

Tercer Informe de Calidad de Aire - 2024

Distrito de Ciudad Nueva

Gobierno Regional de Tacna

2024-08-27

El presente reporte muestra los resultados del monitoreo de la calidad de aire, el cual fue realizado con la estación de monitoreo de calidad de aire del Gobierno Regional de Tacna en un espacio proporcionado por la Institución Educativa Manuel A. Odría² en el distrito de Ciudad Nueva durante el 08 de agosto del 2024 al 18 de agosto del 2024. Los parámetros de calidad de aire evaluados fueron $PM_{2.5}$, PM_{10} , NO_2 , O_3 , CO , SO_2 , H_2S y datos meteorológicos generados por la estación de monitoreo. Las concentraciones de cada uno de estos parámetros no deben superar el Estándar de Calidad Ambiental para Aire (ECA-aire), establecidos mediante el D.S. N° 003-2017-MINAM (MINAM, 2017), a fin de evitar problemas en la salud de las personas y el ambiente. También se ha considerado en el análisis los niveles recomendados por las Directrices de la Organización Mundial de la Salud (OMS, 2021) sobre la calidad del aire. Como principales paquetes computacionales de R para llevar a cabo el procesamiento de la información se tiene a openair (Carslaw & Ropkins, 2012), zoo (Zeileis & Grothendieck, 2005) y tidyverse (Wickham et al., 2019).

Tabla 1: Estándares de Calidad Ambiental para Aire - D.S. N° 003-2017 MINAM

| Parámetros | Período | Valor (ug/m ³) | Criterios de evaluación | Método de análisis ¹ |
|------------|----------|-------------------------------|--|--|
| SO_2 | 24 horas | 250 | NE ² más de 7 veces al año | Fluorescencia ultravioleta (método automático) |
| NO_2 | 1 hora | 200 | NE más de 24 veces al año | Quimioluminiscencia (método automático) |
| $PM_{2.5}$ | 24 horas | 50 | NE más de 7 veces al año | Separación inercial/filtración (gravimetría) |
| PM_{10} | 24 horas | 100 | NE más de 7 veces al año | Separación inercial/filtración (gravimetría) |
| CO | 1 hora | 10000 | NE más de 1 vez al año | Infrarrojo no dispersivo (NDIR) (método automático) |
| | 8 horas | 30000 | Media aritmética móvil | Fotometría de absorción ultravioleta (método automático) |
| O_3 | 8 horas | 100 | Máxima media diaria NE más de 24 veces al año | Fotometría de absorción ultravioleta (método automático) |
| H_2S | 24 horas | 150 | Media aritmética | Fluorescencia ultravioleta (método automático) |

Una manera muy útil de medir la calidad de aire de diferentes zonas del país era utilizando el Índice de Calidad de Aire del Perú, sin embargo, este instrumento técnico se encuentra desactualizado respecto a la normativa vigente. Por lo cual en este estudio se utilizó el Índice de Calidad de Aire (AQI por sus siglas en inglés) de la Agencia de Protección Ambiental de los Estados Unidos (US-EPA, 2024), cuya simbología se aprecia en la tabla 2.

Tabla 2: Rangos del AQI y su simbología de colores

| Categoría | Rango AQI | Color |
|------------------------------------|-----------|----------|
| Buena | 0 - 50 | Verde |
| Moderada | 51 - 100 | Amarillo |
| No saludable para grupos sensibles | 101 - 150 | Naranja |
| No saludable | 151 - 200 | Rojo |
| Muy no saludable | 201 - 300 | Púrpura |
| Peligrosa | 301 - 500 | Marrón |

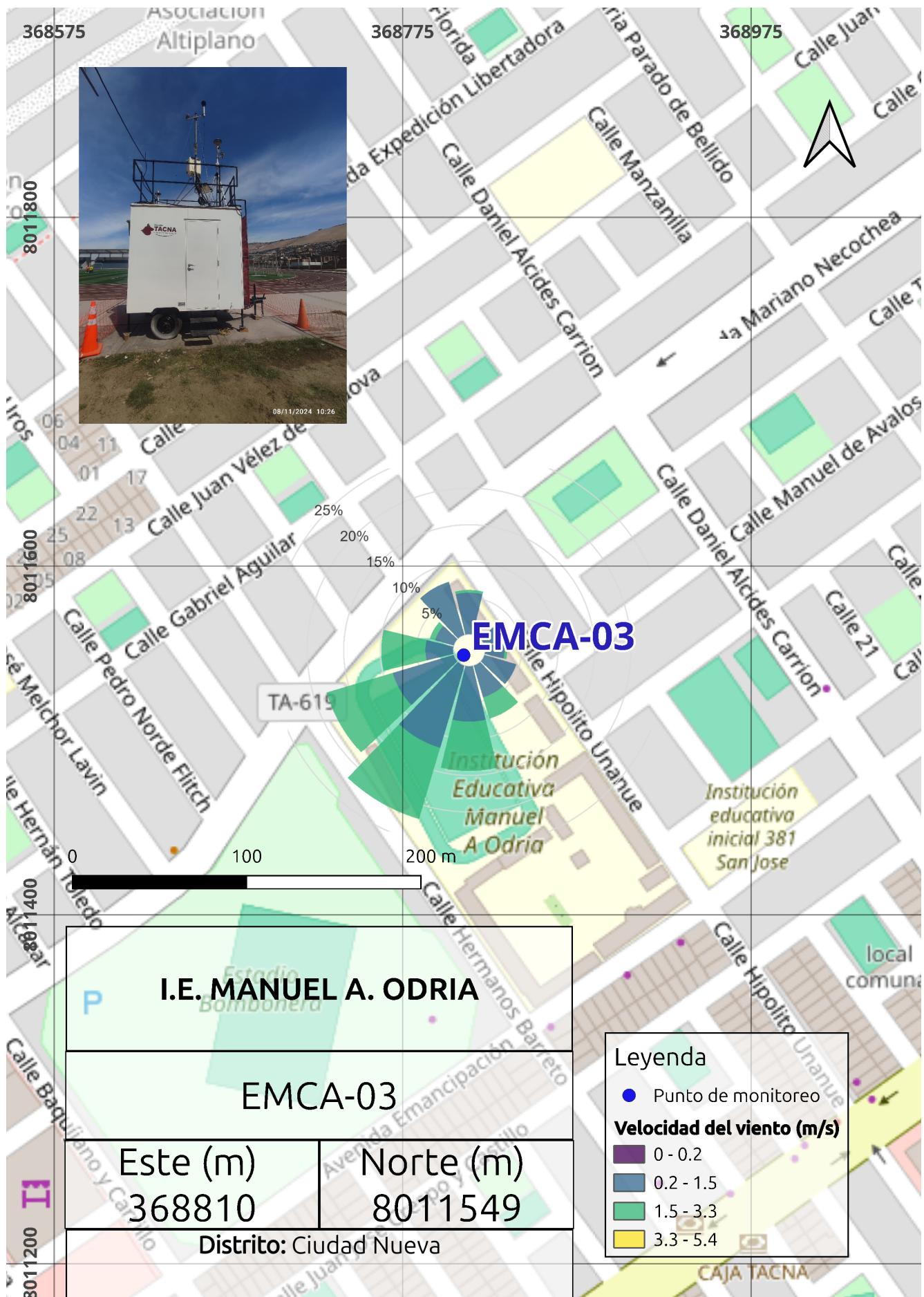
²NE: No exceder más de una cantidad

¹O método equivalente aprobado

1 Estación de monitoreo de calidad de aire EMCA - 03

Durante el 08 de agosto del 2024 al 18 de agosto del 2024 se realizó el monitoreo de calidad del aire, en la Institución Educativa Manuel A. Odría” en el distrito de Ciudad Nueva, utilizando la Estación Móvil de Monitoreo de Calidad de aire del Gobierno Regional de Tacna.

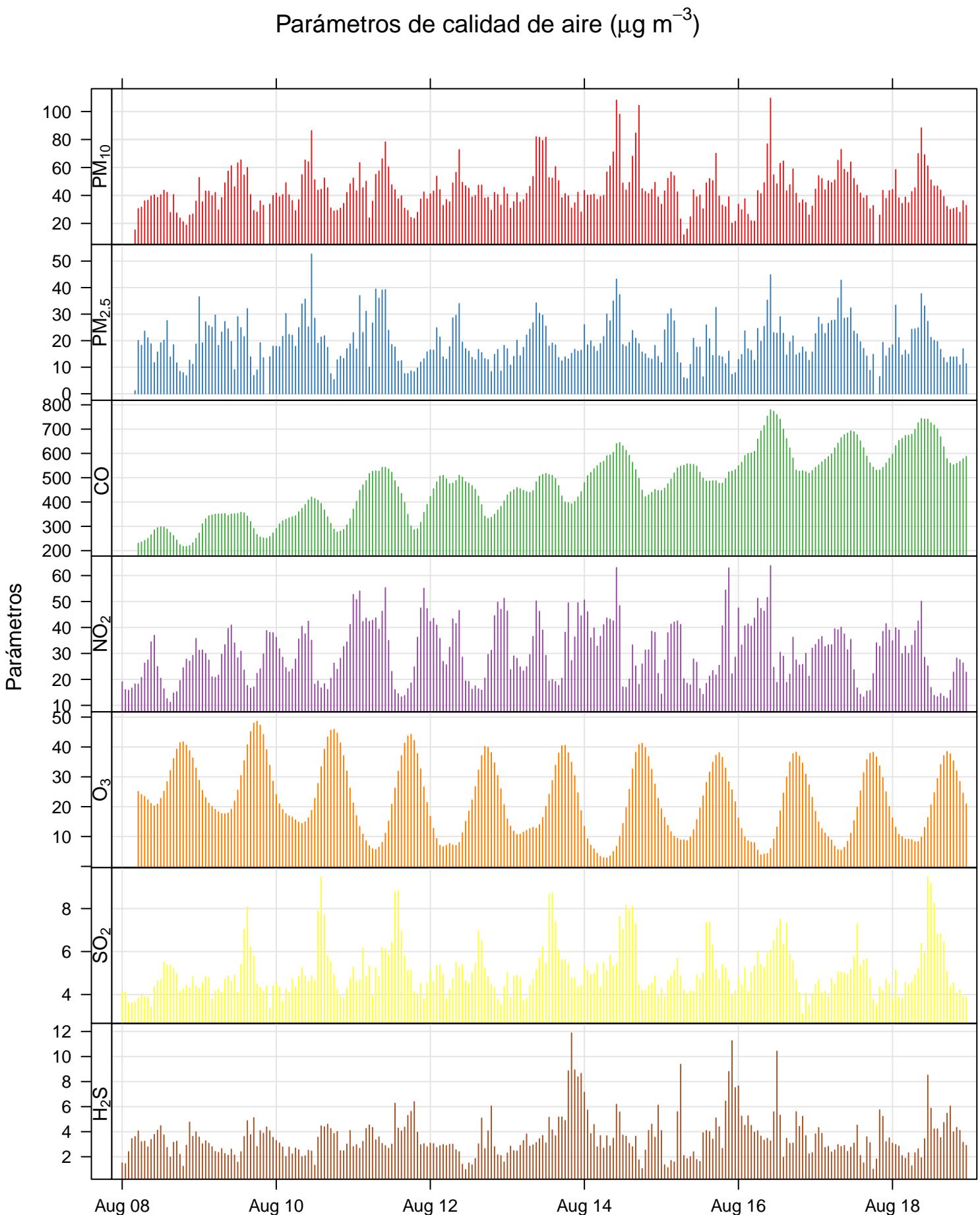
Figura 1: Mapa de Ubicación de la estación EMCA - 03



2 Parámetros de calidad de aire

Con los datos obtenidos de la estación de monitoreo de la calidad del aire del Gobierno Regional de Tacna, se realizó un análisis de la variabilidad horaria de las concentraciones de PM_{10} , $PM_{2.5}$, CO , NO_2 , O_3 , SO_2 y H_2S las cuales se presentan en la figura 2 y están expresadas en $\mu g/m^3$.

Figura 2: Datos horarios de los parámetros de calidad de aire ($\mu g/m^3$)



2.1 Comparación con el Estándar de Calidad de aire

2.1.1 Concentraciones diarias de los parámetros monitoreados

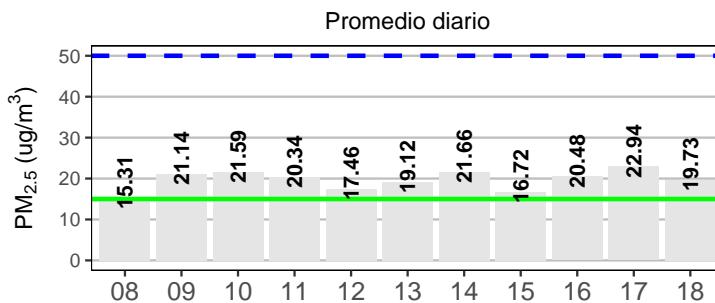
A continuación, se presenta la comparación de las concentraciones diarias obtenidas durante el monitoreo de calidad de aire, con los valores que establece el Estándar de Calidad Ambiental de Aire (D.S. N° 003-2017-MINAM).

Así mismo se compara con los niveles recomendados de las Directrices de la OMS sobre la calidad del aire, la cual ofrece recomendaciones cuantitativas relativas a la salud para la gestión de la calidad del aire.

Figura 3: Comparación de concentraciones diarias con el ECA-aire del 08 de agosto al 18 de agosto

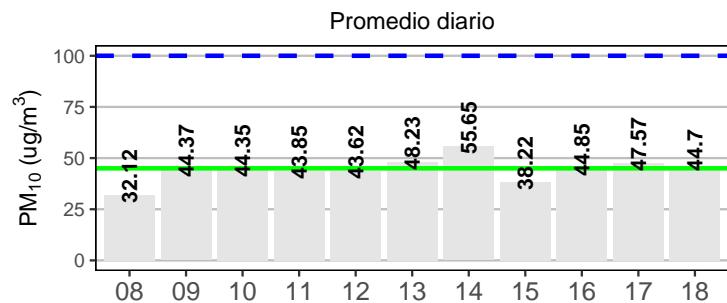
A

Material particulado menor a 2.5 micras



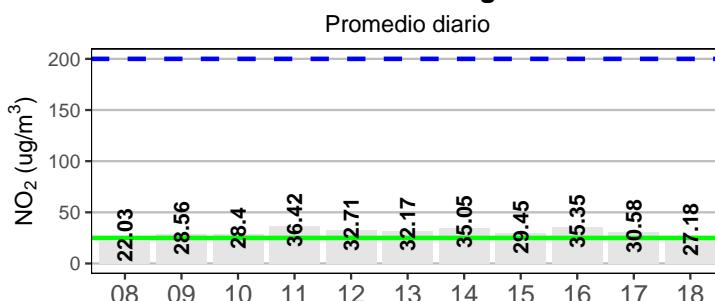
B

Material particulado menor a 10 micras



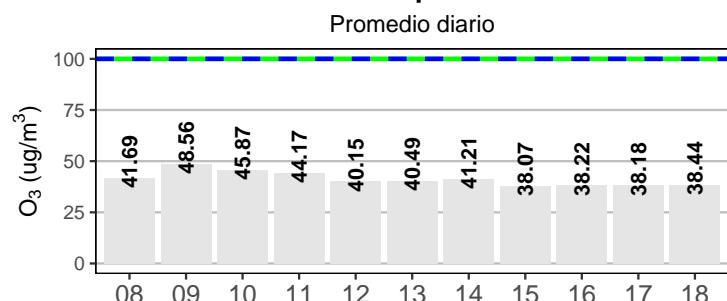
C

Dióxido de nitrógeno



D

Ozono troposférico



Estándar — ECA — OMS

Por otro lado, las concentraciones diarias de los parámetros SO_2 , H_2S y CO se muestran en la siguiente tabla:

Tabla 3: Comparación con el ECA de los datos diarios

| Parámetros | 08-08 | 09-08 | 10-08 | 11-08 | 12-08 | 13-08 | 14-08 | 15-08 | 16-08 | 17-08 | 18-08 | ECA | OMS |
|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| SO ₂ | 4.4 | 4.8 | 5.1 | 5.5 | 4.9 | 5.3 | 5.6 | 4.9 | 5.3 | 4.8 | 5.4 | 250 | 40 |
| H ₂ S | 3.1 | 3.2 | 3.0 | 3.8 | 2.7 | 4.7 | 3.9 | 4.1 | 4.4 | 3.1 | 3.7 | 150 | NA |
| CO (8h) | 255.1 | 321.4 | 352.3 | 450.8 | 435.1 | 459.0 | 533.0 | 523.0 | 626.8 | 614.6 | 651.1 | 30000 | 4000 |
| CO (1h) | 253.7 | 317.4 | 342.2 | 437.0 | 438.4 | 453.7 | 535.7 | 509.8 | 629.1 | 603.0 | 651.2 | 10000 | NA |

Lo visto en la figura 3 y la tabla 3 muestra que las concentraciones diarias no superan el Estándar de Calidad Ambiental de Aire en ningún día de monitoreo. En el caso del $PM_{2.5}$ la concentración diaria más alta se dio el sábado 17 de agosto con 22.94 ug/m³ y en el caso del PM_{10} la concentración diaria más alta se dio el día 14 de agosto con 55.65 ug/m³.

Sin embargo, al realizar la comparación con las Directrices sobre la calidad de aire de la Organización Mundial de la Salud (OMS), los parámetros $PM_{2.5}$, PM_{10} y NO_2 superan estos valores en varios días de monitoreo.

2.1.2 Concentraciones horarias de los parámetros monitoreados

A continuación, se muestran las concentraciones horarias de los parámetros comparados de forma referencial con los Estándares de Calidad Ambiental (ECA) para aire del Perú y los niveles de la Directriz de la Organización Mundial de la Salud (OMS). El gráfico muestra que los parámetros $PM_{2.5}$ y PM_{10} superan en algunas horas de monitoreo, ambos umbrales de referencia, en el caso de los parámetros NO_2 , O_3 , SO_2 , H_2S y CO no se llega a superar estos umbrales.

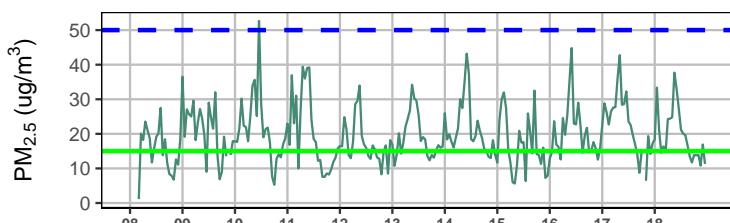
en ningún momento del periodo de monitoreo. Así también, de forma complementaria en la figura 5 para una mejor comprensión, se muestra el comportamiento semanal de cada uno de los parámetros monitoreados.

Figura 4: Comparación referencial de concentraciones horarias con el Estándar de Calidad Ambiental de Aire del 08 de agosto al 18 de agosto

A

Material particulado menor a 2.5 micras

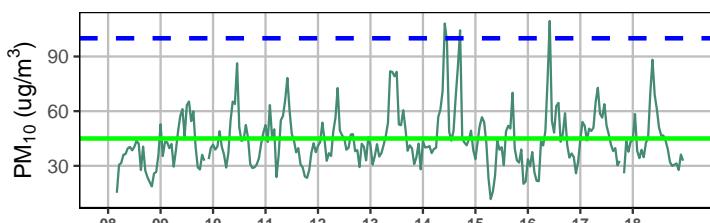
Promedio horario



B

Material particulado menor a 10 micras

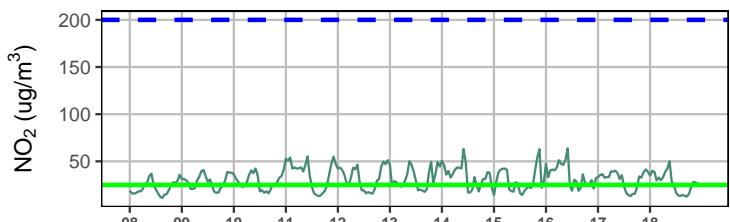
Promedio horario



C

Dióxido de nitrógeno

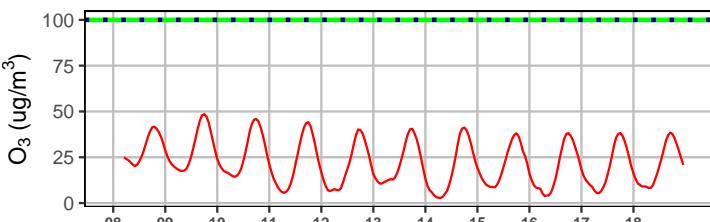
Promedio horario



D

Ozono troposférico

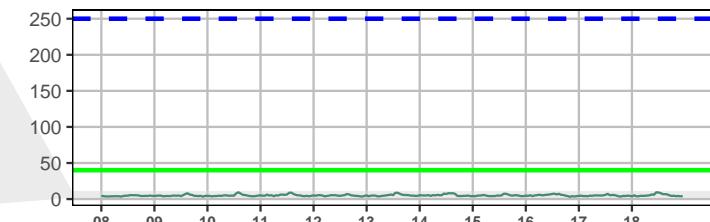
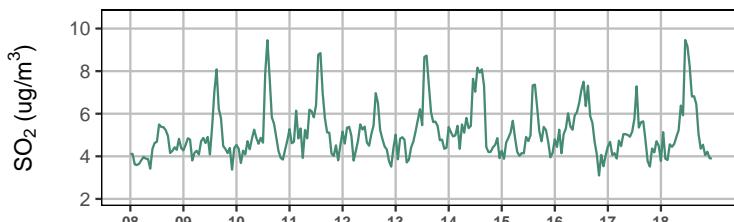
Promedio horario



E

Dióxido de azufre

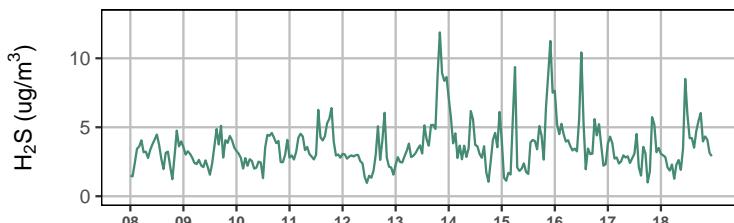
Promedio horario



F

Sulfuro de hidrógeno

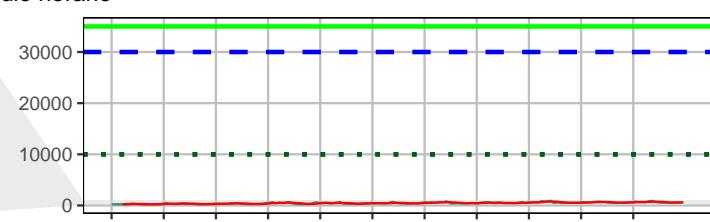
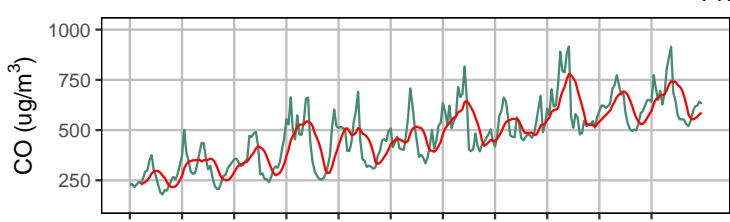
Promedio horario



G

Monóxido de carbono

Promedio horario



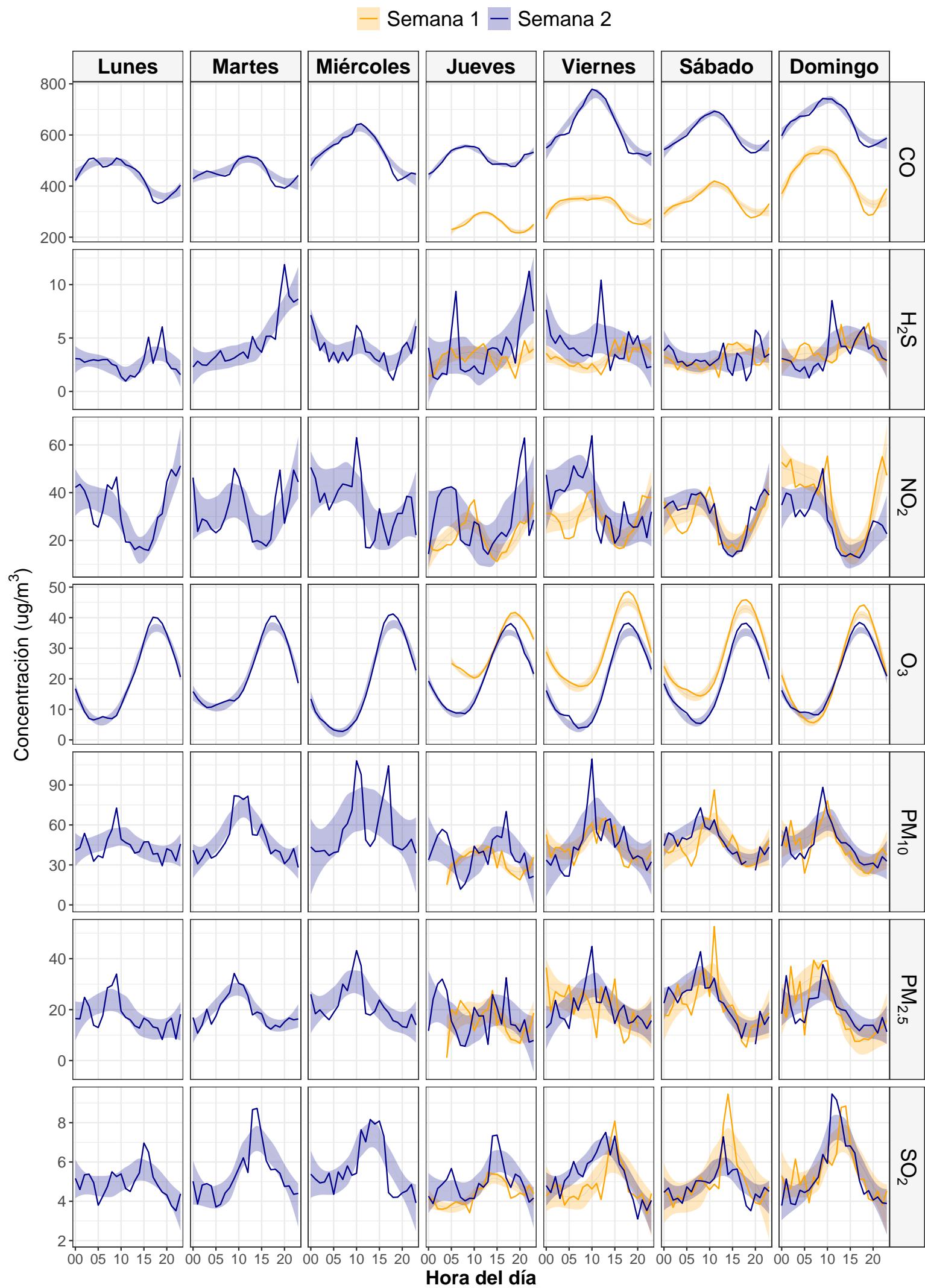
Leyenda

Media aritmética ECA

Media móvil ECA(8h)

OMS OMS(8h)

Figura 5: Comportamiento semanal de datos horarios - 08 de agosto al 18 de agosto

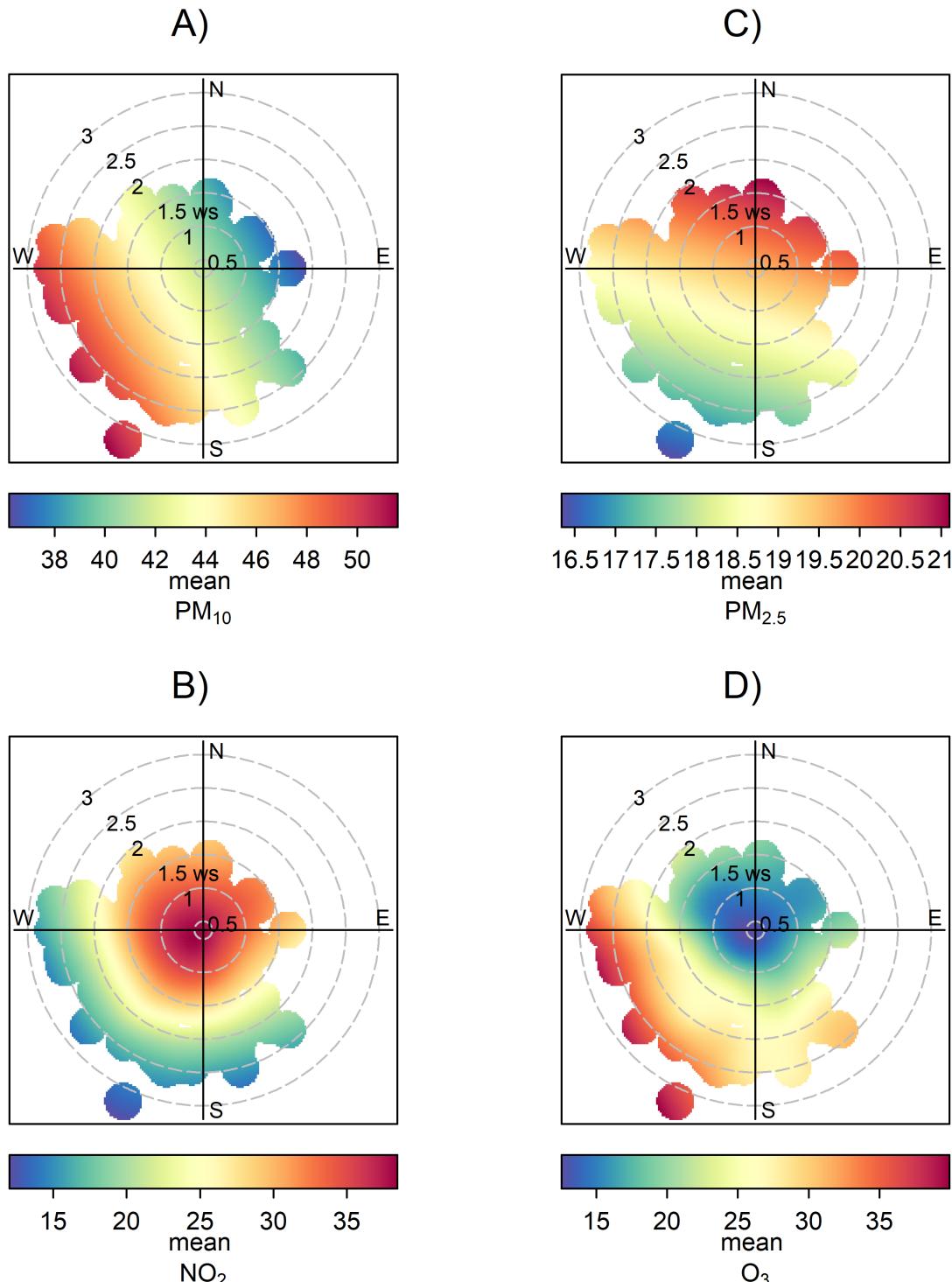


2.1.3 Gráficos polares

Son gráficos que presentan una relación entre las concentraciones horarias de los contaminantes y el comportamiento de los vientos. La dirección del viento se muestra en el plano cartesiano, la velocidad del viento en las circunferencias, la cual aumenta a medida que se aleja del origen, y la concentración en la paleta de colores.

En la figura 6 se aprecia la representación polar de 4 parámetros de calidad de aire de interés PM_{10} , $PM_{2.5}$, NO_2 y O_3 . En el caso del parámetro PM_{10} , esta muestra mayores concentraciones con mayores niveles de velocidad de viento los cuales provienen principalmente de dirección oeste y suroeste, en el caso del $PM_{2.5}$ las mayores concentraciones se dan a bajos niveles de velocidad del viento, y en mayor medida de dirección norte. Así mismo según el gráfico, las mayores concentraciones de NO_2 se presentan a valores reducidos de velocidad de viento, en todas las direcciones de viento. Los valores de O_3 se presentan con valores altos de velocidad de viento y provenientes con mayor predominancia de dirección oeste y suroeste.

Figura 6: Gráficos polares de los principales parámetros evaluados



2.2 Índice de Calidad de Aire

El índice de Calidad de Aire (AQI por sus siglas en inglés) muestra los estados de la calidad del aire, en general la zona monitoreada durante el 08 de agosto del 2024 al 18 de agosto del 2024 presenta estados de calidad de aire “**Bueno**” en los parámetros NO_2 , O_3 , SO_2 , y CO , durante todos los días de medición. En el caso del $PM_{2.5}$ se observa que presenta todos los días estado de calidad del aire “**Moderado**”, que puede no ser favorable para personas sensibles a una exposición prolongada de este parámetro en la zona de evaluación. Finalmente, los valores de PM_{10} presenta estado de calidad de aire “**Bueno**” en casi todos los días monitoreados, a excepción del día 14 con estado de calidad del aire “**Moderado**”.

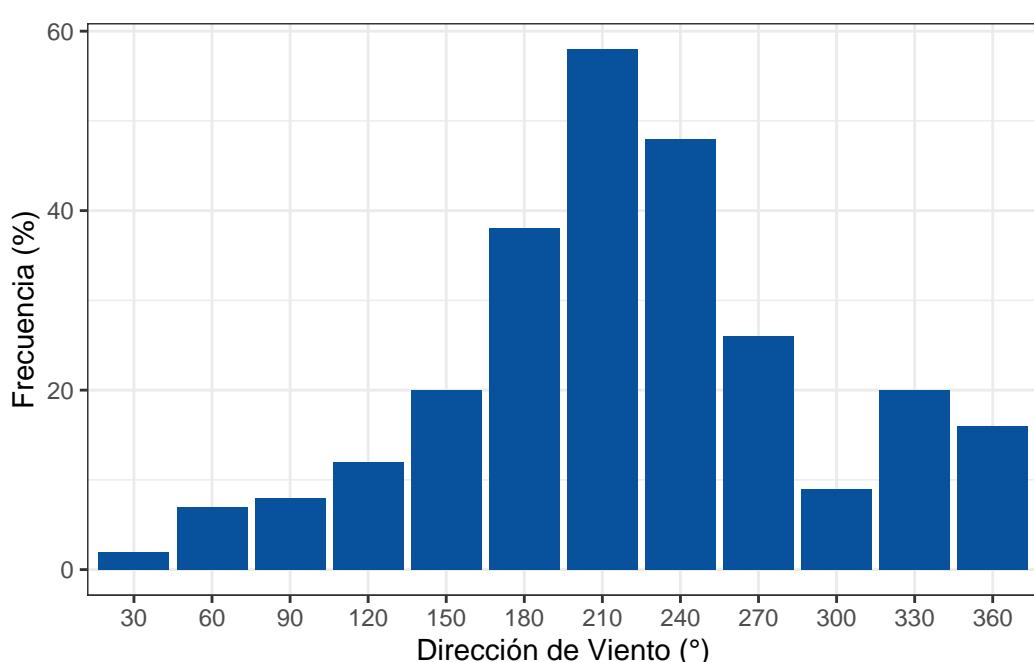
Figura 7: Índice de Calidad de Aire - 08 de agosto al 18 de agosto



3 Parámetros meteorológicos

El siguiente gráfico muestra la distibución de los vientos en intervalos de 30 grados sexagesimales, de manera que, la dirección predominante del viento se da a los 210 grados en sentido horario.

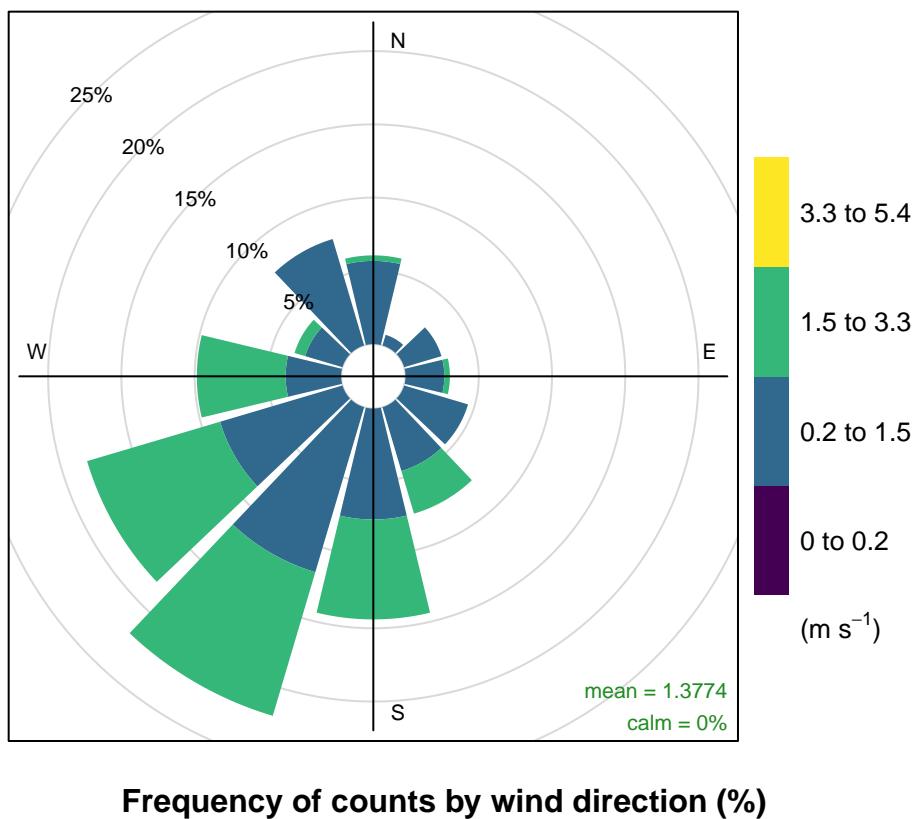
Figura 8: Distibución de la dirección de los vientos



Así también se presenta el gráfico de rosa de viento donde se evidencia que el promedio de velocidades es de 1.38 m/s. De acuerdo a los rangos propuestos por la OMM (2023), los rangos de velocidades encontrados en este periodo de monitoreo

se encuentran en las categorías de “brisa muy débil” y “brisa débil”.

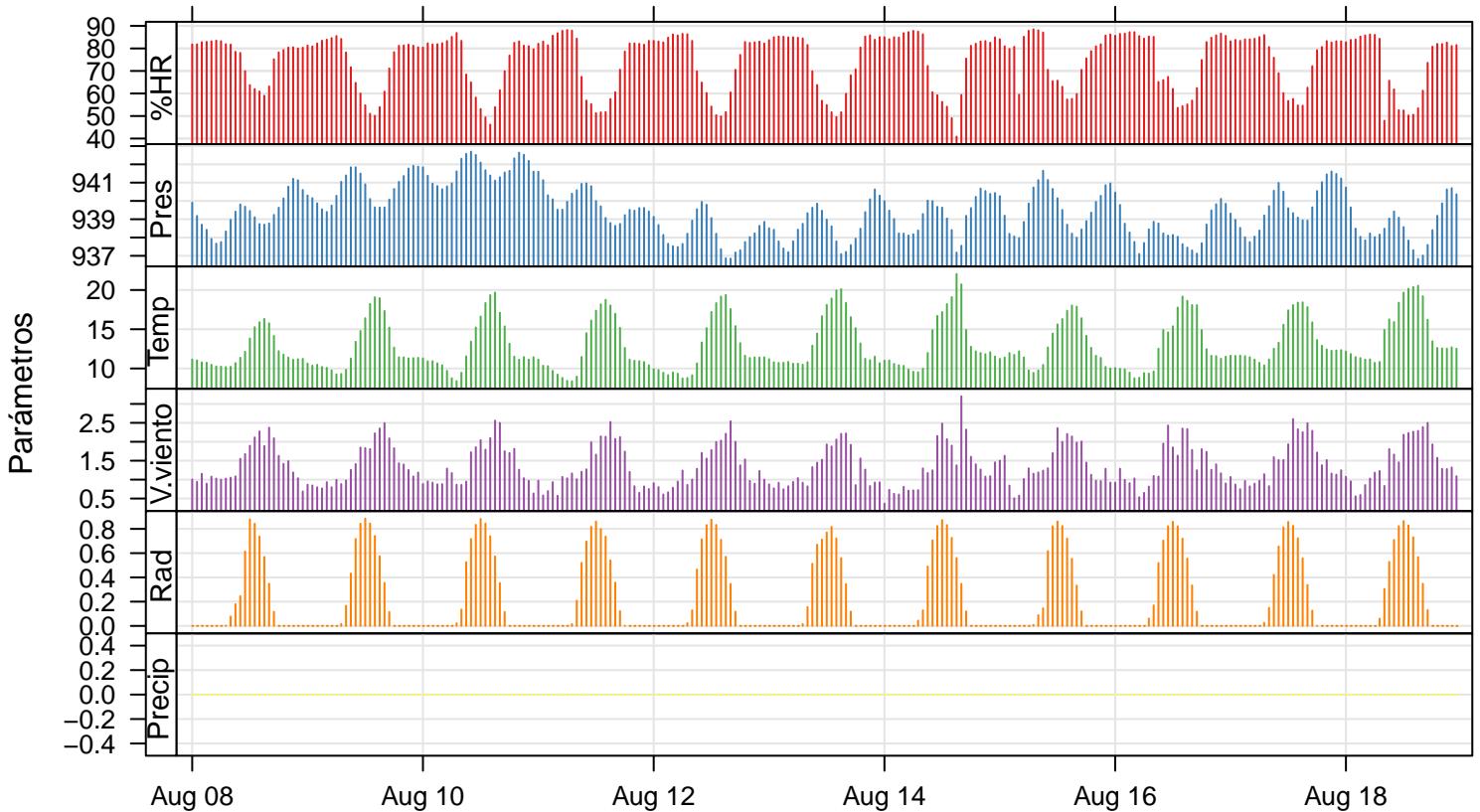
Figura 9: Rosa de vientos



Frequency of counts by wind direction (%)

A continuación se presenta la información obtenida durante el periodo de medición respecto a los parámetros temperatura, precipitación, humedad relativa, presión, velocidad del viento y radiación solar.

Figura 10: Datos horarios de los parámetros meteorológicos de la estación evaluada



4 Conclusiones

- Las concentraciones diarias de material particulado en la zona evaluada cumple con los Estándar de Calidad Ambiental para aire, establecidos en el D.S. N° 003-2017-MINAM. Asimismo, en el caso del $PM_{2.5}$ la concentración diaria más alta se dio el sábado 17 de agosto con 22.94 ug/m³ y en el caso del PM_{10} la concentración diaria más alta se dio el miércoles 14 de agosto con 55.65 ug/m³.
- Los contaminantes gaseosos NO_2 , O_3 , SO_2 , H_2S y CO no superaron sus respectivos ECA-aire. Asimismo, las mayores concentraciones de NO_2 se registraron el domingo 11 de agosto del 2024 con 36.42 ug/m³ y de O_3 el día viernes 09 de agosto con 48.56 ug/m³.
- El Índice de Calidad de Aire utilizado para determinar los estados de la calidad de aire en la zona de estudio muestra que durante los días de monitoreo los parámetros evaluados presentan la categoría de “**Bueno**” en la mayoría de los casos (a excepción de los parámetros $PM_{2.5}$ PM_{10}) . Asimismo, para el parámetro $PM_{2.5}$ presenta estado de calidad del aire “**Moderado**” en todos los días de monitoreo y respecto al parámetro PM_{10} este presenta estado de calidad de aire “**Bueno**” en casi todos los días monitoreados, a excepción del día 14 de agosto con estado de calidad del aire “**Moderado**”.
- Respecto a la comparación con las Directrices de la Organización Mundial de la Salud (OMS) sobre la calidad del aire, los parámetros $PM_{2.5}$, PM_{10} y NO_2 superan sus valores de referencia respectivos.
- En cuanto a los parámetros meteorológicos se destaca la predominancia del viento suroeste (210°) y el valor medio de la velocidad del viento en 1.38 m/s.

5 Referencias

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ANEXOS

TABLA : HOJA DE DATOS - TEMPERATURA (°C)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | |
|-------------------------------------|----------------------------------|
| Ciudad | : Tacna |
| Nombre/Número de la Estación | : EMCA-03 |
| Ubicación | : I.E. MANUEL A. ODRÍA |
| Equipo de Muestreo | : Sensor de Temperatura del Aire |
| Coordenadas UTM (WGS 84) | |
| Este | : 368810 |
| Norte | : 8011549 |

| | |
|----------------------------|----------------------|
| Periodo | : 08 al 18 de agosto |
| Año | : 2024 |
| Responsable | : GORE - TACNA |
| Tipo de Data | : Horario |
| Unidades | : °C |
| Límite de Detección | : ---°C |

| DIA \ HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 11.2 | 11.0 | 10.8 | 10.7 | 10.5 | 10.3 | 10.2 | 10.2 | 10.2 | 10.7 | 11.4 | 12.1 | 13.8 | 15.3 | 15.9 | 16.3 | 15.8 | 14.2 | 12.2 | 11.8 | 11.4 | 11.1 | 11.2 | 11.2 | 12.1 | 16.3 | 10.2 |
| 09/08/2024 | 10.6 | 10.4 | 10.5 | 10.2 | 10.1 | 9.8 | 9.3 | 9.3 | 9.8 | 11.3 | 13.4 | 14.8 | 16.4 | 18.2 | 19.1 | 19.0 | 17.3 | 15.2 | 12.7 | 11.4 | 11.4 | 11.3 | 11.3 | 11.4 | 12.7 | 19.1 | 9.3 |
| 10/08/2024 | 11.3 | 10.9 | 10.9 | 10.7 | 10.4 | 9.7 | 8.8 | 8.4 | 9.5 | 11.6 | 13.4 | 15.2 | 16.6 | 18.3 | 19.4 | 19.7 | 17.1 | 15.4 | 13.2 | 11.5 | 11.1 | 11.5 | 11.1 | 11.4 | 12.8 | 19.7 | 8.4 |
| 11/08/2024 | 11.1 | 10.4 | 10.3 | 9.7 | 9.2 | 8.8 | 8.4 | 8.4 | 9.0 | 11.5 | 14.5 | 16.1 | 17.4 | 18.2 | 18.8 | 18.0 | 17.0 | 15.2 | 12.6 | 11.1 | 11.0 | 10.9 | 10.8 | 10.4 | 12.4 | 18.8 | 8.4 |
| 12/08/2024 | 9.9 | 9.8 | 9.5 | 9.2 | 9.5 | 9.3 | 8.7 | 8.8 | 9.1 | 10.7 | 13.3 | 15.2 | 17.2 | 18.3 | 19.2 | 19.4 | 17.6 | 15.4 | 13.2 | 11.6 | 11.3 | 11.4 | 11.4 | 11.4 | 12.5 | 19.4 | 8.7 |
| 13/08/2024 | 11.2 | 10.8 | 10.7 | 10.7 | 10.8 | 10.6 | 10.6 | 10.5 | 10.8 | 12.9 | 14.5 | 16.7 | 18.1 | 18.9 | 20.0 | 20.1 | 18.4 | 16.5 | 15.1 | 13.2 | 11.2 | 11.1 | 11.5 | 10.7 | 13.6 | 20.1 | 10.5 |
| 14/08/2024 | 11.0 | 11.0 | 10.6 | 10.4 | 10.3 | 9.9 | 9.6 | 9.5 | 10.0 | 12.0 | 14.9 | 16.7 | 17.2 | 18.2 | 19.1 | 22.1 | 20.7 | 14.9 | 12.8 | 12.2 | 12.0 | 11.8 | 12.1 | 11.5 | 13.4 | 22.1 | 9.5 |
| 15/08/2024 | 11.2 | 11.4 | 12.0 | 11.7 | 12.2 | 11.4 | 9.8 | 9.4 | 9.8 | 10.5 | 12.7 | 14.5 | 15.6 | 16.3 | 17.4 | 18.0 | 17.9 | 16.4 | 14.2 | 12.6 | 11.6 | 11.4 | 10.2 | 10.0 | 12.8 | 18.0 | 9.4 |
| 16/08/2024 | 10.1 | 10.0 | 9.9 | 9.5 | 8.8 | 8.8 | 9.4 | 9.4 | 9.6 | 12.5 | 14.9 | 14.6 | 15.4 | 17.8 | 19.2 | 18.6 | 18.1 | 18.1 | 14.9 | 12.5 | 11.6 | 11.6 | 11.2 | 11.5 | 12.8 | 19.2 | 8.8 |
| 17/08/2024 | 11.6 | 11.6 | 11.6 | 11.6 | 11.4 | 11.1 | 10.7 | 10.4 | 11.2 | 12.5 | 13.3 | 15.6 | 17.4 | 18.1 | 18.4 | 18.4 | 17.8 | 15.9 | 13.6 | 12.9 | 12.4 | 12.3 | 12.3 | 12.3 | 13.5 | 18.4 | 10.4 |
| 18/08/2024 | 12.2 | 11.8 | 11.5 | 11.3 | 11.1 | 11.2 | 10.7 | 10.8 | 14.9 | 16.3 | 15.9 | 18.4 | 19.7 | 20.2 | 20.4 | 20.6 | 19.2 | 16.2 | 13.5 | 12.6 | 12.6 | 12.5 | 12.7 | 12.5 | 14.5 | 20.6 | 10.7 |
| Prom. | 11.0 | 10.8 | 10.7 | 10.5 | 10.4 | 10.1 | 9.7 | 9.6 | 10.3 | 12.0 | 13.8 | 15.4 | 16.8 | 18.0 | 18.8 | 19.1 | 17.9 | 15.8 | 13.5 | 12.1 | 11.6 | 11.5 | 11.4 | 11.3 | | | |
| Max. | 12.2 | 11.8 | 12.0 | 11.7 | 12.2 | 11.4 | 10.7 | 10.8 | 14.9 | 16.3 | 15.9 | 18.4 | 19.7 | 20.2 | 20.4 | 22.1 | 20.7 | 18.1 | 15.1 | 13.2 | 12.6 | 12.5 | 12.7 | 12.5 | | | |
| Min. | 9.9 | 9.8 | 9.5 | 9.2 | 8.8 | 8.8 | 8.4 | 8.4 | 9.0 | 10.5 | 11.4 | 12.1 | 13.8 | 15.3 | 15.9 | 16.3 | 15.8 | 14.2 | 12.2 | 11.1 | 11.0 | 10.9 | 10.2 | 10.0 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - HUMEDAD RELATIVA (%)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|-------------------------------------|------------------------------|----------------------------|----------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : Sensor de Humedad Relativa | Tipo de Data | : Horario |
| Coordenadas UTM (WGS 84) | | | Unidades : % |
| Este | : 368810 | Límite de Detección | : ---% |
| Norte | : 8011549 | | |

| DIA \ HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 81.8 | 81.8 | 82.8 | 82.9 | 83.2 | 83.5 | 83.2 | 81.9 | 81.7 | 78.5 | 78.0 | 69.9 | 63.7 | 62.0 | 60.9 | 59.0 | 63.1 | 75.2 | 78.3 | 79.3 | 80.4 | 80.5 | 80.0 | 80.3 | 76.3 | 83.5 | 59.0 |
| 09/08/2024 | 81.2 | 80.9 | 82.2 | 83.4 | 83.9 | 84.6 | 85.5 | 84.2 | 78.2 | 71.7 | 64.7 | 60.0 | 54.8 | 51.0 | 50.1 | 54.0 | 60.8 | 71.1 | 78.4 | 81.2 | 81.3 | 81.7 | 81.2 | 80.5 | 73.6 | 85.5 | 50.1 |
| 10/08/2024 | 80.4 | 82.3 | 81.8 | 81.9 | 82.3 | 83.3 | 85.1 | 86.9 | 83.3 | 68.4 | 64.9 | 58.2 | 53.1 | 49.4 | 46.2 | 54.0 | 61.5 | 69.9 | 76.9 | 82.5 | 83.1 | 81.2 | 81.0 | 79.6 | 73.2 | 86.9 | 46.2 |
| 11/08/2024 | 82.1 | 83.1 | 81.4 | 85.7 | 86.8 | 87.8 | 88.2 | 87.9 | 84.3 | 67.4 | 56.9 | 55.3 | 51.3 | 51.6 | 51.8 | 57.5 | 60.6 | 70.6 | 78.6 | 82.2 | 82.3 | 82.1 | 81.7 | 83.4 | 74.2 | 88.2 | 51.3 |
| 12/08/2024 | 83.4 | 83.1 | 82.7 | 84.8 | 86.2 | 85.8 | 86.5 | 86.3 | 83.3 | 69.8 | 64.8 | 60.2 | 54.2 | 50.3 | 49.8 | 51.8 | 60.5 | 70.5 | 77.1 | 82.9 | 82.5 | 82.7 | 83.1 | 82.2 | 74.4 | 86.5 | 49.8 |
| 13/08/2024 | 83.7 | 85.0 | 85.3 | 85.2 | 84.9 | 85.0 | 84.8 | 84.4 | 81.5 | 69.9 | 63.8 | 56.8 | 54.9 | 51.7 | 49.5 | 51.7 | 59.9 | 68.1 | 70.7 | 80.4 | 85.3 | 85.8 | 83.9 | 85.0 | 74.0 | 85.8 | 49.5 |
| 14/08/2024 | 85.0 | 84.1 | 85.0 | 84.9 | 86.8 | 87.3 | 87.8 | 87.4 | 86.3 | 72.2 | 60.6 | 59.2 | 56.3 | 54.1 | 49.1 | 40.9 | 59.4 | 75.5 | 81.2 | 82.1 | 83.1 | 83.3 | 82.5 | 84.9 | 75.0 | 87.8 | 40.9 |
| 15/08/2024 | 84.1 | 81.0 | 79.8 | 80.7 | 59.5 | 85.2 | 87.9 | 88.5 | 88.1 | 87.1 | 70.5 | 65.5 | 65.7 | 63.0 | 57.3 | 57.6 | 59.8 | 70.5 | 75.6 | 78.8 | 80.9 | 81.8 | 85.7 | 86.2 | 75.9 | 88.5 | 57.3 |
| 16/08/2024 | 85.6 | 86.4 | 86.6 | 87.2 | 87.2 | 85.5 | 84.3 | 85.3 | 85.1 | 65.1 | 66.0 | 67.4 | 62.1 | 53.6 | 54.3 | 55.1 | 56.9 | 62.4 | 74.9 | 82.8 | 84.8 | 85.8 | 86.6 | 85.6 | 75.7 | 87.2 | 53.6 |
| 17/08/2024 | 83.2 | 83.8 | 83.4 | 84.0 | 84.0 | 84.3 | 85.0 | 85.9 | 80.6 | 75.9 | 69.0 | 60.2 | 56.7 | 57.6 | 54.7 | 54.6 | 62.6 | 72.1 | 79.2 | 80.6 | 83.3 | 82.6 | 83.2 | 83.2 | 75.4 | 85.9 | 54.6 |
| 18/08/2024 | 82.8 | 83.8 | 84.0 | 85.3 | 85.8 | 86.2 | 86.0 | 84.3 | 47.9 | 65.7 | 61.8 | 52.6 | 52.5 | 50.3 | 50.6 | 53.4 | 61.3 | 73.6 | 80.8 | 82.0 | 82.0 | 82.6 | 81.1 | 81.5 | 72.4 | 86.2 | 47.9 |
| Prom. | 83.0 | 83.2 | 83.2 | 84.2 | 82.8 | 85.3 | 85.8 | 85.7 | 80.0 | 72.0 | 65.5 | 60.5 | 56.8 | 54.1 | 52.2 | 53.6 | 60.6 | 70.9 | 77.4 | 81.4 | 82.6 | 82.8 | 82.7 | 82.9 | | | |
| Max. | 85.6 | 86.4 | 86.6 | 87.2 | 87.2 | 87.8 | 88.2 | 88.5 | 88.1 | 87.1 | 78.0 | 69.9 | 65.7 | 63.0 | 60.9 | 59.0 | 63.1 | 75.5 | 81.2 | 82.9 | 85.3 | 85.8 | 86.6 | 86.2 | | | |
| Min. | 80.4 | 80.9 | 79.8 | 80.7 | 59.5 | 83.3 | 83.2 | 81.9 | 47.9 | 65.1 | 56.9 | 52.6 | 51.3 | 49.4 | 46.2 | 40.9 | 56.9 | 62.4 | 70.7 | 78.8 | 80.4 | 80.5 | 80.0 | 79.6 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - VELOCIDAD DEL VIENTO (m/s)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|--|----------------------------|----------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : Sensor de Velocidad y Dirección del Aire - WINDSONIC I | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : m/s |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : ---m/s |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA \ HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 1.0 | 0.9 | 1.2 | 0.9 | 1.1 | 1.0 | 1.0 | 1.0 | 1.1 | 1.1 | 1.5 | 1.7 | 1.9 | 2.1 | 2.3 | 1.9 | 2.4 | 2.1 | 1.6 | 1.4 | 1.5 | 1.2 | 1.0 | 0.7 | 1.4 | 2.4 | 0.7 |
| 09/08/2024 | 0.9 | 0.8 | 0.8 | 0.8 | 0.9 | 0.8 | 1.0 | 0.9 | 1.0 | 1.3 | 1.4 | 1.8 | 1.8 | 1.8 | 2.2 | 2.4 | 2.5 | 2.1 | 1.8 | 1.4 | 1.4 | 1.3 | 1.1 | 1.2 | 1.4 | 2.5 | 0.8 |
| 10/08/2024 | 0.9 | 1.0 | 0.9 | 0.9 | 0.9 | 1.3 | 1.2 | 0.9 | 0.9 | 0.9 | 1.7 | 1.9 | 2.0 | 1.8 | 2.1 | 2.6 | 2.5 | 1.7 | 1.7 | 1.8 | 1.3 | 1.0 | 1.0 | 0.6 | 1.4 | 2.6 | 0.6 |
| 11/08/2024 | 1.0 | 0.6 | 0.7 | 0.9 | 0.6 | 1.1 | 1.0 | 1.2 | 1.0 | 1.2 | 1.3 | 2.0 | 1.7 | 2.1 | 2.1 | 2.5 | 2.1 | 2.1 | 1.7 | 1.2 | 0.8 | 0.7 | 0.8 | 0.8 | 1.3 | 2.5 | 0.6 |
| 12/08/2024 | 0.9 | 0.8 | 0.6 | 0.7 | 0.8 | 0.9 | 1.2 | 0.9 | 1.0 | 1.3 | 1.7 | 1.6 | 1.8 | 2.0 | 2.0 | 2.2 | 2.5 | 2.0 | 1.4 | 1.5 | 1.0 | 0.9 | 1.2 | 1.0 | 1.3 | 2.5 | 0.6 |
| 13/08/2024 | 0.9 | 0.8 | 0.9 | 0.7 | 0.8 | 0.9 | 1.0 | 0.9 | 0.8 | 1.3 | 1.4 | 1.5 | 1.9 | 1.9 | 2.1 | 2.2 | 2.2 | 1.9 | 0.9 | 1.6 | 1.3 | 0.8 | 0.9 | 0.9 | 1.3 | 2.2 | 0.7 |
| 14/08/2024 | 0.4 | 0.7 | 0.6 | 0.6 | 0.8 | 0.7 | 0.7 | 0.7 | 1.3 | 1.2 | 1.2 | 2.2 | 2.5 | 2.1 | 1.9 | 1.4 | 3.2 | 2.3 | 1.6 | 1.4 | 1.3 | 1.1 | 1.1 | 1.5 | 1.4 | 3.2 | 0.4 |
| 15/08/2024 | 1.5 | 1.6 | 0.8 | 0.5 | 0.6 | 1.0 | 1.3 | 1.2 | 1.2 | 1.2 | 1.3 | 1.7 | 2.4 | 2.0 | 2.2 | 2.1 | 2.0 | 2.0 | 1.5 | 1.1 | 1.0 | 1.0 | 1.3 | 0.9 | 1.4 | 2.4 | 0.5 |
| 16/08/2024 | 0.9 | 1.3 | 1.0 | 0.9 | 1.0 | 0.5 | 0.7 | 0.8 | 1.1 | 1.1 | 2.0 | 2.4 | 1.9 | 1.6 | 2.3 | 2.3 | 1.8 | 1.2 | 1.8 | 1.7 | 1.3 | 1.4 | 1.2 | 0.9 | 1.4 | 2.4 | 0.5 |
| 17/08/2024 | 1.1 | 0.9 | 0.7 | 1.0 | 0.8 | 0.9 | 1.0 | 1.1 | 0.8 | 1.6 | 1.5 | 1.5 | 1.9 | 2.6 | 2.3 | 2.3 | 2.5 | 2.3 | 1.7 | 1.4 | 1.5 | 1.2 | 1.1 | 1.2 | 1.5 | 2.6 | 0.7 |
| 18/08/2024 | 1.1 | 1.0 | 0.6 | 0.6 | 0.9 | 1.0 | 1.2 | 1.2 | 0.8 | 1.8 | 1.7 | 1.5 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 | 2.5 | 1.9 | 1.6 | 1.3 | 1.3 | 1.3 | 1.1 | 1.5 | 2.5 | 0.6 |
| Prom. | 0.9 | 0.9 | 0.8 | 0.8 | 0.8 | 0.9 | 1.0 | 1.0 | 1.0 | 1.3 | 1.5 | 1.8 | 2.0 | 2.0 | 2.2 | 2.2 | 2.4 | 2.0 | 1.6 | 1.5 | 1.2 | 1.1 | 1.1 | 1.0 | | | |
| Max. | 1.5 | 1.6 | 1.2 | 1.0 | 1.1 | 1.3 | 1.3 | 1.2 | 1.3 | 1.8 | 2.0 | 2.4 | 2.5 | 2.6 | 2.3 | 2.6 | 3.2 | 2.5 | 1.9 | 1.8 | 1.5 | 1.4 | 1.3 | 1.5 | | | |
| Min. | 0.4 | 0.6 | 0.6 | 0.5 | 0.6 | 0.5 | 0.7 | 0.7 | 0.8 | 0.9 | 1.2 | 1.5 | 1.7 | 1.6 | 1.9 | 1.4 | 1.8 | 1.2 | 0.9 | 1.1 | 0.8 | 0.7 | 0.8 | 0.6 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - RADIACIÓN SOLAR GLOBAL (kW/m²)

GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|--|----------------------------|------------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : Equipo Sensor de Radiación Solar Global - CPM3 | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : kW/m ² |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : ---kW/m ² |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA/HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.2 | 0.2 | 0.6 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 09/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 10/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 11/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.5 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 12/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 13/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.5 | 0.7 | 0.7 | 0.8 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.8 | 0.0 |
| 14/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 15/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.6 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 16/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 17/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.4 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| 18/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.9 | 0.0 |
| Prom. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.2 | 0.4 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Max. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.3 | 0.5 | 0.7 | 0.8 | 0.9 | 0.8 | 0.7 | 0.6 | 0.4 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Min. | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 | 0.2 | 0.6 | 0.8 | 0.8 | 0.7 | 0.5 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - PRESIÓN ATMOSFÉRICA (mbar)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|--------------------------------------|----------------------------|----------------------|
| Ciudad | : Tacna | Período | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : Sensor Presión Atmósferica - CS106 | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : mbar |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : ---mbar |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DÍA | HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 08/08/2024 | 939.9 | 939.2 | 938.7 | 938.4 | 937.9 | 937.7 | 937.8 | 938.3 | 939.0 | 939.4 | 939.8 | 939.7 | 939.4 | 939.1 | 938.7 | 938.7 | 938.8 | 939.2 | 939.6 | 940.1 | 940.8 | 941.2 | 941.1 | 940.6 | 939.3 | 941.2 | 937.7 | |
| 09/08/2024 | 940.3 | 940.2 | 939.9 | 939.5 | 939.4 | 939.7 | 940.3 | 941.0 | 941.4 | 941.8 | 941.8 | 941.5 | 940.9 | 940.1 | 939.7 | 939.6 | 939.6 | 940.1 | 940.7 | 941.0 | 941.4 | 941.8 | 941.9 | 941.9 | 940.6 | 941.9 | 939.4 | |
| 10/08/2024 | 941.8 | 941.4 | 940.9 | 940.8 | 940.6 | 940.8 | 941.0 | 941.6 | 942.3 | 942.6 | 942.7 | 942.5 | 942.1 | 941.7 | 941.4 | 941.1 | 941.3 | 941.6 | 941.6 | 942.3 | 942.6 | 942.5 | 942.2 | 941.6 | 941.7 | 942.7 | 940.6 | |
| 11/08/2024 | 941.6 | 941.1 | 940.3 | 940.1 | 939.5 | 939.5 | 940.0 | 940.4 | 940.6 | 940.9 | 941.0 | 940.8 | 940.0 | 939.7 | 939.1 | 938.8 | 938.6 | 938.7 | 939.2 | 939.5 | 939.5 | 939.6 | 939.6 | 939.4 | 939.9 | 941.6 | 938.6 | |
| 12/08/2024 | 939.1 | 938.7 | 938.1 | 937.7 | 937.5 | 937.5 | 937.7 | 938.2 | 938.9 | 939.6 | 940.0 | 939.8 | 939.1 | 938.2 | 937.4 | 936.9 | 936.8 | 937.2 | 937.3 | 937.8 | 938.0 | 938.2 | 938.6 | 938.9 | 938.2 | 940.0 | 936.8 | |
| 13/08/2024 | 938.5 | 938.4 | 937.8 | 937.4 | 937.2 | 937.8 | 938.4 | 938.8 | 939.3 | 939.6 | 939.9 | 939.5 | 939.0 | 938.6 | 937.8 | 937.1 | 937.2 | 937.6 | 937.9 | 938.5 | 939.4 | 940.1 | 940.6 | 940.3 | 938.6 | 940.6 | 937.1 | |
| 14/08/2024 | 940.0 | 939.5 | 939.0 | 938.2 | 938.2 | 938.1 | 938.2 | 938.4 | 939.3 | 940.0 | 940.0 | 939.7 | 939.6 | 939.0 | 938.4 | 937.2 | 937.6 | 939.2 | 939.6 | 940.2 | 940.7 | 940.5 | 940.4 | 940.4 | 939.2 | 940.7 | 937.2 | |
| 15/08/2024 | 940.3 | 939.2 | 938.2 | 938.1 | 938.0 | 938.9 | 939.9 | 940.7 | 941.1 | 941.7 | 941.1 | 940.7 | 940.1 | 939.5 | 938.7 | 938.2 | 938.0 | 938.4 | 938.9 | 939.4 | 940.0 | 940.3 | 940.9 | 941.0 | 939.6 | 941.7 | 938.0 | |
| 16/08/2024 | 940.5 | 939.8 | 938.8 | 938.3 | 937.8 | 937.1 | 937.7 | 938.4 | 938.9 | 938.8 | 938.2 | 938.1 | 938.1 | 938.0 | 937.6 | 937.5 | 937.3 | 937.1 | 937.7 | 938.7 | 939.5 | 939.8 | 940.1 | 939.8 | 938.5 | 940.5 | 937.1 | |
| 17/08/2024 | 939.3 | 939.0 | 938.5 | 938.0 | 937.8 | 938.1 | 938.4 | 939.2 | 939.7 | 940.6 | 941.0 | 940.5 | 939.6 | 939.3 | 939.1 | 938.9 | 938.9 | 939.7 | 940.5 | 941.0 | 941.5 | 941.6 | 941.5 | 941.2 | 939.7 | 941.6 | 937.8 | |
| 18/08/2024 | 940.7 | 939.6 | 938.5 | 938.0 | 937.8 | 938.2 | 938.0 | 938.2 | 938.5 | 939.0 | 939.4 | 939.1 | 938.6 | 937.8 | 937.3 | 936.8 | 937.0 | 937.6 | 938.4 | 939.2 | 939.9 | 940.6 | 940.7 | 940.4 | 938.7 | 940.7 | 936.8 | |
| Prom. | 940.2 | 939.6 | 939.0 | 938.6 | 938.3 | 938.5 | 938.8 | 939.4 | 939.9 | 940.4 | 940.4 | 940.2 | 939.7 | 939.2 | 938.7 | 938.3 | 938.3 | 938.8 | 939.2 | 939.8 | 940.3 | 940.6 | 940.7 | 940.5 | | | | |
| Max. | 941.8 | 941.4 | 940.9 | 940.8 | 940.6 | 940.8 | 941.0 | 941.6 | 942.3 | 942.6 | 942.7 | 942.5 | 942.1 | 941.7 | 941.4 | 941.1 | 941.3 | 941.6 | 941.6 | 942.3 | 942.6 | 942.5 | 942.2 | 941.9 | | | | |
| Min. | 938.5 | 938.4 | 937.8 | 937.4 | 937.2 | 937.1 | 937.7 | 938.2 | 938.5 | 938.8 | 938.2 | 938.1 | 938.1 | 937.8 | 937.3 | 936.8 | 936.8 | 937.1 | 937.3 | 937.8 | 938.0 | 938.2 | 938.6 | 938.9 | | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - MATERIAL PARTICULADO RESPIRABLE (PM₁₀)

GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|---------------------------------|----------------------------|-------------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - TEOM 1405 | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : ug/m ³ |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : --- ug/m ³ |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA/HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 08/08/2024 | 9.5 | 8.7 | 0.0 | 10.5 | 15.2 | 30.5 | 31.6 | 36.1 | 36.5 | 39.6 | 40.4 | 38.5 | 40.5 | 43.7 | 42.1 | 27.7 | 40.6 | 27.4 | 23.8 | 21.1 | 18.7 | 25.8 | 26.7 | 35.8 | 28.0 | 43.7 | 0.0 |
| 09/08/2024 | 52.8 | 35.4 | 43.0 | 43.0 | 39.7 | 42.0 | 29.6 | 38.4 | 48.9 | 57.3 | 61.1 | 46.2 | 63.2 | 65.3 | 54.5 | 59.9 | 40.5 | 29.2 | 28.0 | 36.1 | 32.8 | 20.8 | 33.7 | 39.9 | 43.4 | 65.3 | 20.8 |
| 10/08/2024 | 41.6 | 38.9 | 40.6 | 49.0 | 40.4 | 36.3 | 29.0 | 36.9 | 54.7 | 65.3 | 64.0 | 86.3 | 51.1 | 43.7 | 44.3 | 52.4 | 45.4 | 31.0 | 28.8 | 29.2 | 30.8 | 34.3 | 42.0 | 48.2 | 44.3 | 86.3 | 28.8 |
| 11/08/2024 | 52.3 | 43.2 | 63.3 | 45.4 | 50.1 | 23.8 | 35.8 | 55.0 | 57.4 | 66.1 | 78.2 | 60.3 | 47.6 | 44.0 | 37.4 | 39.7 | 30.8 | 29.2 | 24.2 | 23.4 | 27.8 | 37.4 | 42.4 | 37.5 | 43.9 | 78.2 | 23.4 |
| 12/08/2024 | 41.0 | 43.0 | 53.7 | 44.1 | 32.8 | 36.9 | 35.4 | 48.9 | 56.4 | 72.7 | 49.4 | 46.8 | 45.1 | 38.8 | 39.9 | 47.2 | 47.4 | 38.0 | 38.6 | 29.3 | 42.1 | 40.5 | 33.0 | 45.7 | 43.6 | 72.7 | 29.3 |
| 13/08/2024 | 41.0 | 30.7 | 35.4 | 41.9 | 35.1 | 36.9 | 41.4 | 46.4 | 53.5 | 81.9 | 81.5 | 79.1 | 81.6 | 52.7 | 52.3 | 60.5 | 50.5 | 38.3 | 41.3 | 39.6 | 30.9 | 34.7 | 42.2 | 28.1 | 48.2 | 81.9 | 28.1 |
| 14/08/2024 | 43.5 | 40.1 | 40.3 | 40.8 | 37.0 | 39.2 | 39.9 | 56.7 | 60.9 | 71.0 | 108.1 | 98.0 | 48.8 | 43.8 | 49.2 | 68.0 | 84.6 | 104.4 | 44.8 | 42.8 | 41.3 | 44.3 | 49.3 | 38.8 | 55.6 | 108.1 | 37.0 |
| 15/08/2024 | 33.7 | 43.1 | 52.1 | 56.7 | 54.0 | 42.4 | 23.1 | 11.8 | 15.9 | 24.7 | 44.0 | 38.9 | 40.3 | 30.4 | 48.9 | 52.0 | 50.5 | 70.1 | 39.5 | 33.0 | 31.8 | 39.0 | 20.1 | 21.4 | 38.2 | 70.1 | 11.8 |
| 16/08/2024 | 33.7 | 29.7 | 37.6 | 26.4 | 21.8 | 21.6 | 43.4 | 41.2 | 49.0 | 76.8 | 109.5 | 54.6 | 48.2 | 62.8 | 64.6 | 43.2 | 47.6 | 58.9 | 41.4 | 34.5 | 36.8 | 34.9 | 25.9 | 32.4 | 44.9 | 109.5 | 21.6 |
| 17/08/2024 | 44.4 | 54.1 | 51.9 | 43.9 | 50.4 | 49.1 | 51.0 | 65.0 | 72.8 | 58.6 | 56.5 | 63.8 | 52.0 | 47.3 | 41.7 | 38.1 | 39.7 | 30.3 | 32.7 | 18.5 | 25.9 | 43.6 | 37.8 | 43.3 | 46.4 | 72.8 | 18.5 |
| 18/08/2024 | 44.1 | 58.4 | 38.3 | 34.3 | 38.8 | 34.7 | 42.6 | 45.4 | 69.9 | 88.2 | 69.0 | 61.0 | 51.0 | 46.6 | 46.6 | 43.8 | 39.1 | 32.1 | 30.0 | 30.6 | 31.3 | 27.8 | 36.2 | 32.8 | 44.7 | 88.2 | 27.8 |
| Prom. | 39.8 | 38.7 | 41.5 | 39.6 | 37.8 | 35.8 | 36.6 | 43.8 | 52.4 | 63.8 | 69.2 | 61.2 | 51.8 | 47.2 | 47.4 | 48.4 | 47.0 | 44.4 | 33.9 | 30.7 | 31.9 | 34.8 | 35.4 | 36.7 | | | |
| Max. | 52.8 | 58.4 | 63.3 | 56.7 | 54.0 | 49.1 | 51.0 | 65.0 | 72.8 | 88.2 | 109.5 | 98.0 | 81.6 | 65.3 | 64.6 | 68.0 | 84.6 | 104.4 | 44.8 | 42.8 | 42.1 | 44.3 | 49.3 | 48.2 | | | |
| Min. | 9.5 | 8.7 | 0.0 | 10.5 | 15.2 | 21.6 | 23.1 | 11.8 | 15.9 | 24.7 | 40.4 | 38.5 | 40.3 | 30.4 | 37.4 | 27.7 | 30.8 | 27.4 | 23.8 | 18.5 | 18.7 | 20.8 | 20.1 | 21.4 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - MATERIAL PARTICULADO RESPIRABLE (PM_{2,5})

GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|---------------------------------|----------------------------|-------------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - TEOM 1405 | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : ug/m ³ |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : --- ug/m ³ |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA/HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 20.1 | 18.2 | 23.6 | 21.1 | 18.8 | 11.7 | 15.7 | 19.1 | 20.1 | 27.5 | 13.8 | 18.4 | 11.6 | 8.4 | 7.9 | 6.8 | 12.6 | 11.1 | 18.7 | 12.8 | 27.5 | 0.0 |
| 09/08/2024 | 36.5 | 19.2 | 27.1 | 25.6 | 25.0 | 29.6 | 18.2 | 23.2 | 27.2 | 24.4 | 19.6 | 9.0 | 29.0 | 24.9 | 21.5 | 32.0 | 13.9 | 6.9 | 8.9 | 19.2 | 13.5 | 0.0 | 13.9 | 17.9 | 20.3 | 36.5 | 0.0 |
| 10/08/2024 | 17.8 | 17.7 | 21.6 | 30.2 | 22.3 | 22.0 | 17.8 | 24.9 | 33.8 | 35.6 | 25.2 | 52.6 | 28.4 | 19.0 | 21.3 | 21.8 | 17.4 | 7.6 | 5.3 | 12.7 | 14.1 | 13.2 | 16.9 | 18.8 | 21.6 | 52.6 | 5.3 |
| 11/08/2024 | 23.0 | 16.8 | 37.0 | 23.0 | 31.0 | 10.0 | 26.6 | 39.4 | 36.0 | 39.0 | 39.2 | 23.9 | 18.5 | 17.6 | 12.2 | 12.4 | 7.6 | 7.6 | 8.6 | 8.2 | 9.7 | 11.9 | 13.1 | 15.8 | 20.3 | 39.4 | 7.6 |
| 12/08/2024 | 16.5 | 16.4 | 24.8 | 21.3 | 13.9 | 13.0 | 17.7 | 28.6 | 29.5 | 34.0 | 19.4 | 17.0 | 16.0 | 13.7 | 12.8 | 16.7 | 15.5 | 13.2 | 12.8 | 8.3 | 14.8 | 16.7 | 8.5 | 18.2 | 17.5 | 34.0 | 8.3 |
| 13/08/2024 | 16.9 | 10.7 | 14.1 | 20.2 | 14.3 | 17.5 | 22.1 | 24.3 | 26.7 | 34.2 | 30.3 | 29.6 | 25.4 | 17.9 | 19.1 | 18.4 | 13.6 | 12.3 | 13.9 | 13.1 | 15.2 | 16.7 | 16.0 | 16.3 | 19.1 | 34.2 | 10.7 |
| 14/08/2024 | 26.0 | 18.4 | 19.9 | 17.8 | 16.0 | 18.8 | 21.5 | 30.0 | 27.4 | 34.9 | 43.2 | 37.3 | 18.5 | 17.8 | 19.3 | 23.8 | 20.9 | 18.8 | 15.7 | 15.0 | 13.4 | 13.0 | 18.2 | 14.0 | 21.7 | 43.2 | 13.0 |
| 15/08/2024 | 11.7 | 24.1 | 30.0 | 32.0 | 27.4 | 15.5 | 11.6 | 6.0 | 5.6 | 11.1 | 20.9 | 17.5 | 17.6 | 6.4 | 25.9 | 20.7 | 14.4 | 32.5 | 14.2 | 13.8 | 11.3 | 16.0 | 7.3 | 7.9 | 16.7 | 32.5 | 5.6 |
| 16/08/2024 | 12.8 | 14.7 | 23.7 | 16.9 | 16.2 | 12.6 | 24.6 | 19.7 | 25.4 | 35.2 | 44.8 | 23.0 | 22.7 | 29.0 | 22.8 | 14.6 | 19.5 | 21.8 | 14.6 | 15.3 | 17.6 | 15.8 | 12.5 | 15.7 | 20.5 | 44.8 | 12.5 |
| 17/08/2024 | 22.6 | 28.8 | 26.2 | 22.7 | 26.5 | 27.6 | 27.7 | 36.0 | 42.8 | 28.4 | 28.6 | 32.3 | 23.6 | 22.5 | 19.6 | 17.0 | 14.2 | 8.8 | 14.8 | 0.0 | 6.4 | 19.3 | 14.2 | 17.2 | 22.0 | 42.8 | 0.0 |
| 18/08/2024 | 18.4 | 33.4 | 21.1 | 14.5 | 16.4 | 14.9 | 24.3 | 24.4 | 24.8 | 37.7 | 33.0 | 27.3 | 21.2 | 20.1 | 19.6 | 16.7 | 13.5 | 11.7 | 13.9 | 13.8 | 13.9 | 10.8 | 16.9 | 11.3 | 19.7 | 37.7 | 10.8 |
| Prom. | 18.4 | 18.2 | 22.3 | 20.4 | 19.1 | 18.3 | 20.9 | 25.5 | 27.3 | 30.3 | 28.7 | 25.9 | 21.8 | 19.0 | 20.1 | 18.9 | 15.4 | 13.9 | 11.9 | 11.6 | 12.4 | 13.3 | 13.5 | 15.6 | | | |
| Max. | 36.5 | 33.4 | 37.0 | 32.0 | 31.0 | 29.6 | 27.7 | 39.4 | 42.8 | 39.0 | 44.8 | 52.6 | 29.0 | 29.0 | 27.5 | 32.0 | 20.9 | 32.5 | 15.7 | 19.2 | 17.6 | 19.3 | 18.2 | 18.8 | | | |
| Min. | 0.0 | 0.0 | 0.0 | 0.0 | 1.1 | 10.0 | 11.6 | 6.0 | 5.6 | 11.1 | 11.7 | 9.0 | 16.0 | 6.4 | 12.2 | 12.4 | 7.6 | 6.9 | 5.3 | 0.0 | 6.4 | 0.0 | 7.3 | 7.9 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - DIÓXIDO DE NITRÓGENO (NO₂)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|--------------------------------------|----------------------------|-------------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - ANALIZADOR 42i | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : ug/m ³ |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : --- ug/m ³ |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 19.0 | 16.0 | 15.8 | 16.6 | 18.2 | 18.2 | 20.7 | 26.2 | 27.5 | 34.5 | 37.0 | 24.9 | 20.4 | 16.3 | 12.5 | 11.2 | 14.7 | 15.2 | 19.5 | 24.5 | 27.8 | 27.0 | 29.2 | 35.7 | 22.0 | 37.0 | 11.2 |
| 09/08/2024 | 31.2 | 31.3 | 29.9 | 27.4 | 20.9 | 20.7 | 21.6 | 29.7 | 33.3 | 39.6 | 40.9 | 34.1 | 28.3 | 30.8 | 23.6 | 17.6 | 16.6 | 17.1 | 22.3 | 24.0 | 29.8 | 38.8 | 38.1 | 38.0 | 28.6 | 40.9 | 16.6 |
| 10/08/2024 | 36.2 | 31.8 | 28.5 | 24.5 | 22.9 | 23.9 | 27.8 | 35.5 | 40.4 | 37.5 | 42.4 | 35.0 | 18.1 | 19.4 | 16.7 | 18.3 | 16.1 | 20.4 | 26.2 | 23.8 | 28.1 | 32.6 | 34.4 | 41.1 | 28.4 | 42.4 | 16.1 |
| 11/08/2024 | 52.7 | 50.7 | 54.0 | 42.3 | 43.6 | 42.3 | 42.7 | 43.7 | 39.3 | 46.2 | 55.3 | 35.0 | 23.0 | 16.0 | 14.5 | 13.2 | 13.8 | 16.4 | 18.6 | 24.8 | 36.2 | 47.5 | 55.1 | 47.2 | 36.4 | 55.3 | 13.2 |
| 12/08/2024 | 42.2 | 43.5 | 40.9 | 35.7 | 26.9 | 25.6 | 32.3 | 43.3 | 41.5 | 46.5 | 28.5 | 19.4 | 19.2 | 16.2 | 17.5 | 16.3 | 15.8 | 20.5 | 29.6 | 31.2 | 44.5 | 49.7 | 47.0 | 51.2 | 32.7 | 51.2 | 15.8 |
| 13/08/2024 | 46.3 | 23.7 | 29.0 | 28.0 | 24.8 | 23.2 | 24.9 | 29.5 | 36.5 | 50.2 | 46.2 | 39.0 | 29.2 | 19.4 | 19.9 | 19.1 | 17.6 | 20.4 | 38.1 | 49.5 | 27.2 | 36.3 | 49.5 | 44.5 | 32.2 | 50.2 | 17.6 |
| 14/08/2024 | 50.6 | 46.0 | 36.0 | 39.8 | 32.8 | 36.6 | 41.0 | 43.6 | 43.1 | 42.5 | 63.0 | 48.4 | 17.1 | 16.9 | 20.1 | 33.3 | 25.1 | 18.0 | 25.9 | 31.3 | 31.3 | 38.5 | 38.0 | 22.3 | 35.0 | 63.0 | 16.9 |
| 15/08/2024 | 14.3 | 27.5 | 38.0 | 41.2 | 42.1 | 42.5 | 41.1 | 20.2 | 18.5 | 17.8 | 27.8 | 26.6 | 16.4 | 14.2 | 18.4 | 21.2 | 23.4 | 21.6 | 25.4 | 40.6 | 54.4 | 62.9 | 22.1 | 28.5 | 29.5 | 62.9 | 14.2 |
| 16/08/2024 | 47.5 | 33.2 | 40.6 | 41.3 | 40.5 | 43.6 | 51.2 | 47.3 | 46.3 | 51.5 | 63.8 | 24.6 | 18.8 | 30.4 | 28.9 | 18.8 | 22.0 | 36.2 | 27.4 | 25.5 | 25.7 | 30.0 | 21.2 | 32.0 | 35.4 | 63.8 | 18.8 |
| 17/08/2024 | 33.4 | 35.3 | 36.5 | 32.7 | 33.3 | 33.3 | 39.5 | 39.1 | 40.1 | 37.5 | 31.4 | 35.4 | 23.7 | 16.7 | 14.2 | 13.2 | 15.5 | 15.6 | 22.2 | 34.1 | 32.7 | 38.4 | 41.4 | 39.0 | 30.6 | 41.4 | 13.2 |
| 18/08/2024 | 34.8 | 39.8 | 39.0 | 29.9 | 32.8 | 30.0 | 33.1 | 38.7 | 42.5 | 50.1 | 28.5 | 25.2 | 16.9 | 13.8 | 13.3 | 14.5 | 13.4 | 12.7 | 15.7 | 22.8 | 28.1 | 27.5 | 26.3 | 22.8 | 27.2 | 50.1 | 12.7 |
| Prom. | 37.1 | 34.5 | 35.3 | 32.7 | 30.8 | 30.9 | 34.2 | 36.1 | 37.2 | 41.3 | 42.3 | 31.6 | 21.0 | 19.1 | 18.1 | 17.9 | 17.6 | 19.5 | 24.6 | 30.2 | 33.3 | 39.0 | 36.6 | 36.6 | | | |
| Max. | 52.7 | 50.7 | 54.0 | 42.3 | 43.6 | 43.6 | 51.2 | 47.3 | 46.3 | 51.5 | 63.8 | 48.4 | 29.2 | 30.8 | 28.9 | 33.3 | 25.1 | 36.2 | 38.1 | 49.5 | 54.4 | 62.9 | 55.1 | 51.2 | | | |
| Min. | 14.3 | 16.0 | 15.8 | 16.6 | 18.2 | 18.2 | 20.7 | 20.2 | 18.5 | 17.8 | 27.8 | 19.4 | 16.4 | 13.8 | 12.5 | 11.2 | 13.4 | 12.7 | 15.7 | 22.8 | 25.7 | 27.0 | 21.2 | 22.3 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - DIOXIDO DE AZUFRE (SO₂)

GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | |
|--------------------------------------|---------------------------------------|
| Ciudad | : Tacna |
| Nombre/Número de la Estación | : EMCA-03 |
| Ubicación | : I.E. MANUEL A. ODRÍA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - ANALIZADOR 450i |
| Última Calibración del Equipo | : julio - 2024 |
| Coordenadas UTM (WGS 84) | |
| Este | : 368810 |
| Norte | : 8011549 |

| | |
|----------------------------|-------------------------|
| Período | : 08 al 18 de agosto |
| Año | : 2024 |
| Responsable | : GORE - TACNA |
| Tipo de Data | : Horario |
| Unidades | : ug/m ³ |
| Límite de Detección | : --- ug/m ³ |

| DIA/HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 4.1 | 4.1 | 3.6 | 3.6 | 3.7 | 3.8 | 4.0 | 3.9 | 3.9 | 3.4 | 4.4 | 4.6 | 4.7 | 5.5 | 5.4 | 5.4 | 5.2 | 5.0 | 4.2 | 4.3 | 4.4 | 4.3 | 4.8 | 4.4 | 4.4 | 5.5 | 3.4 |
| 09/08/2024 | 4.3 | 4.5 | 4.8 | 4.8 | 3.8 | 4.2 | 4.3 | 4.1 | 4.7 | 4.9 | 4.6 | 4.9 | 4.1 | 5.4 | 7.0 | 8.1 | 6.2 | 5.8 | 4.5 | 4.3 | 4.2 | 4.4 | 3.4 | 4.4 | 4.8 | 8.1 | 3.4 |
| 10/08/2024 | 4.5 | 4.4 | 3.7 | 4.3 | 4.1 | 4.7 | 4.3 | 4.8 | 5.3 | 4.9 | 4.6 | 4.9 | 4.6 | 7.9 | 9.5 | 7.7 | 5.8 | 5.5 | 4.9 | 4.3 | 3.9 | 3.8 | 4.3 | 4.7 | 5.1 | 9.5 | 3.7 |
| 11/08/2024 | 5.3 | 4.6 | 4.7 | 6.1 | 4.8 | 5.3 | 3.9 | 5.2 | 4.8 | 6.2 | 6.1 | 5.8 | 6.4 | 8.8 | 8.8 | 7.0 | 5.8 | 5.1 | 5.1 | 4.1 | 4.0 | 4.5 | 3.8 | 4.5 | 5.5 | 8.8 | 3.8 |
| 12/08/2024 | 5.2 | 4.6 | 5.3 | 5.4 | 5.0 | 3.8 | 4.3 | 4.7 | 5.5 | 5.3 | 5.4 | 4.6 | 4.5 | 5.0 | 5.4 | 7.0 | 6.5 | 5.2 | 4.8 | 4.5 | 4.3 | 3.8 | 3.5 | 4.4 | 4.9 | 7.0 | 3.5 |
| 13/08/2024 | 5.0 | 3.9 | 4.8 | 4.9 | 4.8 | 3.7 | 3.8 | 4.4 | 4.7 | 5.2 | 5.7 | 6.2 | 5.5 | 8.7 | 8.7 | 7.4 | 6.1 | 5.6 | 5.6 | 5.4 | 4.8 | 4.8 | 4.4 | 4.4 | 5.3 | 8.7 | 3.7 |
| 14/08/2024 | 5.4 | 5.1 | 4.9 | 5.0 | 5.4 | 4.4 | 5.5 | 5.1 | 5.8 | 5.3 | 5.4 | 7.6 | 7.0 | 8.2 | 7.9 | 8.1 | 7.3 | 4.4 | 4.2 | 4.2 | 4.4 | 4.5 | 4.9 | 3.9 | 5.6 | 8.2 | 3.9 |
| 15/08/2024 | 4.3 | 3.9 | 4.6 | 4.9 | 5.1 | 5.7 | 4.9 | 4.2 | 4.0 | 4.2 | 4.1 | 4.9 | 4.7 | 5.0 | 7.3 | 7.4 | 6.3 | 5.2 | 4.7 | 5.4 | 5.2 | 4.7 | 4.0 | 4.2 | 4.9 | 7.4 | 3.9 |
| 16/08/2024 | 4.8 | 4.4 | 5.2 | 4.1 | 5.0 | 5.3 | 6.0 | 5.4 | 5.2 | 5.9 | 6.1 | 6.5 | 7.1 | 7.5 | 6.4 | 7.3 | 5.9 | 5.6 | 4.7 | 4.1 | 3.1 | 4.1 | 3.5 | 4.0 | 5.3 | 7.5 | 3.1 |
| 17/08/2024 | 4.5 | 4.7 | 4.1 | 4.1 | 3.9 | 4.7 | 4.5 | 5.0 | 5.0 | 5.0 | 4.9 | 5.2 | 5.8 | 7.3 | 5.4 | 5.6 | 5.6 | 4.8 | 3.8 | 3.5 | 4.4 | 4.2 | 4.7 | 4.5 | 4.8 | 7.3 | 3.5 |
| 18/08/2024 | 3.8 | 5.1 | 3.9 | 3.8 | 4.6 | 4.4 | 4.6 | 4.9 | 5.2 | 6.4 | 5.9 | 9.5 | 9.2 | 8.2 | 6.8 | 6.8 | 6.5 | 5.1 | 4.4 | 4.5 | 4.1 | 4.2 | 3.9 | 3.9 | 5.4 | 9.5 | 3.8 |
| Prom. | 4.6 | 4.5 | 4.5 | 4.6 | 4.6 | 4.5 | 4.5 | 4.7 | 4.9 | 5.1 | 5.2 | 5.9 | 5.8 | 7.0 | 7.2 | 7.1 | 6.1 | 5.2 | 4.6 | 4.4 | 4.3 | 4.3 | 4.1 | 4.3 | 4.3 | | |
| Max. | 5.4 | 5.1 | 5.3 | 6.1 | 5.4 | 5.7 | 6.0 | 5.4 | 5.8 | 6.4 | 6.1 | 9.5 | 9.2 | 8.8 | 9.5 | 8.1 | 7.3 | 5.8 | 5.6 | 5.4 | 5.2 | 4.8 | 4.9 | 4.7 | | | |
| Min. | 3.8 | 3.9 | 3.6 | 3.6 | 3.7 | 3.7 | 3.8 | 3.9 | 3.9 | 3.4 | 4.1 | 4.6 | 4.1 | 5.0 | 5.4 | 5.4 | 5.2 | 4.4 | 3.8 | 3.5 | 3.1 | 3.8 | 3.4 | 3.9 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - SULFURO DE HIDRÓGENO (H₂S)

GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|---------------------------------------|----------------------------|-------------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - ANALIZADOR 450i | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : ug/m ³ |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : --- ug/m ³ |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA/HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | 1.5 | 1.4 | 2.4 | 3.4 | 3.6 | 4.1 | 3.2 | 3.2 | 2.8 | 3.4 | 3.8 | 4.1 | 4.5 | 3.7 | 2.7 | 2.0 | 3.1 | 3.2 | 2.2 | 1.2 | 2.9 | 4.8 | 3.6 | 4.0 | 3.1 | 4.8 | 1.2 |
| 09/08/2024 | 3.6 | 3.0 | 3.3 | 3.1 | 2.8 | 2.4 | 2.3 | 2.6 | 2.2 | 2.1 | 2.6 | 2.1 | 1.6 | 2.4 | 3.6 | 4.9 | 3.7 | 5.1 | 2.8 | 4.1 | 3.9 | 4.4 | 4.1 | 3.5 | 3.2 | 5.1 | 1.6 |
| 10/08/2024 | 3.3 | 3.1 | 2.8 | 2.0 | 2.8 | 2.2 | 2.7 | 2.5 | 2.0 | 2.1 | 2.5 | 2.4 | 1.3 | 3.5 | 4.5 | 4.4 | 4.6 | 4.2 | 3.8 | 4.0 | 2.5 | 2.5 | 3.0 | 4.1 | 3.0 | 4.6 | 1.3 |
| 11/08/2024 | 2.8 | 3.0 | 2.7 | 3.2 | 4.2 | 4.5 | 4.3 | 3.3 | 3.6 | 3.1 | 2.9 | 2.7 | 3.0 | 6.3 | 4.3 | 4.0 | 4.3 | 5.3 | 5.6 | 6.4 | 3.9 | 2.9 | 3.0 | 2.8 | 3.8 | 6.4 | 2.7 |
| 12/08/2024 | 3.1 | 3.0 | 2.7 | 2.9 | 3.0 | 2.9 | 3.0 | 3.0 | 2.5 | 2.4 | 1.4 | 1.0 | 1.5 | 1.3 | 1.9 | 3.0 | 5.1 | 2.6 | 4.1 | 6.0 | 2.8 | 2.1 | 2.1 | 1.6 | 2.7 | 6.0 | 1.0 |
| 13/08/2024 | 2.3 | 2.8 | 2.5 | 2.4 | 2.9 | 3.3 | 3.8 | 2.8 | 2.9 | 3.1 | 3.4 | 3.7 | 3.1 | 5.1 | 4.1 | 3.7 | 5.2 | 5.2 | 4.9 | 8.9 | 11.9 | 8.9 | 8.4 | 8.6 | 4.7 | 11.9 | 2.3 |
| 14/08/2024 | 7.1 | 5.7 | 3.8 | 4.6 | 2.8 | 3.7 | 2.7 | 3.7 | 2.8 | 3.5 | 6.2 | 5.6 | 3.7 | 3.6 | 3.1 | 2.8 | 3.6 | 1.7 | 1.0 | 2.5 | 4.1 | 4.6 | 3.5 | 6.1 | 3.9 | 7.1 | 1.0 |
| 15/08/2024 | 4.1 | 1.3 | 1.1 | 1.7 | 1.6 | 5.6 | 9.4 | 2.1 | 1.8 | 2.0 | 2.4 | 1.8 | 1.6 | 3.9 | 4.1 | 4.0 | 3.4 | 5.1 | 4.4 | 2.7 | 6.4 | 8.8 | 11.3 | 7.5 | 4.1 | 11.3 | 1.1 |
| 16/08/2024 | 7.6 | 5.2 | 4.5 | 5.3 | 4.5 | 4.0 | 4.1 | 3.6 | 3.3 | 3.5 | 3.3 | 5.6 | 10.4 | 5.3 | 2.0 | 3.5 | 3.1 | 3.1 | 5.6 | 4.4 | 5.2 | 3.7 | 2.2 | 2.3 | 4.4 | 10.4 | 2.0 |
| 17/08/2024 | 3.8 | 4.3 | 3.9 | 2.7 | 2.8 | 2.4 | 2.5 | 3.0 | 2.8 | 2.9 | 2.4 | 2.8 | 3.1 | 4.5 | 2.1 | 1.5 | 3.6 | 3.1 | 1.0 | 1.8 | 5.7 | 5.2 | 3.2 | 3.5 | 3.1 | 5.7 | 1.0 |
| 18/08/2024 | 3.1 | 3.0 | 2.8 | 2.1 | 1.9 | 2.3 | 1.3 | 2.3 | 2.6 | 1.9 | 3.4 | 8.5 | 5.9 | 4.2 | 4.2 | 3.5 | 4.7 | 5.5 | 6.0 | 4.0 | 4.3 | 4.1 | 3.1 | 2.9 | 3.7 | 8.5 | 1.3 |
| Prom. | 3.8 | 3.3 | 2.9 | 3.0 | 3.0 | 3.4 | 3.6 | 2.9 | 2.7 | 2.7 | 3.1 | 3.7 | 3.6 | 4.0 | 3.3 | 3.4 | 4.0 | 4.0 | 3.8 | 4.2 | 4.9 | 4.7 | 4.3 | 4.3 | | | |
| Max. | 7.6 | 5.7 | 4.5 | 5.3 | 4.5 | 5.6 | 9.4 | 3.7 | 3.6 | 3.5 | 6.2 | 8.5 | 10.4 | 6.3 | 4.5 | 4.9 | 5.2 | 5.5 | 6.0 | 8.9 | 11.9 | 8.9 | 11.3 | 8.6 | | | |
| Min. | 1.5 | 1.3 | 1.1 | 1.7 | 1.6 | 2.2 | 1.3 | 2.1 | 1.8 | 1.9 | 1.4 | 1.0 | 1.3 | 1.3 | 1.9 | 1.5 | 3.1 | 1.7 | 1.0 | 1.2 | 2.5 | 2.1 | 2.1 | 1.6 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - MONOXIDO DE CARBONO (CO PROMEDIO DE UNA HORA)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | | | |
|--------------------------------------|--------------------------------------|----------------------------|-------------------------|
| Ciudad | : Tacna | Periodo | : 08 al 18 de agosto |
| Nombre/Número de la Estación | : EMCA-03 | Año | : 2024 |
| Ubicación | : I.E. MANUEL A. ODRÍA | Responsable | : GORE - TACNA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - ANALIZADOR 48i | Tipo de Data | : Horario |
| Última Calibración del Equipo | : julio - 2024 | Unidades | : ug/m ³ |
| Coordenadas UTM (WGS 84) | | Límite de Detección | : --- ug/m ³ |
| Este | : 368810 | | |
| Norte | : 8011549 | | |

| DIA | HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 08/08/2024 | 228.6 | 231.3 | 216.1 | 226.4 | 242.2 | 235.8 | 257.3 | 293.2 | 297.8 | 350.0 | 374.9 | 300.3 | 269.7 | 228.5 | 190.1 | 179.5 | 201.3 | 199.0 | 222.0 | 247.7 | 267.1 | 254.9 | 281.6 | 327.1 | 255.1 | 374.9 | 179.5 | |
| 09/08/2024 | 375.1 | 501.3 | 386.3 | 349.6 | 293.1 | 282.0 | 286.2 | 331.0 | 387.1 | 436.7 | 434.7 | 356.6 | 304.2 | 322.9 | 265.7 | 223.8 | 207.5 | 207.1 | 239.3 | 272.0 | 276.9 | 310.1 | 324.7 | 340.2 | 321.4 | 501.3 | 207.1 | |
| 10/08/2024 | 355.1 | 358.1 | 340.6 | 321.8 | 324.9 | 343.7 | 357.7 | 472.1 | 465.7 | 484.3 | 491.0 | 417.9 | 278.8 | 284.9 | 255.7 | 256.0 | 240.8 | 266.1 | 303.8 | 319.4 | 312.2 | 340.4 | 404.1 | 459.5 | 352.3 | 491.0 | 240.8 | |
| 11/08/2024 | 554.3 | 527.7 | 663.5 | 496.9 | 453.0 | 573.6 | 478.7 | 475.8 | 543.6 | 657.3 | 661.7 | 440.9 | 345.3 | 295.9 | 274.2 | 258.5 | 253.3 | 259.1 | 281.1 | 319.1 | 371.3 | 512.7 | 602.0 | 520.1 | 450.8 | 663.5 | 253.3 | |
| 12/08/2024 | 510.8 | 515.4 | 509.8 | 505.4 | 396.9 | 395.8 | 443.9 | 541.2 | 592.7 | 691.5 | 448.9 | 355.4 | 347.8 | 316.4 | 322.9 | 317.0 | 308.1 | 314.3 | 372.3 | 393.1 | 448.3 | 455.3 | 444.6 | 493.9 | 435.1 | 691.5 | 308.1 | |
| 13/08/2024 | 507.8 | 414.3 | 440.3 | 467.1 | 409.7 | 403.8 | 401.0 | 468.5 | 565.1 | 707.3 | 623.6 | 521.4 | 445.7 | 367.5 | 376.6 | 361.6 | 334.3 | 365.8 | 420.7 | 501.3 | 407.9 | 447.3 | 521.2 | 536.7 | 459.0 | 707.3 | 334.3 | |
| 14/08/2024 | 635.0 | 593.3 | 529.1 | 621.9 | 509.1 | 544.7 | 567.8 | 715.7 | 664.4 | 678.7 | 816.2 | 656.6 | 402.0 | 394.8 | 407.5 | 482.8 | 421.4 | 393.9 | 427.8 | 440.2 | 460.8 | 480.4 | 503.4 | 445.5 | 533.0 | 816.2 | 393.9 | |
| 15/08/2024 | 417.8 | 473.9 | 573.3 | 596.9 | 661.8 | 642.6 | 564.5 | 473.4 | 466.2 | 464.2 | 563.8 | 539.4 | 462.0 | 448.8 | 463.8 | 479.4 | 474.1 | 461.8 | 483.4 | 543.7 | 609.6 | 670.6 | 489.4 | 527.1 | 523.0 | 670.6 | 417.8 | |
| 16/08/2024 | 606.0 | 573.8 | 703.6 | 616.9 | 623.5 | 726.2 | 890.4 | 792.9 | 787.5 | 880.7 | 915.7 | 565.1 | 511.4 | 579.5 | 561.7 | 478.3 | 486.0 | 546.4 | 519.6 | 527.6 | 527.8 | 544.8 | 512.1 | 566.4 | 626.8 | 915.7 | 478.3 | |
| 17/08/2024 | 595.1 | 623.0 | 620.8 | 611.0 | 619.5 | 634.4 | 705.5 | 723.3 | 773.0 | 723.9 | 676.5 | 686.5 | 585.8 | 534.4 | 506.5 | 495.1 | 502.3 | 499.1 | 532.9 | 585.1 | 594.1 | 622.4 | 649.1 | 650.5 | 614.6 | 773.0 | 495.1 | |
| 18/08/2024 | 640.3 | 774.0 | 706.2 | 648.8 | 695.6 | 627.3 | 683.4 | 807.3 | 861.5 | 914.4 | 686.6 | 648.5 | 575.0 | 553.0 | 554.0 | 550.8 | 529.4 | 519.6 | 546.6 | 592.0 | 617.5 | 621.2 | 641.4 | 631.2 | 651.1 | 914.4 | 519.6 | |
| Prom. | 493.3 | 507.8 | 517.2 | 496.6 | 475.4 | 491.8 | 512.4 | 554.0 | 582.2 | 635.4 | 608.5 | 499.0 | 411.6 | 393.3 | 379.9 | 371.2 | 359.9 | 366.6 | 395.4 | 431.0 | 444.9 | 478.2 | 488.5 | 499.8 | | | | |
| Max. | 640.3 | 774.0 | 706.2 | 648.8 | 695.6 | 726.2 | 890.4 | 807.3 | 861.5 | 914.4 | 915.7 | 686.5 | 585.8 | 579.5 | 561.7 | 550.8 | 529.4 | 546.4 | 546.6 | 592.0 | 617.5 | 670.6 | 649.1 | 650.5 | | | | |
| Min. | 228.6 | 231.3 | 216.1 | 226.4 | 242.2 | 235.8 | 257.3 | 293.2 | 297.8 | 350.0 | 374.9 | 300.3 | 269.7 | 228.5 | 190.1 | 179.5 | 201.3 | 199.0 | 222.0 | 247.7 | 267.1 | 254.9 | 281.6 | 327.1 | | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - MONOXIDO DE CARBONO (CO MEDIA MOVIL DE 8 HORAS)



GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

Ciudad : Tacna
Nombre/Número de la Estación : EMCA-03
Ubicación : I.E. MANUEL A. ODRÍA
Equipo de Muestreo : THERMO SCIENTIFIC - ANALIZADOR 48i
Última Calibración del Equipo : julio - 2024
Coordenadas UTM (WGS 84)
 Este : 368810
 Norte : 8011549

Periodo : 08 al 18 de agosto
Año : 2024
Responsable : GORE - TACNA
Tipo de Data : Horario
Unidades : ug/m³
Límite de Detección : --- ug/m³

| DIA-HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 08/08/2024 | **** | **** | **** | **** | 230.1 | 234.9 | 241.4 | 250.0 | 264.8 | 284.7 | 293.9 | 297.4 | 296.5 | 288.1 | 273.8 | 261.8 | 242.9 | 223.8 | 217.2 | 216.9 | 220.2 | 231.6 | 250.1 | 253.7 | 297.4 | 216.9 | |
| 09/08/2024 | 271.8 | 309.6 | 330.1 | 342.9 | 346.1 | 349.5 | 350.1 | 350.6 | 352.1 | 344.0 | 350.1 | 350.9 | 352.3 | 357.4 | 354.9 | 341.5 | 319.0 | 290.3 | 265.9 | 255.3 | 251.9 | 250.3 | 257.7 | 272.2 | 317.4 | 357.4 | 250.3 |
| 10/08/2024 | 290.7 | 309.5 | 322.2 | 328.4 | 334.4 | 338.6 | 342.8 | 359.2 | 373.1 | 388.8 | 407.6 | 419.6 | 413.9 | 406.5 | 393.8 | 366.8 | 338.7 | 311.4 | 288.0 | 275.7 | 279.9 | 286.8 | 305.4 | 330.8 | 342.2 | 419.6 | 275.7 |
| 11/08/2024 | 370.0 | 402.7 | 447.6 | 469.8 | 487.4 | 516.6 | 525.9 | 527.9 | 526.6 | 542.8 | 542.6 | 535.6 | 522.1 | 487.4 | 461.8 | 434.7 | 398.4 | 348.6 | 301.0 | 285.8 | 289.1 | 316.2 | 357.2 | 389.8 | 437.0 | 542.8 | 285.8 |
| 12/08/2024 | 422.0 | 454.1 | 482.7 | 505.9 | 509.1 | 494.5 | 474.8 | 477.4 | 487.7 | 509.7 | 502.0 | 483.3 | 477.2 | 467.2 | 452.1 | 424.1 | 388.5 | 341.4 | 331.8 | 336.5 | 349.1 | 366.4 | 381.6 | 403.7 | 438.4 | 509.7 | 331.8 |
| 13/08/2024 | 428.7 | 441.2 | 449.7 | 458.9 | 454.1 | 447.7 | 442.2 | 439.1 | 446.2 | 482.9 | 505.8 | 512.6 | 517.0 | 512.5 | 509.5 | 496.1 | 467.3 | 424.6 | 399.2 | 396.7 | 392.0 | 402.0 | 420.0 | 441.9 | 453.7 | 517.0 | 392.0 |
| 14/08/2024 | 479.5 | 507.9 | 521.5 | 536.5 | 549.2 | 561.4 | 567.2 | 589.6 | 593.3 | 603.9 | 639.8 | 644.2 | 630.8 | 612.0 | 592.0 | 562.9 | 532.5 | 496.9 | 448.4 | 421.3 | 428.7 | 439.4 | 451.3 | 446.7 | 535.7 | 644.2 | 421.3 |
| 15/08/2024 | 446.2 | 456.2 | 474.4 | 494.0 | 519.1 | 539.4 | 547.0 | 550.5 | 556.5 | 555.3 | 554.1 | 547.0 | 522.0 | 497.8 | 485.2 | 485.9 | 486.9 | 486.7 | 476.6 | 477.1 | 495.6 | 523.3 | 526.5 | 532.5 | 509.8 | 556.5 | 446.2 |
| 16/08/2024 | 549.0 | 562.9 | 590.5 | 599.6 | 601.4 | 608.3 | 658.4 | 691.6 | 714.3 | 752.7 | 779.2 | 772.7 | 758.7 | 740.4 | 699.3 | 660.0 | 622.3 | 580.5 | 531.0 | 526.3 | 528.4 | 524.0 | 517.8 | 528.9 | 629.1 | 779.2 | 517.8 |
| 17/08/2024 | 542.5 | 552.1 | 564.7 | 575.1 | 586.6 | 597.8 | 622.0 | 641.6 | 663.8 | 676.4 | 683.4 | 692.8 | 688.6 | 676.1 | 651.3 | 622.7 | 588.9 | 560.8 | 542.8 | 530.2 | 531.2 | 542.2 | 560.0 | 579.4 | 603.0 | 692.8 | 530.2 |
| 18/08/2024 | 596.7 | 631.0 | 652.7 | 660.7 | 673.4 | 674.0 | 678.3 | 697.9 | 725.5 | 743.1 | 740.6 | 740.6 | 725.5 | 716.2 | 700.0 | 668.0 | 626.5 | 577.1 | 559.6 | 552.6 | 557.9 | 566.4 | 577.3 | 587.4 | 651.2 | 743.1 | 552.6 |
| Prom. | 439.7 | 462.7 | 483.6 | 497.2 | 506.1 | 487.1 | 494.9 | 506.1 | 517.2 | 533.1 | 544.5 | 544.8 | 536.9 | 524.6 | 508.0 | 485.1 | 457.3 | 423.7 | 397.1 | 388.6 | 392.8 | 403.4 | 417.0 | 433.0 | | | |
| Max. | 596.7 | 631.0 | 652.7 | 660.7 | 673.4 | 674.0 | 678.3 | 697.9 | 725.5 | 752.7 | 779.2 | 772.7 | 758.7 | 740.4 | 700.0 | 668.0 | 626.5 | 580.5 | 559.6 | 552.6 | 557.9 | 566.4 | 577.3 | 587.4 | | | |
| Min. | 271.8 | 309.5 | 322.2 | 328.4 | 334.4 | 230.1 | 234.9 | 241.4 | 250.0 | 264.8 | 284.7 | 293.9 | 297.4 | 296.5 | 288.1 | 273.8 | 261.8 | 242.9 | 223.8 | 217.2 | 216.9 | 220.2 | 231.6 | 250.1 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - OZONO TROPOSFÉRICO (O₃)

GRRNyGA
GERENCIA REGIONAL
DE RECURSOS NATURALES
Y GESTIÓN AMBIENTAL

| | |
|--------------------------------------|--------------------------------------|
| Ciudad | : Tacna |
| Nombre/Número de la Estación | : EMCA-03 |
| Ubicación | : I.E. MANUEL A. ODRÍA |
| Equipo de Muestreo | : THERMO SCIENTIFIC - ANALIZADOR 48i |
| Última Calibración del Equipo | : julio - 2024 |
| Coordenadas UTM (WGS 84) | |
| Este | : 368810 |
| Norte | : 8011549 |

| | |
|----------------------------|-------------------------|
| Periodo | : 08 al 18 de agosto |
| Año | : 2024 |
| Responsable | : GORE - TACNA |
| Tipo de Data | : Horario |
| Unidades | : ug/m ³ |
| Límite de Detección | : --- ug/m ³ |

| DIA/HORA | 0:00 | 1:00 | 2:00 | 3:00 | 4:00 | 5:00 | 6:00 | 7:00 | 8:00 | 9:00 | 10:00 | 11:00 | 12:00 | 13:00 | 14:00 | 15:00 | 16:00 | 17:00 | 18:00 | 19:00 | 20:00 | 21:00 | 22:00 | 23:00 | Prom. | Max. | Min. |
|------------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|
| 08/08/2024 | **** | **** | **** | **** | 25.1 | 24.0 | 23.4 | 22.2 | 21.0 | 20.2 | 20.8 | 22.7 | 25.1 | 28.3 | 32.1 | 36.1 | 39.3 | 41.4 | 41.7 | 40.5 | 38.7 | 36.3 | 32.9 | 30.1 | 41.7 | 20.2 | |
| 09/08/2024 | 28.8 | 25.4 | 23.0 | 21.1 | 20.0 | 19.0 | 18.2 | 17.6 | 17.6 | 17.8 | 19.1 | 21.9 | 25.5 | 30.4 | 35.4 | 40.7 | 45.1 | 48.0 | 48.6 | 47.3 | 44.1 | 39.0 | 33.8 | 28.5 | 29.8 | 48.6 | 17.6 |
| 10/08/2024 | 24.1 | 20.9 | 19.0 | 17.6 | 16.9 | 16.5 | 15.6 | 14.7 | 14.3 | 14.9 | 16.2 | 18.7 | 22.8 | 27.7 | 33.4 | 39.2 | 43.3 | 45.6 | 45.9 | 44.6 | 41.4 | 37.0 | 31.9 | 26.2 | 27.0 | 45.9 | 14.3 |
| 11/08/2024 | 21.2 | 16.9 | 13.3 | 10.8 | 8.5 | 6.9 | 5.9 | 5.6 | 6.4 | 8.0 | 11.1 | 15.1 | 20.8 | 26.2 | 31.8 | 37.1 | 41.2 | 43.6 | 44.2 | 42.1 | 37.7 | 32.6 | 26.6 | 21.3 | 22.3 | 44.2 | 5.6 |
| 12/08/2024 | 16.7 | 12.7 | 9.3 | 7.0 | 6.6 | 7.0 | 7.6 | 7.2 | 7.0 | 7.9 | 11.2 | 15.0 | 18.5 | 22.2 | 26.6 | 32.3 | 37.1 | 40.1 | 39.9 | 38.1 | 34.6 | 30.4 | 26.0 | 20.6 | 20.1 | 40.1 | 6.6 |
| 13/08/2024 | 15.8 | 13.4 | 11.8 | 10.6 | 10.7 | 11.4 | 12.0 | 12.6 | 13.1 | 12.7 | 13.9 | 16.3 | 20.0 | 24.2 | 28.7 | 33.9 | 37.9 | 40.4 | 40.5 | 38.0 | 34.9 | 30.3 | 24.6 | 18.6 | 21.9 | 40.5 | 10.6 |
| 14/08/2024 | 13.4 | 9.2 | 7.0 | 5.8 | 4.3 | 3.3 | 2.9 | 2.8 | 3.5 | 4.9 | 6.6 | 10.0 | 14.3 | 19.7 | 25.8 | 32.6 | 38.2 | 40.7 | 41.2 | 39.8 | 36.8 | 32.4 | 27.5 | 22.8 | 18.6 | 41.2 | 2.8 |
| 15/08/2024 | 19.3 | 16.3 | 13.7 | 11.6 | 10.0 | 9.4 | 8.8 | 8.8 | 8.6 | 9.8 | 12.2 | 15.7 | 19.5 | 23.6 | 28.1 | 31.6 | 34.9 | 37.2 | 38.1 | 36.5 | 32.9 | 28.3 | 25.6 | 21.6 | 20.9 | 38.1 | 8.6 |
| 16/08/2024 | 16.1 | 12.6 | 9.9 | 8.5 | 8.1 | 7.9 | 5.4 | 3.8 | 4.1 | 4.3 | 5.9 | 9.1 | 13.1 | 18.6 | 24.5 | 29.9 | 34.9 | 37.7 | 38.2 | 36.9 | 34.6 | 30.8 | 27.3 | 23.1 | 18.5 | 38.2 | 3.8 |
| 17/08/2024 | 18.4 | 14.9 | 12.6 | 11.2 | 9.8 | 8.8 | 6.8 | 5.6 | 5.4 | 6.4 | 8.4 | 11.1 | 15.3 | 19.8 | 25.3 | 31.3 | 35.7 | 37.8 | 38.2 | 36.6 | 33.6 | 29.7 | 25.0 | 20.0 | 19.5 | 38.2 | 5.4 |
| 18/08/2024 | 16.2 | 13.1 | 10.7 | 9.9 | 9.0 | 9.1 | 8.9 | 8.2 | 8.3 | 9.8 | 13.0 | 16.3 | 20.6 | 24.6 | 29.4 | 34.0 | 37.1 | 38.4 | 37.6 | 35.3 | 31.9 | 28.4 | 24.5 | 20.9 | 20.6 | 38.4 | 8.2 |
| Prom. | 19.0 | 15.6 | 13.0 | 11.4 | 10.4 | 11.3 | 10.6 | 10.0 | 10.0 | 10.7 | 12.5 | 15.5 | 19.4 | 23.8 | 28.8 | 34.1 | 38.3 | 40.8 | 41.2 | 39.7 | 36.6 | 32.5 | 28.1 | 23.3 | | | |
| Max. | 28.8 | 25.4 | 23.0 | 21.1 | 20.0 | 25.1 | 24.0 | 23.4 | 22.2 | 21.0 | 20.2 | 21.9 | 25.5 | 30.4 | 35.4 | 40.7 | 45.1 | 48.0 | 48.6 | 47.3 | 44.1 | 39.0 | 36.3 | 32.9 | | | |
| Min. | 13.4 | 9.2 | 7.0 | 5.8 | 4.3 | 3.3 | 2.9 | 2.8 | 3.5 | 4.3 | 5.9 | 9.1 | 13.1 | 18.6 | 24.5 | 29.9 | 34.9 | 37.2 | 37.6 | 35.3 | 31.9 | 28.3 | 24.5 | 18.6 | | | |

Observaciones : Corte de Luz (*), Mantenimiento (**), Calibracion (***) y Otros (****)

Reporta: SGGA - GRRNyGA

| fecha | hr(%) | pm2.5 (ug/m³) | pm10 (ug/m³) | pres (mbar) | pp (mm) | temp (°C) | wd (m/s) | ws (m/s) | rad (kw/m²) | no (ppb) | no2 (ppb) | so2 (ppb) | h2s (ppb) | co (ppb) | o3 (ppb) |
|---------------------|--------|---------------|--------------|-------------|---------|-----------|----------|----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2024/08/08 00:00:00 | 81.8 | -8.82533 | 9.47533 | 939.9034 | 0 | 11.15 | 2 | 1.003 | 0 | 0.6892068 | 10.11822 | 1.56721 | 1.073686 | 199.6642 | 13.22367 |
| 2024/08/08 01:00:00 | 81.846 | -5.53006 | 8.71533 | 939.1799 | 0 | 11.04 | 188 | 0.94 | 0 | 0.6562425 | 8.528558 | 1.57041 | 1.032181 | 202.0267 | 13.59667 |
| 2024/08/08 02:00:00 | 82.78 | -10.3544 | 4.6152 | 938.7064 | 0 | 10.79 | 326 | 1.155 | 0 | 0.5607055 | 8.380259 | 1.380941 | 1.721941 | 188.6917 | 13.5155 |
| 2024/08/08 03:00:00 | 82.942 | -3.07551 | 10.5104 | 938.4227 | 0 | 10.74 | 148 | 0.893 | 0 | 0.6539366 | 8.848174 | 1.371888 | 2.46573 | 197.7275 | 12.58558 |
| 2024/08/08 04:00:00 | 83.191 | 1.13031 | 15.2219 | 937.924 | 0 | 10.48 | 113 | 1.079 | 0 | 0.8461133 | 9.684683 | 1.394687 | 2.586625 | 211.4967 | 11.71992 |
| 2024/08/08 05:00:00 | 83.467 | 20.0602 | 30.5213 | 937.6682 | 0 | 10.27 | 189 | 1.026 | 0 | 1.187729 | 9.659541 | 1.461122 | 2.9093 | 205.9417 | 11.97557 |
| 2024/08/08 06:00:00 | 83.225 | 18.2124 | 31.5867 | 937.7531 | 0 | 10.24 | 337 | 1 | 0 | 1.160846 | 11.02172 | 1.515375 | 2.289456 | 224.6708 | 10.14469 |
| 2024/08/08 07:00:00 | 81.895 | 23.557 | 36.0986 | 938.3324 | 0 | 10.18 | 122 | 1.027 | 0.003 | 3.036588 | 13.95588 | 1.485142 | 2.317178 | 256.0142 | 8.483199 |
| 2024/08/08 08:00:00 | 81.712 | 21.0536 | 36.5204 | 938.9726 | 0 | 10.21 | 10 | 1.052 | 0.077 | 4.4658 | 14.59725 | 1.480264 | 1.992101 | 260.0417 | 8.559483 |
| 2024/08/08 09:00:00 | 78.52 | 18.765 | 39.6207 | 939.4144 | 0 | 10.69 | 217 | 1.085 | 0.179 | 8.210974 | 18.31775 | 1.305252 | 2.416343 | 305.6491 | 8.764708 |
| 2024/08/08 10:00:00 | 78.009 | 11.7108 | 40.3974 | 939.811 | 0 | 11.37 | 301 | 1.549 | 0.245 | 9.849816 | 19.65775 | 1.662242 | 2.706358 | 327.4083 | 10.09374 |
| 2024/08/08 11:00:00 | 69.933 | 15.7001 | 38.4829 | 939.6846 | 0 | 12.13 | 229 | 1.678 | 0.614 | 7.979241 | 13.24775 | 1.767835 | 2.95241 | 262.2508 | 15.1635 |
| 2024/08/08 12:00:00 | 63.716 | 19.1331 | 40.4572 | 939.4493 | 0 | 13.83 | 173 | 1.896 | 0.879 | 6.227258 | 10.85502 | 1.786694 | 3.2075 | 235.485 | 19.47825 |
| 2024/08/08 13:00:00 | 61.976 | 20.1497 | 43.6827 | 939.1051 | 0 | 15.26 | 198 | 2.115 | 0.843 | 3.870033 | 8.686683 | 2.098542 | 2.676783 | 199.5708 | 21.82541 |
| 2024/08/08 14:00:00 | 60.889 | 27.518 | 42.1439 | 938.7379 | 0 | 15.89 | 211 | 2.274 | 0.737 | 2.524475 | 6.658425 | 2.05324 | 1.956043 | 165.9733 | 23.12633 |
| 2024/08/08 15:00:00 | 59.016 | 13.8474 | 27.7268 | 938.7062 | 0 | 16.32 | 208 | 1.888 | 0.569 | 2.050961 | 5.941892 | 2.050775 | 1.411741 | 156.7308 | 23.82067 |
| 2024/08/08 16:00:00 | 63.122 | 18.4454 | 40.5604 | 938.7741 | 0 | 15.76 | 217 | 2.373 | 0.348 | 2.128675 | 7.830908 | 1.995382 | 2.255696 | 175.7708 | 24.70583 |
| 2024/08/08 17:00:00 | 75.19 | 11.6044 | 27.4099 | 939.2402 | 0 | 14.15 | 250 | 2.093 | 0.116 | 1.596211 | 8.091333 | 1.893102 | 2.320713 | 173.7658 | 21.84992 |
| 2024/08/08 18:00:00 | 78.252 | 8.36862 | 23.77551 | 939.6328 | 0 | 12.21 | 239 | 1.628 | 0 | 1.071242 | 10.36734 | 1.586609 | 1.56557 | 193.87 | 18.79217 |
| 2024/08/08 19:00:00 | 79.323 | 7.89321 | 21.1361 | 940.1398 | 0 | 11.78 | 257 | 1.418 | 0 | 1.239366 | 13.00154 | 1.623975 | 0.8857504 | 216.2933 | 16.3755 |
| 2024/08/08 20:00:00 | 80.379 | 6.75937 | 18.7164 | 940.7813 | 0 | 11.39 | 202 | 1.488 | 0 | 1.678395 | 14.76442 | 1.689085 | 2.09041 | 233.2667 | 14.79442 |
| 2024/08/08 21:00:00 | 80.506 | 12.6202 | 25.8225 | 941.2089 | 0 | 11.11 | 225 | 1.188 | 0 | 1.319393 | 14.3675 | 1.643745 | 3.413371 | 222.6375 | 14.33192 |
| 2024/08/08 22:00:00 | 80.012 | 11.082 | 26.6702 | 941.1305 | 0 | 11.18 | 248 | 1.036 | 0 | 1.178975 | 15.52475 | 1.841633 | 2.59567 | 245.9358 | 13.20275 |
| 2024/08/08 23:00:00 | 80.333 | 18.6745 | 35.8359 | 940.6006 | 0 | 11.23 | 13 | 0.688 | 0 | 0.9499817 | 18.99866 | 1.675018 | 2.853767 | 285.63 | 10.09284 |
| 2024/08/09 00:00:00 | 81.242 | 36.5243 | 52.7718 | 940.3038 | 0 | 10.63 | 349 | 0.865 | 0 | 2.288506 | 16.58392 | 1.634115 | 2.554261 | 327.5616 | 7.948308 |
| 2024/08/09 01:00:00 | 80.888 | 19.1506 | 35.3618 | 940.1542 | 0 | 10.36 | 81 | 0.846 | 0 | 1.102767 | 16.6265 | 1.730776 | 2.169146 | 437.7383 | 8.116416 |
| 2024/08/09 02:00:00 | 82.205 | 27.0915 | 43.0479 | 939.8734 | 0 | 10.48 | 80 | 0.798 | 0 | 0.6911403 | 15.90575 | 1.849948 | 2.341693 | 337.3741 | 8.754841 |
| 2024/08/09 03:00:00 | 83.433 | 25.6419 | 42.9612 | 939.5438 | 0 | 10.19 | 116 | 0.768 | 0 | 0.7117833 | 14.57042 | 1.827658 | 2.202983 | 305.2625 | 8.835983 |
| 2024/08/09 04:00:00 | 83.903 | 25.016 | 39.6996 | 939.3997 | 0 | 10.08 | 118 | 0.933 | 0 | 0.6586756 | 11.13757 | 1.452448 | 2.003958 | 255.9958 | 10.32014 |
| 2024/08/09 05:00:00 | 84.596 | 29.6191 | 42.0217 | 939.748 | 0 | 9.75 | 308 | 0.799 | 0 | 1.037517 | 11.0075 | 1.587569 | 1.7297 | 246.2883 | 10.35566 |
| 2024/08/09 06:00:00 | 85.521 | 18.1781 | 29.5718 | 940.2834 | 0 | 9.25 | 2 | 0.995 | 0 | 1.320222 | 11.49512 | 1.62707 | 1.676208 | 249.9342 | 9.874691 |
| 2024/08/09 07:00:00 | 84.194 | 23.2226 | 38.3896 | 941.0444 | 0 | 9.3 | 89 | 0.882 | 0.016 | 2.343032 | 15.77158 | 1.560447 | 1.8944 | 289.0983 | 7.491891 |
| 2024/08/09 08:00:00 | 78.226 | 27.1938 | 48.9289 | 941.3952 | 0 | 9.84 | 209 | 0.978 | 0.166 | 8.373866 | 17.72233 | 1.797958 | 1.611793 | 338.0791 | 7.906266 |
| 2024/08/09 09:00:00 | 71.657 | 24.4227 | 57.3111 | 941.8392 | 0 | 11.27 | 337 | 1.258 | 0.432 | 16.07508 | 21.04733 | 1.856617 | 1.513621 | 381.3267 | 9.182708 |
| 2024/08/09 10:00:00 | 64.711 | 19.6491 | 61.1236 | 941.8411 | 0 | 13.41 | 214 | 1.411 | 0.717 | 16.22142 | 21.74667 | 1.765493 | 1.865673 | 379.6333 | 13.9375 |
| 2024/08/09 11:00:00 | 59.974 | 9.04552 | 46.181 | 941.4971 | 0 | 14.78 | 217 | 1.846 | 0.843 | 9.910041 | 18.10467 | 1.87529 | 1.524904 | 311.4425 | 20.05216 |
| 2024/08/09 12:00:00 | 54.771 | 29.018 | 63.1981 | 940.9098 | 0 | 16.41 | 205 | 1.833 | 0.885 | 6.3349 | 15.04475 | 1.561363 | 1.11845 | 265.6633 | 25.19033 |
| 2024/08/09 13:00:00 | 51.009 | 24.8732 | 65.2885 | 940.1071 | 0 | 18.22 | 240 | 1.806 | 0.845 | 5.176892 | 16.3825 | 2.06516 | 1.713527 | 301.22742 | 30.22742 |
| 2024/08/09 14:00:00 | 50.128 | 21.4863 | 54.5286 | 939.6548 | 0 | 19.09 | 284 | 2.222 | 0 | 0.7117833 | 12.93083 | 12.52688 | 2.686953 | 2.587575 | 320.20617 |
| 2024/08/09 15:00:00 | 53.959 | 32.0271 | 59.9296 | 939.6429 | 0 | 18.96 | 200 | 2.352 | 0.575 | 2.88165 | 9.370266 | 3.0856 | 3.493975 | 195.4375 | 29.28475 |
| 2024/08/09 16:00:00 | 60.849 | 13.873 | 40.5369 | 939.6478 | 0 | 17.33 | 258 | 2.493 | 0.355 | 2.804475 | 8.805224 | 2.377015 | 2.688973 | 181.1892 | 25.69533 |
| 2024/08/09 17:00:00 | 71.111 | 6.86038 | 29.1737 | 940.0784 | 0 | 15.21 | 192 | 2.089 | 0.115 | 4.263542 | 9.069166 | 2.209966 | 3.663935 | 180.8467 | 20.91558 |
| 2024/08/09 18:00:00 | 78.354 | 8.93667 | 28.0232 | 940.6562 | 0 | 12.67 | 169 | 1.829 | 0 | 2.506724 | 11.85822 | 1.560447 | 1.8944 | 289.0983 | 7.491891 |
| 2024/08/09 19:00:00 | 81.183 | 19.1879 | 36.0792 | 941.0446 | 0 | 11.43 | 337 | 1.432 | 0 | 2.683626 | 12.78502 | 1.657935 | 2.917032 | 337.5717 | 14.74433 |
| 2024/08/09 20:00:00 | 81.338 | 13.5223 | 32.8426 | 941.3625 | 0 | 11.43 | 200 | 1.4 | 0 | 1.2889 | 15.85933 | 1.585407 | 2.775665 | 241.7967 | 12.39549 |
| 2024/08/09 21:00:00 | 81.694 | -0.777551 | 20.8022 | 941.7742 | 0 | 11.29 | 248 | 1.257 | 0 | 1.9962 | 20.62308 | 1.677776 | 3.135137 | 270.7625 | 9.429658 |
| 2024/08/09 22:00:00 | 81.216 | 13.8807 | 33.7138 | 941.9203 | 0 | 11.32 | 177 | 1.082 | 0 | 1.094952 | 20.23141 | 1.287634 | 2.911873 | 283.5568 | 9.0209 |
| 2024/08/09 23:00:00 | 80.476 | 17.8785 | 39.9197 | 941.8766 | 0 | 11.36 | 206 | 1.186 | 0 | 1.197285 | 20.18217 | 1.676752 | 2.538815 | 297.0566 | 7.755233 |
| 2024/08/10 00:00:00 | 80.407 | 17.8435 | 41.6279 | 941.8403 | 0 | 11.3 | 83 | 0.884 | 0 | 1.347509 | 19.23733 | 1.730728 | 2.3539 | 310.0783 | 7.460541 |
| 2024/08/10 01:00:00 | 82.256 | 17.6689 | 38.9236 | 941.3839 | 0 | 10.91 | 249 | 0.954 | 0 | 0.9361658 | 16.8935 | 1.662835 | 2.216523 | 312.75675 | 8.145433 |
| 2024/08/10 02:00:00 | 81.77 | 21.5893 | 40.5806 | 940.9484 | 0 | 10.93 | 233 | 0.92 | 0 | 0.6603279 | 15.156 | 1.40734 | 1.989365 | 297.4175 | 8.394008 |
| 2024/08/10 03:00:00 | 81.886 | 30.1995 | 49.0036 | 940.8168 | 0 | 10.65 | 138 | 0.875 | 0 | 0.6299311 | 13.03292 | 1.62922 | 1.441107 | 280.9991 | 9.26895 |
| 2024/08/10 04:00:00 | 82.316 | 22.318 | 40.4061 | 940.6406 | 0 | 10.41 | 49 | 0.882 | 0 | 0.782427 | 12.1595 | 1.562465 | 1.984532 | 283.77 | 9.338307 |
| 2024/08/10 05:00:00 | 83.284 | 22.0016 | 36.2948 | 940.7977 | 0 | 9.7 | 134 | 1.292 | 0 | 1.318031 | 12.73232 | 1.79913 | 1.590008 | 300.1441 | 7.767375 |
| 2024/08/10 06:00:00 | 85.131 | 17.8442 | 29.0462 | 940.9694 | 0 | 8.76 | 123 | 1.173 | 0 | 2.050913 | 14.7745 | 1.653852 | 1.928022 | 312.3383 | 5.296425 |
| 2024/08/10 07:00:00 | 86.854 | 24.8775 | 36.8945 | 941.6172 | 0 | 8.39 | 324 | 0.864 | 0.022 | 7.267408 | 18.88232 | 1.845252 | 2.826213 | 412.255 | 4.31 |

| | | | | | | | | | | | | | | | |
|---------------------|--------|---------|---------|----------|---|-------|-----|-------|-------|-----------|-----------|-----------|-----------|----------|-----------|
| 2024/08/11 20:00:00 | 82.251 | 9.6902 | 27.819 | 939.4718 | 0 | 10.99 | 157 | 0.826 | 0 | 1.684911 | 19.26167 | 1.53479 | 2.832971 | 324.2883 | 8.550033 |
| 2024/08/11 21:00:00 | 82.058 | 11.8699 | 37.3643 | 939.6107 | 0 | 10.93 | 167 | 0.652 | 0 | 5.003692 | 25.2455 | 1.724542 | 2.116227 | 447.6967 | 4.765525 |
| 2024/08/11 22:00:00 | 81.67 | 13.1312 | 42.4058 | 939.618 | 0 | 10.83 | 322 | 0.82 | 0 | 5.468283 | 29.28117 | 1.454825 | 2.174639 | 525.7175 | 2.031465 |
| 2024/08/11 23:00:00 | 83.37 | 15.7721 | 37.4849 | 939.4264 | 0 | 10.41 | 341 | 0.754 | 0 | 2.947946 | 25.11758 | 1.728063 | 2.006645 | 454.2133 | 3.533348 |
| 2024/08/12 00:00:00 | 83.366 | 16.5033 | 41.0084 | 939.133 | 0 | 9.92 | 335 | 0.907 | 0 | 2.526235 | 22.46283 | 1.97162 | 2.204192 | 446.0625 | 3.670467 |
| 2024/08/12 01:00:00 | 83.086 | 16.3976 | 43.0192 | 938.685 | 0 | 9.8 | 196 | 0.803 | 0 | 3.094367 | 23.14008 | 1.75549 | 2.179987 | 450.1108 | 2.174918 |
| 2024/08/12 02:00:00 | 82.686 | 24.8302 | 53.7051 | 938.1431 | 0 | 9.46 | 71 | 0.608 | 0 | 2.450853 | 21.72075 | 2.041228 | 1.955152 | 455.2042 | 1.108395 |
| 2024/08/12 03:00:00 | 84.785 | 21.326 | 44.0607 | 937.6585 | 0 | 9.15 | 302 | 0.665 | 0 | 2.051318 | 18.99883 | 2.054673 | 2.060132 | 441.3733 | 2.732462 |
| 2024/08/12 04:00:00 | 86.204 | 13.8559 | 32.776 | 937.5269 | 0 | 9.5 | 292 | 0.786 | 0 | 1.226495 | 14.29296 | 1.890208 | 2.128345 | 346.5616 | 6.70075 |
| 2024/08/12 05:00:00 | 85.788 | 12.9647 | 36.9486 | 937.4813 | 0 | 9.34 | 326 | 0.948 | 0 | 1.481481 | 13.61411 | 1.450413 | 2.06772 | 345.6866 | 6.536908 |
| 2024/08/12 06:00:00 | 86.465 | 17.6909 | 35.4127 | 937.6517 | 0 | 8.73 | 284 | 1.239 | 0 | 4.172789 | 17.19192 | 1.62624 | 2.140546 | 387.6308 | 4.9588 |
| 2024/08/12 07:00:00 | 86.297 | 28.5583 | 48.8748 | 938.2089 | 0 | 8.79 | 173 | 0.86 | 0.023 | 11.66404 | 23.0145 | 1.810357 | 2.14883 | 472.65 | 1.671068 |
| 2024/08/12 08:00:00 | 83.343 | 29.5085 | 56.4416 | 938.9239 | 0 | 9.14 | 146 | 1.001 | 0.129 | 18.50723 | 22.04725 | 2.10019 | 1.82642 | 517.6342 | 2.834017 |
| 2024/08/12 09:00:00 | 69.845 | 33.9662 | 72.704 | 939.5511 | 0 | 10.65 | 56 | 1.286 | 0.465 | 29.27366 | 24.73166 | 2.007512 | 1.715252 | 603.8733 | 6.222208 |
| 2024/08/12 10:00:00 | 64.848 | 19.4309 | 49.3647 | 939.9501 | 0 | 13.32 | 276 | 1.705 | 0.715 | 13.29187 | 15.17211 | 2.059405 | 1.000992 | 391.9733 | 14.47627 |
| 2024/08/12 11:00:00 | 60.209 | 16.9516 | 46.7909 | 939.7935 | 0 | 15.15 | 241 | 1.556 | 0.832 | 5.730908 | 10.31129 | 1.774985 | 0.6941547 | 310.3808 | 18.31358 |
| 2024/08/12 12:00:00 | 54.207 | 15.9984 | 45.1314 | 939.0641 | 0 | 17.2 | 162 | 1.78 | 0.876 | 4.84015 | 10.21031 | 1.717313 | 1.068526 | 307.7667 | 20.59892 |
| 2024/08/12 13:00:00 | 50.346 | 13.651 | 38.8279 | 938.2085 | 0 | 18.33 | 248 | 1.994 | 0.833 | 3.81735 | 8.597266 | 1.923822 | 0.961337 | 276.2633 | 21.8145 |
| 2024/08/12 14:00:00 | 49.82 | 12.7783 | 39.9282 | 937.3624 | 0 | 19.17 | 234 | 2.03 | 0.71 | 3.7769 | 9.279449 | 2.078185 | 1.328504 | 282.0183 | 22.71425 |
| 2024/08/12 15:00:00 | 51.758 | 16.6505 | 47.2076 | 936.8666 | 0 | 19.37 | 272 | 2.211 | 0.57 | 3.046083 | 8.688183 | 2.6601 | 2.166989 | 276.8608 | 24.53258 |
| 2024/08/12 16:00:00 | 60.484 | 15.5162 | 47.3835 | 936.8456 | 0 | 17.58 | 231 | 2.542 | 0.346 | 2.770658 | 8.411159 | 2.4815 | 3.643663 | 269.0792 | 22.54283 |
| 2024/08/12 17:00:00 | 70.537 | 13.1958 | 38.0406 | 937.1844 | 0 | 15.4 | 208 | 2.001 | 0.117 | 2.812475 | 10.88363 | 1.996857 | 1.891199 | 274.4975 | 18.698 |
| 2024/08/12 18:00:00 | 77.126 | 12.7907 | 38.6155 | 937.3069 | 0 | 13.23 | 217 | 1.378 | 0 | 2.431854 | 15.73242 | 1.839509 | 2.913418 | 325.1175 | 13.27474 |
| 2024/08/12 19:00:00 | 82.853 | 8.281 | 29.324 | 937.7559 | 0 | 11.63 | 268 | 1.533 | 0 | 3.107507 | 16.5805 | 1.705452 | 4.340733 | 343.2783 | 11.12551 |
| 2024/08/12 20:00:00 | 82.485 | 14.8093 | 42.1282 | 938.0279 | 0 | 11.34 | 283 | 0.965 | 0 | 3.180242 | 23.674 | 1.649908 | 2.006745 | 391.4566 | 6.560558 |
| 2024/08/12 21:00:00 | 82.731 | 16.6544 | 40.5153 | 938.2269 | 0 | 11.42 | 135 | 0.893 | 0 | 2.652282 | 26.43208 | 1.441887 | 1.537074 | 397.5758 | 4.475025 |
| 2024/08/12 22:00:00 | 83.052 | 8.491 | 33.0037 | 938.6429 | 0 | 11.4 | 172 | 1.229 | 0 | 1.377694 | 24.974 | 1.342564 | 1.493733 | 388.2408 | 4.612592 |
| 2024/08/12 23:00:00 | 82.189 | 18.1863 | 45.7201 | 938.8557 | 0 | 11.43 | 19 | 0.998 | 0 | 2.465916 | 27.23908 | 1.672915 | 1.124911 | 431.29 | 2.682213 |
| 2024/08/13 00:00:00 | 83.709 | 16.9095 | 41.0278 | 938.5078 | 0 | 11.18 | 212 | 0.874 | 0 | 2.611312 | 24.63076 | 1.915598 | 1.641653 | 443.4616 | 3.03149 |
| 2024/08/13 01:00:00 | 84.995 | 10.7443 | 30.7356 | 938.4256 | 0 | 10.8 | 353 | 0.771 | 0 | 0.64697 | 12.61754 | 1.47404 | 2.032289 | 361.7642 | 9.019633 |
| 2024/08/13 02:00:00 | 85.275 | 14.0528 | 35.4489 | 937.7869 | 0 | 10.71 | 242 | 0.917 | 0 | 0.9365016 | 15.41592 | 1.842828 | 1.778116 | 384.5367 | 6.485958 |
| 2024/08/13 03:00:00 | 85.192 | 20.1646 | 41.902 | 937.4008 | 0 | 10.73 | 166 | 0.746 | 0 | 0.6720783 | 14.90492 | 1.86981 | 1.755983 | 407.9133 | 6.383825 |
| 2024/08/13 04:00:00 | 84.923 | 14.2815 | 35.1135 | 937.2026 | 0 | 10.84 | 192 | 0.825 | 0 | 0.7045131 | 13.18167 | 1.824653 | 2.074073 | 357.8025 | 7.054175 |
| 2024/08/13 05:00:00 | 84.964 | 17.4635 | 36.9005 | 937.7947 | 0 | 10.61 | 231 | 0.938 | 0 | 1.030554 | 12.33908 | 1.416938 | 2.35437 | 352.6241 | 7.283608 |
| 2024/08/13 06:00:00 | 84.758 | 22.0931 | 41.356 | 938.4326 | 0 | 10.62 | 158 | 1.04 | 0 | 1.076148 | 13.21683 | 1.466181 | 2.73564 | 350.1775 | 7.0248 |
| 2024/08/13 07:00:00 | 84.449 | 24.3258 | 46.3784 | 938.7529 | 0 | 10.49 | 49 | 0.918 | 0.015 | 4.699875 | 15.70108 | 1.686958 | 2.037581 | 409.1291 | 5.023933 |
| 2024/08/13 08:00:00 | 81.526 | 26.7262 | 53.4646 | 939.3316 | 0 | 10.81 | 236 | 0.822 | 0.155 | 13.26192 | 19.41575 | 1.791162 | 2.106557 | 493.4666 | 4.959833 |
| 2024/08/13 09:00:00 | 69.85 | 34.2073 | 81.8968 | 939.6309 | 0 | 12.91 | 195 | 1.329 | 0.512 | 27.99092 | 26.67991 | 1.970688 | 2.242782 | 617.6733 | 7.739158 |
| 2024/08/13 10:00:00 | 63.755 | 30.3221 | 81.5137 | 939.8548 | 0 | 14.46 | 313 | 1.449 | 0.67 | 21.14667 | 24.55817 | 1.2619727 | 2.461273 | 544.5958 | 11.39117 |
| 2024/08/13 11:00:00 | 56.793 | 29.5802 | 79.1436 | 939.4655 | 0 | 16.66 | 278 | 1.526 | 0.712 | 20.74183 | 23.372371 | 2.645925 | 455.3408 | 16.12375 | |
| 2024/08/13 12:00:00 | 54.893 | 25.4487 | 81.606 | 938.9789 | 0 | 18.11 | 208 | 1.93 | 0.771 | 6.883008 | 15.52875 | 2.085377 | 2.219724 | 389.2042 | 22.0475 |
| 2024/08/13 13:00:00 | 51.681 | 17.9271 | 52.6978 | 938.6131 | 0 | 18.93 | 171 | 1.876 | 0.817 | 3.829767 | 10.29363 | 3.308133 | 3.68785 | 320.9316 | 24.20733 |
| 2024/08/13 14:00:00 | 49.537 | 19.0737 | 52.3104 | 937.7881 | 0 | 19.95 | 255 | 2.059 | 0.722 | 3.781908 | 10.58053 | 3.332433 | 2.966498 | 328.9191 | 25.54783 |
| 2024/08/13 15:00:00 | 51.665 | 18.3578 | 60.547 | 937.0946 | 0 | 20.11 | 195 | 2.21 | 0.56 | 3.346383 | 16.10113 | 2.18167 | 2.629876 | 315.8175 | 26.068 |
| 2024/08/13 16:00:00 | 59.876 | 13.6222 | 50.4598 | 937.2154 | 0 | 18.37 | 270 | 2.221 | 0.345 | 3.382233 | 9.366508 | 2.317816 | 3.701817 | 291.9442 | 21.40025 |
| 2024/08/13 17:00:00 | 68.085 | 12.335 | 38.2783 | 937.5867 | 0 | 16.54 | 269 | 1.919 | 0.118 | 3.044708 | 10.85696 | 1.410498 | 3.713073 | 319.4425 | 17.96308 |
| 2024/08/13 18:00:00 | 70.749 | 13.8879 | 41.2615 | 937.9396 | 0 | 15.14 | 203 | 0.855 | 0 | 1.770097 | 20.25933 | 2.150007 | 3.500967 | 367.4217 | 11.70975 |
| 2024/08/13 19:00:00 | 80.408 | 13.1072 | 39.6335 | 938.4832 | 0 | 13.2 | 190 | 1.559 | 0 | 3.739058 | 26.29625 | 2.070017 | 6.352417 | 477.7925 | 6.065108 |
| 2024/08/13 20:00:00 | 85.28 | 15.187 | 30.9449 | 939.3922 | 0 | 11.24 | 212 | 1.266 | 0 | 2.121909 | 14.45355 | 1.815412 | 8.5253 | 356.2116 | 9.124607 |
| 2024/08/13 21:00:00 | 85.829 | 16.7294 | 34.6537 | 940.0915 | 0 | 11.06 | 255 | 0.83 | 0 | 1.343522 | 19.31683 | 1.826763 | 6.406549 | 390.6 | 5.845458 |
| 2024/08/13 22:00:00 | 83.863 | 15.9882 | 42.2118 | 940.6301 | 0 | 11.51 | 64 | 0.924 | 0 | 2.765608 | 26.30775 | 1.662345 | 6.004716 | 455.1433 | 2.132776 |
| 2024/08/13 23:00:00 | 85.027 | 16.3482 | 28.0893 | 940.2917 | 0 | 10.68 | 192 | 0.928 | 0 | 2.770217 | 23.64383 | 1.681195 | 6.20435 | 468.6792 | 1.580495 |
| 2024/08/14 00:00:00 | 84.991 | 25.9945 | 43.5146 | 939.9895 | 0 | 11 | 272 | 0.367 | 0 | 4.312616 | 26.87858 | 2.054088 | 5.1269 | 554.5075 | 0.1874056 |
| 2024/08/14 01:00:00 | 84.126 | 18.385 | 40.0893 | 939.4725 | 0 | 11.03 | 257 | 0.731 | 0 | 2.516027 | 24.48417 | 1.958397 | 4.098783 | 518.1408 | 0.8674105 |
| 2024/08/14 02:00:00 | 84.988 | 19.9075 | 40.2781 | 939.0125 | 0 | 10.58 | 223 | 0.625 | 0 | 1.404572 | 19.11716 | 1.883802 | 2.750026 | 462.08 | 2.824345 |
| 2024/08/14 03:00:00 | 84.852 | 17.7648 | 40.8382 | 938.2255 | 0 | 10.42 | 311 | 0.608 | 0 | 1.640503 | 21.1515 | 1.902355 | 3.274075 | 543.0516 | 1.087854 |
| 2024/08/14 04:00:00 | 86.814 | 16.0222 | 37.0246 | 938.2147 | 0 | 10.34 | 340 | 0.81 | 0 | 0.8769292 | 17.42158 | 2.07 | | | |

| | | | | | | | | | | | | | | | |
|---------------------|--------|----------|---------|----------|---|-------|-----|-------|-------|-----------|----------|----------|-----------|----------|-------------|
| 2024/08/15 17:00:00 | 70.504 | 32.5115 | 70.0915 | 938.4428 | 0 | 16.41 | 266 | 2.008 | 0.12 | 2.247458 | 11.50725 | 1.9765 | 3.654316 | 403.3233 | 19.77 |
| 2024/08/15 18:00:00 | 75.632 | 14.1969 | 39.5388 | 938.9013 | 0 | 14.17 | 236 | 1.451 | 0 | 1.437236 | 13.50165 | 1.796276 | 3.143468 | 422.1208 | 14.58617 |
| 2024/08/15 19:00:00 | 78.818 | 13.8363 | 32.9882 | 939.3655 | 0 | 12.64 | 252 | 1.128 | 0 | 2.236977 | 21.59483 | 2.054413 | 1.905627 | 474.7775 | 7.746241 |
| 2024/08/15 20:00:00 | 80.947 | 11.2759 | 31.7704 | 939.9531 | 0 | 11.62 | 173 | 0.973 | 0 | 3.634258 | 28.92525 | 1.996472 | 4.612545 | 532.3842 | 3.208257 |
| 2024/08/15 21:00:00 | 81.843 | 16.0216 | 38.9735 | 940.2811 | 0 | 11.35 | 181 | 0.961 | 0 | 9.102191 | 33.45575 | 1.788578 | 6.310999 | 585.65 | 0.9006659 |
| 2024/08/15 22:00:00 | 85.729 | 7.25594 | 20.1412 | 940.8611 | 0 | 10.2 | 326 | 1.287 | 0 | 1.694849 | 11.75427 | 1.508765 | 8.078533 | 427.3867 | 10.22221 |
| 2024/08/15 23:00:00 | 86.224 | 7.90121 | 21.4466 | 940.9626 | 0 | 10 | 137 | 0.922 | 0 | 1.766272 | 15.17859 | 1.591012 | 5.388283 | 460.2867 | 7.595408 |
| 2024/08/16 00:00:00 | 85.643 | 12.844 | 33.6731 | 940.4583 | 0 | 10.07 | 321 | 0.923 | 0 | 2.169987 | 25.256 | 1.831487 | 5.487001 | 529.2191 | 1.810302 |
| 2024/08/16 01:00:00 | 86.444 | 14.7286 | 29.6925 | 939.7814 | 0 | 9.95 | 336 | 1.286 | 0 | 1.118348 | 17.66075 | 1.696338 | 3.753883 | 501.0541 | 5.389903 |
| 2024/08/16 02:00:00 | 86.591 | 23.6573 | 37.5877 | 938.7564 | 0 | 9.89 | 354 | 0.993 | 0 | 0.9248366 | 21.57217 | 2.004397 | 3.227666 | 614.4325 | 3.335042 |
| 2024/08/16 03:00:00 | 87.229 | 16.8988 | 26.417 | 938.2773 | 0 | 9.47 | 78 | 0.907 | 0 | 0.9720133 | 21.96617 | 1.581632 | 3.771016 | 538.7083 | 2.269793 |
| 2024/08/16 04:00:00 | 87.223 | 16.2481 | 21.7604 | 937.7613 | 0 | 8.76 | 233 | 1.031 | 0 | 1.759169 | 21.52467 | 1.92287 | 3.22445 | 544.4592 | 1.351926 |
| 2024/08/16 05:00:00 | 85.497 | 12.5951 | 21.5789 | 937.0988 | 0 | 8.82 | 113 | 0.536 | 0 | 12.63364 | 23.15767 | 2.028265 | 2.842183 | 634.1349 | 0.2241606 |
| 2024/08/16 06:00:00 | 84.347 | 24.5739 | 43.4167 | 937.7052 | 0 | 9.41 | 198 | 0.651 | 0 | 31.64375 | 27.23908 | 2.299317 | 2.917593 | 777.575 | -0.00668067 |
| 2024/08/16 07:00:00 | 85.31 | 19.7222 | 41.1929 | 938.4471 | 0 | 9.35 | 210 | 0.816 | 0.061 | 21.45921 | 25.16508 | 2.066943 | 6.209696 | 692.4041 | 1.191251 |
| 2024/08/16 08:00:00 | 85.128 | 25.3542 | 49.0096 | 938.8639 | 0 | 9.62 | 154 | 1.095 | 0.169 | 25.82983 | 24.59208 | 2.003687 | 2.388317 | 687.6858 | 2.897233 |
| 2024/08/16 09:00:00 | 65.12 | 35.2287 | 76.7806 | 938.7685 | 0 | 12.52 | 244 | 1.082 | 0.519 | 32.05841 | 27.40241 | 2.259767 | 2.47913 | 769.1241 | 6.089449 |
| 2024/08/16 10:00:00 | 65.956 | 44.8106 | 109.474 | 938.2258 | 0 | 14.91 | 221 | 1.951 | 0.704 | 34.22467 | 33.93183 | 2.319168 | 2.334773 | 799.6492 | 9.978749 |
| 2024/08/16 11:00:00 | 67.363 | 22.9782 | 54.6384 | 938.1049 | 0 | 14.6 | 188 | 2.429 | 0.822 | 9.05205 | 13.08145 | 2.482366 | 4.004004 | 493.4575 | 15.362 |
| 2024/08/16 12:00:00 | 62.058 | 22.7405 | 48.2093 | 938.139 | 0 | 15.38 | 233 | 1.85 | 0.859 | 5.345666 | 10.01692 | 2.713977 | 7.48095 | 446.5925 | 17.80767 |
| 2024/08/16 13:00:00 | 53.645 | 29.0074 | 62.8461 | 938.0426 | 0 | 17.77 | 213 | 1.634 | 0.821 | 7.065367 | 16.16658 | 2.865467 | 3.809603 | 506.0525 | 22.34533 |
| 2024/08/16 14:00:00 | 54.345 | 22.7522 | 64.5663 | 937.6357 | 0 | 19.18 | 196 | 2.349 | 0.72 | 5.861575 | 15.35233 | 2.427833 | 1.404472 | 490.4808 | 24.31558 |
| 2024/08/16 15:00:00 | 55.148 | 14.5549 | 43.229 | 937.4505 | 0 | 18.63 | 189 | 2.335 | 0.555 | 3.5391 | 10.00937 | 2.7924 | 2.483635 | 417.685 | 23.18717 |
| 2024/08/16 16:00:00 | 56.854 | 19.4957 | 47.6065 | 937.2941 | 0 | 18.08 | 315 | 1.784 | 0.334 | 5.354341 | 11.68812 | 2.249637 | 2.191438 | 424.43 | 23.13667 |
| 2024/08/16 17:00:00 | 62.404 | 21.7663 | 58.9014 | 937.1322 | 0 | 18.07 | 241 | 1.248 | 0.117 | 4.20465 | 19.24475 | 2.12865 | 2.212688 | 477.1675 | 17.65708 |
| 2024/08/16 18:00:00 | 74.884 | 14.5938 | 41.4306 | 937.6912 | 0 | 14.9 | 245 | 1.805 | 0 | 3.393106 | 14.59354 | 1.790605 | 4.012067 | 453.7491 | 12.02282 |
| 2024/08/16 19:00:00 | 82.807 | 15.307 | 34.5493 | 938.7157 | 0 | 12.46 | 252 | 1.733 | 0 | 3.949067 | 13.56957 | 1.560017 | 3.165206 | 460.7783 | 9.817566 |
| 2024/08/16 20:00:00 | 84.762 | 17.593 | 36.8142 | 939.4842 | 0 | 11.62 | 161 | 1.259 | 0 | 2.116316 | 13.67693 | 1.182832 | 3.748066 | 460.9492 | 8.405125 |
| 2024/08/16 21:00:00 | 85.826 | 15.8008 | 34.8542 | 939.8209 | 0 | 11.57 | 185 | 1.405 | 0 | 1.479501 | 15.97729 | 1.55373 | 2.636182 | 475.7583 | 7.142916 |
| 2024/08/16 22:00:00 | 86.613 | 12.5472 | 25.9163 | 940.1135 | 0 | 11.24 | 180 | 1.167 | 0 | 1.152114 | 11.26976 | 1.348349 | 1.588951 | 447.19 | 9.771491 |
| 2024/08/16 23:00:00 | 85.577 | 15.6902 | 32.3525 | 939.8485 | 0 | 11.51 | 151 | 0.9 | 0 | 0.7995066 | 17.01858 | 1.5456 | 1.663853 | 494.6633 | 6.06065 |
| 2024/08/17 00:00:00 | 83.174 | 22.575 | 44.4004 | 939.3132 | 0 | 11.63 | 172 | 1.069 | 0 | 1.508322 | 17.75683 | 1.701015 | 2.738452 | 519.7291 | 4.123891 |
| 2024/08/17 01:00:00 | 83.793 | 28.8255 | 54.0738 | 938.9687 | 0 | 11.61 | 246 | 0.871 | 0 | 0.8481531 | 18.794 | 2.178650 | 3.09955 | 54.0208 | 3.271758 |
| 2024/08/17 02:00:00 | 83.363 | 26.1824 | 51.9491 | 938.5318 | 0 | 11.64 | 185 | 0.747 | 0 | 0.7878774 | 19.40383 | 1.550332 | 2.765117 | 542.1475 | 2.754142 |
| 2024/08/17 03:00:00 | 84.029 | 22.7008 | 43.9167 | 938.0172 | 0 | 11.58 | 211 | 0.964 | 0 | 0.7756011 | 17.3615 | 1.584292 | 1.958483 | 533.5933 | 3.937541 |
| 2024/08/17 04:00:00 | 84.032 | 26.4552 | 50.4182 | 937.7502 | 0 | 11.44 | 166 | 0.822 | 0 | 1.034958 | 17.69125 | 1.487913 | 2.018065 | 541.0316 | 3.087392 |
| 2024/08/17 05:00:00 | 84.29 | 27.5585 | 49.1053 | 938.0533 | 0 | 11.14 | 144 | 0.895 | 0 | 2.355026 | 17.71867 | 1.80902 | 1.701687 | 554.0091 | 2.774879 |
| 2024/08/17 06:00:00 | 85.029 | 27.7283 | 50.965 | 938.3864 | 0 | 10.72 | 188 | 0.972 | 0 | 7.25586 | 20.97775 | 1.710737 | 1.815567 | 616.1049 | 1.547627 |
| 2024/08/17 07:00:00 | 85.937 | 35.9864 | 65.0451 | 939.2103 | 0 | 10.4 | 357 | 1.143 | 0.025 | 13.30996 | 20.7865 | 1.924722 | 2.127722 | 631.6733 | 1.146698 |
| 2024/08/17 08:00:00 | 80.609 | 42.7641 | 72.8259 | 939.7166 | 0 | 11.15 | 163 | 0.827 | 0.149 | 18.07067 | 21.31258 | 1.924747 | 2.015918 | 675.0891 | 3.346717 |
| 2024/08/17 09:00:00 | 75.9 | 28.416 | 58.6309 | 940.5593 | 0 | 12.52 | 172 | 1.592 | 0.42 | 17.94058 | 19.92233 | 1.910382 | 2.077087 | 632.1799 | 7.353583 |
| 2024/08/17 10:00:00 | 69.007 | 28.6092 | 56.4697 | 940.9847 | 0 | 13.29 | 164 | 1.517 | 0.655 | 14.43108 | 16.67 | 1.878803 | 1.732054 | 590.7975 | 10.87866 |
| 2024/08/17 11:00:00 | 60.167 | 32.2899 | 63.8348 | 940.506 | 0 | 15.58 | 276 | 1.518 | 0.813 | 12.96009 | 18.821 | 1.970003 | 1.974402 | 599.4742 | 15.01433 |
| 2024/08/17 12:00:00 | 56.704 | 23.5752 | 52.0044 | 939.6036 | 0 | 17.41 | 222 | 1.934 | 0.858 | 5.851041 | 12.58963 | 2.197888 | 2.211286 | 511.6042 | 20.16417 |
| 2024/08/17 13:00:00 | 57.592 | 22.5054 | 47.3279 | 939.3334 | 0 | 18.08 | 282 | 2.6 | 0.825 | 3.5755 | 8.879283 | 2.781616 | 3.239693 | 466.6967 | 21.26858 |
| 2024/08/17 14:00:00 | 54.719 | 19.5624 | 41.6523 | 939.0923 | 0 | 18.39 | 199 | 2.33 | 0.723 | 2.562475 | 7.562441 | 2.043287 | 1.501189 | 442.3258 | 23.82833 |
| 2024/08/17 15:00:00 | 54.601 | 17.0236 | 38.1166 | 938.9379 | 0 | 18.43 | 189 | 2.253 | 0.558 | 2.320983 | 7.003341 | 2.137705 | 1.074384 | 432.4033 | 25.72008 |
| 2024/08/17 16:00:00 | 62.598 | 14.1673 | 39.737 | 938.9283 | 0 | 17.82 | 255 | 2.49 | 0.338 | 2.899041 | 8.219616 | 2.154518 | 2.571793 | 438.6866 | 21.376 |
| 2024/08/17 17:00:00 | 72.133 | 8.75053 | 30.2876 | 939.6547 | 0 | 15.88 | 139 | 2.289 | 0.126 | 3.224572 | 8.302217 | 1.822108 | 2.23286 | 435.8125 | 16.00158 |
| 2024/08/17 18:00:00 | 79.22 | 14.8308 | 32.7079 | 940.5394 | 0 | 13.63 | 222 | 1.717 | 0.001 | 3.048547 | 11.80538 | 1.439282 | 0.7166228 | 465.4033 | 12.27107 |
| 2024/08/17 19:00:00 | 80.637 | -2.13505 | 18.4828 | 941.0257 | 0 | 12.9 | 207 | 1.38 | 0 | 2.71838 | 18.11592 | 1.343087 | 1.298949 | 510.9458 | 8.635641 |
| 2024/08/17 20:00:00 | 83.265 | 6.43637 | 25.9232 | 941.4508 | 0 | 12.43 | 255 | 1.516 | 0 | 2.430683 | 17.37058 | 1.667842 | 4.115672 | 518.7833 | 7.9132 |
| 2024/08/17 21:00:00 | 82.641 | 19.3414 | 43.5733 | 941.6127 | 0 | 12.26 | 215 | 1.16 | 0 | 2.391585 | 20.42617 | 1.597035 | 3.744267 | 543.5092 | 5.326933 |
| 2024/08/17 22:00:00 | 83.204 | 14.1669 | 37.7564 | 941.4775 | 0 | 12.29 | 261 | 1.131 | 0 | 1.791275 | 22.02892 | 1.797692 | 2.289273 | 566.8133 | 4.62635 |
| 2024/08/17 23:00:00 | 83.168 | 17.1999 | 43.3263 | 941.2282 | 0 | 12.34 | 232 | 1.247 | 0 | 1.606512 | 20.728 | 1.717732 | 2.508878 | 568.0674 | 5.3708 |
| 2024/08/18 00:00:00 | 82.753 | 18.3817 | 44.1403 | 940.7337 | 0 | 12.16 | 152 | 1.073 | 0 | 0.9066783 | 18.52242 | 1.442492 | 2.20752 | 559.17 | 5.943358 |
| 2024/08/18 01:00:00 | 83.798 | 33.3566 | 58.4278 | 939.6478 | 0 | 11.84 | 21 | 0.954 | 0</td | | | | | | |