAKER: You want a five-minute break? Thank you.

(Off the record.)

MS. PARSONS: All right. I think we're ready to get started again.

MR. WALLER: Okay. Thank you very much. My name is Jacob Waller. I'm Manager of Codes and Standards at Washington Gas as we went through in the introduction. So I really appreciate Mr. Ackley's final comments there with respect to what do -- what does the gas company do when they are responding to reports of an odor or an initial claim by a leak survey technician.

And that brings us to leak grading protocols which, in essence, is the assignment of a level of hazard to a leak indication.

I don't know how to advance the slides.

MS. PARSONS: Next slide, you'll say.

MR. WALLER: Who is advancing? Next

slide. Is that -- is that you?

MR. HENNING: No. We have our IT support --

MR. WALLER: Oh wow. Okay. Great. We have an -- an operations and maintenance manual, which is a set of -- a set of practices, policies, and procedures in response to Title 49 of the Code of Federal Regulations part 192.

And within -- within that document we have a section titled "Leak Grading, Repair, and Monitoring Criteria." And this forms the basis for leak assessment policy at Washington Gas.

So we have an indication which may be prompted by a -- a drive by from an -- an advanced leak detective vehicle. And in response to an indication or a signal which occurs, you know, during multiple passes -- I believe the phrase was "deviation from baseline" -- we would follow this procedure to assess the level of hazard and assign a grade 1, 2, or 3.

This has been on the books for a number of years, but the purpose of this slide was in part

just to show that from ten years prior, we've made several revisions, mostly editorial. But we did make a major change to the way we approach grading to align with -- actually it is the New York Codes of Rules and Regulations, which is shown on the next slide.

So in 2021, we adopted an approach, like I said, from I think it's Title 16 of the New York Code of Rules and Regulation that -- that demands a -- an assignment of hazard a grade. They're called types in New York, but we call them grades as a function of leak concentration and proximity to a structure as well as the ground cover, which -- which lies above the -- above the leak, should it be a below-ground leak.

I would be remiss if I didn't mention that any -- any indication that gets -- that gets inside a house, or any occupied structure would prompt a -- a classification of hazardous.

So this is New York's graphic. We took it and modified it, and the result is shown on the next slide.

So what you had was more of a profile

view in New York. We took the opportunity to, you know, at our own tactic, which is a bird's eye view, which would have you scope out a leak, determine the -- the extent of the leak. That is the -- the spread of area that the leak covers that's bound by a reading of zero -- zero gas. So that -- that would be a spread of -- that would be the -- the migration pattern, as it were.

And you have a -- you end up with a collection of concentrations, proximities to structures, and ground covers. So when you mix all those three factors together, you end up with an assignment of grade 1, grade 2, or grade 3, which is in order of most hazardous to non-hazardous, or immediately hazardous to non-hazardous 1, 2, and 3 respectively.

So for example, if -- if I detect any gas reading within 10 feet of a building wall, the leak grade is 1, and that receives immediate and continuous treatment until resolved.

If I am 25 feet from a -- a leak, I'm in the yellow zone that's beyond 20, but within 30, I

believe. Sorry, the text is a little bit small. And if I have an unpaved area and I'm 20 percent gas and air as my peak concentration, I receive a leak grade of 3. And this would be, you know, the closest to the building structure.

So every leak is going to have kind of a spread, a unique fingerprint, and you know, you're -- you're taking all of these things into consideration.

You're also taking into consideration -- into consideration whether or not a leak makes its way into a substructure, like a sewer line, or a storm drain, or a water -- water meter box. And those have their own criteria as well.

I -- I would note, as I listened to the ALD talk earlier, it occurred to me that 1 percent gas in air is 10,000 ppm. So you know, when -- when we assign grades to leaks, we're -- we're on those orders of magnitude.

We talked about 35 ppb, 0.035 ppm, I believe that's the -- if a ppb is a thousandth of a ppm, we're at a much lower scale than -- than what we

deal with when we're -- when we're talking about leak grades.

Just -- that just occurred to me, and it -- it impressed upon me that the scale at which ALD is looking at leaks is much finer than what we have historically used for decades.

MR. CUMBERBATCH: Question.

MR. WALLER: Yes.

MR. CUMBERBATCH: So the -- the graph here says it's visually grading for typical single family house. Is this grading -- and I'm seeing, you know, the distances from the -- the structure or the house -- is this the same for leaks, let's say, from a commercial building or from -- in the middle of the street or from a construction site?

Just trying to understand if there's a -- a different system based on where the leak is originating from.

MR. WALLER: That's a great point. And there was a question that came in with respect to the way the neighborhoods and this -- the landscape, the streetscapes look in -- in Washington, D.C. It's

oftentimes different from a single-family home. You'll have more rows of homes or commercial and -- and residential, you know, lining -- lining the street.

So it's the same anywhere you go. You -- you have a point in space that you've, -- you've created. It's -- it's usually a -- a little borehole into the -- the ground. And that -- that spot is X distance away from the nearest building.

So it doesn't matter if you're in, you know, Reservoir Road where there are single-family homes, or out here in front of this building. You have a spot. You have a proximity to a -- the -- the nearest building wall that's X feet. You have a gas concentration that's determined by a combustible gas indicator, and you have street cover, which out here I noticed it was paved from sidewalk to sidewalk or building to building.

So you have to mix all of those three no matter where you are: commercial, industrial, residential district.

MR. CUMBERBATCH: Right. But wouldn't

that make a -- wouldn't there be a difference if the leak is from a service line compared to a main line?

MR. WALLER: Typically, the leak grading criteria are pipeline type agnostic. So oftentimes what you'll end up with when it's a leak along a service line is a leak that propagates closer to a building wall because the mains are typically out in the street and the service lines travel to the building walls.

So -- but that's just a function of the system design. You know, it -- at the end of the day we're looking at points in space, what kind of gas concentrations are we getting, and how close are they to structures.

MS. ROGERS: So Jacob, is it right that when we think about leak grading in a, like, heavy urban environment like ours -- high pavement, dense buildings -- you're just going to see more 1 and 2 when a leak happens rather than in a rural environment where you might get more 3s?

MR. WALLER: Yes. Exactly. If you could go back one prior slide, you'll notice in the

location column it says, "Paved area or unpaved area." If I was out in front of this building along G Street Northwest, I'd be in a paved area. And if I just glance from side to side, from comparing paved areas to unpaved areas, you're generally at a higher -- meaning lower number, sorry -- grade higher level of hazard.

If you see the yellow, it -- it especially sticks out, you know, 2 and 1 versus 3 and 2. It gets -- it gets near equivalent when you're far away. That is beyond 30 feet away from a structure. But in -- in general, that's true.

MS. RUIZ: A question along the same lines. This is Aleksandra from OPC.

In the operations manual, do you consider whether the leak is by power lines, for example, which would change the risk of different kinds of leaks? Is that included?

MR. WALLER: Oh, we don't mention power lines. I'm thinking to myself, what would that look like? And if I had a -- a gas line that's nearby a power line, which happens, you know. These -- these

utilities are crossing and they're traveling in, you know, in parallel at times. That's not a consideration.

I -- I would be remiss if I didn't remind myself right now that the question posed earlier about the type of pipeline does have a qualifier, and we're going to get into that. That is, we have system pressures. We have a transmission system, which is upstream of a distribution system, and certain pipelines that are -- just call them high pressure, immediately receive a higher grade.

So beyond this graphic, there's -- there is what we call "special considerations," which I'm about to get to. And yeah, proximity to structures, the -- the whole risk is that we're -- we're encroaching upon sources of ignition. So I just want to highlight that.

MS. RUIZ: That's -- that's very helpful. So do you have a list in the operations manual of the kind of structure that could be in proximity and increase that risk in, specifically, D.C.?

MR. WALLER: Let's take a look at the special considerations, which are all listed on subsequent slides and see -- see what -- what kind of circumstances dictate, you know, considerations beyond just this -- this graphic.

MR. MURPHY: Jacob probably has it on other slides, but type of -- it's -- if it's an occupied structure, it gets the same treatment.

MS. ROGERS: Well and then there's also the, like, confined substructures. So, like, if it's an underground power line in our confined underground space, that would sort of fall into that substructure category, I would guess. I honestly don't know. So --

MR. WALLER: It's -- it's possible. This is a great discussion by the way, because you're really getting my wheels churning. Think about an electric duct bank. You have concrete structures. They carry conduits that have electric lines. You said electric line earlier -- somebody did.

And if gas were to get in there, you would be in the confined spaces, manholes, valve

boxes, other substructures category. And if I -- if I just get 3 percent or greater gas in that structure -- trapped in that structure, it -- it's a grade 1 which demands immediate and continuous response.

So from that angle, you know, electric lines -- I think, you know, it's probably a little more possible -- probable is the word I'm looking for, that it would be a sewer line or a storm drain. But -- but it's possible to -- to kind of migrate into these duct banks. You just said someone said electric earlier, so to leverage that example.

But yeah. Any -- any occupied building receives the same level of treatment, meaning home, school, commercial building. If it -- if it can get in there, we want to know how close the gas is and at what concentration it's -- it's reaching.

MR. CALDWELL: Can I ask a quick clarifying question? We have the different colors -- red, orange, yellow, green -- and differentiated by paved area and unpaved area. I just want to understand, like, the reason for specifying whether it's paved or unpaved, is that a function of the

material that's on top, or is that just an indication if it's paved, it means it's probably closer to a structure?

MR. WALLER: Oh, that's a great question. To me, when you're talking about a paved wall to wall atmosphere, like I keep referring to -- it's such a great example out in front of this building -- when it's paved, that gas has a harder time of escaping through the soil.

So to us it represents -- that's an inherently higher level of hazard because the migration can -- can be extensive before that gas finds the path of least resistance and makes its way up through the soil. That -- that barrier serves to kind of trap the gas and then it can travel in many areas, which, you know, demands a -- a, you know, pretty thorough -- a very thorough leak survey to -- to kind of figure out where -- where your perimeter of zeros is, as you kind of deduce the -- the leak spread or profile.

MS. ROGERS: Well -- and I think to your point, Jacob, that it's migrating to the place of

least resistance to escape. That's when you're looking at, like, substructures and interior spaces. And that's why you need to cover a broader range?

MR. WALLER: Right. Substructures especially receive pretty strict rules. If -- if I may, I mean, you're talking about just 3 percent, which is, you know, not tremendously high if -- if the spectrum of percentages is from 0 to 100. And any -- any mode by which gas can migrate poses a hazard; substructures, paved areas. This is why we discriminate between paved areas and unpaved areas.

MR. HENNING: I just had a question about the weather. Does the -- does changes in the weather, it can cause movements in gas to change as well, right? Are there some leak types or places where the weather change would make a leak more dangerous than it would normally be?

MR. WALLER: We are mindful of the weather. And you have to -- yeah, we recognize that, let's say, we had frozen ground. It would mean that the inspection pattern -- when -- when we go, we want to see where the -- where this profile or where this

shape that the leak plume underground occupies. We would've to go further. If it's wet, you know, leaks may -- may spread further.

So, you know, the -- the approach is the same in dry weather as it is cold or wet weather. You're forming a perimeter of zeros if -- if that makes -- if that makes sense. We call it leak centering.

MR. HENNING: Yeah. No, that -- no, that's helpful. So I mean, that's something that when someone's like on site, they're -- they're noting that and they're changing their -- their approach based on the weather, or is that just -- how would -- how does that come to bear?

MR. WALLER: Yes. We're talking about leak grading, but there's another section that I didn't highlight. Shame on me. I should have included a slide. It's called "leak investigation." And it shows that a perimeter that you have to achieve before you can, you know, affirmatively say, "I've got the leak surrounded."

MR. CUMBERBATCH: Jason from OPC again.

So -- so the leak grading, is it essentially the point where the gas escapes, and based on the distance or the parameters around that escape point that's --

MR. WALLER: Okay.

MR. CUMBERBATCH: -- determines the grade?

MR. WALLER: Okay. Great question. What we're doing is we're -- we're finding any substructures that we can find, first off. So you see that little yellow valve box in the street. We're checking there if -- if there's a leak indication at this house along the surface line.

But we're also probing the ground with -- with drills or bars and creating what's called a bar hole. And we're measuring the gas concentration within that hole that extends down to our pipeline. It's about an inch and a quarter in diameter, give or take.

So we're not waiting for gas to escape. We're -- we're actually piercing the ground so that we can detect gas that's, you know, shifting throughout the soil or flowing from a leak.

MR. MURPHY: And the -- the relative distance is judged from the highest concentration detected. That's where you're making the grade assignment?

MR. WALLER: Yes. That's a great question. I really appreciate that because if I wasn't clear on that, I -- I apologize. But we have to -- we determine the concentration, not just from standing on the surface and, you know, we have the -- they're wands. And that's helpful because they could be inserted into holes into the ground.

MS. BOTWINICK: I have a follow-up question. This is Katya Botwinick from DOEE. How are leaks treated if they're coming from above ground? If it's determined that the leak is coming from above-ground infrastructure, how are they treated and graded?

MR. WALLER: Right. So above-ground leaks -- if I had a leak at a -- I'm trying to think how I should do this, because they -- they come, yeah, absolutely. They come up in further slides. There's -- there's a -- a big one we should probably

knock off, you know, the checklist.

If -- if the -- the person that's moving these slides can advance to the -- one slide forward, please. Ah, that's great.

Okay. So -- so what about above-ground? I'm going to kind of leap off this. So if you have an above-ground leak, like a leak at a meter set or a riser -- meter sets are very common; you'll see them outside of buildings or inside -- they -- they're either hazardous or non-hazardous, one or the other. And -- and if they're hazardous, they get treated the same way as a grade 1 leak.

So this shows up in our special considerations, which you're reading a lot. There's a lot of text here. But what -- what this is supposed to do is just show an evolution over time of criteria that have been, you know, listed within the O&M and then we've -- we've refined that the -- the descriptor.

MS. RUIZ: While you're explaining, could you please add what constitutes a hazardous leak when it's above ground? So you -- you mentioned it's

the same as a grade 1 leak, but could you explain what constitutes hazardous, or how do you get to that point?

MR. WALLER: Yeah. Hazardous leaks represent an -- an immediate danger that requires immediate action or continuous action until the condition is no longer hazardous. And that kind of dovetails with the definition of a grade 1 leak. A grade 1 leak is a hazardous leak.

And so what does that mean? Well if -- if it's audible from above-ground, if I can hear it hissing, it's a -- it's a hazardous leak, which if it results in combustible mixtures around sources of ignition, or could result, i.e., an inside leak, then it's a -- it's a hazardous leak. If it's resulted in a fire or explosion, that's a hazardous leak. If it's an outside leak that's traveling under or into a structure, it's a hazardous leak.

So we have these considerations listed here. They show up in the O&M as well too. We're trying to -- I'm matching this graphical, you know, kind of cut and dry with these qualifiers that you

need to consider. But in essence, a hazardous leak is -- represents an emergency to us.

MS. BOTWINICK: Just one more follow-up. How many of the above-ground leaks would you say are hazardous? If you can, like, it could be a rough guess. I'm just --

MR. WALLER: That data is available. Above-ground leaks are -- I would be guessing.

MS. ROGERS: We can get that information for you.

MR. WALLER: Yeah.

MS. ROGERS: I'll save Jacob from guessing.

MR. HENNING: This is Bryan Henning with the staff. I -- I noticed the color indicators as you went through on this slide. Does that reflect when the revision was added? So, i.e., the text in the light green was added in that revision? The text in the blue was added in that revision? Same for the text in red?

MR. WALLER: Yes. It represents when that text became effective.

MR. HENNING: Okay. And then the giant red box, is that because that was updated in the -- the '23 revision or just a highlight that all of that analysis was replaced with the -- the graphical approach to it?

MR. WALLER: Yeah. First off, we tried our best to summarize ten years' worth of evolution in a slide. So I'm -- I'm really apologetic about all the text here. But that big red box is supposed to draw my attention to the fact that that one statement was -- was an approach and the paradigm shift to the leak grading graphic occurred in -- effective January 1, 2021.

So for example, back in 2012, if I were talking to you in 2012, I would've said -- all I would've said is any CGI -- that's combustible gas indicator -- reading 75 percent or greater is a -- is a grade 1. And we've -- we've really, really added layers to that. If that --

MR. HENNING: No. That answered perfectly.

MR. CUMBERBATCH: I'm sorry. Just one

last follow-up question. Just following up on DOEE's question of how many hazardous leaks are above-ground. So in terms of the recording of the leaks, which is done on the LIDAROC database, how do you differentiate between the two tabs of above-ground leaks and underground leaks?

Because my understanding is the above-ground leaks are the complaints that are made by either residents or that's -- that's called in or, you know, and the underground leaks are what is determined by the technicians when they come on the site.

MS. ROGERS: I think that subject to Kevin and Jacob's correction, as always, you can have a -- a call out, an odor call, for either above or below-ground leak. It's essentially just an indication that somebody smells something.

And then we send a crew out and they look for where that leak is coming from, which again, could be underground but found its way out, or from an above-ground source. Is that right, Jacob?

MR. WALLER: Yes. When you call in a leak, we're going to do an above-ground and a

below-ground assessment. I mean, getting -- when we pinpoint it that -- that will be telltale. But if we can't find it, you know, from -- on a meter set using soap and water or something like that, or a CGI, it will prompt a below-ground investigation.

But we, you know, when we get calls, the -- the leaks are -- they come from both spaces.

MR. MURPHY: So it's been a minute since I perused through the LIDAROC database process. But there -- there is reporting of odor complaints in LIDAROC. Those are customer calls. It's odor of gas in the air most commonly. And the -- the resources we send, we colloquially refer to them as our above-ground technician. They do maintenance on above-ground assets. They do the meter -- meter work, customer premise work.

So as -- as was said, if we get out there, and that -- that first responder does the assessment and determines the leak is below-ground, they'll -- they'll go through the grading process, and if it can be scheduled for repair, a 2 or a 3, it's -- it's scheduled for repair, and that's the end of that

visit until an underground maintenance crew can deal with it.

If they get out there and it's above ground, they make the judgment. Is this hazardous? Do I need to deal with this or get somebody out here who can deal with it? Or is it non-hazardous? Can I schedule it for repair or not even schedule it for repair? Grade 3s can be monitored in the next leak service cycle.

So it's a little convoluted in LIDAROC database because of the way the -- the prescriptive way it's defined in -- in the DCMR. It says give us this, and so that we do that. And it does make it a little hard to digest. But whether it's above or below it -- it still goes to a hazard assessment.

MR. CUMBERBATCH: Thank you. Thank you.

MR. HENNING: I guess the follow-up to that question then is when you are looking through these in LIDAROC, is there an easy way to differentiate whether it was an above- or below-ground leak?

MR. MURPHY: I don't know if it's easy and I'm -- I'm guessing it's not. We've had multiple technical conferences around LIDAROC and we -- we really struggled to find a common understanding. I'm always up for another go. And -- and I -- I don't think I can do it by the seat of my pants here without it in front of me. But I -- we -- we recognize that's been a perennial topic of discussion.

MS. RUIZ: Well OPC would welcome that for another LIDAROC focused conference. I also have -- oh, go ahead.

MR. HENNING: I was just going to say, I -- I actually believe that that is part of this broader 1178 discussion process, is -- is how we might improve that. We were trying to get what we thought might be the easier component, which is how is a grade derived? But I -- I think we will get into that discussion as we go further into this process.

MS. PARSONS: That would probably be, like, the next stage we would focus on LIDAROC.

MS. RUIZ: I have just one last question about the first slide and the conversation

around it. What part of the operations manual, if any, addresses a situation where -- for example, it's Georgetown. There's a row of structures that are entirely surrounded by cement. Does the operation manuals direct or inform how far out you should be testing for underground leaks?

MR. WALLER: Yes, yes. Absolutely. So in the leak investigation section of the O&M, which is section 3221 -- this is 3222; it just precedes this -- you must -- you must test in a situation like that.

It's Georgetown. You said it's -- it's all paved. So you're going to be drilling holes along the -- the main and the service -- the area in question till you form a perimeter of zero readings that you know, where -- where gas is -- is not observed. So you have the -- kind of like a lasso around the -- the leak -- the migration profile.

So yes. You would be -- you would be doing that in Georgetown. And that's -- that's defined in not the -- not not the grading, the assessment of hazard, but in the -- the kind of the -- the mechanics behind the -- the assessment.

I wish I had that graphic right now, but --

MS. ROGERS: I was just thinking that would've been a good, like, fancy graphic that we need to invest in.

MR. WALLER: Yes.

MS. ROGERS: Like, invest in.

MR. WALLER: It's not so fancy. But it is effective.

Grade 2, so what do I mean exactly when I say grade 2? Because grade 1, those are hazardous and require immediate and continuous response until resolved. But the next slide defines a grade 2 leak. That's non-hazardous at the time of discovery but requires scheduled repair. It used to say "justifies," but just editorially, we -- we felt it better to -- to say "requires."

These -- these leaks are cleared within one calendar a year, not to exceed fifteen months and are monitored every six -- six months until cleared or downgraded. That is a -- a possibility.

And then once again, we have these

special considerations. These happen to -- to meet -- meet up pretty closely with the diagram -- the graphical diagram.

So you know, if I'm reading one of these currently, and I see the term "CGI," again, I'm going to say a combustible gas indicator reading at top right of less than 10 percent gas in air in a paved area or less than 20 percent gas in air in an unpaved area within 20 feet of a building wall.

That's a mouthful. But those are all kind of graphically represented in -- in the figure we -- we showed.

MS. RUIZ: I have a question around what you just mentioned. Is there a limit to how often or frequently grade 2 leaks can be downgraded?

MR. WALLER: If you were going to downgrade a grade 2 leak, you can only go -- there is a limit. It could only be downgraded as far as a grade 3. So that's -- that is a theoretical possibility.

And then you're going to have several opportunities to downgrade a leak. That is one

during -- if there's pinpointing activity. So a grade can be assigned by a leak survey technician or a service operations technician as part of a leak survey or a response to an odor call.

Then you're going to want to pinpoint the leak and get a sense for, you know, where it's specifically coming from. That's going to be assessed by a below-ground crew, a crew with those tools that I mentioned, bore holes into the ground, especially pavement.

When you do that, you can downgrade a leak if the readings you're getting, you know, disagree with the original assessment that was only above-ground. Or if you reassess the leak six months from the original investigation, you have an opportunity to downgrade the leak.

But if it remains a grade 2 after one calendar year not to exceed fifteen months, it needs to have been resolved or repaired.

MR. CUMBERBATCH: So just to clarify, you have up to 15 months or 12 to 15 months to repair a grade 2 leak?

MR. WALLER: Yes.

MR. CUMBERBATCH: So I guess that's probably where I think OPC needs some clarification. We were under the impression that grade 2 leaks would be repaired in -- within a six-month period.

MR. WALLER: It should be assessed within a six-month period. But unless there's some sort of agreement that I'm not aware of, you know, like an order or something, the -- the O&M follows that they should be monitored at least every six months and then repaired within calendar year, NTE fifteen months.

MR. DODGE: Jacob, if I may. John Dodge with Washington Gas. These are not Washington Gas's standards. The -- the derivation of these is federal law; is that correct?

MR. WALLER: Almost. The -- the derivation of this is from a federally recognized group, the Gas Piping Technology Committee and their grading criteria that is in the -- they're known as the GPTC, and they have a -- a guide for distribution and transmission and gathering operators. And they

outline this timeframe.

There is no timeframe in -- in the federal -- federal regulations. There was a proposed timeframe that appeared in a proposed rule that is called the Advanced Leak -- well known as the Advanced Leak Detection Rule, but it is TBD.

MR. HENNING: So I actually have -- I have two questions. I'm going to start with the updated PHMSA rulemaking on that.

Presuming that what was published as the -- the Notice of Proposed Rulemaking, and then the January 17th publication, presuming that that actually is implemented and passed forward, do you anticipate that there will be any changes to how you go about grading these leaks? I -- I know that there are going to be repair changes in timelines, but do you -- do you anticipate that that will change your grading process for leaks?

MR. WALLER: Not repairs, but grading, yes, because we are compelled to understand leak flow rates within ALD, which it's very important to understand that, you know, currently as our technology

suite exists, we are not considering flow rate when we assign grade. It's just, as I said, concentration, proximity to structures, ground cover.

MR. HENNING: Do you have an estimate for when that's going to be established within the O&M manual?

MR. WALLER: I do not. We would've had a timeline should the ALD rule, you know, not been rescinded or withdrawn.

MR. HENNING: Right. Published on January 17th is an important component to that, I'm -- I'm aware. Then the -- the second question that I have for you is, when we're discussing this downgrading process, do you know when those -- when leaks that are done repaired -- done repaired -- when leaks that are repaired are submitted to your annual PHMSA report and they're categorized as hazardous or -- or other, is that categorization based upon the initial finding and categorization, or is it based upon the grade of the leak at the time at which it is repaired?

Which is to say, if you downgrade it,

does it go in as a -- a non-hazardous for the purposes of that report, or is it hazardous because that's what it was when you found it?

MR. WALLER: I'd like to check. I --

MR. MURPHY: It's -- it's classified as what -- how it was categorized at the -- at the time of repair. So you know, if -- if a 1 -- it's very possible that a leak survey technician with limited ability to do an underground migration investigation, gets out there and says, "This is a 1." An underground crew puts down bar holes really understands the true extent of migration and says, "No. Actually it's a 2." We fix it. It's -- it's going to be reported as a nonhazard.

MR. HENNING: Okay. Thank you.

MS. ROGERS: And I think going back to your question about the tabled, pulled, unclear, unclear status of the federal rulemaking, when we had, in our January 30th report, talked about a super-emitter program, I think where that program is useful using ALD, looking at the emissions or the leak rates, it -- it's the grade 3s; right?

Because the grade 3s -- and maybe a little bit of grade 2 -- but the grade 3s in particular, a higher leak rate doesn't necessarily mean that you're getting moved up because you're out in the middle of the street or, you know, for other parts of our service territory, not D.C., it could be in the middle of a field.

But that's a place where we see ALD, a super-emitter program using ALD, that would make a difference in the emissions and would really prioritize leaks that otherwise might not get the priority.

MR. HENNING: And -- and just to make sure that my intuition is correct and -- and aligns with what it sounded like Bob and -- and Nathan were saying, that's driven by the fact that realistically a grade 1 leak is just not open long enough to emit that much gas regardless of the size, because it has to be repaired or addressed immediately. So it just doesn't have long enough to admit that much gas?

MR. MURPHY: I'm not a hundred percent sure I'm -- I'm following you. But you know, if -- if

a grade 1 is picked up with an ALD device capable of estimating flow rate, we know when we found it and how much we think it might've been flowing when we found it.

When that started flowing, we don't know whether it -- the rates went up and down over time. You -- you can't -- it's not going to be useful for estimating emissions. And a grade 1 if it's going to be worked as a grade 1 is going to be continually worked and likely resolved before the end of a shift.

MS. ROGERS: Well and it's also, like, when you think about the diagram and the percentage of gas to air, like, obviously if you have a big leak and in close proximity to a building, that's going to increase the grade.

So I do think that that's probably what Bob was thinking about. I mean he's still on the call, so he can certainly opine. But to me I think that when I think about the use of ALD on super-emitters, it really is targeting those things that would be grade 3 but for the size of the leak.

MR. WALLER: Absolutely. Yeah. Back

to the discussion about grade 1s and repairing right away, it's -- it's funny. You know, the ALD would've had us designate a grade 2 a leak that's emitting 10 standard cubic feet per hour or more and grade 3 -- repairable grade 3 as between 5 and 10. And then they had a non-repairable grade 3 as less than 5.

So that maybe -- maybe the thinking behind the code writers, if I can presume, was that you know, your grade 1s are -- are not going to change as a function of flow rate. They -- the flow rate does -- doesn't appear. You know, you have dangerous situations in proximity to, you know, occupied structures. Fix them right away and hone in on those grade 2s and 3s, which we otherwise wouldn't have had that insight, you know, with respect to flow rate.

MS. RUIZ: I have a follow-up question around when the grade is assigned or what -- what point in time it's based off of, the moment of repair versus the moment it's called in. Is that the same case for when you're providing the code in LIDAROC or is it different from the PHMSA reporting?

MR. MURPHY: And I don't have LIDAROC

in front of me, but you used the word "code." Code is different than grade. Code is a prioritization of the -- in the dispatch office.

MS. RUIZ: Oh, that's part of my question. So I'm trying to understand when you said that the grading happens or is reflective of the level of hazard at the moment of repair, is that true for what is being inputted into LIDAROC as well as a PHMSA reporting?

MS. ROGERS: Well I think when things are put into LIDAROC, isn't that, like, the callout time? And so it's the call-out, and then once we've got a tech on the ground, they assess the scene and determine whether it's a grade 1.

MR. WALLER: Right.

MS. ROGERS: And they immediately repair, or it's not a grade 1 and they need additional -- may or may not need additional crews to help establish the grading?

MR. MURPHY: I think -- I think what's likely in LIDAROC is, as I -- I explained to Bryan that whatever it's graded at, at the time of repair

is -- is what it's going to be reported at. Repaired grade 2. We're out there with a grade 2. We repaired the grade 2. That's reported to the database in the PHMSA.

MR. CUMBERBATCH: I think we understand that. But I think the question is the origination date. Because I have the -- the LIDAROC in front of me. I -- I play with it all the time. So there's an origination date and a work completion date for underground leaks.

And I think that we're leaning towards understanding at the point of work completed, is that when it's -- the grade is finalized, or is it the origination date?

MR. WALLER: We have G1R's, grade 1 repairs, G2Rs. So those reported repairs match up with the grade at the time of repair, like you're saying.

MR. MURPHY: Yeah. I guess I'm not understanding the question very well.

MS. RUIZ: So to add to Jason's question, which I'll just add is a component of the

OPC questions that were submitted on September 3rd that Washington Gas has not responded to, 15 DCMR Section 3702.12 and 13 specifically talk about the origination date and the grade of leak being necessary components of what's added to LIDAROC.

So our questions are trying to understand what -- whether that is happening. Is there grading happening at the point of origination?

MR. MURPHY: Yes. You have to originate a grade as soon as you've determined that this is a leak.

MS. RUIZ: Okay. That's helpful. Is that being included in LIDAROC?

MR. MURPHY: I assume so. But that's -- we should -- we should walk through that. I -- I know we're reporting grades in LIDAROC.

MR. WALLER: Yeah. I -- I'm not sure. I don't fill out LIDAROC. But I would be interested to know.

MR. CUMBERBATCH: We will look into that in report back.

MS. RUIZ: We are also very interested

in knowing and having a written response, preferably around whether you do or do not. Thank you.

MR. CUMBERBATCH: Of course.

MR. WALLER: Finally, related to grade 3s there on the next slide, there was no descriptor beyond -- that's why there's a blank box. Because all -- all that you'll see in the O&M is from that yellowish box with the dashed border.

A grade 3 leak is any leak indication that doesn't meet the criteria of grade 1 or 2. And what that means it's non-hazardous at the time of detection and we expect it to remain non-hazardous.

And what do we do to -- to maintain that expectation? We monitor and reevaluate either at the next scheduled leak survey or 15 months. And these leaks can be, you know, monitored indefinitely should they meet -- maintain to meet grade 3 leak criteria.

MS. RUIZ: Sorry. I do have a question around that. So you just mentioned that grade 3 leaks are not hazardous at the time of detection. So what happens when a grade 2 leak is downgraded to a grade 3

leak and it was -- or grade 1 leak was downgraded to a grade 2 leak, and then a grade 3 leak and it was considered hazardous at the time of detection?

MR. WALLER: If it's a grade 2 leak that's downgraded to a grade 3 leak, which doesn't happen often, but it -- it's possible, it would enter a monitoring cycle. If it's downgraded it would then be -- be monitored, you know, until either repaired or monitored again.

MS. ROGERS: Not to put you on the spot but -- not to put you on the spot, Jacob, but can you give us an example of a time or a reason that a grade 2 might get downgraded to a grade 3?

MR. WALLER: Yes. If at the six-month inspection cycle for a grade 2 you cannot get readings that would, you know, kick you into the -- the grade 2 zone, you're -- you're getting, you know, 10 percent, you know, 40 feet from a building mall. You're just not generating enough concentration or proximity to a structure that would, you know, meet the grade 2 criteria.

MR. HENNING: I see -- I think Bob's

hand went up. Bob.

MR. WALLER: In that case, Bob, did --

MR. ACKLEY: Yeah. Thanks. I have -- I have a question on your investigation. You keep indicating that you get readings of, you know, 10 percent or 30 percent. I'm just assuming that these are in what we would call in the industry bar hole testing or plunger bar holes?

MR. WALLER: Yes.

MR. ACKLEY: And typically, they're now 6 to 10 inches or whatever your Miss Utility or whatever you use in your area. Typically, we do 6 inches just to be safe. So is that the only equipment you use to investigate a public odor complaint? Is the plunger bar and the combustible gas indicator, or is it standard to have other equipment available?

MR. WALLER: Oh yes. We're going to leverage plunger bar holes, substructures that already exist, you know, valve boxes, sewers, et cetera, and --

MR. ACKLEY: Well that's not my

question. My question is what other equipment is used in the investigation? Is it just the combustible gas indicator and the Bang [ph] bar, or is there a flame ionization unit? Is there a DP3? I've seen the Heath units. They look like a little barrel. I can't remember the model number. I don't know if you've seen those. Those are pretty good. Bascom-Turner -- I was there today -- they've got the rover and ranger.

You know, so what -- what do -- what do you -- what does WGL utilize on a public odor complaint?

MR. WALLER: Bascom-Turner gas-rangers and rovers.

MR. ACKLEY: That's what you're using now?

MR. WALLER: Yes.

MR. ACKLEY: Yeah?

MR. WALLER: Yes.

MR. ACKLEY: And what's their capability? Is their capability around 10?

MR. WALLER: Oh, I think the -- the rover is -- is good down to, I want to say, 5 ppm.

But the Ranger is good down to 50 ppm, if you're talking about sensitivity.

MR. ACKLEY: Yeah. Right on -- on just the gas track mode?

MR. WALLER: Right.

MR. ACKLEY: Yeah. Yeah. Okay. Well thank -- thank you for that information. I really appreciate it. And I'm -- I'm really amazed with your -- your protocols. It's very good, by the way, from an independent here. Thank you very much.

MR. WALLER: Thank you. Thank you, Mr. Ackley.

MR. MURPHY: I would add that when a grade 1 -- when we're contemplating when a crew leader believes a grade 1 is going to be downgraded, they do actually bring the laser out, the Heath RMLD and just as an extra -- extra layer protection, extra quality control to make sure that we -- that that is a justified decision. So that there is an instance where that extra piece of equipment is brought to bear on -- on leak grading.

MR. WALLER: Yes. Downgrading prompts

another instrument, the remote methane leak detector.

MS. BOTWINICK: I have a question about how grade leak -- grade 3 leaks are recorded because I -- I have never seen LIDAROC. I don't think we've ever had access to it. So I don't -- all of those conversations are going up over my head. I haven't seen it.

But I have seen some of the PHMSA reporting and the reporting that the commission does on their website about leaks, and it's just hazardous, non-hazardous. I'm assuming the hazardous is the grade 1 leaks. Is the hazardous just grade 2 or is grade 3 also included in that?

I just want -- I'm trying to understand if grade 3 leaks are actually being included in some of those numbers or if they're kind of being, like, left off the table?

MR. WALLER: Non-hazardous would be grade 2 plus grade 3.

MS. BOTWINICK: Oh, it's all inclusive of grade 2 and 3 leaks?

MR. MURPHY: It's important to read the

definitions that come with the PHMSA reporting form. They -- they ask that you do not report on hazardous leaks that are repaired by lubrication, adjustment, and tightening.

MR. WALLER: Yes.

MR. MURPHY: So we -- we follow the instructions on the form. Those -- I think the intent is, I don't want to call them nuisance leaks, but they're very minor leaks that are just snug the fitting and -- and that's it. They ask in their reporting criteria to exclude those.

MR. WALLER: And thanks so much, Kevin. That's a qualifier. If you would lubricate, adjust, or tighten the fitting to resolve the leak, it gets thrown out of the report.

MR. HENNING: And just to make sure that I have been reading the fine print correctly, it's all of the leaks that are repaired within a given year. So let's say you discover a grade 2 leak on Thanksgiving. Nobody wants to be out there doing that when they can have turkey. So it goes onto the schedule, and it becomes scheduled for repair in

February, a wonderful Valentine's Day present for somebody.

That leak goes onto the next year. The February report has a other non-hazardous leak that goes into the February report, but in the report for the proceeding year, it gets recorded as one of the known leaks scheduled for repair; is that correct?

MR. WALLER: You got that right, yeah.

MR. HENNING: And then grade 3 leaks would not appear on the scheduled for repair category because they're not scheduled. They're being monitored. But if you then go back and do your annual inspection and conclude that it must be repaired at the time that it is repaired, it goes on that year. So it -- it may be some extended period of time before it actually goes onto the -- the period.

So it may be something that was discovered in 2021 but was stable, minor, and so was left and monitored, and then in '24 it is repaired and removed. That then goes on the '24 repair list; correct?

MR. MURPHY: That does sound correct

to me.

MR. HENNING: Okay. I -- I wanted to make sure I read the small print correctly, and I -- I find that the examples are helpful to make sure that I understand correctly.

MS. ROGERS: Well and it's a great point, because it's sort of counterintuitive when you look at, like, leak data. You're thinking that the utility has a lot of leaks but it's actually indicative of robust leak repair programs.

So it -- it ends up creating this situation where you could have a utility that has a lot of grade 3 leaks but looks like they have great leak data because they don't do a lot of repairs. So you can get utilities, not Washington Gas certainly, but other utilities can get big backlogs of grade 3 leaks that never actually show up and also don't get repaired.

MS. RUIZ: I have a follow-up question for you, Jessica. So is that reflective in LIDAROC?

MS. ROGERS: I -- I, too, Katya, have not been to LIDAROC so I don't know.

MS. RUIZ: It is very important for OPC that Washington Gas disclose what is happening in LIDAROC. It is required by DCMR, and it's very confusing what you just stated around there being a representation of a perpetual amount of repair schedule.

I might be misphrasing, but what you just stated isn't consistent with what OPC understands the DCMR requires to be reported as a grade.

MS. ROGERS: Oh, and I definitely wasn't saying this as to D.C. I was saying it as to PHMSA data.

MS. PARSONS: We're talking about PHMSA rules; right?

MS. ROGERS: PHMSA's reporting data is specifically repair focused, and not leak existence focused. So I -- I sincerely don't know. And now I'm going to learn about -- a lot about LIDAROC because it sounds like we're going to have a technical conference on this, and I should probably prepare myself.

MS. PARSONS: That we should -- that's what we should work towards, is that having another --

UNIDENTIFIED SPEAKER: Yeah.

MS. PARSONS: -- conference about LIDAROC. But I do appreciate you all identifying your questions to identify to Washington Gas what you think we need to talk about when we get there.

MR. HENNING: I've -- Jacob, I want to make sure you finished your presentation. If I recall correctly, this is the final slide?

MR. WALLER: This is it.

MR. HENNING: And -- and you finished what you wanted to present, because I had a question that is related to this, but I didn't want to derail this too much.

MR. WALLER: Yes.

MR. HENNING: Okay. So you had this revision to how the grading process was established in 2021. And I -- I happen to notice as you look through the PHMSA reporting on leaks that have been reported in '21, '22, and '23 there is a noticeable change in the pattern of the percentage of hazardous leaks relative to other leaks.

Do you believe that is reflective of a

change in the leak characteristics of the city, or do you believe that that is a byproduct of this change to how you've done your grading process? Obviously, I can't know for sure, but the timing happens to line up in a way that -- that I -- I'm curious about.

MR. WALLER: Yes. We -- we anticipated that this paradigm shift would result in, you know, a -- a change in reporting norms, percentage of grade 1, 2, and 3 leaks. And I think that's been reflected in the data, but hopefully now we have a kind of a new baseline, as it were.

MR. CALDWELL: Can I ask a quick, quick, quick question. When you detect that there's a leak in using ALD, and ALD now is able -- capable of measuring the flow rates, do you record the flow rate along with the, you know, the -- the other information that you may be taking down to, you know, report when the leak is reported or active?

MR. WALLER: I've seen the data output from ALD runs, and I've seen the flow rate, you know, determination. That data does exist from the ALD runs. But when it makes its way into these systems of

record that we're talking about, you know, for reporting to PHMSA or D.C. or Maryland or Virginia, that flow rate data does not make its way into those systems of record. Stops at the ALD.

MR. CALDWELL: Right. Yeah. I -- I understand. But I guess what I'm trying to get at is, is it possible, like, say for, like, a grade 2 leak where it's not repaired right away, but you know, or grade 3 that's monitored, to be able to calculate the amount of emissions that are coming out of the -- the leak over time?

MR. WALLER: If we have ALD data, that gives us a snapshot of the flow rate, normally in standard cubic feet per hour. We could understand, you know, the ongoing leak flow, you know, volume that's -- that's building at least since the time of detection. There's a -- there's, of course, the -- the origin of that leak is not exactly known.

MR. MURPHY: I -- I think if you have a flow rate and you have a time, you can do multiplication. You get a number. I -- I don't know that the -- the ALD data represents a -- a full

capture of every bit of methane that's ascribed to -- to a leak.

Again, this is, you think about that complex environment. You got all that pavement. It's -- it's coming out of cracks here and cracks there. ALD has given you in a -- what did we talk about, a 30-foot buffer, you know, multiple matching peaks and you -- and -- and a flow rate is determined.

So I -- I don't -- I don't think it's really precise to just take -- take that number, do the multiplication on time, and call it a emission.

MR. WALLER: Yeah. The resolution is not very fine. I think someone earlier during the ALD discussion talked about order of magnitude expectation that, you know, if you had a 10 SCFH leak, is it 1? Is it 100? Kind of gets you in that -- in a -- in a large ballpark of sorts.

MR. CALDWELL: Okay. Yeah. Because I was curious, like, if that's, you know -- you know, ALD's potential could be used towards, you know, maybe calculating a local, like, greenhouse gas emissions standard or at least reported or known or something

along those lines.

MR. HENNING: And I see that, Bob, you've still got your hand up. I don't know if that's from the earlier or now, but I -- I wanted to check in and make sure. I'm going to assume it's from earlier.

Then the -- the last question that I had actually dovetails off of the -- the question from D.C. gov. Again, I've spent a lot of time reading these, and there's a lot of fine print and a lot of specificity in -- in these reports.

I noticed that there -- that Washington Gas draws a distinction between ALD indications and leaks whereby I -- I noticed that in a great many of your reports, you -- you make a point to say that there are ALD indications, but you won't call it a leak until it's been found and validated.

Is that consistent with how you've done these other reports and how things are -- are tracked to go through? And am I understanding that distinction correctly? That -- that you don't refer to it as a leak until it's actually been found and validated by the -- the grading process to go through

and do this and until then you categorize it as an indication, which is a separate number on these reports and a separate process for how it's gone through?

MR. MURPHY: Yeah. And that's accurate. So indication, I think that's actually Picarro's term. You heard him refer to a LISA, leak indication.

UNIDENTIFIED SPEAKER: Sorry. I can't hear you.

MR. MURPHY: I -- I think indication is actually Picarro's term. You hear them refer to LISAs, which is leak indication and then --

UNIDENTIFIED SPEAKER: Search area.

MR. MURPHY: Search area. On our work management system, their leak conditions or conditions -- maintenance conditions is what we call them -- because again, if you've got kind of grade 2 indications, you may have multiple grade 2 indications on a street, and we may create a maintenance condition in two different spots on a street that are actually the same leak.

So it's a little -- a bit of a slippery slope to conflate indications or maintenance conditions with leaks and -- and so once it's a repaired leak, we label it as such.

MS. ROGERS: Yeah. I guess the way I would add to that is, you know, you could imagine a scenario where multiple neighbors call out for the same leak. It's not a leak until we find it. And that's true whether you're using ALD or, you know, responding to a call-out or just out there with the monitors.

MS. RUIZ: So I know we're going to get to LIDAROC in more detail. I do still think this is highly relevant because y'all, as you know, must comply with the D.C. code. So LIDAROC does talk about a five-day window period from the moment a leak is called in, and when it's graded in LIDAROC.

So this distinction that you're talking about between an ALD indication versus a leak, are there -- are there ALD indication call-ins that are not being included in LIDAROC?

MS. ROGERS: Well I can -- I can guess

at that.

MR. DODGE: Can you just -- I couldn't hear that at the end. You got a little soft. If you could just repeat the question, please. Sorry.

MS. RUIZ: Are there ALD indication call-ins or leaks -- I don't know if y'all classify it as a call-in -- that are not being included in LIDAROC within those first five days?

MS. ROGERS: So I'm going to go out on a limb here, and I will follow up if I am incorrect. But because the ALD in its current use as a pilot, we have, like, a structured program where we run the ALD. Then we take the data and map it and then we have to send people out.

And so only once those people are sent out do I think that that gets marked as a leak and should be included in LIDAROC. But because there is this data aggregation period where we have to map. We do multiple runs, as they described, so that you're, like, not getting background noise. That process takes a little time, and we also have to, like, send a bunch of people out.

And so my understanding is that we drive for, like, a month period and then do the follow-up, or it's, like, over a month period, something where there's a couple of weeks involving the car and then a couple of weeks involving the people on the ground.

MR. MURPHY: We can definitely look into it. I suspect you're right, Jessica. But what I think I know about LIDAROC is they've started to automate the reporting.

And so if -- if that -- if I'm right -- I think I'm right -- when the order to dispatch a technician is created, that's probably going to trigger something needs to go into LIDAROC. I'm -- I'm going out on an odor investigation, and it's just coming out of the computer. I think is what's going on. So --

MS. ROGERS: Oh, that makes sense.

MR. MURPHY: I doubt -- I -- I doubt the LISA, the birth of a LISA is creating an entry in LIDAROC at all.

MR. HENNING: Can -- can you look into

that and -- and provide feedback with us on how ALD-initiated investigations get reported into LIDAROC?

MS. ROGERS: Yep. We can do that.

MS. RUIZ: And can we have that in written response please?

MS. ROGERS: Yep.

MR. MURPHY: We'll share it with everyone.

MS. RUIZ: Sorry. I think this is included in the question, but just in case it isn't, could we also have a written response in what Mr. Kevin Murphy just talked about, which is what triggers the data to be inputted into LIDAROC, whether it is -- what point it is inputted into LIDAROC from the moment it's called in?

MS. ROGERS: So for all of the leaks or just the ALD ones?

MS. RUIZ: If you could distinguish between what happens in both scenarios, that would be helpful.

MS. ROGERS: Sure.

MS. PARSONS: All right. So do we want to go ahead and talk about next conference on LIDAROC? Sounds like -- I also feel like we need to point out that we had asked for a joint final statement at the end of each topic. And so maybe if you'd rather figure out how you want to do that first before you move on to the next one?

MR. DODGE: Just to make sure I understand it, going back in time or just for technical?

MS. PARSONS: Back to the first topic on best methods of leak detection, which we just finished up today with talking about ALD. We had suggested that -- or we would think that -- that maybe OPC or DOEE would like to take the lead on -- on drafting that statement.

Obviously, you know, you can have consensus and non-consensus points that would include your summaries of your positions and recommendations to the commission.

MR. CALDWELL: Are you -- this -- so this is on the topic of ALD?

MS. PARSONS: It would be on best methods of leak detection. So it includes LAUF and the -- the first -- the basically the first three technical conferences, and just the beginning of this one as well, unless we think ALD should be included in the second one. But we -- we talked mostly about it in the first --

MR. HENNING: Yeah.

MS. PARSONS: -- topic. So I think it's better to be grouped there.

MR. HENNING: As -- as I understood the -- the way that this had been done, while it did take us four meetings to get there, we -- we have covered one topic, which was the first topic, which was methods of leak detection.

MS. PARSONS: Right.

MR. HENNING: The last part of the discussion was the first part of today's meeting on the different set points and components of how to do that type of ALD survey and the discrepancy between Washington Gas's and the one conducted and commissioned by DOEE.

So we have now finished our first topic, which means that we're looking for the joint report on that.

MS. PARSONS: That's best practices, recommendations on those -- those topics. And what kind of timeframe do you think that you need for that? And is it important? I think we'd probably like to get it before we do the next technical conference; right?

But it's, you know, if you want to file comments for the next conference, obviously, we're going to build all that time in for you so you're not doing everything at the same time, you know. You've got a little more time.

MS. RUIZ: You know, your first question was in regards to a joint report, but a follow-up question with what you just mentioned. So OPC is still waiting for responses that we filed on September 3rd concerning this topic that we just discussed from Washington Gas. It's been months.

MS. PARSONS: Okay.

MS. RUIZ: We really do need clarity on

when those answers will be filed, or we'll have to take further action.

MS. PARSONS: Okay. So is it useful to -- does your filing stand on its own, or do you want to do an updated filing? What -- what --

MS. RUIZ: It would be good to start with just -- it can stand on its own and have any --

MS. PARSONS: Okay.

MS. RUIZ: -- response from Washington Gas and then take it from there.

MS. PARSONS: All right. So Jessica, can you look into their September filing and outstanding questions?

MS. ROGERS: Yes. Sorry. I thought that we were going to sort of do them before each topic, and then things got a little sideways. So yes, we will get them to you. I mean, depending on the timing of other things, I don't want to raise the fact that there's, like, four rounds of testimony and three climate filings due in the next two months. And I think that up impacts a lot of us, so --

MS. PARSONS: Agreed. I know it's a

lot of these same people that are working on the -- on all these different --

MS. ROGERS: We're all having this fun adventure together. So --

MS. PARSONS: And we may have more flexibility in this case than -- than some of the other cases. So we understand that.

MS. ROGERS: But saying that, I would think -- what's today? -- we could aim for say April, maybe, like, April 22nd?

MS. PARSONS: You are talking for what?

MS. ROGERS: The answers to OPC's questions on leak grading, because Jacob is going to write all the answers.

MS. PARSONS: Do parties want to file additional comments, or you -- or for the next --

MR. CALDWELL: I know that one of the things that we -- DOEE asked for in the -- that motion that we filed was to file one, like, sort of consolidated set of comments at the end of the technical conferences.

MS. PARSONS: Yes. And we -- and we're

okay to do that, but we also wanted to do them by topic as well before we got too far away from them.

MR. CALDWELL: Okay.

MS. PARSONS: So --

MR. CALDWELL: All right. That -- I just wanted to make sure that that was in -- in addition to.

MS. PARSONS: Yeah. I -- I'd agree that I think that makes sense -- at the end because there could be some overlap as you -- as you pointed out.

MS. RUIZ: It would be helpful if OPC could see a response to our comments before, like, the reasonable amount of time before we continue to talk about LIDAROC and the -- the grading criteria.

MS. PARSONS: Okay.

MS. RUIZ: We have been already waiting for months, so I understand --

MS. PARSONS: Yeah.

MS. RUIZ: -- there are other matters. But I think April -- I think it was -- 19th was --

MS. ROGERS: The 22nd.

MS. RUIZ: 22nd is extremely far out.

MS. PARSONS: Yeah. It's about a -- a month. Can you do it shorter for the answers only?

MR. DODGE: I need to look at my calendar for just a second. If we could pause, and I'll do that.

MS. ROGERS: You have all the filing -- my calendar in Outlook is not working right now, so it's not very helpful. We do best efforts by the 15th then? That's a week earlier because I mean rate case rebuttal testimony is due seven days from today. So --

MR. DODGE: I -- I do have another filing on the 15th, but it's of a personal nature. So I don't think I should count that. And it's at the federal level.

MR. HENNING: I -- I recognize that's still about a month out, but it -- it sounds like that's when the proposed date would be. Is -- is that going to cause consternation?

MS. RUIZ: Would it work to parcel out the questions? I just want to acknowledge that some

of these questions we've discussed part of the answers today. And I assumed that Washington Gas would know the responses in preparation for at least this meeting.

So before we have our next meeting, there is -- I mean you could look at even just, like, the first series of questions that focus on, for example, what requires immediate repair, the kind of leaks, the kind of grading we were discussing some today.

So if it works to parcel them out, it would be helpful if we could get a response for those kinds of questions earlier, and OPC would understand if you would need more time to fully address all the --

MS. PARSONS: Okay. Good question. Could you do it on a rolling basis? Is that possible?

MS. ROGERS: We're happy to do it on a rolling basis.

MS. PARSONS: Okay.

MS. ROGERS: And get you things, you know, starting in the next, like -- well not before

rate case testimony is due but, like, I think by the end of next week we could probably get you a few of them, and we'll get them all answered before -- on or before the 15th.

MS. RUIZ: That works.

MS. ROGERS: I hope you weren't planning on taking a vacation or anything --

MR. HENNING: No.

MS. PARSONS: You're talking about June then for next conference?

MR. HENNING: Well so if -- if all of the questions are being answered by Washington Gas no later than the 15th, when does DOEE think they'll be able to circulate the -- at least a draft of the -- the summary on this first topic?

MS. PARSONS: DOEE or OPC, you all can work that out.

MR. CALDWELL: We should decide.

MS. PARSONS: Or else we didn't specify.

MR. CALDWELL: This is going to be like a -- this is a joint report; right?

MS. PARSONS: Yes.

MR. CALDWELL: With the company as well?

MS. PARSONS: Then the company as well, yes. We assume that you, the parties, would prefer to do the first draft because you had brought this petition. So --

MS. RUIZ: Is it possible to get back to the commission --

MS. PARSONS: Yes.

MR. CALDWELL: I think we discussed what's feasible with all the various cases going on right now.

MS. PARSONS: That's right. Right. April, May, and June is probably pretty busy. All right. Would you like to set a date for the next conference then? Or would you also like to regroup? I mean we can do this over email, of course.

MS. RUIZ: I think OPC would prefer the regroup, especially we're -- we're looking forward to some of the responses that will probably be impacted by the amount of questions Washington Gas can respond.

MS. PARSONS: That's no problem. Okay. So what we'll do is that once -- you have at least by the 15th, but if -- if it happens earlier then great. I'll reach out to all of you, and we'll talk about dates for the next one.

And let me know if you think that you want to do another file -- file another round of comments before we get to LIDAROC or if you just on a more informal basis just identify your questions. There will be no weigh-in. We'll give you all dates for your presentation, et cetera.

MS. RUIZ: Great.

MS. ROGERS: Thank you.

MS. PARSONS: That's good. I think that's an end; right?

UNIDENTIFIED SPEAKER: Second.

MS. PARSONS: Second. Yeah, exactly. I don't even know what time it is.

UNIDENTIFIED SPEAKER: Thank you.

MS. PARSONS: Thank you all.

UNIDENTIFIED SPEAKER: Thank you.

UNIDENTIFIED SPEAKER: Thank you.

(Whereupon, at 4:21 p.m., the proceeding was concluded.)

CERTIFICATE

I, SAMUEL PACHON, the officer before whom the foregoing proceedings were taken, do hereby certify that any witness(es) in the foregoing proceedings, prior to testifying, were duly sworn; that the proceedings were recorded by me and thereafter reduced to typewriting by a qualified transcriptionist; that said digital audio recording of said proceedings are a true and accurate record to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

SAMUEL PACHON

Notary Public in and for the

State of District of Columbia

CERTIFICATE OF TRANSCRIBER

I, SHAUNA WOOLLEY, do hereby certify that this transcript was prepared from the digital audio recording of the foregoing proceeding, that said transcript is a true and accurate record of the proceedings to the best of my knowledge, skills, and ability; that I am neither counsel for, related to, nor employed by any of the parties to the action in which this was taken; and, further, that I am not a relative or employee of any counsel or attorney employed by the parties hereto, nor financially or otherwise interested in the outcome of this action.

SHAUNA WOOLLEY

e