



**AB 617 Community Air Protection Program
Steering Committee Meeting Agenda
Heber Community Center**



**Comite Civico
Del Valle, Inc.**

**1132 Heber Ave.
Heber, CA 92249**

**MEETING AGENDA
Tuesday, May 9, 2023
5:30 p.m. – 7:30 p.m.**

Facilitator: Harder+Co.

Chair of Meeting: Luis Olmedo (Alternate: Christian Torres)

WELCOME

- | | |
|---|-------------------------|
| 1. Roll Call/Opening Remarks by CSC Members | Co-Chairs |
| 2. PUBLIC COMMENT PERIOD Comments are to be limited to no more than 2 minutes per person. | Harder+Co. |
| 3. APPROVAL OF MINUTES Review and approval of Minutes of April 12, 2023 CSC Meeting. (Attachment: April 12, 2023 Minutes) | Co-Chairs |
| 4. PRESENTATIONS: | |
| A. New River Pollutant Monitoring Project 1-Yr Summary Sonoma Technology will provide a presentation on the summary of the data collected over 12 months of air quality measurements along the New River in Calexico. (Attachment: NRPMP Summary) | STI |
| 5. DISCUSSION/INFORMATION ITEMS | |
| A. Imperial County AB 617 Open Discussion Time allocated for discussion of future meetings logistics. | ICAPCD |
| 6. AGENCY UPDATES | ICAPCD & CCV |
| 7. AGENDA TOPICS & SET DATE FOR NEXT MEETING Discuss and schedule the next CSC meeting tentative for June 14, 2023. | Co-Chairs |
| 8. CLOSING REMARKS/ADJOURNMENT | Co-Chairs |



AB 617 Programa de Protección del Aire Comunitario

Agenda de la reunión del comité directivo

Centro Comunitario de Heber

1132 Heber Ave.

Heber, CA 92249



Comite Civico
Del Valle, Inc.

AGENDA DE LA REUNIÓN

Martes, 9 de Mayo de 2023

5:30 p.m. – 7:30 p.m.

Facilitador: Harder+Co.

Presidente de la reunión: Luis Olmedo (Suplente: Christian Torres)

BIENVENIDOS

1. **PASE DE LISTA/PALABRAS DE APERTURA DE LOS MIEBROS DEL CSC** **Copresidentes**
2. **PERÍODO DE COMENTARIOS PÚBLICOS** **Harder+Co**
Los comentarios deben limitarse a no más de 2 minutos por persona.
3. **APROBACIÓN DE LAS MINUTAS** **Copresidentes**
Revisión y aprobación del Acta de la reunión del CSC del 12 de abril de 2023.
(Adjunto: [Acta del 12 de abril de 2023](#))
4. **PRESENTACIONES:**
 - A. **Resumen de 1 año del Proyecto de Monitoreo de Contaminantes del Río Nuevo** **STI**
Sonoma Technology brindará una presentación sobre el resumen de los datos recopilados durante 12 meses de mediciones de la calidad del aire a lo largo del Río Nuevo en Calexico.
(Adjunto: [NRPMP Resumen](#))
5. **PUNTOS DE DISCUSIÓN/INFORMACIÓN:**
 - A. **Condado de Imperial AB 617 Discusión Abierta** **ICAPCD**
Tiempo asignado para la discusión de la logística de futuras reuniones.
6. **ACTUALIZACIONES DE LAS AGENCIAS** **ICAPCD & CCV**
7. **TEMAS DE LA AGENDA Y FIJAR FECHA PARA LA PRÓXIMA REUNIÓN** **Copresidentes**
Discutir y programar la próxima reunión del CSC tentativa para el 14 de Junio de 2023.
8. **OBSERVACIONES DE CLAUSURA/CIERRE** **Copresidentes**

**3. Minutes:
April 12, 2023
CSC Meeting**

**AB 617 Community Air Protection Program
Minutes of the Steering Committee Meeting
Heber Community Center Meeting
April 12, 2023**

Meeting Chairman: Israel Hernandez

Facilitator: Jessica Silva of Harder & Company

I. Assistance:

Primaries: **Rene Felix**, Community Corridor; **Sergio Cabañas**, Community Corridor; **Mary Salazar**, Community Corridor; **John Hernandez**, Community Corridor; **Michael Moore**, Community Corridor; **Paolo Alvarado**, Community Corridor; **Jose G. Landeros**, Community Corridor; **Daniela Flores**, Community Corridor; **Virginia Mendoza**, Community Corridor

Alternates: **Israel Hernandez**, Air Pollution Control District; **Mariela Moran**, Community Corridor; **Melissa Sandoval**, Community Corridor; **Ricardo Romero**, Community Corridor; **Raul Urena**, Community Corridor.

Other Agency Staff: **Marco Perrone**, Air Pollution Control District; **David Aguirre**, Imperial County Transportation Commission; **Edgar Ruiz**, Comite Civico del Valle; **Adriana Carrillo**, Air Pollution Control District.

I. Welcome and Opening Remarks by CSC Members

There were no comments on record due to technical difficulties.

II. Public Comments

There are no comments on record due to technical difficulties.

III. Approval of Minutes

The minutes from the February 8th meeting were approved.

IV. Presentations

Blue and Green Circulator Routes Transition to E-vans, ICTC.

John Hernandez commented that he would like more information about the process, the funds, and how much would be allocated to a project of this type. He said he hoped those questions could be answered.

A member from ICTC said that the presentation was made as a representation of the type of projects for which funds could be provided. He commented that they were in the process of opening their call for proposals for bus routes and infrastructure. He mentioned that he would like to start a request for proposals. He said that it is a matter of the new members trying to use the funds for the best projects that come up. He said that more information can be presented if necessary.

Raul Ureña asked if the two cities that routes have are El Centro and Brawley. He commented that Calexico does not have one. He asked who oversees moving the population around.

A member from ICTC said that the Calexico service is the one that oversees mobilizing most of the population. He commented that it is a public transportation Uber that is subsidized with an average cost of 2 to 3 dollars per adult. He mentioned that they have three routes operating daily from 6 am to 6 pm with a capacity of around five passengers per hour per vehicle. He said Brawley is around four passengers.

Raul Ureña mentioned that his concern with this project is that it is requesting to electrify a route that provides the worst service. He asked if it was possible to review other infrastructure needs to improve the service and reach the level of Brawley or Calexico. He asked how much CO2 reduction would occur thanks to this project.

A member from ICTC commented that they are conducting an operational analysis of all their services to have a better idea of how they operate them. He commented that they also have Dial a Ride, which is a transportation service for older adults through telephone calls.

Raul Ureña said he has had discussions with the mayor about how the money could be used to transition this service to a micro-transit system.

A member from ICTC said they are transitioning their fuel fleets to other technologies. He mentioned that they can present it if required.

John Hernandez commented that there is a great need for public transportation in his community. He said that it is complex, but he said that he hopes to see the proposal to go ahead with this project.

Michael Moore asked what the capacity of the vans would be.

A member from ICTC mentioned it was around eight people. He mentioned that some vans would have to be modified.

Michael Moore asked how long the project was projected for.

A member from ICTC said it would be around 7 years.

John Hernandez asked where the 100-mile life estimate for the batteries came from.

A member from ICTC commented that it is an estimate.

John Hernandez asked how all the information was being managed.

A member from ICTC said that what is being presented for consideration are the vehicles since the maintenance will be covered under their daily operation service.

John Hernandez reiterated that the presentation is in its initial state. He commented that a project like this must be aligned with state regulations.

AQ View Update; Taylor Helgestad and Yanju Chen, CARB.

Ricardo asked if they had an update on the regulatory monitors that were going to be added.

Taylor Helgestad commented that they were already added but they do not have them ready yet.

Ricardo said if contaminants could be added.

Taylor Helgestad mentioned that it was possible.

A CSC Member asked where the news networks get their data from when they talk about air quality. He also asked if there was a way to add important events to the page.

Taylor Helgestad said they have information from many networks and Purple Air monitors will be added soon. Regarding the events, he mentioned that it is an excellent suggestion, and they are trying to see how to implement it on the page.

Miguel Zavala asked what procedure is used to ensure the quality and accuracy of the data.

Taylor Helgestad commented that they do research with each of the monitor's manufacturers and use an algorithm that reviews the data.

AB 617 CAMP Community Air Monitoring Update, CCV.

Sergio Cabanas mentioned that it is important to be able to get the event information to have a better idea of how the monitors are working.

Edgar Ruiz said he was going to talk to **Christian Torres** to bring that information.

Mary Salazar asked if they could make the information larger in graphics so that it would be clearer and more visible.

Edgar Ruiz said he will check it out.

Mary Salazar mentioned that they should also add air events to the charts.

A CSC Member said Calexico regularly shows the highest rates of high-risk days. He asked if there is a correlation with the recent fires that have happened in the region. He commented that it is necessary to see information about the events in these reports.

Edgar Ruiz said they are working on it.

Virginia Mendoza said that she knows that there is an application by the Committee that shows information about the monitors and asked if there are other means by which the Committee distributes this information to the community.

Daniela Flores said it would be a good idea to show which monitors and areas have the highest risk. She mentioned that part of the reason for having these monitors is to see how CERP policies and programs are having an effect in improving the numbers seen on the monitors.

A CSC Member asked if it was possible to have hourly data on the days with the highest contamination.

Edgar Ruiz commented that they tried to do it but had problems handling so much data. He said that he will do his best to make the information clearer in the next presentation.

V. Discussion Topics / Information Items

Imperial County AB 617 Q&A, Israel Hernandez; ICAPCD.

Sergio Cabanas asked if they still had vacancies on the committee.

Israel Hernandez said that they have places for substitutes and that they continue to receive requests for these.

Sergio Cabanas mentioned that this committee is much smaller than the one they had 5 years ago and that for this very reason, it will be necessary for the new members to be more active. He commented that the presentations are fabulous, but the group is very small.

Mary Salazar said to agree with **Sergio Cabanas**. She commented that the committee's involvement with the community has been declining. She mentioned that they are at a point where they still do not have the sources of contamination and more needs to be done for the community. She said a lot of people do not know about the existence of the committee because they do not advertise enough.

Virginia Mendoza commented that they should publish informative press releases so that the community is informed about what is taking place in the program and thus be able to receive feedback from the community.

A CSC Member said that it is a new opportunity for AB 617. He suggested doing training to be able to correctly integrate the new colleagues. He suggested promoting the committee on the radio.

Israel Hernandez mentioned that they are having a very good dialogue.

Raul Ureña said that he is making himself available to identify the radio and television media to be able to disseminate this information.

Michael Moore commented that he recognizes the work being done behind all atmospheric monitors. He said that some of the delays they have had are the transition from virtual to face-to-face meetings and member changes. He mentioned that having a permanent venue will help people know where to always go.

Israel Hernandez said to schedule less time for presentations at the next meeting to allow more time for this dialogue.

VI. Agency Updates

Israel Hernandez mentioned that they will have a committee in the northern part of the area and invited residents of Brawley or Calipatria to apply. He commented that they will conduct three workshops where they will discuss how to create the openings for that committee. He said they will start with their request for proposals for electric bus replacement and electric charging infrastructure. He mentioned if they see promising projects, they will take them into account for the next session.

John Hernandez asked if they could talk about what happened with the mobile monitoring in the new river in the next session.

Israel Hernandez commented that they allocate more time in the next session for these dialogues. He said they will present the Jamboard in the next session.

VII. Agenda Topics and Date for the Next Meeting.

Israel Hernandez said that the tentative date for the next meeting is May 10, but since that day is Mother's Day in Mexico, they were thinking of moving it to May 17.

Sergio Cabanas made a motion to have the meeting on May 9th.

Mary Salazar seconded the motion.

The motion passed.

Israel Hernandez commented that they will add the issue of venue rotation as a point for the next session.

Gloria Romo said that more monitors are needed in Mexicali and Calexico because both sides of the border breathe the same air and commented that it is necessary to be able to identify the events that cause air pollution.

Adriana Montano commented that she would like the community to be informed in a friendlier way and that it should be reported through the PTO.

A CSC Member commented on veteran locations for upcoming meetings.

VIII. Closing Remarks / Adjourning

Sergio Cabanas invited people from Mexicali to talk about what is happening on that side of the border in terms of air pollution.

A member made a motion to adjourn the meeting.

A member seconded the motion.

The motion passed.

Meeting adjourned.

Programa Comunitario de Protección Atmosférica Bajo el Auspicio del Proyecto de Ley AB 617
Minuta de la Reunión del Comité Directivo
Reunión Centro Comunitario de Heber
abril 12 del 2023

Presidente de la Reunión: Israel Hernández

Facilitadora: Jessica Silva de Harder & Company

I. Asistencia:

Primarias: **René Félix**, Corredor Comunitario; **Sergio Cabañas**, Corredor Comunitario; **María Salazar**, Corredor Comunitario; **John Hernández**, Corredor Comunitario; **Michael Moore**, Corredor Comunitario; **Paolo Alvarado**, Corredor Comunitario; **Jose G. Landeros**, Corredor Comunitario; **Daniela Flores**, Corredor Comunitario; **Virginia Mendoza**, Corredor Comunitario.

Suplentes: **Israel Hernandez**, Distrito de Control de la Contaminación del Aire; **Mariela Moran**, Corredor Comunitario; **Melissa Sandoval**, Corredor Comunitario; **Ricardo Romero**, Corredor Comunitario; **Raul Urena**, Corredor Comunitario.

Personal por parte de las Dependencias: **Marco Perrone**, Distrito de Control de la Contaminación del Aire; **David Aguirre**, Comisión de Transporte del Condado de Imperial; **Édgar Ruiz**, Comité Cívico del Valle; **Adriana Carrillo**, Distrito de Control de la Contaminación del Aire.

I. Bienvenida y Comentarios Iniciales por parte de los Integrantes del CSC

No quedaron asentados en la minuta debido a que por dificultades técnicas la grabación comenzó después.

II. Periodo de Comentario Público

No quedó asentado en la minuta debido a que por problemas técnicos la grabación comenzó después.

III. Aprobación de la Minuta de la Reunión Anterior

Se aprobó la minuta de la reunión del 8 de febrero.

IV. Presentaciones; preguntas y respuestas

Rutas Azules y Verdes Circulatorias Transición a E-vans, ICTC.

John Hernández comentó que le gustaría tener más información acerca del proceso, sus fondos y cuanto se asignaría a un proyecto de este tipo. Dijo que esperaba que esas preguntas fueran respondidas

Un miembro de ICTC dijo que la presentación fue hecha como una representación del tipo de proyectos para los que se pudieran brindar fondos. Comentó que estaban en el proceso de abrir su convocatoria de propuestas para rutas de autobuses e infraestructura. Mencionó que le gustaría iniciar una solicitud de propuestas. Dijo que es cuestión de que los nuevos integrantes traten de utilizar los fondos para los mejores proyectos que se presenten. Dijo que se puede presentar más información si es necesario.

Raul Ureña preguntó si las dos ciudades que cuentan con rutas son El Centro y Brawley. Comentó que Calexico no cuenta con una. Preguntó quién está encargado de mover a la población.

Un integrante de ICTC dijo que el servicio de Calexico es el que se encarga de movilizar a la mayoría de la población. Comentó que esencialmente es un Uber de transporte público que está subsidiado con un costo promedio de 2 a 3

dólares por adulto. Mencionó que tienen 3 servicios operando diariamente de 6 am a 6 pm con una capacidad de alrededor de 5 pasajeros por hora por vehículo. Dijo que Brawley se acerca a 4 pasajeros.

Raul Ureña mencionó que su preocupación con este proyecto es que se está solicitando electrificar una ruta que peor servicio brinda. Preguntó si era posible revisar otras necesidades de infraestructura para poder mejorar el servicio y llegar al nivel de Brawley o Calexico. Preguntó cuánta era la reducción de CO2 gracias a este proyecto.

Un integrante de ICTC comentó que están llevando a cabo un análisis operacional de todos sus servicios para mejorar tener una mejor idea de cómo los operan. Comentó que también cuentan con Dial A Ride que es un servicio para adultos mayores de transporte a través de llamadas telefónicas.

Raul Ureña dijo que ha tenido pláticas con el alcalde sobre cómo el dinero se pudiera utilizar para trasladar este servicio para un microsistema de transporte.

Un integrante de ICTC dijo que están trasladando sus flotillas de combustible a alguna otra tecnología. Mencionó que lo pueden presentar si es requerido.

John Hernández comentó que existe una gran necesidad de transporte público en su comunidad. Dijo que es complejo, pero dijo que espera ver la propuesta para ir adelante con este proyecto.

Michael Moore preguntó cuál sería la capacidad de la van.

Un integrante de ICTC son alrededor de 8 personas. Mencionó que algunos tendrían que ser modificados.

Michael Moore preguntó para cuánto tiempo está proyectado el proyecto.

Un integrante de ICTC mencionó que tiene alrededor de 7 años.

John Hernández preguntó de dónde surgió el estimado de 100 millas de vida para las baterías.

Un integrante de ICTC comentó que es un estimado.

John Hernández preguntó cómo se estaba gestionando toda la información.

Un integrante de ICTC dijo que lo que se está presentando para consideración son los vehículos ya que el mantenimiento se cubrirá bajo su servicio de operación cotidiano.

John Hernández reiteró que la presentación está en su estado inicial. Comentó que un proyecto como este se tiene que alinear con reglamentos del estado.

Actualización de AQ View; Taylor Helgestad and Yanju Chen, CARB.

Ricardo preguntó si se tenía una actualización sobre los monitores normativos que se iban a añadir.

Taylor Helgestad comentó que ya estaban añadidos, pero no cuentan con ellos todavía.

Ricardo dijo si se podían añadir contaminantes si se llegaban a agregar los monitores normativos.

Taylor Helgestad mencionó que si era posible.

Un integrante del CSC preguntó que de donde se obtienen los datos cuanto escucha que se habla sobre la calidad del aire en las noticias. También preguntó si había alguna manera de agregar eventos importantes a la página.

Taylor Helgestad dijo que tienen información de muchas redes y que próximamente se agregarían los monitores de Purple Air. En cuanto a los eventos, mencionó que es una excelente sugerencia y están tratando de ver como implementarlo a la página.

Miguel Zavala preguntó qué procedimiento se utiliza para poder asegurarse de la calidad y precisión de los datos.

Taylor Helgestad comentó que hacen investigaciones con cada uno de los fabricantes de los instrumentos y utilizan un algoritmo que hace revisiones de los datos

Actualización del AB 617 CAMP, CCV.

Sergio Cabañas mencionó que es importante poder conseguir la información de eventos para poder tener una mejor idea de cómo están trabajando los monitores.

Edgar Ruiz dijo que iba a platicar con **Christian Torres** para traerles esa información.

Mary Salazar preguntó si podían hacer la información en gráficos más grandes para que fueran más claros y visibles.

Edgar Ruiz comentó que lo revisara.

Mary Salazar mencionó que también deberían de agregar eventos de aire en los gráficos.

Un integrante del CSC dijo que Calxico es el que regularmente muestra los índices más altos de días insalubres. Preguntó si hay una correlación con los recientes incendios que han sucedido en la región. Comentó que es necesario ver información sobre los eventos en sus reportes.

Edgar Ruiz dijo que trabajan en eso.

Virginia Mendoza dijo que reconoce que existe una aplicación por parte del Comité que muestra información sobre los monitores y preguntó si hay otros medios por los cuales el Comité Cívico del Valle distribuye esta información a la comunidad.

Daniela Flores dijo que sería una buena idea recalcar cuales monitores y áreas son los de más alto riesgo. Mencionó que parte del porque se tienen estos monitores es para ver como las pólizas y programas del CERP están teniendo un efecto en mejorar los números que se ven en los monitores.

Un integrante del CSC preguntó si era posible tener los datos por hora en los días con mayor contaminación.

Edgar Ruiz comentó que lo intentaron hacer, pero tuvieron problemas al manejar tanta información. Dijo que hará lo posible para que la información se vea más clara en la siguiente presentación.

V. Temas de Diálogo / Información

Sesión de Preguntas y Respuestas del Imperial County AB 617, Israel Hernández; ICAPCD.

Sergio Cabañas preguntó si todavía contaban con vacantes en el comité.

Israel Hernández dijo que cuentan con lugares para suplentes y que continúan recibiendo solicitudes para estos.

Sergio Cabañas mencionó que este comité es mucho más pequeño que el que tuvieron hace 5 años y que por esto mismo será necesario que los nuevos integrantes sean más participativos. Comentó que las presentaciones son fabulosas pero el grupo es muy pequeño.

Mary Salazar dijo estar de acuerdo con **Sergio Cabañas**. Comentó que su participación con la comunidad ha ido disminuyendo. Mencionó que están en un punto en donde todavía no cuentan con cuales son las fuentes de contaminación y se necesita hacer más para la comunidad. Dijo que mucha gente no sabe de su existencia porque no se anuncian lo suficiente.

Virginia Mendoza comentó que deberían de publicar boletines de prensa informativos para que la comunidad esté informada sobre lo que se lleva a cabo en el programa y de esta manera poder recibir retroalimentación de la comunidad.

Un integrante del CSC dijo que es una nueva oportunidad para AB 617. Sugirió hacer una capacitación para poder integrar de manera correcta a los nuevos compañeros. Sugirió hacer promoción en la radio bilingüe.

Israel Hernández mencionó que están teniendo un muy buen diálogo.

Raul Ureña dijo que se pone a disposición para identificar los medios de radio y televisión para poder difundir esta información.

Michael Moore comentó que reconoce la labor detrás de todos los motores atmosféricos. Dijo que algunos de los retrasos que han tenido es la transición de reuniones virtuales a presenciales y de integrantes. Mencionó que el tener una sede permanente ayudará a la gente saber a dónde acudir siempre.

Israel Hernández dijo que programaran menos tiempo para las presentaciones en la próxima reunión para tener más tiempo para este diálogo.

VI. Actualizaciones de las Agencias

Israel Hernández mencionó que tendrán un comité en la parte norte del área e invitó a los residentes de Brawley o Calipatria a presentar sus solicitudes. Comentó que llevarán a cabo 3 talleres en donde dialogarán cómo hacer las convocatorias para ese comité. Dijo que comenzarán con su solicitud de propuestas para reemplazo de autobuses eléctricos e infraestructura de carga eléctrica. Mencionó si ven proyectos prometedores los tomaran en cuenta para la siguiente sesión.

John Hernández preguntó que si podían platicar de qué sucedió con el monitoreo móvil en el río nuevo en la siguiente sesión.

Israel Hernández comentó que asignan más tiempo en la siguiente sesión para estos diálogos. Dijo que abordaron su Jamboard en la siguiente sesión.

VII. Temas de la Agenda y Fecha para la Próxima Reunión.

Israel Hernández dijo que la fecha tentativa para la siguiente reunión es el 10 de mayo, pero dado a que ese día es el día de las Madres en México se estaba pensando en moverlo para el 17 de mayo

Sergio Cabañas hizo una moción para tener la reunión el 9 de mayo.

Mary Salazar secundó la moción.

La moción pasó.

Israel Hernández comentó que agregarán el tema de rotación de sede como punto para la siguiente sesión.

Gloria Romo dijo que son necesarios más monitores en Mexicali y Calexico porque ambos lados de la frontera respiran el mismo aire y comentó que es necesario poder identificar los eventos que causan la contaminación atmosférica.

Adriana Montano comentó que le gustaría que se informará a la comunidad de una manera más amigable y que se debería de informar por medio del PTO.

Un integrante del CSC comentó ubicaciones veteranas para las próximas reuniones

VIII. Observaciones Finales / Cierre

Sergio Cabañas invitó a gente de Mexicali para que hablen sobre lo que está sucediendo de ese lado de la frontera en cuanto a contaminación atmosférica.

Un integrante hizo una moción para levantar la reunión.

Otro integrante secundó la moción.

La moción pasó.

Se levanta la sesión.

4. Presentations:

A. New River Monitoring Project 1-Yr Summary (STI)

Data Summary of 12 Months of Air Quality Measurements along the New River in Calexico, CA

December 2021 – December 2022

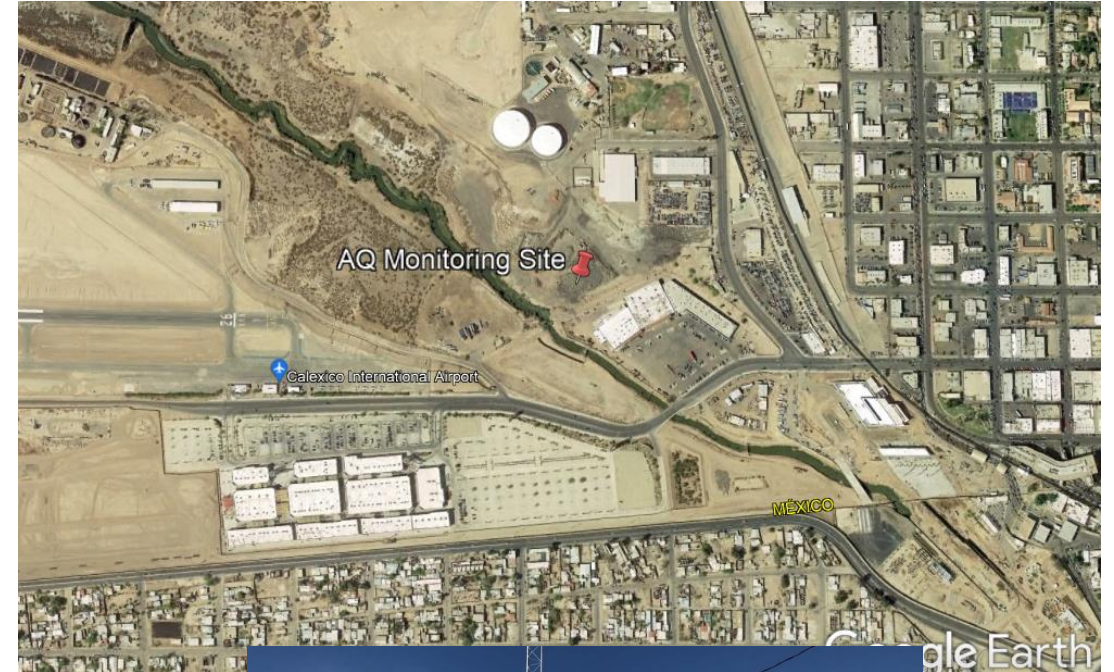
Josette Marrero, PhD and Annie Anderson, PhD
For Imperial County Air Pollution Control District
May 9, 2023

Outline

- Project overview
- Compounds detected
- Concentration patterns throughout the year
- Potential emissions sources
- Reference Exposure Limit (REL) comparisons
- Conclusions
- Q&A

Study Overview/Monitoring Site

- Sampling period 12/3/21 – 12/4/22
 - Initially a 6-month study, extended for full year
- Species targeted includes those with known health risks, allowing for comparisons against health thresholds
- Goal: to better understand what if any impact the New River has on local air quality



Chemical Species Sources

| Chemical Species | Detected | Sources |
|-------------------------------------|-----------------|--|
| Hydrogen Sulfide (H ₂ S) | Always | Wastewater treatment, oil and gas refining, mining ¹ |
| Ammonia (NH ₃) | Always | Livestock and fertilizer, traffic, agricultural chemicals ² |
| VOCs (Benzene, toluene, xylene) | Often | Manufacturing, industrial solvents, vehicle exhaust ³ |
| Other VOCs | Often | Multiple sources |
| Polyaromatic Hydrocarbons (PAHs) | Some detected | Result from burning coal, oil, gas, wood, and garbage ⁴ |
| Chlorinated Hydrocarbons (PCBs) | Not detected | Industrial and commercial applications ⁵ |
| Pesticides | Not detected | Agricultural chemicals |

¹ OSHA 2022, access online at <https://www.osha.gov/hydrogen-sulfide>

² NOAA 2000, access online at <https://csl.noaa.gov/aqrs/reports/ammonia.pdf>

³ EPA 2022, access online at <https://www.epa.gov/indoor-air-quality-iaq/what-are-volatile-organic-compounds-vocs>

⁴ CDC 2022, access online at https://www.cdc.gov/biomonitoring/PAHs_FactSheet.html

⁵ EPA 2005, access online at <https://www.epa.gov/pcbs/learn-about-polychlorinated-biphenyls-pcbs>

Summary of Monitored Compounds

| | Chemical Species | Measurement Frequency | %Valid Data or #Samples Collected | %Data Completeness |
|------------|-------------------------------------|------------------------------|--|---------------------------|
| Continuous | Hydrogen Sulfide (H ₂ S) | 5 minutes | 91.5 | 94.4 |
| | Ammonia (NH ₃) | 5 minutes | 87.4 | 94.9 |
| | VOCs (Benzene, toluene, xylene) | 10 minutes | 91.6 | 94.1 |
| | Meteorological parameters (WS/WD) | 5 minutes | 97.0 | 97.0 |
| Offline | Other VOCs | 4 days | 79 | 90.0 |
| | Polyaromatic Hydrocarbons (PAHs) | 4 days | 79 | 90.0 |
| | Chlorinated Hydrocarbons (PCBs) | 6-12 days | 61 | 80.0 |
| | Pesticides | 6-12 days | 61 | 80.0 |

- Period of downtime following October 2022 storm, which caused a power outage to the monitoring site
 - Resulted in 3-5.5% missing data
- Brief pause in offline sample collection in June 2022 while new tech onboarded

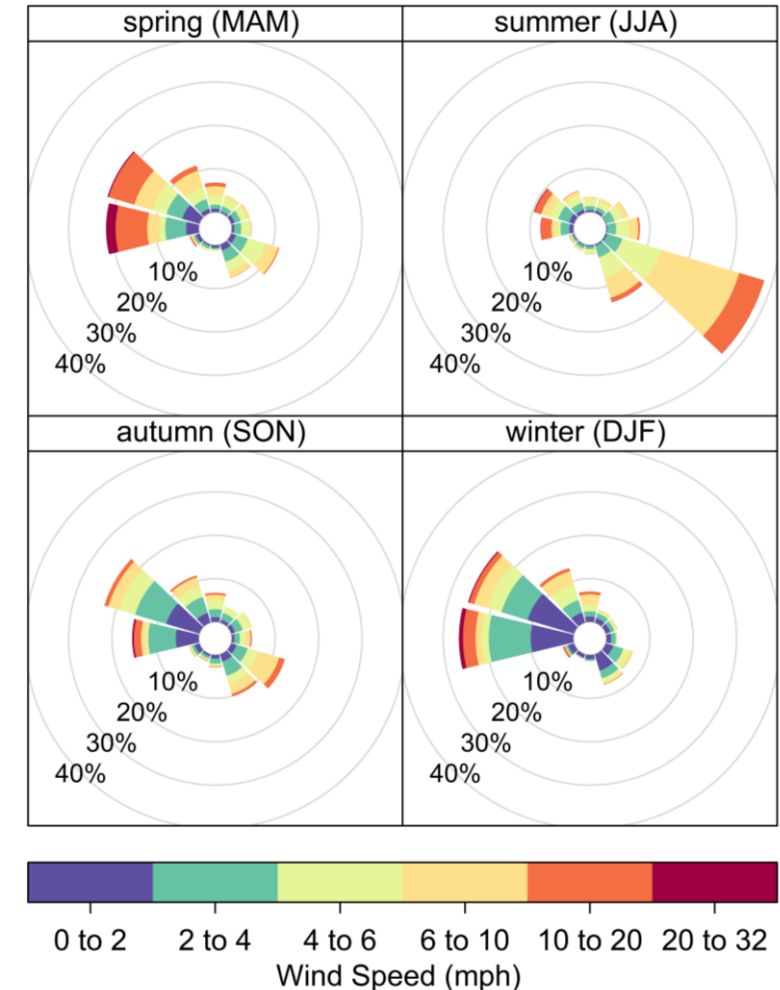
Summary of Monitored Compounds

| Chemical Species | Detection Limit | Average Concentration | Maximum Single Value |
|-------------------------------------|------------------------|------------------------------|-----------------------------|
| Hydrogen Sulfide (H ₂ S) | 0.4 ppb | 15.6 ppb | 791 ppb |
| Ammonia (NH ₃) | 1 ppb | 24.5 ppb | 495 ppb |
| VOCs (Benzene) | 1 ppb | 0.6 ppb | 19.9 ppb |
| VOCs (Toluene) | 1 ppb | 1.1 ppb | 51.9 ppb |
| VOCs (O-xylene) | 1 ppb | 0.8 ppb | 29.5 ppb |

- Benzene and o-xylene concentrations were generally below the detection limit of the analyzer
- Wide range of values observed for H₂S and NH₃

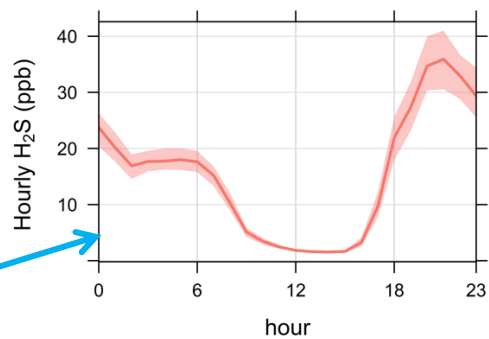
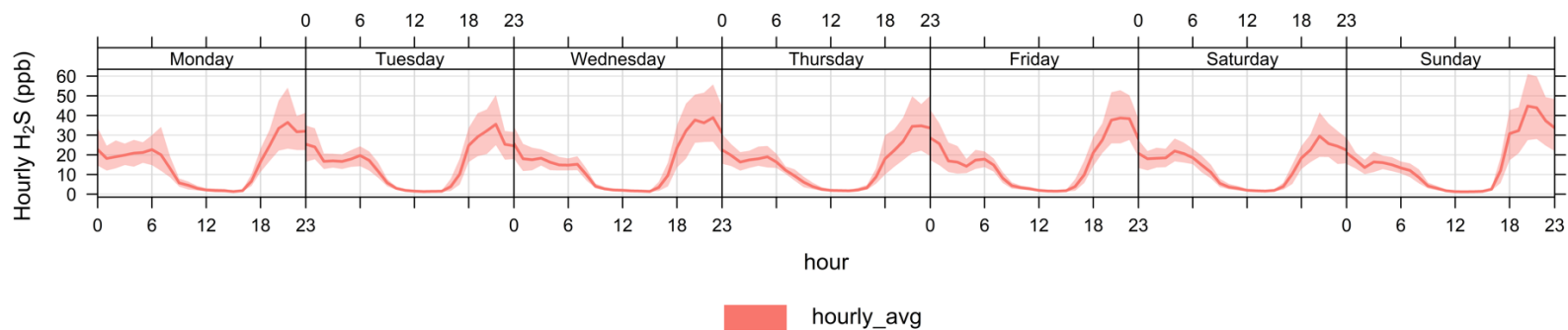
Summary of Monitored Compounds

- Winds most commonly from W or NW
 - More frequently from the SE during summer months
- Overall, winds over 10 mph were observed less than 20% of the time
 - Most often in the spring
- Calm winds were observed ~30% of the time

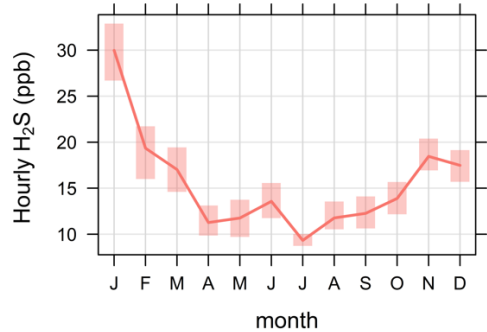


Concentrations Patterns Throughout the Year

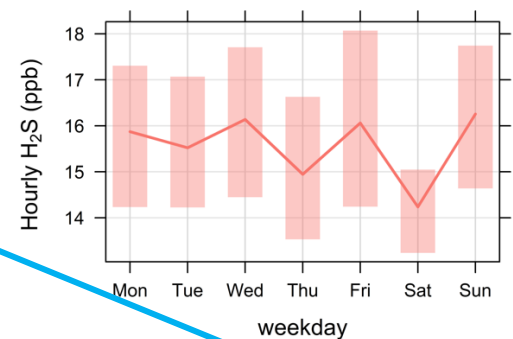
Hydrogen Sulfide (H_2S)



H_2S shows daytime lows, nighttime highs



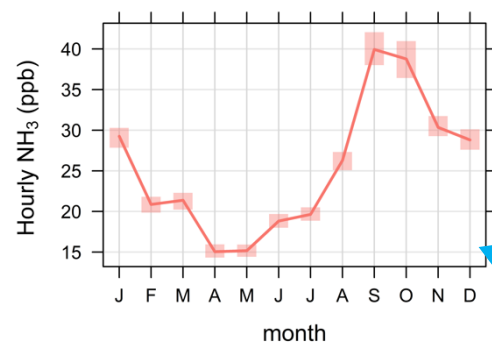
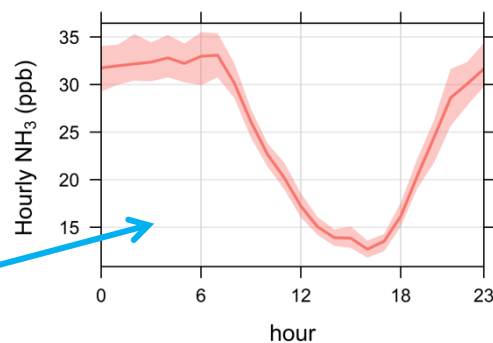
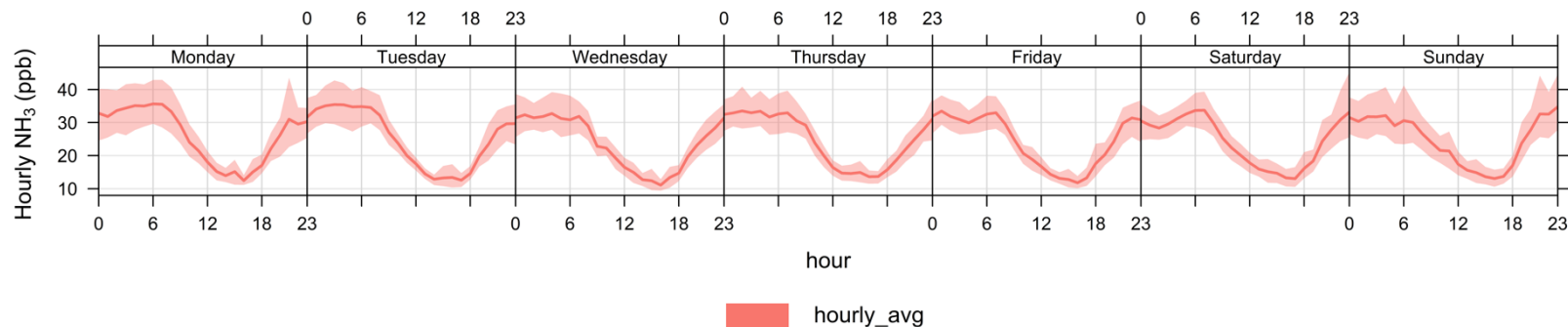
mean and 95% confidence interval in mean



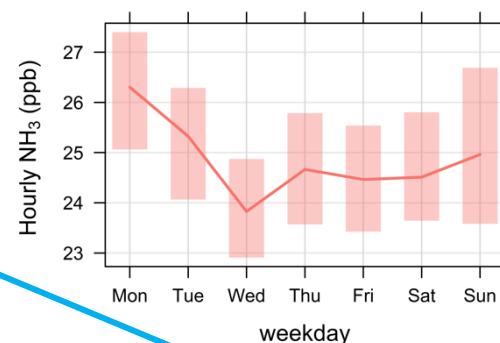
Peaks in January; summertime minimum

Concentrations Patterns Throughout the Year

Ammonia (NH_3)



mean and 95% confidence interval in mean

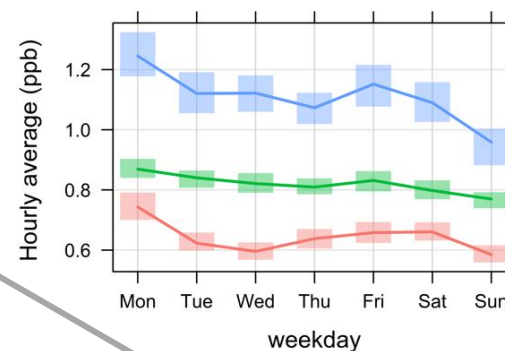
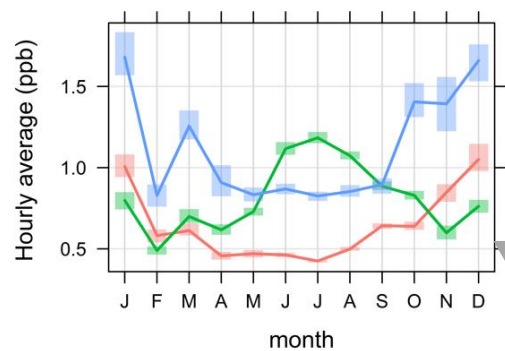
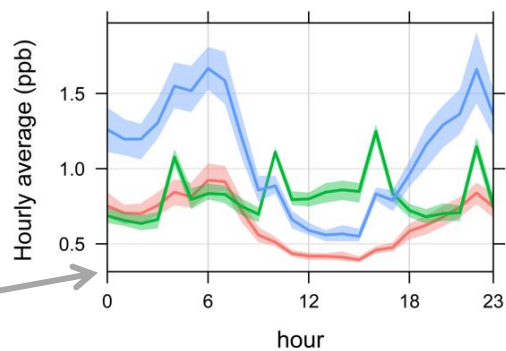
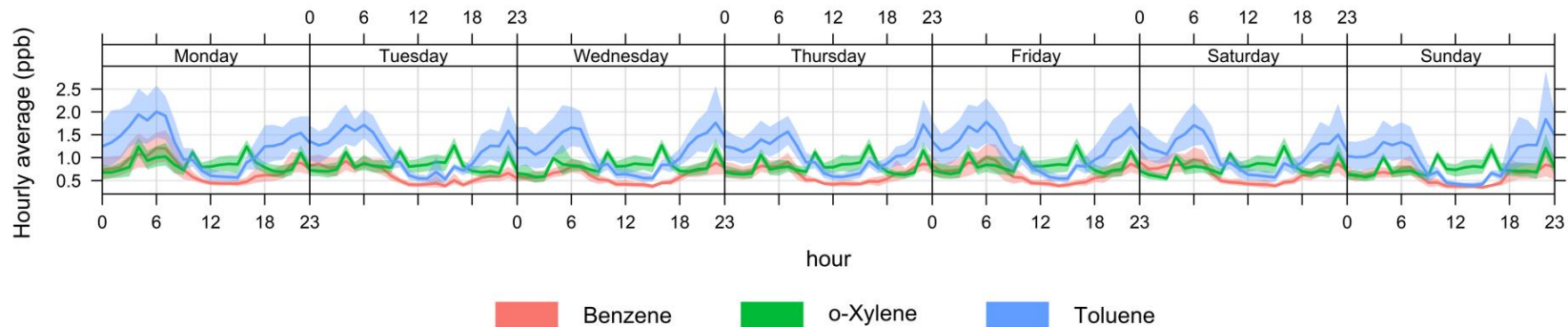


Ammonia shows daytime lows, nighttime highs

Peaks in September and October; minimum in spring

Concentrations Patterns Throughout the Year

VOCs (benzene, toluene, o-xylene)



Toluene, and benzene generally lower values during daytime lows
Xylene is less sensitive to diurnal cycle

****All species near analyzer detection limits**

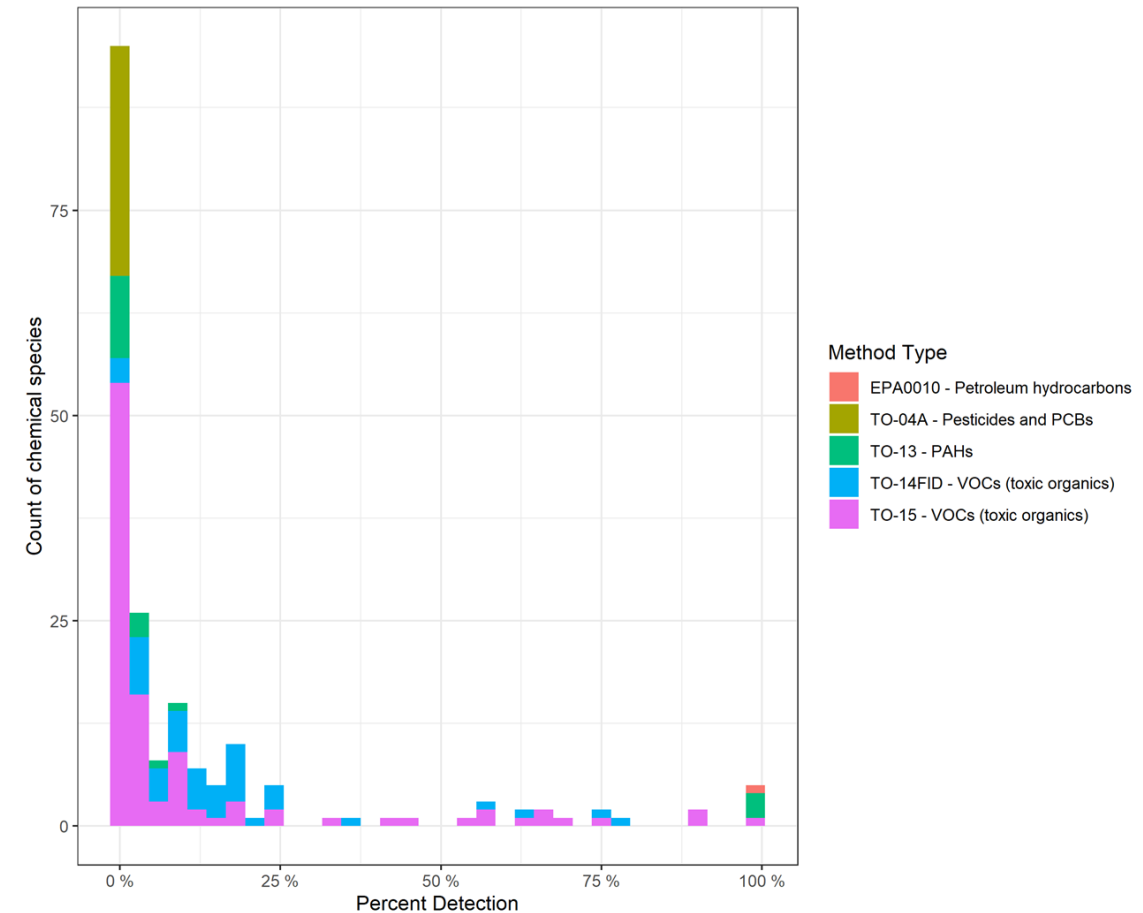
Toluene and benzene show summertime minimum
Xylene shows summer peak

Whole Air Canisters and PUF samples

VOCs, PCBs, Pesticides

- These methods provide analysis of hundreds of species at lower detection limits, but with less time resolution
 - Goal to identify most prevalent species potentially impacting local air quality
 - Hydrocarbons, PAHs, pesticides & PCBs
- Measured 177 total VOC species
- Vast majority were detected less than 15% of the time
- Some species were present in 100% of samples

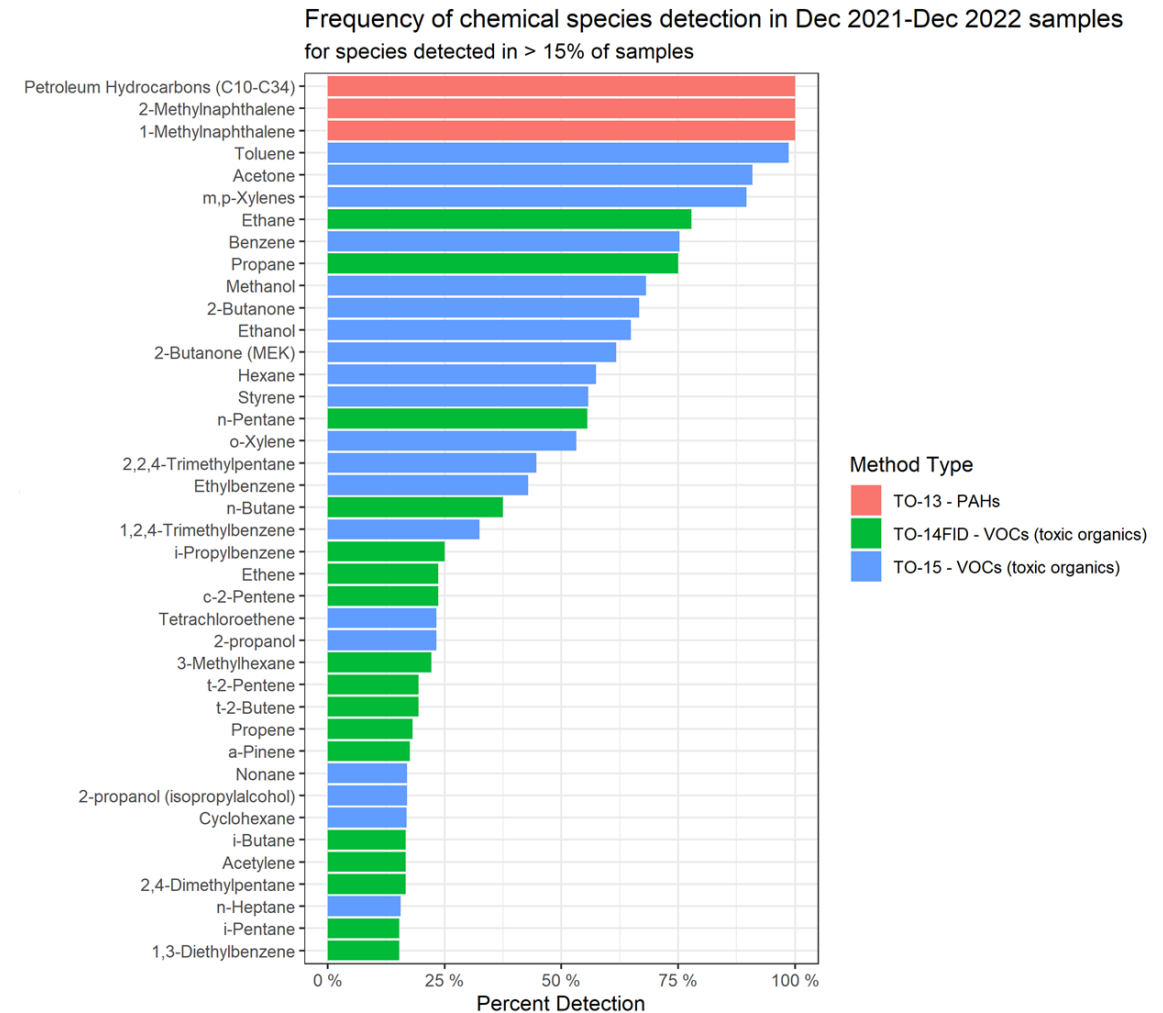
Frequency of chemical species detection in Dec 2021-Dec 2022 samples
Colored by analytical method type, binwidth = 3%



Whole Air Canisters and PUF samples

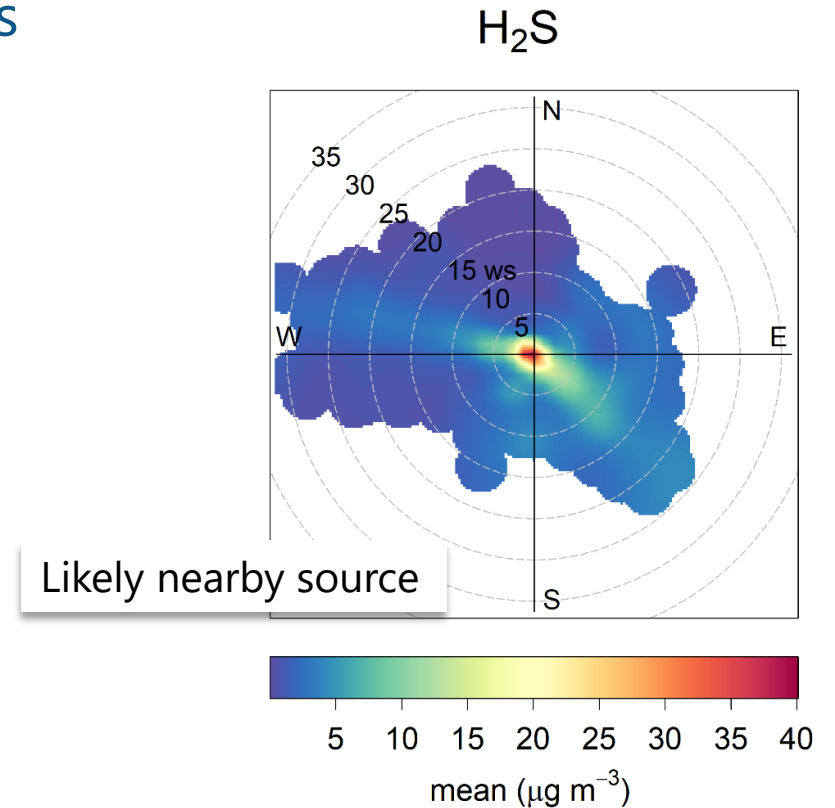
VOCs, PCBs, Pesticides

- Only 3 species were detected in all PUF samples
 - Two PAHs and petroleum hydrocarbons
 - Additional 5 species detected more infrequently in PUF samples
 - Sources include fossil fuel combustion, vehicle exhaust, industrial waste, and insect repellents
- Some VOCs detected in at least 75% of canister samples
 - Acetone, BTX, ethane, propane
 - Sources include industrial processes, vehicle emissions, or natural gas/fuels
- Concentrations remained below health thresholds throughout the study



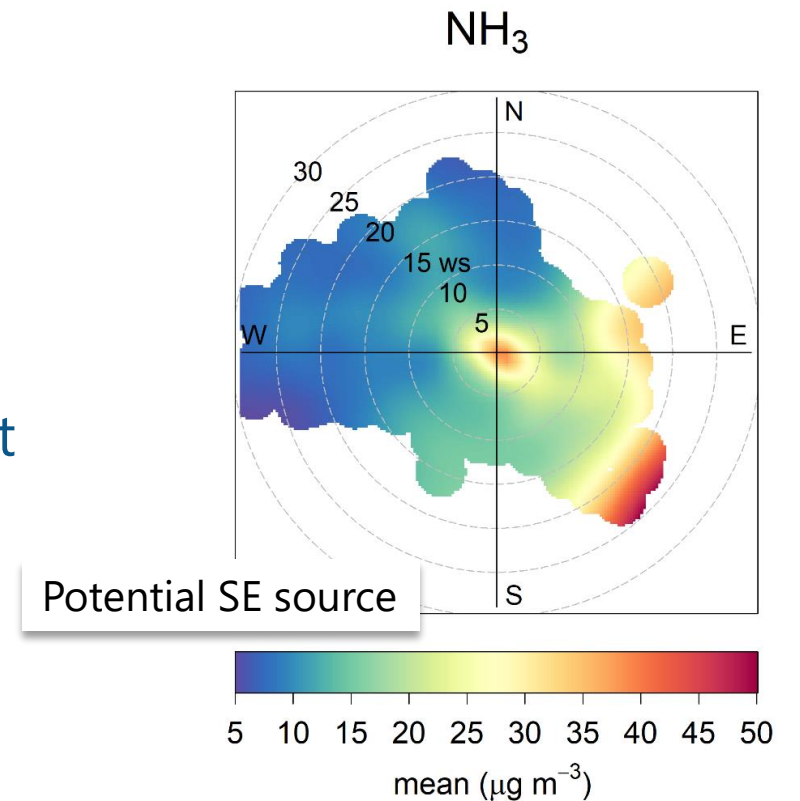
Potential Source Identification – H₂S

- Real-time measurements in context of wind data suggest different pollutants are correlated with different origins
- Higher H₂S concentrations observed predominantly during low wind speeds (<5 mph)
 - Corresponded to winds blowing from the SE and WNW
 - Less likely to be due to transport, but rather local source
- Possible nearby sources:
 - New River (200 ft from site)
 - Wastewater treatment plant (2500 ft from site)
 - City of Mexicali (2000 ft from site)
- Contribution or importance of each source cannot be discerned from the data collected during this study



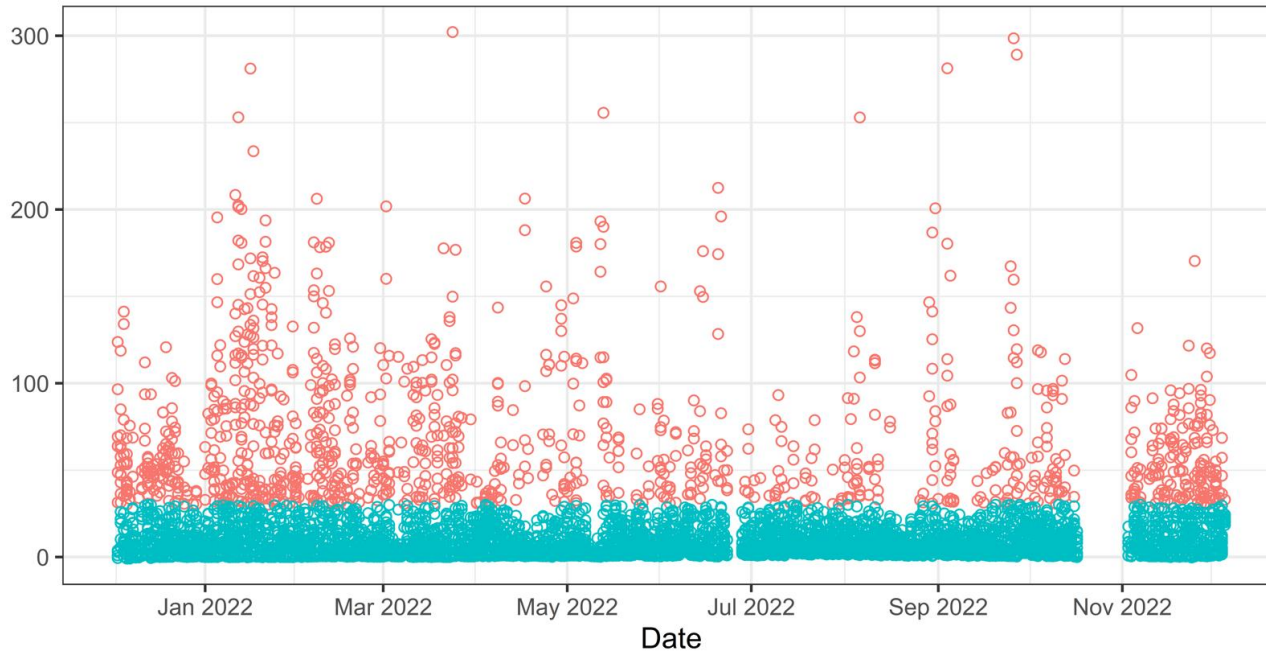
Potential Source Identification – NH₃

- Real-time measurements in context of wind data suggest different pollutants are correlated with different origins
- Higher NH₃ concentrations observed during low wind speeds (<5 mph) but also when winds were 15-20 mph
 - NH₃ elevated during all winds, especially SE & SW
 - Hot spot occurred in August 2022 during high winds
- Suggests SE source that is either further away than what typically influences the site (transport) or an infrequent but high-impact emitter
- Contributions to elevated NH₃ likely from agriculture, livestock waste, fertilizer production, or solvent manufacture



Summary of REL Comparisons – H₂S

REL ○ Above REL ○ Below REL



- Hourly H₂S concentrations were consistently above 30 ppb overnight, which is the acute or 1-hr reference exposure level (REL)
- Exceedances of the REL most frequently in the winter months
- Unclear if this trend is true for the wider region, or if proximity to wastewater treatment plant is significant

| Hourly Mean (ppb) | 1-hr REL (ppb) | Chronic REL (ppb) |
|-------------------|----------------|-------------------|
| 15.6 | 30 | 7.2 |

Summary of REL comparisons

- Apart from H₂S, none of the other species exceeded 1-hr REL thresholds during the study

| Chemical Species | Detection Frequency | Comparison to 1-hr reference exposure levels (REL) |
|---|----------------------------|---|
| Hydrogen Sulfide (H ₂ S) | Often | Above REL, 14.6% of time |
| Ammonia (NH ₃) | Often | Below REL |
| VOCs (Benzene, toluene, xylene) | Often | Below REL |
| Other VOCs | Often | Below REL |
| Polycyclic Aromatic Hydrocarbons (PAHs) | Some detected | N/A |
| Chlorinated Hydrocarbons (PCBs) | Not detected | N/A |
| Pesticides | Not detected | N/A |

Summary

- Measurements conducted with high data completeness
- Compounds detected
 - Many VOCs and some PAHs were identified and often detected
 - PCBs and pesticides were not detected in air samples
- REL Exceedances
 - Hourly REL exceedances were observed in 14.6% of H₂S measurements
 - H₂S concentrations at this site above chronic REL
 - No REL exceedances were observed for other species
- The contribution to H₂S concentrations from the wastewater plant cannot be distinguished from New River > future work?
- Overall, concentrations of all species stem from various local sources, including the New River although the extent is less certain

Thank you!

We would love to hear your questions and discussion



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