

**From:** Charles Davidson <[REDACTED]>  
**Sent:** Wednesday, April 13, 2022 12:48 PM  
**To:** Gregory H. Nudd <[gnudd@baaqmd.gov](mailto:gnudd@baaqmd.gov)>  
**Subject:** Fwd: REGULATION 13-5 CLIMATE POLLUTANTS FROM REFINERY HYDROGEN PLANTS

[REDACTED]

Hello Greg,

Greetings.

I hope that you have read my extensive public comment on Rule 13-5 which was first sent to Victor Douglas as my public comment. It is very well referenced and deserves to be read by a scientist because it has data and research about the EPA Methods 18 (which the District is considering using) and Method 21.

I have several questions:

1) Has the Air District formally considered assessing the advantage of the MIRA Pico methane monitor over EPA Method 18 and Method 21 or have they yet made a scientific comparison between the Pico and the EPA Methods?

Note that the EPA helped develop the MIRA Pico.

The case might be that the MIRA Pico, as a plume detector and Method 18, as a point-source leak detector, can be used in conjunction, at least for a period to gain experience and data. (However the Pico also can be used to locate and document point-sources.) It is exquisitely sensitive, in my hands, from 150 yards away (offsite) and downwind from the Deer Valley Road oil well site where I found a large leak from their oil gas separator located on the other side of the property line. Months later, after the operator refused the District site admission (and had to threaten legal action), the District apparently found no leak, probably using Method 21 or maybe Method 18. I am not sure.

2) Have comparative laboratory tests been done by BAAQMD, which include the MIRA Pico?

3) If no formal assessment has been done w the Pico, is there time and or an inclination for the Air District to do a formal assessment before Rule 13-5 with Method 18 is approved.

4) What in situ methods being considered to measure fugitive methane emissions from H2 plants?

5) What are the suspected point-sources for fugitive methane which BAAQMD, CARB and the US EPA apparently failed to detect in past tests.

Regards,

Charles Davidson

Begin forwarded message:

From: Charles Davidson <[REDACTED]>  
Subject: REGULATION 13-5 CLIMATE POLLUTANTS FROM REFINERY HYDROGEN PLANTS - Public Comment and Airborne [methane] Emissions from the Antioch Sunset Exploration oil wells along Deer Valley Road  
Date: April 5, 2022 at 6:38:42 PM PDT  
To: [gnudd@baaqmd.gov](mailto:gnudd@baaqmd.gov)  
Cc: [vdouglas@baaqmd.gov](mailto:vdouglas@baaqmd.gov), Ranyee Chiang <[rchiang@baaqmd.gov](mailto:rchiang@baaqmd.gov)>, Phil Martein <[pmartien@baaqmd.gov](mailto:pmartien@baaqmd.gov)>

Download full resolution images  
Available until May 5, 2022  
Hello Greg and others.

Greetings.

I believe that BAAQMD should very carefully assess how to measure fugitive methane using the most current, accurate, convenient and cost effective technology. And this should be done soon for due diligence, as the completion date of Rule 13-5 is approaching, I believe. For BAAQMD to assume principle responsibility for monitoring a climate pollutant, such as fugitive methane, is rather significant politically in California.

From what I saw in the Draft 13-5 regulation for methane measurements was that the Air District would likely substitute optical gas imaging (EPAS Method 18) for the formerly-recommended flame ionization detector (Method 21). However, this is not the most current technology and I suggest that the Air District (who is now responsible for identifying fugitive methane detection) look into mid-infrared laser spectroscopy, such as the MIRA Pico from Aeris Technologies in Hayward. This device was developed in collaboration with the US EPA and ARPA-e.

The heart of the compact device is the palm-size laser unit with mirrored opposite-facing sides used to obtain a remarkable 13-foot path length. Air is inhaled into the unit with a pump, there is rapid response time to a signal and the device has a GPS. The MIRA Pico is more than a simple gas detector, it is sensitive enough to pick up a plume from 150-yards away, which is impossible with OGI/Method 18, limited to a few yards at a site of a preselected and predicted leak. The Pico is one-quarter the cost of a FLIR Camera and can speciate both methane and ethane (which a FLIR cannot), in order to delineate natural gas (w M/E) versus landfill methane (M-only) at high resolution. The MIRA Pico would be an excellent handheld plume-detection device

to correlate with Dr. Martien's sophisticated circular flyover methane assessment method used for refineries, landfills and compost facilities. That study showed the abysmal failure of standard EPA methods.

I have no interest in Aeris Technologies, but am pointing out what I preferentially used to measure a very strong methane signal from further than the goalpost-to-goalpost distance in a football field. A plume was detected with the reading displays in a smart phone format and I simply walked opposite the wind direction and identified leaky equipment. The Pico use is certainly much easier than using Summa Canisters and better than having to enter a suspected emissions site using the EPA methods and then know where to look for the leak, beforehand. Plume detection from a distance is also safer. The Pico is light enough to be adapted to a drone.

The profound expansiveness of methane makes plume detection paramount.

Thank you for your attention.

PS: The bottom image is of my study of the Brentwood Hills neighborhood where I was briefly inspecting for potential fugitive methane (by car or walking) because that neighborhood has 16 gas vents located over plugged and abandoned oil wells (12 vents through houses and 4 as false lamp posts; see slide 11 in the PPT). The ethane-to-methane ratio in the GPS map below was 3.35%, indicating a possible opened NG BBQ valve. I told the neighbor who was outside and she turned off the BBQ. In contrast, the DVR emissions (from my July 2020 investigation) was 45% ethane and likely heavier hydrocarbons, which accounted for separate June 2020 odor complaints to BAAQMD coming from neighbors in Brentwood Hill.

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Assessment of Regional Methane Emissions Inventories through Airborne Quantification 2 in the San Francisco Bay Area es0c01212\_si\_001 "" .pdf  
489 KB

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My own study (and formal Dec. 2020 complaint to BAAQMD Compliance and Enforcement Division).

Airborne Emissions from the Antioch Sunset Exploration oil wells along Deer Valley Road:

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Airborne Emissions from the Antioch Sunset Exploration oil wells along Deer Valley Road "" ""  
"" .pptx  
67.7 MB

Begin forwarded message:

From: Charles Davidson <[REDACTED]>  
Subject: REGULATION 13 CLIMATE POLLUTANTS RULE 5 PETROLEUM REFINERY HYDROGEN PLANTS - Public Comment  
Date: March 9, 2022 at 4:09:53 PM PST  
To: [vdouglas@baaqmd.gov](mailto:vdouglas@baaqmd.gov)  
Cc: [jfinkle@baaqmd.gov](mailto:jfinkle@baaqmd.gov)

REGULATION 13 CLIMATE POLLUTANTS RULE 5 PETROLEUM REFINERY HYDROGEN PLANTS.

Public Comment from:

[REDACTED]

Hercules CA

[REDACTED]

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Methane Rule 13-5 BAAQMD Public Comment from [REDACTED] 2-9-2020 -  
3'.docx  
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