

# Séptimo Informe de Calidad de Aire - 2024

Distrito de Tacna

Gobierno Regional de Tacna

2025-02-02

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 Prolongación Hipólito Unanue “Ex sede del Gobierno Regional de Tacna” en el distrito de Tacna durante el 01 de diciembre del 2024 al 31 de diciembre 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 <sup>3</sup> )	Criterios de evaluación	Método de análisis <sup>1</sup>
$SO_2$	24 horas	250	NE <sup>2</sup> 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	
$O_3$	8 horas	100	Máxima media diaria	Fotometría de absorción ultravioleta (método automático)
			NE más de 24 veces al año	
$H_2S$	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

<sup>2</sup>NE: No exceder más de una cantidad

<sup>1</sup>O método equivalente aprobado

# 1 Estación de monitoreo de calidad de aire UNANUE

Durante el 01 de diciembre del 2024 al 31 de diciembre del 2024 se realizó el monitoreo de calidad del aire, en Prolongación Hipólito Unanue “Ex sede del Gobierno Regional de Tacna” en el distrito de Tacna, utilizando la Estación Móvil de Monitoreo de Calidad de aire del Gobierno Regional de Tacna.

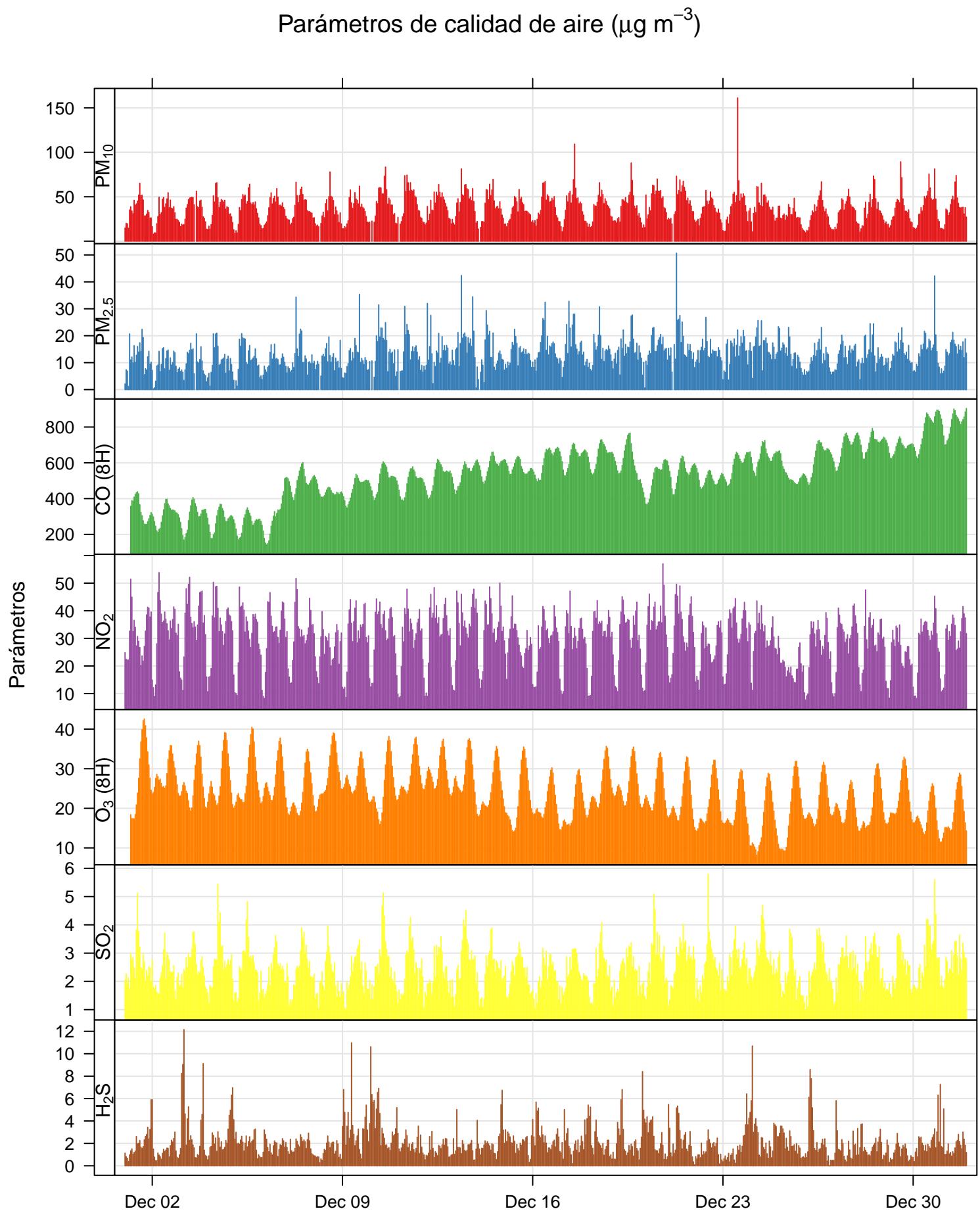
Figura 1: Mapa de Ubicación de la estación UNANUE



## 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

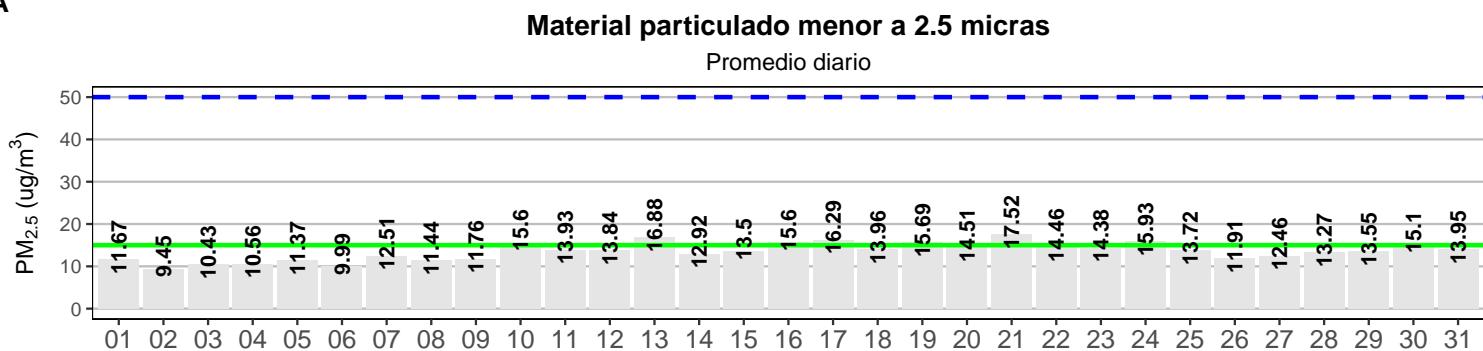
### 2.1.1 Concentraciones diarias de los parámetros monitoreados

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).

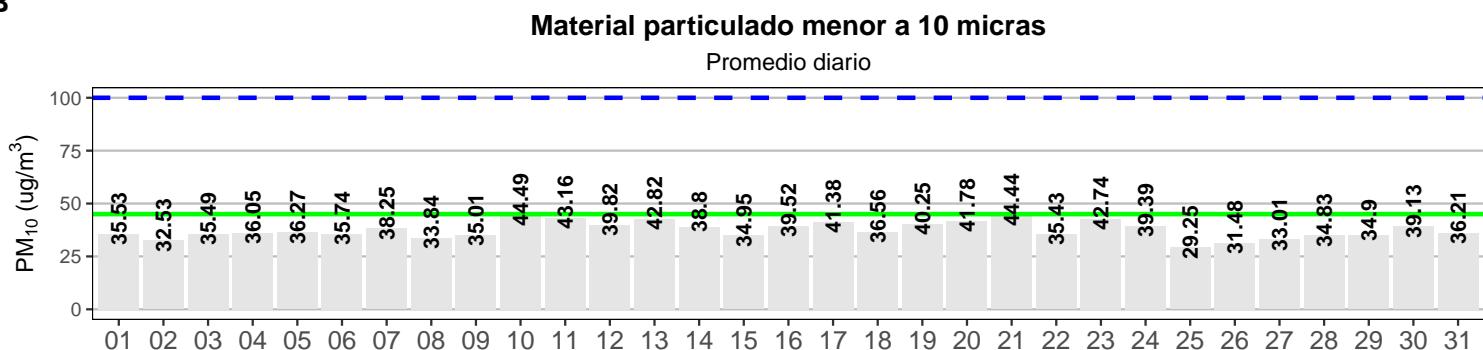
Así mismo se compara con los niveles recomendados de las Directrices de la OMS sobre la calidad del aire, la cual ofrece recomendaciones cuantitativas relativas a la salud para la gestión de la calidad del aire.

Figura 3: Comparación de concentraciones diarias con el ECA-aire del 01 de diciembre al 31 de diciembre

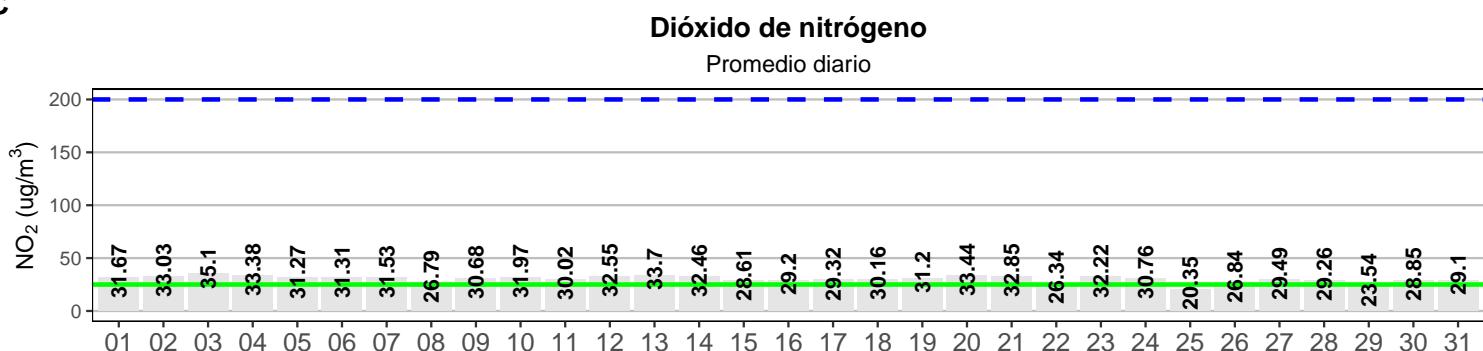
A



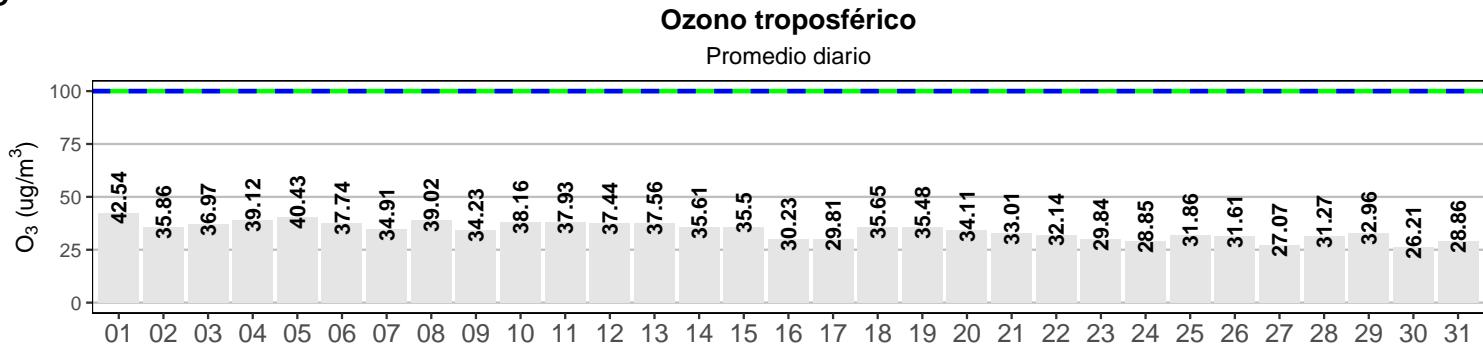
B



C



D



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 de concentraciones diarias con el ECA-aire

Fecha	SO2	H2S	CO (1h)	CO (8h)
01-12	2.6	1.9	341.3	336.8
02-12	2.3	1.5	310.6	301.4
03-12	2.6	3.5	301.3	305.8
04-12	2.7	2.5	284.0	279.1
05-12	2.5	2.2	265.9	264.2
06-12	2.4	1.8	303.0	339.3
07-12	2.4	1.8	500.1	502.6
08-12	2.1	1.3	441.4	425.6
09-12	2.2	3.5	458.4	466.9
10-12	2.7	3.8	507.7	508.9
11-12	2.4	2.1	492.0	490.5
12-12	2.3	1.5	520.1	528.0
13-12	2.7	1.7	539.2	550.7
14-12	2.4	2.1	583.2	582.4
15-12	2.3	2.0	575.5	569.6
16-12	2.2	2.7	608.4	621.9
17-12	2.3	2.0	633.6	630.9
18-12	2.3	2.3	641.6	638.1
19-12	2.4	2.1	615.2	594.8
20-12	2.7	2.8	510.1	523.0
21-12	2.7	2.3	547.1	549.3
22-12	2.6	1.5	512.2	506.8
23-12	2.6	1.7	582.8	594.8
24-12	2.9	2.9	633.0	638.6
25-12	2.2	2.1	543.9	524.7
26-12	2.5	2.3	621.5	635.5
27-12	2.5	1.6	681.5	699.3
28-12	2.6	1.7	713.5	708.8
29-12	2.4	1.3	689.0	683.5
30-12	2.9	2.1	785.9	812.1
31-12	2.6	2.0	821.5	830.5
ECA	250.0	150.0	30000.0	10000.0
OMS	40.0	NA	10000.0	35000.0

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 21 de diciembre con 17.52 ug/m<sup>3</sup> y en el caso del  $PM_{10}$  la concentración diaria más alta también se dio el día martes 10 de diciembre con 44.49 ug/m<sup>3</sup>.

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

### 2.1.2 Concentraciones horarias de los parámetros monitoreados

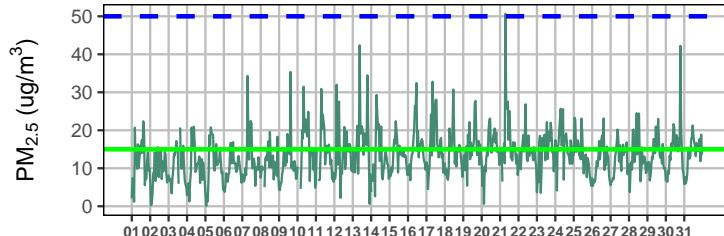
A continuación, se muestran las concentraciones horarias de los parámetros comparados de forma referencial con los Estándares de Calidad Ambiental (ECA) para aire del Perú y los niveles de la Directriz de la Organización Mundial de la Salud (OMS). El gráfico muestra que los parámetros  $PM_{2.5}$ ,  $PM_{10}$  y  $NO_2$  superan en algunas horas de monitoreo, ambos umbrales de referencia, en el caso de los parámetros  $O_3$ ,  $SO_2$ ,  $H_2S$  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 01 de diciembre al 31 de diciembre

A

### Material particulado menor a 2.5 micras

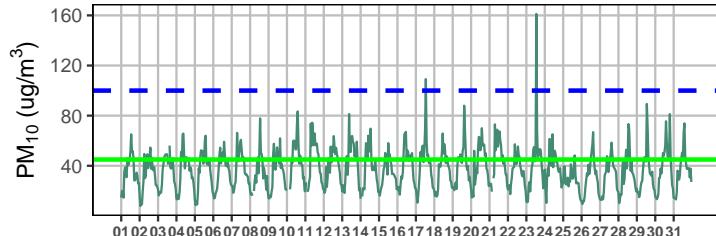
Promedio horario



B

### Material particulado menor a 10 micras

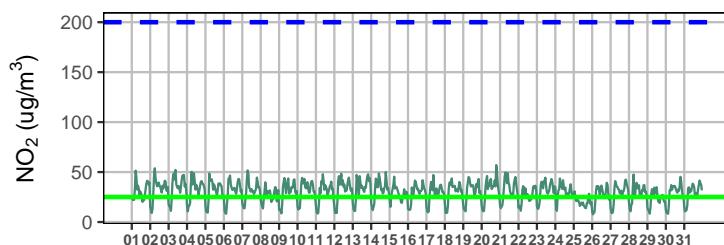
Promedio horario



C

### Dióxido de nitrógeno

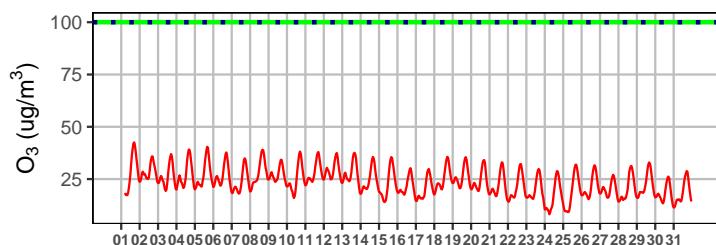
Promedio horario



D

### Ozono troposférico

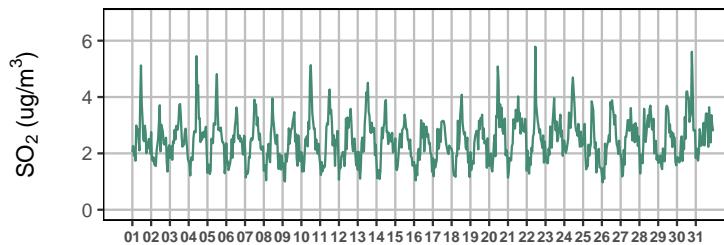
Promedio horario



E

### Dióxido de azufre

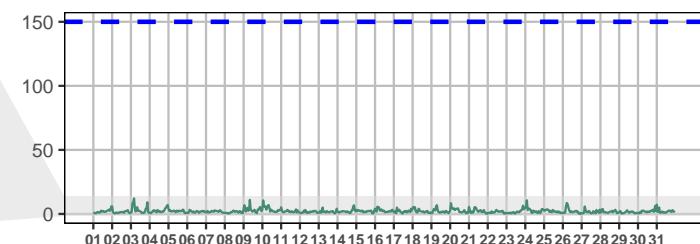
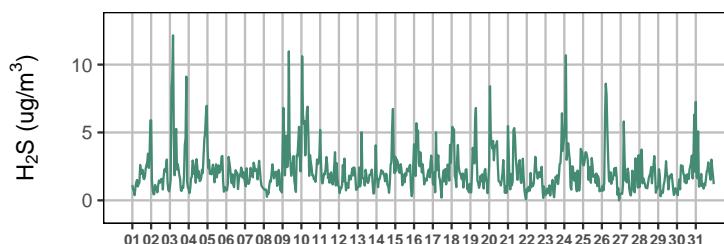
Promedio horario



F

### Sulfuro de hidrógeno

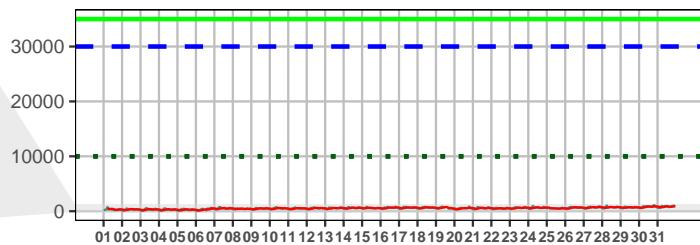
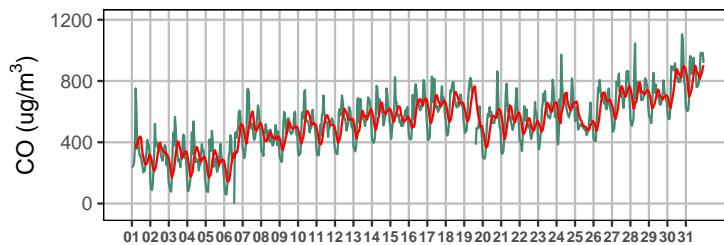
Promedio horario



G

### Monóxido de carbono

Promedio horario

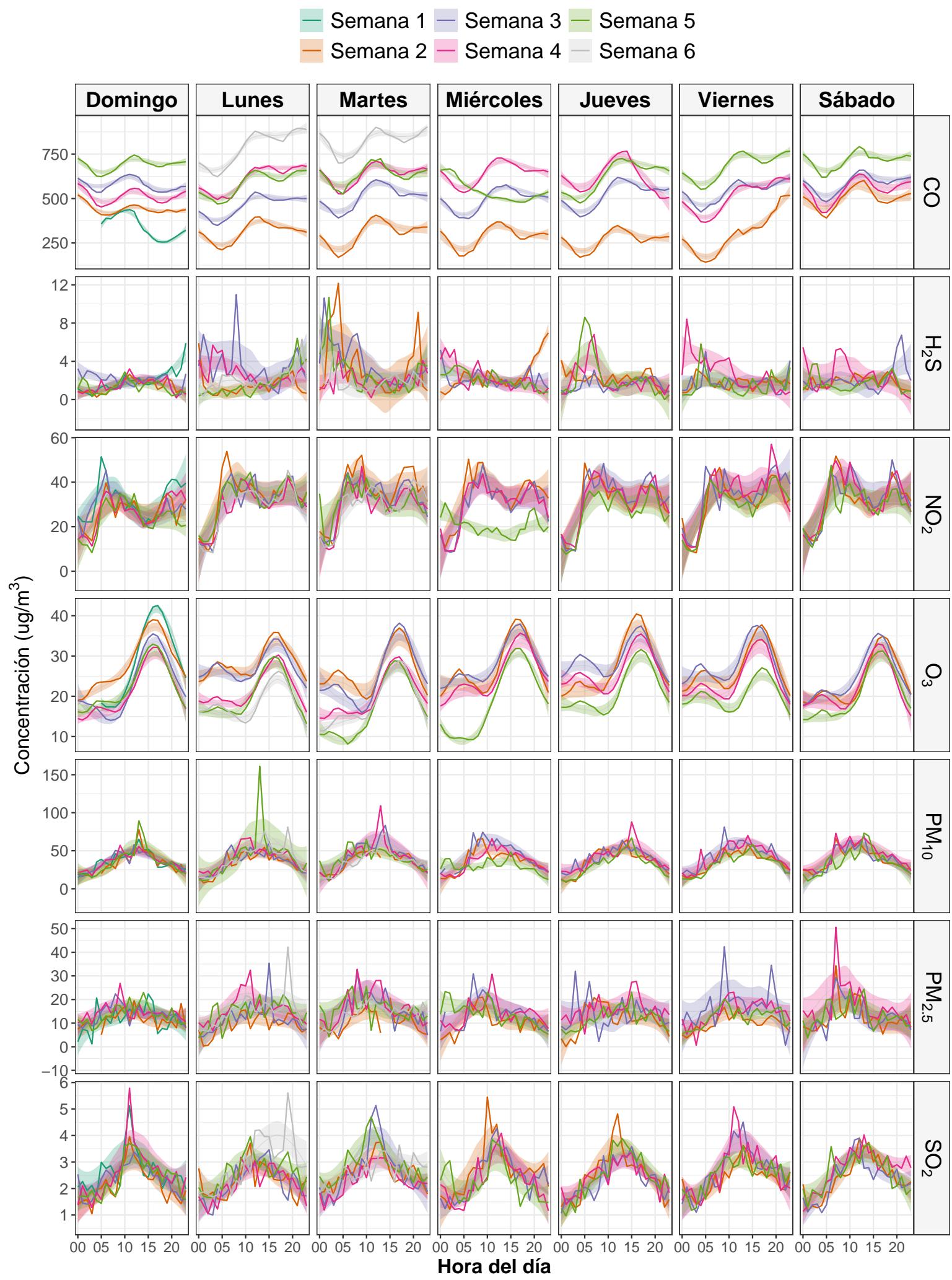


### Leyenda

Media aritmética      ECA      OMS

Media móvil      ECA(8h)      OMS(8h)

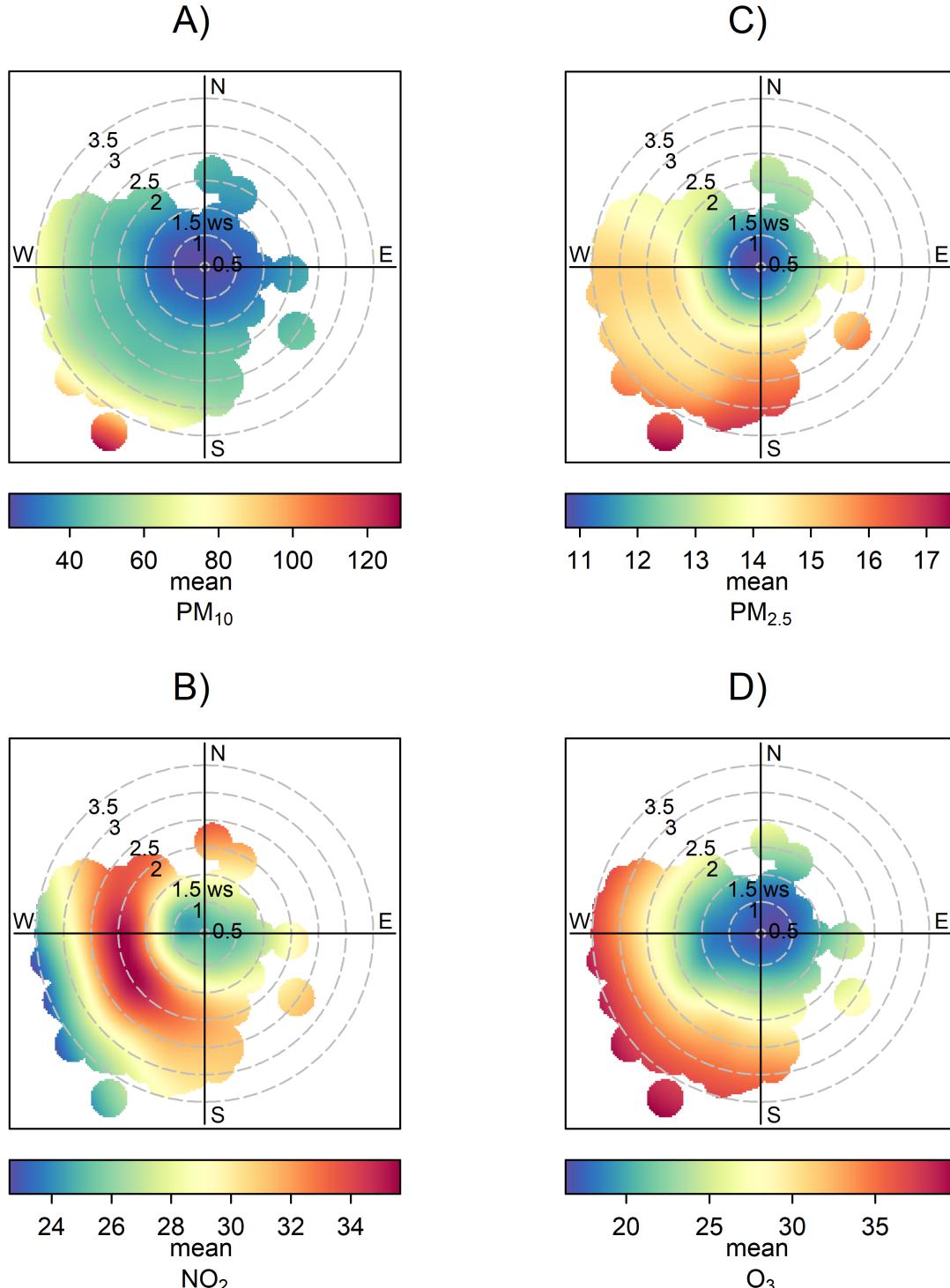
Figura 5: Comportamiento semanal de datos horarios - 01 de diciembre al 31 de diciembre



## 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 presenta mayores concentraciones con velocidad de viento mayores a 1.5 m/s los cuales provienen principalmente de dirección suroeste, en el caso del  $PM_{2.5}$  las mayores concentraciones también se dan a mayores niveles de velocidad del viento, y en mayor medida de dirección suroeste. Así mismo, según el gráfico, las mayores concentraciones de  $NO_2$  se presentan a velocidades de viento mayores a 1.5 m/s, principalmente de dirección suroeste. Las mayores concentraciones de  $O_3$  se presentan con valores de velocidad de viento mayores a 1.5 m/s y provenientes con mayor predominancia de dirección noroeste, oeste y también de dirección suroeste.

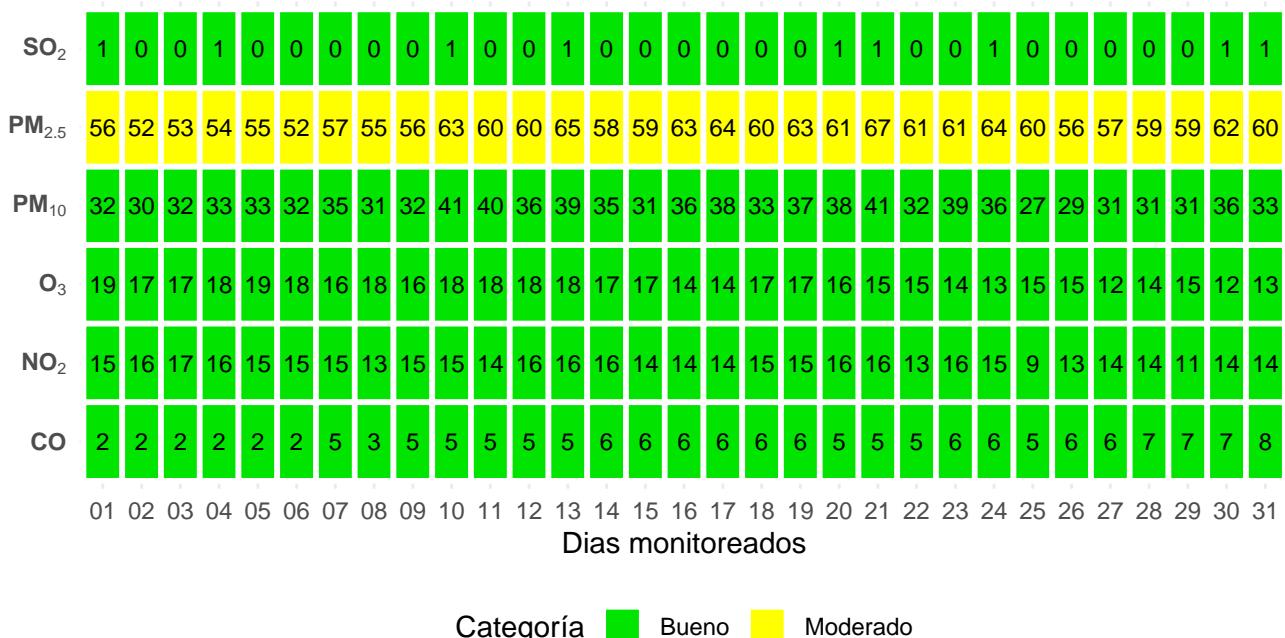
Figura 6: Gráficos polares de los principales parámetros evaluados



## 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 01 al 31 de diciembre del 2024 presenta estados de calidad de aire “**Bueno**” en los parámetros  $PM_{10}$ ,  $NO_2$ ,  $O_3$ ,  $SO_2$ , 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.

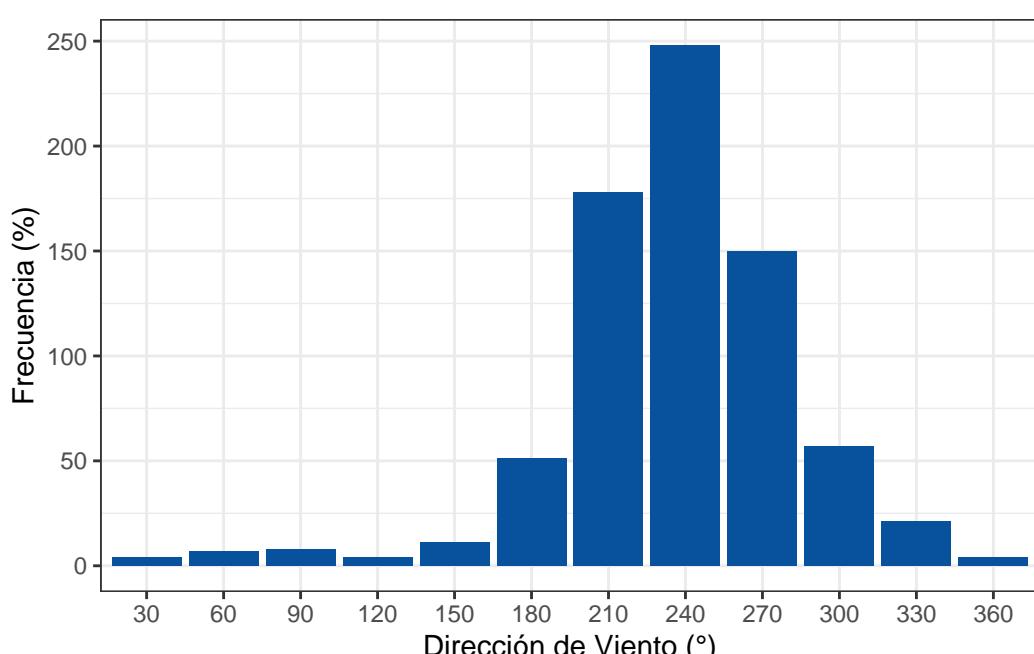
Figura 7: Índice de Calidad de Aire - 01 de diciembre al 31 de diciembre



## 3 Parámetros meteorológicos

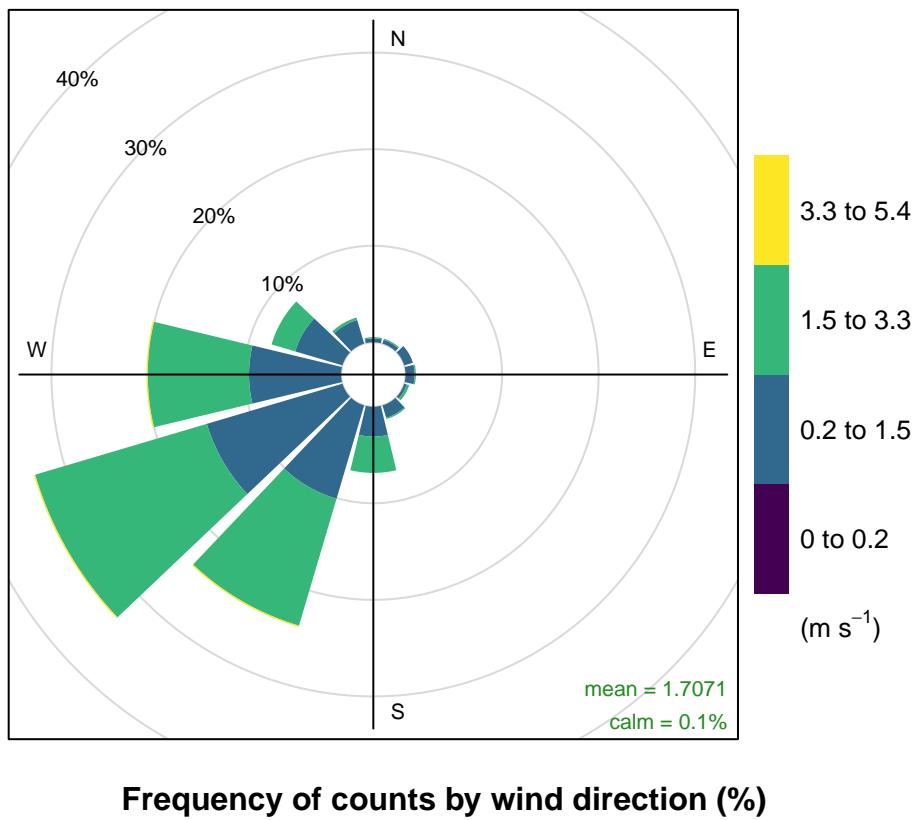
El siguiente gráfico muestra la distribución de los vientos en intervalos de 30 grados sexagesimales, de manera que, la dirección predominante del viento se da a los 240 grados en sentido horario.

Figura 8: Distibución de la dirección de los vientos



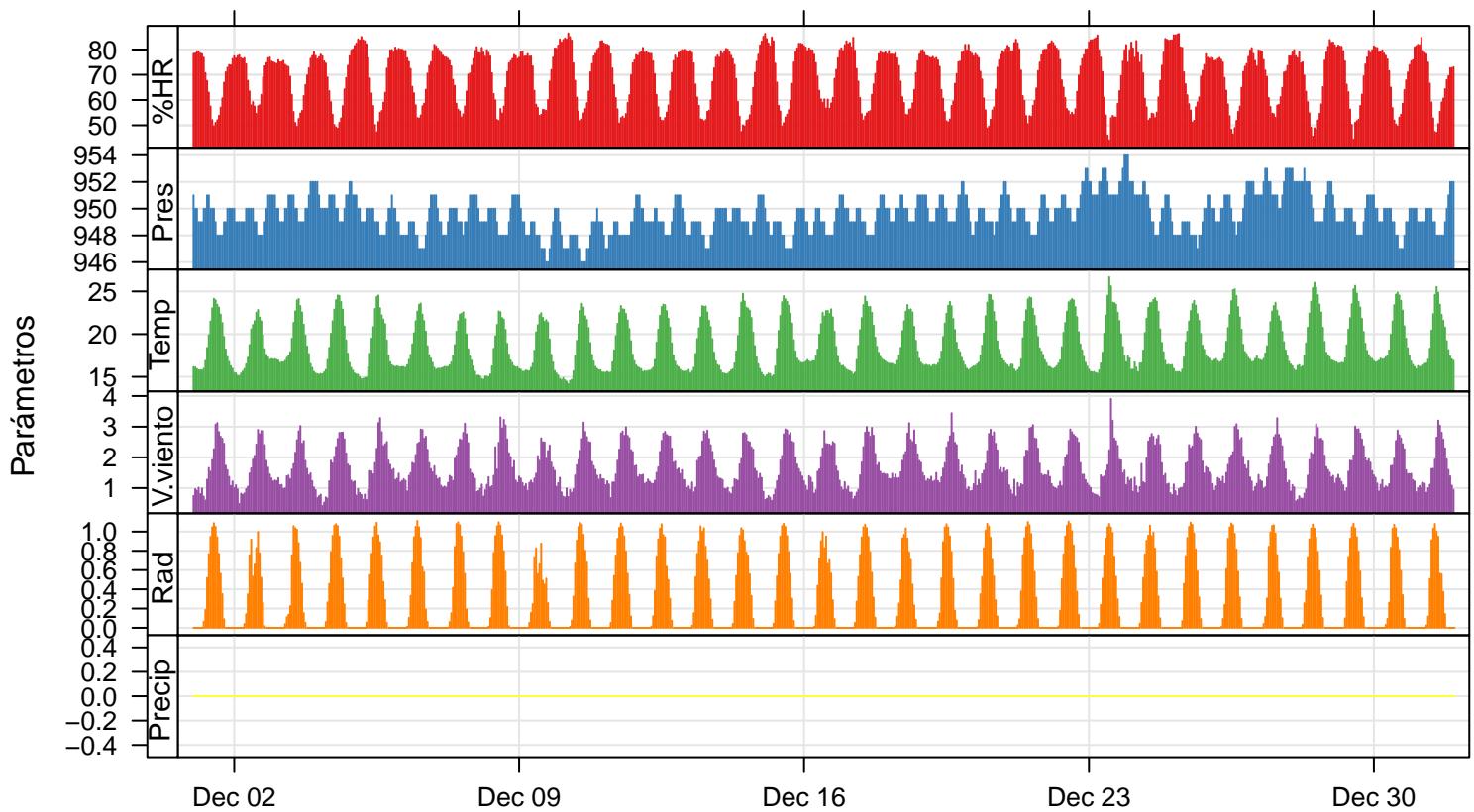
Así también se presenta el gráfico de rosa de viento donde se evidencia que el promedio de velocidades es de 1.71 m/s. De acuerdo con los rangos propuestos por la OMM (2023), los rangos de velocidades de viento en este periodo de monitoreo, se encuentran en las categorías de “brisa muy débil” y “brisa débil”.

Figura 9: Rosa de vientos



A continuación, se presenta la información obtenida durante el periodo de monitoreo 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 21 de diciembre con 17.52 ug/m<sup>3</sup> y en el caso del  $PM_{10}$  la concentración diaria más alta se dio el martes 10 de diciembre con 44.49 ug/m<sup>3</sup>.
- Los contaminantes gaseosos  $NO_2$ ,  $O_3$ ,  $SO_2$ ,  $H_2S$  y CO no superaron sus respectivos ECA-aire. Asimismo, la mayor concentración de  $NO_2$  se registró el viernes 13 de diciembre del 2024 con 33.7 ug/m<sup>3</sup> y de  $O_3$  el domingo 1 de diciembre con 42.54 ug/m<sup>3</sup>.
- 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 del parámetro  $PM_{2.5}$ ). Asimismo, para el parámetro  $PM_{2.5}$  presenta estado de calidad del aire “**Moderado**” en todos los días de monitoreo .
- Respecto a la comparación con las Directrices de la Organización Mundial de la Salud (OMS) sobre la calidad del aire, los parámetros  $PM_{2.5}$  y  $NO_2$  superan sus valores de referencia respectivos.
- En cuanto a los parámetros meteorológicos se destaca la predominancia del viento suroeste (240°) y el valor medio de la velocidad del viento en 1.71 m/s.

## 5 Referencias

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# **ANEXOS**

TABLA : HOJA DE DATOS - TEMPERATURA (°C)



**GRRNyGA**  
GERENCIA REGIONAL  
DE RECURSOS NATURALES  
Y GESTIÓN AMBIENTAL

<b>Ciudad</b>	: Tacna	<b>Periodo</b>	: 01 al 31 de diciembre
<b>Nombre/Número de la Estación</b>	: UNANUE	<b>Año</b>	: 2024
<b>Ubicación</b>	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	<b>Responsable</b>	: GORE - TACNA
<b>Equipo de Muestreo</b>	: Sensor de Temperatura del Aire	<b>Tipo de Data</b>	: Horario
<b>Última Calibración del Equipo</b>	: agosto - 2024	<b>Unidades</b>	: °C
<b>Coordinadas UTM (WGS 84)</b>		<b>Límite de Detección</b>	: ---°C
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	16.1	16.1	15.9	15.8	15.8	15.8	16.0	16.9	18.4	19.9	21.5	23.0	24.2	24.0	23.5	23.1	22.3	21.3	19.7	18.2	17.3	16.8	16.3	16.0	18.9	24.2	15.8
02/12/2024	15.5	15.4	15.1	15.1	15.4	15.6	15.9	16.5	17.3	18.7	20.6	21.1	21.5	22.5	22.8	22.0	21.5	19.9	18.3	17.6	17.3	17.0	17.1	17.0	18.2	22.8	15.1
03/12/2024	17.1	17.0	16.9	16.6	16.7	16.7	16.9	17.2	17.5	17.9	19.5	21.3	22.7	24.0	24.1	23.3	22.6	21.1	19.9	18.6	17.7	16.5	16.1	15.6	18.9	24.1	15.6
04/12/2024	15.4	15.3	15.3	15.4	15.3	15.5	15.8	17.0	18.4	20.1	21.5	22.9	24.0	24.6	24.5	23.8	22.9	20.9	19.3	17.7	16.7	16.1	15.7	15.4	18.7	24.6	15.3
05/12/2024	15.3	15.3	15.0	14.7	14.8	14.9	14.9	16.1	17.7	19.5	20.8	23.0	24.4	24.5	23.1	22.2	21.7	21.2	19.3	17.5	16.7	16.4	16.2	16.2	18.4	24.5	14.7
06/12/2024	16.3	16.2	16.1	16.2	16.1	16.1	16.4	17.0	17.6	18.8	20.1	21.5	22.7	23.5	23.6	22.3	21.5	20.3	18.6	17.5	17.2	16.7	16.1	15.9	18.5	23.6	15.9
07/12/2024	16.0	16.0	16.0	16.1	16.2	16.2	16.4	16.7	17.5	18.7	20.3	21.5	22.5	22.3	22.4	22.6	21.8	20.0	18.3	17.4	16.9	16.2	15.6	15.1	18.0	22.6	15.1
08/12/2024	15.2	15.1	14.8	14.7	15.1	15.0	15.0	15.3	16.2	18.3	19.8	21.1	22.7	22.6	21.9	21.7	20.5	18.9	17.6	16.9	16.6	16.2	16.1	16.1	17.6	22.7	14.7
09/12/2024	15.9	15.8	15.6	15.6	15.8	15.7	15.7	16.1	16.6	18.1	20.2	21.1	22.2	22.5	21.9	21.5	21.7	21.4	19.4	17.6	16.7	15.7	15.4	15.2	18.0	22.5	15.2
10/12/2024	14.8	14.6	14.9	14.6	14.5	14.2	14.5	14.7	15.7	17.5	19.2	21.1	22.7	23.6	23.1	22.1	21.7	20.7	19.0	17.6	16.8	16.2	16.0	15.8	17.7	23.6	14.2
11/12/2024	15.8	15.5	15.5	15.6	15.5	15.5	15.5	16.7	18.1	19.8	21.2	22.5	23.3	22.9	22.9	22.4	21.6	20.6	19.2	17.6	16.9	16.4	16.1	16.0	18.5	23.3	15.5
12/12/2024	15.9	15.6	15.7	15.6	15.7	15.7	15.9	16.1	17.0	19.0	20.5	22.2	23.2	23.5	23.4	22.7	21.8	20.8	18.9	17.5	16.8	16.3	16.1	15.8	18.4	23.5	15.6
13/12/2024	15.7	15.6	15.6	15.8	15.4	15.6	16.1	17.7	19.4	20.7	22.0	23.3	23.2	23.3	22.6	21.6	20.8	19.4	17.9	16.9	16.4	16.3	15.7	18.4	23.3	15.4	
14/12/2024	15.4	15.4	15.3	15.4	15.5	15.8	15.9	16.6	18.0	19.8	21.9	23.7	24.7	23.8	23.1	23.0	22.8	21.9	20.2	18.6	17.3	16.5	15.9	15.5	18.8	24.7	15.3
15/12/2024	15.2	15.0	15.2	15.4	15.4	15.0	15.2	16.2	18.3	20.4	22.2	23.8	24.5	24.1	23.8	23.4	22.4	21.3	19.3	18.0	17.2	16.9	16.7	16.6	18.8	24.5	15.0
16/12/2024	16.7	16.8	17.0	16.8	16.7	16.8	16.9	17.4	18.2	20.0	21.2	22.5	22.1	22.7	22.7	22.4	22.9	22.0	20.3	18.5	17.4	16.6	16.3	16.3	19.0	22.9	16.3
17/12/2024	16.1	15.9	15.7	15.7	15.5	15.3	15.5	17.0	18.6	20.5	21.9	23.4	24.4	23.8	23.2	22.5	21.0	19.6	18.5	17.8	17.4	17.1	16.9	19.0	24.4	15.3	
18/12/2024	16.8	16.6	16.6	16.5	16.6	16.4	16.4	16.9	17.5	18.4	20.4	21.5	22.6	23.4	22.8	22.9	22.6	20.9	19.2	18.0	17.1	16.7	16.5	16.3	18.7	23.4	16.3
19/12/2024	16.4	16.3	16.3	16.2	16.4	16.4	16.3	16.6	17.0	18.0	19.7	21.3	22.4	23.3	23.8	23.3	21.8	20.5	19.0	18.2	17.9	17.2	16.8	16.3	18.6	23.8	16.2
20/12/2024	16.0	15.8	15.9	16.1	16.2	16.3	16.5	16.7	17.5	18.7	20.1	22.1	23.7	24.6	24.6	24.0	22.6	21.5	19.2	18.2	17.7	17.1	16.8	16.6	18.9	24.6	15.8
21/12/2024	16.4	16.1	16.4	16.4	15.9	15.6	15.6	16.1	17.1	19.5	21.5	22.8	24.1	24.3	24.2	23.0	22.2	21.0	19.7	18.3	18.0	17.6	17.0	16.6	19.0	24.3	15.6
22/12/2024	16.2	16.2	16.0	15.9	16.1	16.3	16.6	16.9	18.5	20.2	21.3	22.7	23.7	23.9	24.1	24.0	23.2	22.0	20.3	18.8	18.1	17.4	16.7	16.2	19.2	24.1	15.9
23/12/2024	15.9	15.6	15.5	15.6	15.5	15.4	15.8	16.6	17.9	20.1	22.2	24.5	26.7	25.6	23.7	23.7	23.5	22.5	21.6	20.0	18.5	17.5	16.7	17.4	19.5	26.7	15.4
24/12/2024	17.2	15.8	15.9	16.7	16.1	15.6	16.6	16.6	18.1	20.2	21.8	23.1	23.7	23.7	24.0	24.2	23.8	22.6	20.6	19.0	17.9	16.9	16.4	16.4	19.3	24.2	15.6
25/12/2024	16.3	16.4	16.0	15.6	15.6	15.6	15.5	15.9	17.3	19.1	20.3	21.5	22.7	23.5	23.9	23.4	22.4	21.6	20.0	18.7	18.2	17.5	17.3	17.1	18.8	23.9	15.5
26/12/2024	16.9	16.8	17.0	17.1	16.9	16.7	16.8	17.0	17.8	19.1	20.7	22.3	23.9	25.2	25.3	24.5	23.2	22.0	20.5	18.8	17.9	17.7	17.2	17.0	19.5	25.3	16.7
27/12/2024	16.7	16.8	17.1	17.4	17.1	17.0	16.9	17.1	17.8	18.6	20.1	21.4	22.7	23.3	23.7	22.8	22.1	21.5	20.3	19.1	18.1	17.4	16.8	16.5	19.1	23.7	16.5
28/12/2024	16.3	15.9	15.7	16.3	16.4	16.1	16.3	17.5	18.9	20.8	22.4	23.8	25.4	26.0	25.4	24.6	23.5	22.6	20.8	19.1	17.8	17.5	17.3	17.0	19.7	26.0	15.7
29/12/2024	16.9	16.8	16.7	16.6	16.6	16.7	16.6	17.2	18.7	20.5	21.9	23.5	25.3	25.7	24.8	23.8	23.1	21.8	20.3	18.9	18.1	17.5	17.2	17.1	19.7	25.7	16.6
30/12/2024	16.8	16.7	16.8	16.9	17.2	17.0	17.1	17.3	17.5	18.1	20.0	21.5	23.4	24.6	24.9	24.5	23.9	22.8	20.9	19.5	18.4	17.5	16.8	16.4	19.4	24.9	16.4
31/12/2024	16.2	15.9	16.3	16.2	16.2	16.3	16.5	16.6	17.0	18.3	20.4	22.4	24.6	25.5	24.9	23.5	22.3	21.6	20.8	19.2	18.1	17.4	17.1	16.9	19.2	25.5	15.9
Prom.	16.1	15.9	15.9	15.9	15.9	15.9	16.0	16.6	17.6	19.2	20.8	22.3	23.5	23.9	23.7	23.1	22.4	21.3	19.7	18.3	17.5	16.9	16.5	16.3			
Max.	17.2	17.0	17.1	17.4	17.2	17.0	17.1	17.5	18.9	20.8	22.4	24.5	26.7	26.0	25.4	24.6	23.9	22.8	21.6	20.0	18.5	17.7	17.3	17.4			
Min.	14.8	14.6	14.8	14.6	14.5	14.2	14.5	14.7	15.7	17.5	18.7	20.3	21.5	22.3	21.9	21.5	20.5	18.9	17.6	16.9	16.6	15.7	15.4	15.1			

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	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: Sensor de Humedad Relativa	Tipo de Data	: Horario
Última Calibración del Equipo	: agosto - 2024	Unidades	: %
Coordenadas UTM (WGS 84)		Límite de Detección	: ---%
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	78.3	78.5	79.3	79.2	78.4	78.3	76.8	70.7	67.6	63.0	57.5	52.1	49.6	51.0	52.0	53.8	57.1	60.7	66.9	71.0	72.8	73.9	73.8	76.3	67.4	79.3	49.6
02/12/2024	77.4	76.5	77.5	77.8	76.6	76.2	76.6	74.2	67.7	63.5	57.9	59.2	57.5	54.6	57.6	58.0	62.1	69.0	73.4	74.7	76.6	76.9	75.2	75.0	69.6	77.8	54.6
03/12/2024	74.6	74.3	75.9	74.9	75.0	75.6	74.0	73.5	73.1	69.3	62.1	55.3	51.0	49.5	52.5	54.7	55.8	61.6	66.0	69.8	72.6	76.4	77.5	79.1	67.7	79.1	49.5
04/12/2024	77.5	76.2	77.0	78.0	77.4	75.4	74.5	69.0	63.5	59.2	54.2	50.1	49.2	48.8	51.1	52.8	57.6	64.3	68.7	73.7	77.4	79.7	80.1	81.5	67.4	81.5	48.8
05/12/2024	82.4	84.0	83.6	85.0	83.7	83.3	82.1	76.7	68.6	62.6	57.7	50.1	47.2	51.3	55.0	55.7	59.0	62.9	72.5	76.4	79.7	79.8	78.8	80.8	70.8	85.0	47.2
06/12/2024	79.8	80.3	80.0	80.0	79.5	79.4	76.6	75.2	72.3	65.3	62.7	58.0	52.9	52.8	54.0	57.6	58.6	64.1	70.5	73.6	75.0	79.5	81.9	81.3	70.4	81.9	52.8
07/12/2024	80.4	79.5	78.6	77.6	77.0	76.9	76.4	75.5	73.4	68.1	65.7	58.6	56.2	55.5	53.2	54.4	57.5	63.4	70.1	70.5	73.6	76.3	79.5	81.0	70.0	81.0	53.2
08/12/2024	78.6	78.5	80.7	78.8	77.2	79.8	78.7	77.3	70.7	62.4	60.0	52.1	51.8	56.5	54.7	57.5	64.8	71.2	74.6	75.4	76.3	77.9	77.5	76.2	70.4	80.7	51.8
09/12/2024	76.9	79.0	79.2	77.2	77.3	78.3	77.2	77.3	73.4	63.7	58.2	57.0	53.8	54.2	56.2	56.0	55.8	60.0	67.4	72.0	76.9	80.5	80.3	81.6	69.5	81.6	53.8
10/12/2024	84.0	82.8	83.8	84.4	84.0	86.4	84.9	83.6	74.6	67.7	61.0	55.5	51.7	52.3	54.8	56.5	58.8	63.4	71.0	74.3	77.3	78.3	79.9	80.6	72.2	86.4	51.7
11/12/2024	83.2	83.4	82.4	82.0	81.9	81.5	78.1	72.6	66.0	60.8	56.4	50.7	52.9	53.4	52.7	54.5	58.9	61.9	69.9	74.6	75.8	77.9	77.5	78.6	69.5	83.4	50.7
12/12/2024	79.1	80.7	78.8	79.0	78.6	78.4	78.3	75.4	70.3	62.1	57.2	53.1	51.9	51.7	52.9	55.1	57.9	63.5	70.8	75.5	77.7	76.5	78.7	79.2	69.3	80.7	51.7
13/12/2024	79.8	79.6	79.9	79.4	79.0	79.5	78.7	74.6	66.2	61.1	57.7	52.4	52.2	51.6	52.1	55.4	55.8	59.9	67.2	72.6	76.9	77.7	76.9	79.4	68.6	79.9	51.6
14/12/2024	78.3	79.3	80.3	80.0	79.0	77.6	76.3	73.9	68.4	59.3	53.4	47.4	50.0	49.6	51.8	52.1	54.1	57.7	64.9	70.8	75.2	78.0	81.7	83.2	67.6	83.2	47.4
15/12/2024	85.1	86.2	84.2	82.4	81.3	84.8	83.3	74.5	67.0	57.7	55.5	49.5	50.9	53.2	54.3	56.1	59.7	66.5	74.9	78.9	80.5	82.3	82.3	82.1	71.4	86.2	49.5
16/12/2024	81.4	80.8	79.4	80.5	79.7	79.7	78.0	74.7	69.4	63.7	60.3	58.9	60.3	56.7	60.2	56.6	58.7	60.9	68.5	72.0	76.6	79.8	80.5	79.5	70.7	81.4	56.6
17/12/2024	81.8	83.3	82.2	82.7	80.9	84.7	79.6	72.3	67.3	60.8	54.5	52.0	53.5	54.7	55.3	55.7	62.1	66.3	70.4	75.2	78.2	79.4	78.6	78.5	70.4	84.7	52.0
18/12/2024	79.0	78.1	79.4	78.0	78.1	77.9	78.5	76.6	73.5	67.4	61.2	58.9	54.3	54.1	56.3	56.4	58.7	64.1	70.7	75.4	78.1	79.6	79.8	78.7	70.5	79.8	54.1
19/12/2024	77.5	77.3	76.8	76.7	77.1	76.2	76.7	75.7	73.2	64.1	60.6	55.3	51.7	51.2	52.4	57.7	59.5	66.5	70.4	75.0	75.3	78.8	79.2	81.9	69.4	81.9	51.2
20/12/2024	79.6	81.9	79.0	78.4	77.3	78.3	77.5	76.7	71.3	68.2	60.7	56.0	48.8	49.4	52.3	55.9	57.2	64.2	72.9	75.8	77.9	79.4	78.8	80.2	69.9	81.9	48.8
21/12/2024	81.5	80.9	79.2	79.4	82.6	83.9	82.5	80.1	71.7	61.6	59.7	53.7	50.5	53.6	53.4	57.7	59.7	64.6	71.5	74.9	77.7	79.8	80.0	80.0	70.9	83.9	50.5
22/12/2024	82.0	82.4	83.3	82.6	81.5	80.4	79.7	76.0	67.9	65.0	60.8	56.5	55.6	54.1	55.0	54.2	56.4	63.3	69.8	73.3	76.2	77.8	80.1	80.1	70.6	83.3	54.1
23/12/2024	82.9	83.7	83.7	84.1	84.5	85.6	79.7	76.9	71.1	61.0	54.0	46.0	44.1	52.8	53.8	53.2	53.1	58.5	63.6	69.6	75.3	79.8	81.8	74.9	68.9	85.6	44.1
24/12/2024	79.8	82.8	80.5	76.8	83.4	78.6	74.8	77.7	70.6	60.6	57.2	51.9	52.6	54.7	54.5	53.0	55.1	61.1	67.6	73.6	78.8	84.2	83.9	83.5	69.9	84.2	51.9
25/12/2024	83.6	83.7	85.7	85.6	85.9	86.2	80.9	80.7	71.1	66.3	61.9	58.4	55.9	51.2	51.8	57.2	59.1	61.1	69.3	71.6	73.9	78.2	76.8	76.4	71.4	86.2	51.2
26/12/2024	76.9	76.5	75.5	75.6	76.2	76.7	76.0	74.9	68.8	63.8	58.3	53.6	48.3	46.4	49.0	51.8	55.3	57.5	64.9	71.2	73.3	74.3	77.1	79.7	66.7	79.7	46.4
27/12/2024	80.6	78.3	75.6	73.3	79.7	79.5	79.1	75.9	71.8	69.2	60.8	57.3	54.7	54.5	53.0	57.8	58.1	61.2	64.8	70.9	71.3	73.5	77.3	77.3	69.0	80.6	53.0
28/12/2024	78.9	79.8	77.4	76.6	79.1	74.6	75.0	69.7	63.3	59.2	54.8	49.1	45.6	48.9	48.1	51.9	54.6	58.3	65.1	75.7	78.8	81.1	83.8	82.7	67.2	83.8	45.6
29/12/2024	82.8	81.7	80.8	81.6	81.2	81.1	79.4	75.4	66.2	63.2	56.3	50.2	44.4	51.1	51.7	52.3	57.7	62.2	69.4	74.1	76.9	79.5	78.6	79.8	69.1	82.8	44.4
30/12/2024	81.3	80.8	80.6	78.9	79.2	79.7	78.4	77.5	76.1	71.5	65.0	56.8	52.0	50.3	49.6	53.1	54.2	58.6	64.0	67.8	70.9	73.9	75.4	75.8	68.8	81.3	49.6
31/12/2024	80.9	81.4	81.9	81.7	84.7	79.4	78.7	78.1	74.9	66.6	59.1	52.8	47.4	47.1	50.5	55.4	59.1	60.6	64.3	67.9	69.5	72.6	72.7	73.0	68.3	84.7	47.1
Prom.	80.2	80.5	80.1	79.6	80.0	79.9	78.3	75.7	70.1	63.8	58.8	53.9	51.6	52.2	53.3	55.2	57.8	62.6	69.0	73.2	76.0	78.3	79.1	79.4			
Max.	85.1	86.2	85.7	85.6	85.9	86.4	84.9	83.6	76.1	71.5	65.7	59.2	60.3	56.7	60.2	58.0	64.8	71.2	74.9	78.9	80.5	84.2	83.9	83.5			
Min.	74.6	74.3	75.5	73.3	75.0	74.6	74.0	69.0	63.3	57.7	53.4	46.0	44.1	46.4	48.1	51.8	53.1	57.5	63.6	67.8	69.5	72.6	72.7	73.0	68.3	84.7	47.1

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

<b>Ciudad</b>	: Tacna	<b>Periodo</b>	: 01 al 31 de diciembre
<b>Nombre/Número de la Estación</b>	: UNANUE	<b>Año</b>	: 2024
<b>Ubicación</b>	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	<b>Responsable</b>	: GORE - TACNA
<b>Equipo de Muestreo</b>	: Sensor de Velocidad y Dirección del Aire - WINDSONIC I	<b>Tipo de Data</b>	: Horario
<b>Última Calibración del Equipo</b>	: julio - 2024	<b>Unidades</b>	: m/s
<b>Coordenadas UTM (WGS 84)</b>		<b>Límite de Detección</b>	: ---m/s
Este	: 366893		
Norte	: 8008890		

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.	
01/12/2024	0.7	1.0	0.9	1.0	0.8	1.0	0.7	0.6	1.3	1.7	1.5	1.9	2.3	3.1	3.1	2.8	2.7	2.6	2.4	1.7	1.6	1.4	1.1	1.2	1.6	3.1	0.6	
02/12/2024	1.0	1.1	1.0	0.5	0.8	0.8	0.8	1.0	1.0	1.5	1.6	1.9	2.1	2.4	2.9	2.8	2.9	2.9	2.4	1.9	1.7	1.4	1.3	1.2	1.6	2.9	0.5	
03/12/2024	1.3	1.2	1.3	1.1	1.1	1.0	1.0	1.4	1.4	1.3	1.6	1.8	2.2	2.6	2.9	3.0	2.4	2.5	1.9	1.6	1.4	1.5	1.2	1.0	1.7	3.0	1.0	
04/12/2024	0.9	0.7	0.7	0.8	0.4	0.5	0.7	0.7	1.2	1.9	1.8	2.0	2.3	2.6	2.8	2.8	2.8	2.6	2.1	1.8	1.7	1.2	1.2	1.2	1.6	2.8	0.4	
05/12/2024	0.8	1.0	0.8	0.8	0.6	0.8	0.6	0.9	1.6	1.5	1.5	1.8	2.3	3.1	3.3	2.8	2.4	2.4	2.5	1.9	1.8	1.6	1.6	1.3	1.7	3.3	0.6	
06/12/2024	1.3	1.5	1.2	1.2	1.3	1.2	0.9	1.4	1.5	1.8	1.8	2.1	2.4	2.5	2.9	2.9	2.6	2.7	2.3	1.8	1.6	1.5	1.7	1.4	1.8	2.9	0.9	
07/12/2024	1.3	1.3	1.1	1.0	1.1	1.0	1.2	1.4	1.4	1.2	2.0	2.1	2.3	2.6	2.6	2.8	3.1	2.8	2.5	1.6	1.5	1.4	1.3	0.9	1.7	3.1	0.9	
08/12/2024	0.9	1.0	1.1	0.7	0.9	1.1	1.4	1.0	1.1	1.4	2.3	1.6	2.5	3.3	2.9	3.2	3.0	2.6	2.1	2.0	1.7	1.9	1.3	1.2	1.8	3.3	0.7	
09/12/2024	1.4	1.3	1.2	1.0	1.1	0.9	1.2	1.2	1.3	1.5	2.0	1.9	2.6	2.5	2.5	2.0	2.2	2.4	1.8	1.7	1.6	1.0	1.2	1.6	2.6	0.9		
10/12/2024	1.3	0.9	0.7	0.7	1.0	0.7	0.9	0.9	1.0	1.4	1.7	1.9	2.2	2.6	3.1	2.8	2.7	2.5	2.5	1.9	1.7	1.6	1.4	1.3	1.6	3.1	0.7	
11/12/2024	1.4	1.3	1.3	1.1	1.2	1.1	0.7	1.2	1.2	1.4	1.9	2.3	2.8	2.8	2.7	3.0	2.7	2.6	2.2	2.2	1.7	1.7	1.4	1.4	1.4	1.8	3.0	0.7
12/12/2024	1.4	1.4	1.1	1.2	1.3	1.2	1.1	1.1	1.2	1.5	1.7	2.2	2.5	2.8	2.8	2.7	2.7	2.7	2.3	1.8	1.9	1.6	1.6	1.5	1.8	2.8	1.1	
13/12/2024	1.6	1.3	1.3	1.0	1.1	0.9	1.2	0.9	1.0	1.9	2.0	2.0	2.5	2.8	2.8	2.9	2.6	2.4	2.2	1.9	1.6	1.4	1.3	1.3	1.7	2.9	0.9	
14/12/2024	1.3	1.0	1.0	0.9	0.8	1.0	1.3	1.3	1.2	1.8	1.9	2.8	2.8	2.7	2.5	2.5	2.3	2.3	1.6	1.5	1.3	1.5	1.3	1.7	2.8	0.8		
15/12/2024	0.9	0.6	0.7	0.7	0.6	0.8	1.0	1.2	1.4	1.9	2.0	2.8	2.9	2.9	2.7	2.8	2.5	2.5	2.0	1.8	1.6	1.5	1.4	1.7	2.9	0.6		
16/12/2024	1.2	1.1	0.9	1.4	1.3	1.2	0.8	0.9	1.5	1.6	2.0	2.3	2.9	2.4	2.4	2.4	2.4	2.5	2.4	1.7	1.5	1.2	1.0	0.9	1.7	2.9	0.8	
17/12/2024	1.2	0.9	1.1	0.9	0.9	0.6	0.7	0.9	0.9	1.4	1.8	2.3	2.8	3.0	2.8	2.7	3.0	2.7	2.1	1.7	1.8	1.5	1.5	1.5	1.7	3.0	0.6	
18/12/2024	1.4	1.4	1.3	1.3	1.5	1.3	1.4	1.3	1.3	1.5	1.9	2.1	2.2	2.8	3.1	2.6	2.5	2.9	2.4	2.1	1.9	1.8	1.5	1.4	1.9	3.1	1.3	
19/12/2024	1.2	1.3	1.3	1.4	1.2	1.2	1.5	1.2	1.2	1.4	1.6	1.8	2.3	2.5	2.7	3.4	2.8	2.5	2.4	1.9	1.5	1.7	1.4	1.3	1.8	3.4	1.2	
20/12/2024	1.0	1.0	0.9	0.9	1.1	1.6	1.1	1.3	1.1	1.5	1.6	1.8	2.2	2.8	2.9	2.7	2.8	2.4	2.2	1.6	1.7	1.5	1.7	1.5	1.7	2.9	0.9	
21/12/2024	1.6	1.1	0.9	0.8	1.3	0.7	1.2	1.0	1.1	1.1	2.0	2.2	2.2	2.9	3.0	3.1	2.6	2.6	2.3	1.8	1.5	1.4	1.4	1.4	1.7	3.1	0.7	
22/12/2024	1.6	1.4	1.1	1.0	1.0	1.0	1.1	1.2	1.1	1.7	2.0	2.1	2.5	2.9	2.8	2.7	2.7	2.6	2.5	1.8	1.4	1.4	1.3	1.1	1.8	2.9	1.0	
23/12/2024	1.1	1.0	0.8	0.8	0.8	0.7	1.4	1.4	1.4	1.4	1.6	1.7	2.2	3.9	3.2	2.6	2.5	2.4	1.9	1.9	1.5	1.6	1.1	1.3	1.7	3.9	0.7	
24/12/2024	1.2	1.3	0.9	1.3	1.1	0.8	1.0	1.8	1.2	1.2	2.0	2.5	2.7	2.8	2.7	2.4	2.6	2.7	2.4	1.8	1.4	1.5	1.1	1.1	1.7	2.8	0.8	
25/12/2024	0.8	0.8	1.1	0.9	0.7	1.0	1.0	1.0	1.1	1.8	1.8	2.4	2.3	2.4	2.8	3.0	2.8	2.6	2.6	1.9	1.5	1.7	1.6	1.5	1.7	3.0	0.7	
26/12/2024	1.4	1.1	0.9	1.1	1.3	1.3	1.2	1.4	1.1	1.5	1.8	2.0	2.1	2.2	3.0	3.1	2.9	2.6	2.6	2.0	1.8	1.6	1.9	1.4	1.8	3.1	0.9	
27/12/2024	1.2	0.9	1.0	1.1	1.4	1.3	1.2	1.0	1.0	1.3	1.8	2.1	2.4	2.7	3.3	2.7	2.6	2.4	1.9	1.6	1.2	0.9	1.7	1.7	3.3	0.9		
28/12/2024	1.1	1.0	0.6	0.6	0.7	0.7	0.7	0.8	1.0	1.4	1.9	2.1	2.1	2.7	3.1	3.0	2.6	2.6	2.5	2.1	1.7	1.6	1.5	1.4	1.6	3.1	0.6	
29/12/2024	1.4	1.1	1.3	1.4	1.3	1.2	1.1	0.9	1.0	1.5	1.9	1.9	2.1	3.0	2.9	2.9	2.8	2.6	2.4	2.0	1.9	1.9	1.8	1.6	1.8	3.0	0.9	
30/12/2024	1.4	1.3	1.2	0.9	1.1	1.3	1.0	1.1	1.0	1.1	1.7	1.7	2.0	2.5	2.9	2.7	2.6	2.4	2.3	1.6	1.5	1.5	1.5	1.3	1.6	2.9	0.9	
31/12/2024	1.2	0.9	1.0	1.1	1.0	1.2	1.1	0.9	1.0	1.1	1.6	1.6	1.9	2.6	3.2	3.0	2.8	2.6	2.3	1.9	1.6	1.4	1.1	0.9	1.6	3.2	0.9	
Prom.	1.2	1.1	1.0	1.0	1.0	1.0	1.1	1.2	1.4	1.8	2.0	2.3	2.8	2.9	2.8	2.7	2.6	2.3	1.9	1.6	1.5	1.4	1.3					
Max.	1.6	1.5	1.3	1.4	1.5	1.6	1.5	1.8	1.6	1.9	2.3	2.5	2.9	3.9	3.3	3.4	3.1	2.9	2.6	2.2	1.9	1.9	1.9	1.6				
Min.	0.8	0.6	0.6	0.5	0.4	0.5	0.6	0.7	0.9	1.1	1.5	1.6	1.9	2.2	2.4	2.4	2.0	2.2	1.9	1.6	1.4	1.2	1.0	0.9	1.6			

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - RADIACIÓN SOLAR GLOBAL (kW/m<sup>2</sup>)

**GRRNyGA**  
GERENCIA REGIONAL  
DE RECURSOS NATURALES  
Y GESTIÓN AMBIENTAL

<b>Ciudad</b>	: Tacna	<b>Periodo</b>	: 01 al 31 de diciembre
<b>Nombre/Número de la Estación</b>	: UNANUE	<b>Año</b>	: 2024
<b>Ubicación</b>	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	<b>Responsable</b>	: GORE - TACNA
<b>Equipo de Muestreo</b>	: Equipo Sensor de Radiación Solar Global - CPM3	<b>Tipo de Data</b>	: Horario
<b>Última Calibración del Equipo</b>	: julio - 2024	<b>Unidades</b>	: kW/m <sup>2</sup>
<b>Coordenadas UTM (WGS 84)</b>		<b>Límite de Detección</b>	: ---kW/m <sup>2</sup>
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.5	0.8	0.9	1.0	1.1	1.1	0.9	0.8	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
02/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.8	0.9	0.5	0.7	0.8	1.0	0.8	0.5	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.0
03/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.8	1.1	1.0	1.0	0.9	0.7	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
04/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.8	1.0	1.1	1.1	1.1	0.9	0.7	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
05/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.6	0.8	0.9	1.1	1.1	1.0	0.9	0.8	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
06/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.7	0.9	1.1	1.1	1.0	0.9	0.6	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
07/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.4	0.8	1.1	1.1	1.1	1.0	0.8	0.6	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
08/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.8	1.0	1.1	1.1	1.0	0.8	0.6	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
09/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.7	0.8	0.6	0.7	0.9	0.5	0.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.2	0.9	0.0
10/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.7	0.9	1.0	1.1	1.1	1.0	0.8	0.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
11/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.8	0.9	1.0	1.1	1.1	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.4	1.1	0.0
12/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.9	1.0	1.1	1.0	0.9	0.6	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
13/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.8	0.9	1.1	1.0	1.0	0.8	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
14/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.8	1.0	1.0	1.0	0.9	0.8	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.0
15/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.8	1.0	1.1	1.1	1.0	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.4	1.1	0.0
16/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.9	1.0	0.8	1.0	0.7	0.7	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.0
17/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.8	0.9	1.0	1.1	1.0	0.9	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.4	1.1	0.0
18/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.9	1.0	1.0	0.9	0.8	0.7	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.0	0.0
19/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.5	0.9	1.0	1.1	1.0	1.0	0.8	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
20/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.5	0.8	1.0	1.1	1.1	1.0	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
21/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.8	0.9	1.0	1.1	1.1	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
22/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.8	1.0	1.1	1.1	1.0	0.9	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.1	0.0
23/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.8	0.9	1.0	1.1	1.0	1.0	0.7	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
24/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.8	0.9	1.0	1.1	1.0	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
25/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7	0.9	1.1	1.1	1.1	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
26/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.6	0.9	1.0	1.1	1.1	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
27/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.8	1.0	1.1	1.1	1.0	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
28/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.7	0.9	1.0	1.1	1.0	0.9	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
29/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.7	0.9	1.0	1.1	1.0	0.9	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
30/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.8	1.0	1.1	1.0	0.9	0.8	0.6	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
31/12/2024	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.9	1.0	1.1	1.0	0.9	0.6	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0
Prom.	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.7	0.9	1.0	1.0	1.0	1.0	0.9	0.7	0.6	0.3	0.1	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	0.1	0.3	0.6	0.8	1.0	1.1	1.1	1.0	0.9	0.7	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	0.2	0.8	0.5	0.7	0.8	0.5	0.6	0.5	0.2	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

<b>Ciudad</b>	: Tacna	<b>Periodo</b>	: 01 al 31 de diciembre
<b>Nombre/Número de la Estación</b>	: UNANUE	<b>Año</b>	: 2024
<b>Ubicación</b>	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	<b>Responsable</b>	: GORE - TACNA
<b>Equipo de Muestreo</b>	: Sensor Presión Atmósferica - CS106	<b>Tipo de Data</b>	: Horario
<b>Última Calibración del Equipo</b>	: julio - 2024	<b>Unidades</b>	: mbars
<b>Coordenadas UTM (WGS 84)</b>		<b>Límite de Detección</b>	: ---mbars
<b>Este</b>	: 366893		
<b>Norte</b>	: 8008890		

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.	
01/12/2024	951.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	951.0	950.0	950.0	950.0	949.0	948.0	948.0	948.0	948.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	949.5	951.0	948.0	
02/12/2024	950.0	949.0	949.0	949.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	949.0	948.0	948.0	948.0	948.0	949.0	949.0	950.0	951.0	951.0	951.0	951.0	949.5	951.0	948.0	
03/12/2024	951.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	951.0	951.0	951.0	951.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	951.0	951.0	952.0	952.0	952.0	950.2	952.0	949.0	
04/12/2024	952.0	952.0	951.0	950.0	950.0	950.0	950.0	950.0	951.0	951.0	951.0	951.0	950.0	950.0	949.0	949.0	949.0	950.0	951.0	951.0	952.0	952.0	952.0	951.0	951.0	950.6	952.0	949.0
05/12/2024	951.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	950.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	950.0	951.0	951.0	950.0	950.0	949.5	951.0	948.0
06/12/2024	949.0	949.0	948.0	948.0	948.0	948.0	948.0	949.0	949.0	949.0	949.0	948.0	948.0	947.0	947.0	947.0	947.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	948.7	951.0	947.0	
07/12/2024	950.0	949.0	949.0	948.0	948.0	948.0	949.0	950.0	950.0	950.0	950.0	949.0	949.0	949.0	948.0	948.0	949.0	949.0	950.0	951.0	951.0	951.0	951.0	951.0	949.5	951.0	948.0	
08/12/2024	950.0	949.0	949.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	951.0	949.4	951.0	948.0		
09/12/2024	951.0	950.0	949.0	949.0	948.0	948.0	948.0	949.0	949.0	949.0	948.0	948.0	947.0	947.0	947.0	946.0	946.0	947.0	948.0	949.0	950.0	950.0	950.0	950.0	948.4	951.0	946.0	
10/12/2024	949.0	948.0	947.0	947.0	947.0	947.0	948.0	948.0	948.0	948.0	947.0	947.0	946.0	946.0	946.0	947.0	947.0	948.0	949.0	949.0	950.0	949.0	949.0	947.7	950.0	946.0		
11/12/2024	949.0	949.0	948.0	947.0	947.0	947.0	948.0	948.0	948.0	949.0	949.0	948.0	948.0	948.0	948.0	948.0	948.0	949.0	949.0	950.0	951.0	951.0	948.7	951.0	947.0			
12/12/2024	950.0	950.0	949.0	949.0	949.0	949.0	949.0	950.0	950.0	949.0	949.0	949.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	949.4	951.0	948.0	
13/12/2024	950.0	950.0	949.0	948.0	948.0	948.0	949.0	949.0	949.0	949.0	949.0	948.0	948.0	947.0	947.0	947.0	948.0	948.0	949.0	950.0	950.0	950.0	950.0	950.0	948.7	950.0	947.0	
14/12/2024	950.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	949.0	949.0	949.0	948.0	948.0	948.0	949.0	949.0	950.0	951.0	951.0	951.0	951.0	949.5	951.0	948.0	
15/12/2024	951.0	950.0	949.0	949.0	949.0	949.0	948.0	948.0	949.0	949.0	949.0	948.0	948.0	947.0	947.0	947.0	947.0	948.0	949.0	950.0	950.0	950.0	950.0	950.0	948.7	951.0	947.0	
16/12/2024	950.0	949.0	949.0	948.0	948.0	948.0	949.0	950.0	950.0	949.0	949.0	949.0	948.0	948.0	948.0	948.0	948.0	949.0	950.0	950.0	951.0	951.0	951.0	951.0	949.2	951.0	948.0	
17/12/2024	950.0	950.0	950.0	949.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	949.4	951.0	948.0	
18/12/2024	950.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	950.0	951.0	951.0	950.0	950.0	950.0	949.0	949.0	949.0	949.0	950.0	951.0	951.0	951.0	951.0	951.0	950.0	951.0	949.0	
19/12/2024	951.0	950.0	949.0	949.0	949.0	949.0	950.0	950.0	951.0	951.0	951.0	950.0	950.0	949.0	949.0	949.0	949.0	949.0	950.0	951.0	951.0	952.0	952.0	951.0	950.0	949.0	951.0	949.0
20/12/2024	951.0	950.0	949.0	948.0	948.0	948.0	949.0	949.0	950.0	950.0	950.0	950.0	949.0	949.0	949.0	949.0	949.0	949.0	950.0	951.0	951.0	952.0	952.0	949.6	952.0	948.0		
21/12/2024	951.0	951.0	950.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	951.0	949.6	951.0	948.0	
22/12/2024	950.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	951.0	951.0	951.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	951.0	951.0	952.0	952.0	953.0	953.0	950.3	953.0	949.0	
23/12/2024	952.0	952.0	951.0	951.0	951.0	951.0	952.0	952.0	953.0	953.0	953.0	952.0	951.0	951.0	951.0	951.0	951.0	951.0	952.0	952.0	953.0	954.0	954.0	952.0	954.0	951.0	951.0	949.0
24/12/2024	952.0	952.0	952.0	951.0	951.0	951.0	951.0	951.0	952.0	952.0	951.0	951.0	950.0	949.0	949.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	951.0	950.5	952.0	948.0	
25/12/2024	950.0	949.0	948.0	948.0	948.0	948.0	949.0	949.0	949.0	949.0	949.0	948.0	948.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	948.8	951.0	947.0		
26/12/2024	950.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	951.0	951.0	951.0	950.0	949.0	949.0	948.0	948.0	949.0	949.0	950.0	951.0	952.0	952.0	952.0	950.0	952.0	952.0	948.0	
27/12/2024	952.0	952.0	951.0	951.0	951.0	951.0	952.0	953.0	953.0	952.0	952.0	951.0	951.0	951.0	951.0	951.0	951.0	952.0	953.0	953.0	953.0	953.0	953.0	953.0	953.0	953.0	950.0	
28/12/2024	953.0	952.0	952.0	952.0	952.0	952.0	952.0	953.0	952.0	952.0	952.0	951.0	950.0	949.0	949.0	949.0	949.0	949.0	950.0	952.0	952.0	952.0	952.0	952.0	951.1	953.0	949.0	
29/12/2024	951.0	950.0	949.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	950.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	951.0	951.0	951.0	951.0	949.5	951.0	948.0
30/12/2024	951.0	950.0	950.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	950.0	950.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	950.0	950.0	950.0	950.0	949.0	951.0	947.0	
31/12/2024	950.0	950.0	949.0	949.0	949.0	949.0	949.0	950.0	950.0	950.0	950.0	949.0	949.0	948.0	948.0	948.0	948.0	949.0	950.0	951.0	952.0	952.0	952.0	952.0	949.5	952.0	948.0	
Prom.	950.6	950.0	949.5	949.0	949.0	949.5	949.9	950.2	950.3	950.1	949.5	949.1	948.7	948.4	948.2	948.2	948.4	949.2	950.0	950.7	951.2	951.2	951.1					
Max.	953.0	952.0	952.0	952.0	952.0	952.0	953.0	953.0	953.0	953.0	953.0	953.0	952.0	951.0	951.0	951.0	951.0	951.0	952.0	953.0	954.0	954.0	954.0	954.0	954.0	954.0	954.0	
Min.	949.0	948.0	947.0	947.0	947.0	947.0	948.0	948.0	948.0	948.0	948.0	948.0	947.0	947.0	946.0	946.0	946.0	947.0	948.0	949.0	950.0	950.0	950.0	950.0	949.0	950.0	949.0	

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - MATERIAL PARTICULADO RESPIRABLE (PM<sub>10</sub>)

Ciudad	: Tacna	Periodo	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: THERMO SCIENTIFIC - TEOM 1405	Tipo de Data	: Horario
Última Calibración del Equipo	: julio - 2024	Unidades	: ug/m <sup>3</sup>
Coordenadas UTM (WGS 84)		Limite de Detección	: --- ug/m <sup>3</sup>
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	14.6	20.0	19.6	14.6	35.2	38.7	33.8	30.8	46.0	40.5	41.9	45.1	51.8	65.1	51.0	51.7	46.4	28.3	28.4	30.4	34.5	32.2	26.0	26.2	35.5	65.1	14.6
02/12/2024	16.2	7.9	9.4	9.1	19.6	27.7	49.5	30.1	31.9	47.2	49.2	38.1	42.0	47.6	54.5	37.7	46.3	37.0	36.4	38.8	32.1	24.6	24.6	23.1	32.5	54.5	7.9
03/12/2024	21.2	16.4	19.0	18.1	18.7	24.8	37.2	41.2	46.6	48.5	49.0	49.3	49.0	41.0	0.0	56.1	38.6	37.7	45.1	46.2	38.2	27.3	25.6	21.7	34.0	56.1	0.0
04/12/2024	13.5	13.1	16.8	13.6	18.6	29.0	51.0	44.1	65.0	65.7	48.8	37.9	43.7	46.9	45.6	43.8	46.0	36.1	38.6	37.9	30.1	30.8	27.4	21.1	36.1	65.7	13.1
05/12/2024	12.8	8.6	11.7	9.2	18.8	37.8	34.3	46.9	52.4	50.7	51.9	41.7	44.4	60.0	64.0	42.9	41.1	43.4	40.8	44.1	36.5	31.4	26.1	19.3	36.3	64.0	8.6
06/12/2024	17.5	14.0	14.3	18.0	19.7	21.6	28.6	37.6	49.1	54.4	41.9	48.0	50.5	44.1	59.2	49.5	40.3	40.5	39.5	43.1	37.8	35.6	28.0	25.1	35.7	59.2	14.0
07/12/2024	24.1	23.7	18.4	20.2	25.1	26.9	40.3	66.2	51.2	43.6	51.3	58.3	60.7	52.5	46.0	46.7	46.3	34.3	33.2	33.3	32.1	31.4	25.8	26.4	38.3	66.2	18.4
08/12/2024	19.5	17.0	18.0	16.2	0.0	19.9	28.4	32.6	26.5	42.1	46.7	34.0	50.1	77.9	50.3	49.3	45.7	29.9	38.4	34.0	29.5	21.0	31.8	19.4	32.4	77.9	0.0
09/12/2024	14.0	13.9	16.4	15.0	19.4	23.0	49.1	57.6	43.2	36.9	42.2	54.7	47.4	46.1	41.9	61.9	38.2	41.6	38.0	36.5	33.4	27.8	21.4	20.8	35.0	61.9	13.9
10/12/2024	21.3	0.0	22.6	0.0	21.2	28.3	44.6	42.1	59.7	60.1	59.8	53.2	53.1	73.0	83.4	57.8	41.7	48.3	46.3	40.6	40.6	29.7	31.1	20.1	40.8	83.4	0.0
11/12/2024	19.6	26.8	0.0	19.2	22.0	27.4	30.9	73.7	56.0	74.3	65.8	56.4	65.8	57.3	56.2	57.7	50.7	49.3	41.1	34.6	33.8	26.8	25.7	21.6	41.4	74.3	0.0
12/12/2024	21.0	18.4	20.3	39.1	23.1	30.3	46.1	35.0	34.4	55.3	42.7	55.1	51.0	63.7	55.0	49.3	54.4	49.7	46.4	42.5	38.5	34.2	25.6	24.7	39.8	63.7	18.4
13/12/2024	19.5	24.5	20.4	18.3	27.6	42.8	47.7	32.8	43.5	81.3	52.1	51.0	63.2	63.8	59.0	57.8	47.5	49.6	45.6	59.2	44.6	33.2	20.3	22.3	42.8	81.3	18.3
14/12/2024	13.7	0.0	15.5	22.1	22.1	21.1	42.7	58.0	57.4	46.6	64.0	51.3	57.6	69.6	45.4	36.5	38.4	39.2	36.4	44.3	36.1	29.4	25.7	19.0	37.2	69.6	0.0
15/12/2024	19.3	16.1	20.0	22.7	24.6	30.1	37.4	39.1	50.3	48.7	44.3	32.9	58.1	47.2	49.2	43.2	41.2	33.3	33.8	33.4	32.3	30.7	29.6	21.4	34.9	58.1	16.1
16/12/2024	23.0	20.4	23.2	16.9	24.6	31.5	29.7	34.5	49.5	65.2	65.9	67.1	46.2	52.1	50.4	44.0	44.7	48.3	46.0	50.2	37.8	28.8	26.2	22.2	39.5	67.1	16.9
17/12/2024	21.8	16.3	10.6	15.4	24.3	34.7	50.9	44.3	53.9	56.1	42.9	52.0	69.2	109.2	59.6	47.9	48.8	42.1	44.1	42.1	33.1	29.4	22.5	22.3	41.4	109.2	10.6
18/12/2024	20.1	15.9	19.0	15.4	16.4	21.6	41.2	39.8	39.2	43.7	51.5	65.8	49.7	57.3	52.5	42.3	47.7	44.6	40.3	38.9	36.4	28.1	27.3	22.5	36.6	65.8	15.4
19/12/2024	22.9	22.7	20.5	25.0	26.7	21.5	39.1	46.8	46.3	44.9	49.1	43.3	42.3	51.7	55.0	87.9	68.3	51.0	39.3	36.6	39.8	28.3	31.2	26.0	40.3	87.9	20.5
20/12/2024	20.7	14.6	18.3	15.3	51.9	24.9	29.6	37.9	34.0	53.2	63.0	62.4	52.4	56.4	70.0	56.2	56.1	57.0	48.1	50.0	37.8	36.6	32.2	23.9	41.8	70.0	14.6
21/12/2024	25.7	24.2	25.7	19.3	0.0	30.0	33.1	73.1	52.4	68.8	55.3	62.4	67.4	60.5	56.2	45.6	48.5	41.7	45.6	39.5	33.2	33.2	23.6	42.6	73.1	0.0	
22/12/2024	21.1	22.7	24.6	17.4	25.5	30.5	37.9	38.5	38.9	57.2	45.0	41.3	45.0	55.4	48.6	47.1	40.1	37.1	32.9	31.6	35.9	31.4	24.1	20.5	35.4	57.2	17.4
23/12/2024	11.8	10.9	11.3	23.9	27.1	19.5	29.7	38.9	41.5	52.9	55.0	43.5	51.1	161.2	68.0	45.0	53.1	48.7	53.2	50.7	40.0	33.0	22.0	33.8	42.7	161.2	10.9
24/12/2024	36.8	21.7	10.4	31.1	38.1	32.0	61.4	61.0	43.0	39.9	65.1	38.8	51.7	52.1	49.7	42.9	45.3	38.1	35.3	35.1	38.2	29.4	22.6	25.7	39.4	65.1	10.4
25/12/2024	26.0	39.3	39.4	25.8	25.1	28.9	30.5	23.6	29.0	27.3	41.3	37.8	29.8	29.9	37.1	48.3	32.8	25.9	26.7	26.4	26.2	18.5	14.3	12.3	29.3	48.3	12.3
26/12/2024	11.3	9.4	12.0	11.5	15.6	23.3	28.7	34.0	32.1	41.0	33.4	38.4	46.0	50.9	56.8	66.8	45.8	38.3	33.3	36.1	30.1	27.3	18.1	15.1	31.5	66.8	9.4
27/12/2024	13.2	12.9	12.8	15.6	13.3	19.6	32.0	34.1	35.4	47.7	46.2	35.0	41.6	44.7	50.3	58.5	49.5	40.9	38.6	37.9	36.6	34.4	21.7	19.9	33.0	58.5	12.8
28/12/2024	19.1	10.2	14.0	17.4	16.9	37.1	43.9	25.4	30.2	43.5	52.7	37.9	46.6	73.3	69.4	47.8	35.9	43.6	34.4	33.8	31.2	28.5	23.6	19.7	34.8	73.3	10.2
29/12/2024	21.7	18.5	19.1	15.0	17.4	23.5	27.0	27.9	37.0	43.7	46.9	46.0	43.4	89.3	71.5	47.6	39.9	33.8	33.5	32.0	35.3	25.3	21.7	20.7	34.9	89.3	15.0
30/12/2024	15.4	14.6	13.3	14.5	17.6	30.2	30.5	37.8	33.8	40.0	50.2	47.9	50.8	56.1	75.5	59.9	47.9	46.1	46.9	81.2	47.4	34.9	24.4	22.1	39.1	81.2	13.3
31/12/2024	14.4	14.2	13.9	13.1	18.6	36.1	34.9	28.9	31.9	41.2	46.7	50.5	46.3	66.5	73.9	48.6	42.6	37.8	37.4	38.0	38.1	30.6	37.7	27.1	36.2	73.9	13.1
Prom.	19.3	16.3	17.0	17.8	21.3	27.9	38.3	42.1	43.2	50.3	51.1	47.5	50.4	62.1	55.3	51.2	45.3	41.7	39.7	41.1	36.0	29.7	25.7	22.1			
Max.	36.8	39.3	39.4	39.1	51.9	42.8	61.4	73.7	65.0	81.3	68.8	67.1	69.2	161.2	83.4	87.9	68.3	57.0	53.2	81.2	47.4	36.6	37.7	33.8			
Min.	11.3	0.0	0.0	0.0	0.0	19.5	27.0	23.6	26.5	27.3	33.4	32.9	29.8	29.9	0.0	36.5	32.8	25.9	26.7	26.4	26.2	18.5	14.3	12.3			

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - MATERIAL PARTICULADO RESPIRABLE (PM<sub>2,5</sub>)

**GRRNyGA**  
GERENCIA REGIONAL  
DE RECURSOS NATURALES  
Y GESTIÓN AMBIENTAL

<b>Ciudad</b>	: Tacna	<b>Periodo</b>	: 01 al 31 de diciembre
<b>Nombre/Número de la Estación</b>	: UNANUE	<b>Año</b>	: 2024
<b>Ubicación</b>	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	<b>Responsable</b>	: GORE - TACNA
<b>Equipo de Muestreo</b>	: THERMO SCIENTIFIC - TEOM 1405	<b>Tipo de Data</b>	: Horario
<b>Última Calibración del Equipo</b>	: julio - 2024	<b>Unidades</b>	: ug/m <sup>3</sup>
<b>Coordenadas UTM (WGS 84)</b>		<b>Límite de Detección</b>	: --- ug/m <sup>3</sup>
<b>Este</b>	: 366893		
<b>Norte</b>	: 8008890		

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.
01/12/2024	2.1	7.4	6.9	1.2	20.7	11.0	12.1	9.9	16.3	10.1	12.7	16.0	13.9	17.4	14.1	22.4	19.3	5.5	7.8	7.3	12.2	14.2	9.4	10.1	11.7	22.4	1.2
02/12/2024	7.1	0.3	0.7	3.1	8.7	9.1	14.2	6.7	9.4	15.2	15.5	7.7	11.5	14.3	14.7	7.2	11.8	9.1	10.0	14.3	13.7	8.7	6.2	7.6	9.5	15.5	0.3
03/12/2024	8.1	6.7	7.3	6.4	3.4	7.3	9.6	13.9	13.4	14.6	17.2	14.8	15.1	5.9	0.0	20.7	10.3	9.9	11.2	15.9	10.6	7.0	5.7	5.2	10.0	20.7	0.0
04/12/2024	2.9	4.3	6.1	1.3	6.4	9.0	20.7	15.5	20.6	20.9	16.1	9.0	9.4	11.0	11.3	11.7	13.1	6.1	11.3	12.4	7.0	11.5	9.3	6.5	10.6	20.9	1.3
05/12/2024	3.4	0.1	3.3	1.3	7.5	18.7	16.1	20.8	19.2	19.0	18.7	10.1	9.4	14.4	16.4	10.8	11.1	11.7	12.3	15.1	11.5	8.7	9.1	4.4	11.4	20.8	0.1
06/12/2024	5.1	3.8	5.3	8.7	7.3	6.5	8.3	8.8	13.9	16.7	11.3	13.2	16.9	11.3	11.6	11.1	9.1	9.2	11.6	13.2	12.0	10.1	8.6	6.2	10.0	16.9	3.8
07/12/2024	8.5	7.7	6.5	7.1	10.0	8.2	13.4	34.3	15.1	12.3	20.6	22.4	21.7	10.0	10.1	12.5	11.4	5.4	10.1	10.3	9.6	12.9	9.7	10.5	12.5	34.3	5.4
08/12/2024	7.5	9.1	10.5	9.4	0.0	5.0	12.5	13.1	12.1	15.2	17.1	10.3	19.5	12.7	10.2	12.0	13.4	7.0	11.7	10.2	10.5	8.0	18.3	7.8	11.0	19.5	0.0
09/12/2024	4.4	4.2	6.2	6.1	8.6	9.7	14.4	15.3	10.6	13.8	11.6	19.0	16.3	13.9	13.7	35.4	10.1	11.6	10.8	9.4	11.9	10.8	7.2	7.4	11.8	35.4	4.2
10/12/2024	10.4	0.0	10.6	0.0	4.6	10.5	20.0	17.8	31.5	19.6	22.9	22.8	19.0	18.4	24.9	18.2	6.7	13.9	14.9	13.5	13.9	9.6	14.7	4.9	14.3	31.5	0.0
11/12/2024	6.6	14.8	0.0	6.7	6.9	6.9	14.0	30.9	20.4	24.2	22.0	20.4	11.0	14.1	15.9	14.0	15.6	16.3	13.9	11.0	12.2	7.2	9.0	6.4	13.3	30.9	0.0
12/12/2024	8.7	7.2	9.0	32.0	10.9	15.9	27.6	13.3	2.2	10.1	8.6	14.3	13.5	20.9	9.8	11.7	19.7	14.5	16.3	14.4	16.4	15.4	9.5	10.3	13.8	32.0	2.2
13/12/2024	9.1	14.7	10.7	8.9	14.8	15.5	21.2	8.6	17.1	42.4	19.1	20.6	21.0	19.6	13.5	19.2	17.2	18.8	16.1	34.5	21.7	11.9	0.6	8.4	16.9	42.4	0.6
14/12/2024	3.8	0.0	6.4	11.1	9.1	2.6	18.5	29.3	24.0	20.2	21.6	11.9	12.0	21.0	8.4	7.1	9.5	10.6	13.5	14.3	13.0	11.2	11.0	7.2	12.4	29.3	0.0
15/12/2024	9.4	7.9	10.2	8.9	9.8	14.9	17.6	16.4	22.4	19.7	17.2	8.9	15.4	16.0	13.6	14.0	15.1	13.1	14.9	13.0	13.5	13.2	10.8	8.3	13.5	22.4	7.9
16/12/2024	10.2	8.2	11.0	6.8	11.7	13.7	13.8	17.5	20.0	26.4	25.7	32.4	14.6	19.8	12.9	16.2	15.8	17.0	17.7	17.0	13.3	11.9	11.3	9.6	15.6	32.4	6.8
17/12/2024	11.6	10.6	4.5	8.3	10.5	16.7	24.2	13.4	32.8	22.8	15.8	24.0	28.0	28.1	16.7	15.0	12.8	14.1	17.4	18.0	12.8	13.9	8.9	10.2	16.3	32.8	4.5
18/12/2024	11.2	8.3	9.8	7.5	6.9	9.0	20.5	17.4	14.7	16.0	20.2	30.7	20.1	11.2	15.3	10.5	14.3	14.9	14.4	16.2	15.0	12.9	10.5	7.7	14.0	30.7	6.9
19/12/2024	11.3	13.5	9.5	14.5	15.7	5.4	18.8	15.3	22.1	12.4	16.8	13.3	15.8	15.5	17.7	27.3	27.7	18.8	13.5	13.8	17.2	11.0	16.2	13.6	15.7	27.7	5.4
20/12/2024	11.7	5.4	10.1	0.6	10.5	9.0	12.7	14.3	13.4	20.1	22.8	23.1	14.2	14.1	16.3	18.4	19.2	20.5	16.7	19.5	14.3	15.1	15.3	10.9	14.5	23.1	0.6
21/12/2024	15.3	12.5	15.5	6.5	0.0	16.8	11.3	50.6	25.7	26.1	27.5	17.5	25.1	19.8	12.9	12.6	12.0	16.9	14.5	16.8	14.1	11.2	13.6	8.2	16.8	50.6	0.0
22/12/2024	10.2	11.0	14.5	9.8	14.5	15.7	18.7	14.4	15.3	26.8	17.8	12.3	11.9	18.6	13.2	14.7	14.2	14.2	14.2	12.1	15.6	14.6	11.9	10.6	14.5	26.8	9.8
23/12/2024	3.7	6.9	6.4	16.9	18.5	3.5	9.4	18.0	17.2	15.8	18.8	12.1	16.4	22.1	12.5	16.0	19.6	17.2	22.0	19.7	14.2	14.4	9.2	14.5	14.4	22.1	3.5
24/12/2024	17.4	14.2	4.2	15.8	16.1	19.5	22.9	25.7	16.0	16.3	25.6	7.0	18.2	18.2	19.2	17.1	13.9	13.6	12.9	11.1	17.3	15.7	11.2	13.1	15.9	25.7	4.2
25/12/2024	13.8	23.3	22.7	14.3	15.4	17.4	16.6	13.3	15.5	12.4	23.1	19.6	13.1	8.6	11.2	13.5	13.6	7.7	12.7	12.0	10.2	7.8	6.3	5.3	13.7	23.3	5.3
26/12/2024	7.4	5.4	6.8	6.3	6.9	9.4	11.9	10.5	12.6	17.2	12.3	14.5	17.6	18.7	14.7	23.1	9.5	13.3	10.8	15.7	13.6	13.1	8.1	6.5	11.9	23.1	5.4
27/12/2024	5.5	6.5	6.5	7.3	7.2	9.5	13.1	14.5	16.7	20.2	18.0	11.8	16.1	11.9	9.3	14.4	16.2	13.5	14.9	14.3	16.2	16.8	8.4	10.2	12.5	20.2	5.5
28/12/2024	11.1	3.7	9.6	11.6	9.7	19.9	20.2	11.6	13.0	14.7	24.5	13.7	20.3	24.4	12.5	6.6	9.7	15.5	11.2	11.9	13.1	12.1	8.7	9.1	13.3	24.5	3.7
29/12/2024	11.5	9.9	11.7	6.8	7.9	10.5	13.0	12.5	17.7	17.4	14.0	21.0	14.9	18.3	23.0	17.3	13.4	12.7	13.9	11.2	16.4	10.6	9.8	10.0	13.6	23.0	6.8
30/12/2024	6.7	7.0	6.4	9.4	8.6	13.3	12.2	16.5	14.9	16.9	21.6	20.9	14.8	15.5	18.7	18.0	14.4	15.4	16.6	42.2	20.3	14.1	9.8	8.3	15.1	42.2	6.4
31/12/2024	5.8	7.7	6.0	6.8	8.7	14.9	13.9	12.5	13.3	17.5	18.3	21.3	18.3	16.8	16.0	13.2	16.6	14.7	16.1	14.5	17.7	11.9	18.9	13.5	14.0	21.3	5.8
Prom.	8.6	7.8	8.3	8.7	9.2	11.5	16.0	17.4	17.1	18.8	18.7	16.7	16.4	16.2	13.9	15.3	13.9	13.2	13.9	15.6	14.0	11.8	10.3	8.8			
Max.	17.4	23.3	22.7	32.0	18.5	19.9	27.6	50.6	32.8	42.4	27.5	32.4	28.0	28.1	24.9	35.4	27.7	20.5	22.0	42.2	21.7	16.8	18.9	14.5			
Min.	2.9	0.0	0.0	0.0	0.0	2.6	8.3	6.7	2.2	10.1	8.6	7.0	9.4	5.9	0.0	6.6	6.7	5.4	10.0	9.4	7.0	7.0	0.6	4.4			

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - DIÓXIDO DE NITRÓGENO (NO<sub>2</sub>)

Ciudad	: Tacna	Periodo	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: THERMO SCIENTIFIC - ANALIZADOR 42i	Tipo de Data	: Horario
Última Calibración del Equipo	: julio - 2024	Unidades	: ug/m <sup>3</sup>
Coordenadas UTM (WGS 84)		Límite de Detección	: --- ug/m <sup>3</sup>
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	24.8	22.3	22.1	22.1	32.6	51.4	44.9	32.4	36.5	34.0	27.2	30.7	28.9	26.7	20.1	23.6	21.7	27.1	32.6	38.5	41.3	41.0	37.7	39.6	31.7	51.4	20.1
02/12/2024	14.9	12.1	9.0	13.1	28.0	46.6	53.8	43.7	38.8	35.7	36.3	39.5	37.0	35.3	32.7	29.4	36.3	33.6	36.8	41.4	40.5	31.9	31.0	35.1	33.0	53.8	9.0
03/12/2024	17.9	15.6	14.9	11.1	23.3	39.1	47.9	42.3	49.6	52.1	37.7	35.4	33.8	36.0	34.1	29.2	34.8	41.7	46.6	46.9	47.1	35.5	38.3	31.4	35.1	52.1	11.1
04/12/2024	16.0	10.7	15.9	16.2	19.1	38.1	50.3	37.4	48.7	48.8	40.9	32.4	37.3	34.9	32.4	27.4	31.6	36.1	40.4	41.0	38.5	38.0	36.1	32.8	33.4	50.3	10.7
05/12/2024	16.7	10.3	10.0	9.3	21.2	48.6	41.3	41.7	42.9	40.2	32.3	37.8	36.1	32.6	29.6	26.7	31.8	38.6	37.7	38.7	36.8	35.8	27.9	26.0	31.3	48.6	9.3
06/12/2024	23.9	11.1	9.0	8.3	17.7	26.3	43.3	43.0	46.6	38.0	34.4	32.2	32.4	34.0	34.2	30.3	28.2	32.9	39.9	43.2	42.8	37.0	30.3	32.4	31.3	46.6	8.3
07/12/2024	18.9	16.0	13.7	13.9	22.0	28.7	43.0	51.7	47.7	34.3	33.4	30.4	33.1	30.6	31.1	28.1	29.2	31.3	33.8	44.5	40.1	34.8	35.0	31.7	31.5	51.7	13.7
08/12/2024	23.3	18.0	15.8	13.6	23.3	30.5	39.7	33.2	24.2	30.7	30.3	29.0	31.7	26.6	20.0	22.2	22.6	26.9	32.1	35.0	32.8	20.6	28.8	31.9	26.8	39.7	13.6
09/12/2024	12.3	11.6	12.3	8.6	17.8	35.2	40.3	44.0	35.5	28.8	36.1	40.9	43.6	28.4	32.7	29.8	34.8	33.9	35.0	42.3	42.7	30.3	28.4	30.9	30.7	44.0	8.6
10/12/2024	15.4	12.5	13.7	13.7	25.8	39.5	44.3	38.6	39.6	43.1	35.0	33.6	38.7	39.9	32.7	29.2	29.7	37.1	40.7	41.1	37.5	30.5	31.0	24.4	32.0	44.3	12.5
11/12/2024	16.5	9.7	8.5	9.0	19.8	34.0	28.7	40.8	38.7	47.8	40.6	32.3	37.0	35.4	33.1	26.4	29.2	31.7	35.6	37.0	40.4	32.6	33.4	22.3	30.0	47.8	8.5
12/12/2024	15.6	9.0	10.2	9.0	21.1	41.1	46.0	37.4	39.1	48.4	37.3	41.9	35.4	37.5	30.5	31.2	31.5	37.2	42.2	44.5	38.2	32.6	30.9	33.5	32.6	48.4	9.0
13/12/2024	19.4	12.9	11.2	11.0	21.9	47.1	42.9	35.4	27.3	46.0	39.2	34.2	36.3	33.7	31.6	30.1	35.1	34.2	41.2	46.0	47.8	40.9	44.2	39.1	33.7	47.8	11.0
14/12/2024	18.7	15.2	11.9	14.9	18.0	32.8	43.5	42.3	34.8	34.9	48.6	44.4	38.9	31.9	33.4	28.4	29.3	33.9	35.8	50.0	41.7	32.5	34.1	29.1	32.5	50.0	11.9
15/12/2024	24.3	15.1	24.7	29.8	33.3	37.8	45.4	33.5	35.1	35.1	32.9	30.2	27.5	24.8	23.6	19.6	19.1	24.6	26.2	32.9	25.6	27.2	30.3	27.8	28.6	45.4	15.1
16/12/2024	13.3	12.3	12.2	12.5	17.8	34.6	26.0	26.7	34.1	41.5	40.5	36.3	32.8	33.4	29.9	28.1	30.8	31.2	32.3	41.9	37.8	33.7	32.1	28.9	29.2	41.9	12.2
17/12/2024	15.2	10.9	9.7	10.7	26.1	34.2	40.1	38.9	31.7	47.1	34.3	25.9	30.0	33.7	30.7	26.3	28.9	33.6	37.1	37.3	33.2	29.7	30.3	28.0	29.3	47.1	9.7
18/12/2024	19.1	9.1	9.1	9.3	16.3	32.5	39.5	39.8	37.3	43.7	35.1	36.0	35.4	36.2	30.7	32.5	32.6	30.3	34.9	40.1	37.6	30.4	32.2	24.0	30.2	43.7	9.1
19/12/2024	16.6	12.6	12.1	10.7	21.9	35.0	39.6	45.1	43.9	38.5	35.5	35.8	36.9	36.6	29.4	26.4	30.1	38.1	34.7	39.9	43.1	29.2	31.1	26.1	31.2	45.1	10.7
20/12/2024	16.7	11.9	10.7	11.0	21.1	34.8	41.5	46.1	32.9	36.4	36.0	41.3	43.1	33.1	34.4	35.9	35.9	41.7	35.7	57.0	49.2	38.0	31.2	26.7	33.4	57.0	10.7
21/12/2024	16.4	13.9	15.5	16.8	24.5	34.5	45.8	49.6	45.3	38.8	49.0	39.5	36.9	30.5	28.5	25.4	28.3	26.7	38.3	42.4	45.1	37.9	32.2	26.7	32.9	49.6	13.9
22/12/2024	14.2	16.2	14.8	11.3	18.0	31.8	35.9	34.5	26.2	33.8	27.0	28.0	27.8	24.1	21.1	21.4	22.3	23.7	27.3	34.7	36.1	33.8	36.3	32.0	26.3	36.3	11.3
23/12/2024	16.0	13.2	13.4	17.1	24.0	37.0	40.3	39.0	33.7	40.7	41.4	44.4	35.6	29.7	28.3	29.6	31.4	37.0	40.1	43.0	40.0	33.6	28.8	35.7	32.2	44.4	13.2
24/12/2024	34.8	13.7	11.2	25.3	31.7	32.6	43.5	35.4	39.1	33.1	41.9	35.2	32.4	34.6	26.6	29.0	27.0	27.3	29.1	33.8	37.8	30.5	26.4	26.1	30.8	43.5	11.2
25/12/2024	24.1	30.7	26.4	21.1	21.0	22.1	21.5	19.5	16.1	18.2	19.4	17.5	19.6	16.4	15.4	14.0	13.9	18.8	18.9	26.8	28.3	20.8	17.8	20.0	30.7	13.9	
26/12/2024	10.3	7.7	9.2	9.8	19.4	31.3	36.0	33.6	35.9	31.6	26.9	33.0	36.5	33.2	29.2	23.9	27.1	26.0	31.0	39.3	37.2	28.5	22.4	25.1	26.8	39.3	7.7
27/12/2024	14.0	9.9	8.8	10.0	17.6	33.8	41.0	38.4	35.4	35.0	33.1	32.3	28.6	29.7	31.3	24.4	29.8	31.1	34.1	41.7	42.5	38.1	35.2	31.8	29.5	42.5	8.8
28/12/2024	19.4	13.1	10.7	17.2	18.5	34.4	47.5	29.5	26.1	37.5	39.3	33.7	34.7	36.9	27.2	27.5	25.2	32.0	31.1	36.8	37.0	29.7	30.4	26.8	29.3	47.5	10.7
29/12/2024	14.5	11.9	11.8	8.4	14.7	28.5	32.9	29.4	27.1	34.5	33.7	28.6	34.9	27.4	20.9	19.8	19.1	25.1	24.9	27.0	27.0	22.3	20.2	20.7	23.5	34.9	8.4
30/12/2024	12.3	9.0	9.1	8.3	17.4	31.8	31.2	37.0	32.3	34.7	35.8	36.1	35.8	32.9	30.9	29.3	32.6	31.1	35.5	45.3	40.8	31.7	26.3	25.0	28.8	45.3	8.3
31/12/2024	15.3	10.7	11.2	12.0	16.8	33.4	34.7	29.3	32.4	30.7	35.1	38.4	37.3	34.7	25.6	26.1	29.0	26.5	32.4	37.2	41.5	38.9	37.4	31.7	29.1	41.5	10.7
Prom.	17.5	12.9	12.6	13.1	21.3	34.9	40.3	37.9	35.9	38.0	36.0	34.5	34.6	32.2	29.1	26.9	28.9	31.8	34.7	40.3	38.9	32.2	31.0	28.8			
Max.	34.8	30.7	26.4	29.8	33.3	48.6	53.8	51.7	49.6	52.1	49.0	44.4	43.6	39.9	34.4	35.9	36.3	41.7	46.6	57.0	49.2	40.9	44.2	39.1			
Min.	10.3	7.7	8.5	8.3	14.7	22.1	21.5	19.5	16.1	18.2	19.4	17.5	19.6	16.4	15.4	14.0	13.9	18.8	18.9	26.8	25.6	20.6	17.8	20.0			

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - DIOXIDO DE AZUFRE (SO<sub>2</sub>)

Ciudad	: Tacna	Periodo	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: THERMO SCIENTIFIC - ANALIZADOR 450i	Tipo de Data	: Horario
Última Calibración del Equipo	: julio - 2024	Unidades	: ug/m <sup>3</sup>
Coordenadas UTM (WGS 84)		Limite de Detección	: --- ug/m <sup>3</sup>
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	2.0	2.3	1.9	2.1	1.7	3.0	2.8	2.9	2.5	2.1	3.8	5.1	3.8	3.2	2.5	2.4	3.0	2.7	2.0	2.4	2.2	2.5	2.5	2.0	2.6	5.1	1.7
02/12/2024	2.8	1.8	1.7	1.9	1.6	1.6	1.6	2.1	2.3	2.5	3.1	3.7	2.1	3.0	2.9	2.8	2.3	2.3	2.3	2.6	1.7	1.4	2.1	2.3	2.3	3.7	1.4
03/12/2024	1.8	1.9	2.3	1.8	2.4	2.4	2.8	2.5	3.0	2.8	2.8	3.1	3.7	3.8	3.3	2.6	2.2	2.3	2.3	2.7	2.9	2.5	2.2	1.8	2.6	3.8	1.8
04/12/2024	1.7	1.6	1.2	1.9	1.8	1.8	2.5	2.8	2.8	2.8	5.5	4.1	4.4	3.2	3.3	2.4	2.7	2.5	2.6	2.8	2.6	2.7	2.9	2.1	2.7	5.5	1.2
05/12/2024	1.3	1.6	1.6	1.3	1.4	2.5	2.4	2.4	3.1	3.1	3.0	4.2	4.8	3.6	2.8	2.9	2.8	2.9	2.6	2.4	2.4	2.3	1.3	1.6	2.5	4.8	1.3
06/12/2024	2.4	1.7	1.7	1.4	1.5	1.7	1.9	2.5	1.8	2.6	2.4	2.9	3.2	3.6	3.4	2.6	2.5	2.6	2.4	2.5	2.4	2.0	2.0	2.6	2.4	3.6	1.4
07/12/2024	2.2	1.1	1.3	1.3	1.4	1.9	1.8	2.4	2.5	2.5	2.5	3.1	3.9	3.5	3.7	3.0	3.3	2.8	2.5	2.7	2.2	2.1	2.1	2.3	2.4	3.9	1.1
08/12/2024	1.4	1.6	1.6	1.0	2.0	2.0	2.3	1.8	1.7	2.7	3.0	4.0	3.2	3.0	2.6	2.4	2.3	2.7	1.8	1.4	2.0	1.6	1.4	1.9	2.1	4.0	1.0
09/12/2024	1.5	1.6	1.1	1.0	2.0	1.7	1.9	2.2	2.9	2.3	2.6	2.9	2.9	3.1	3.3	3.5	2.4	2.7	1.8	1.6	2.6	2.4	1.7	1.7	2.2	3.5	1.0
10/12/2024	2.0	1.4	1.9	1.4	1.8	2.5	2.5	2.6	2.2	3.1	2.9	4.7	5.1	4.3	3.4	3.1	2.9	2.9	2.1	2.5	2.1	2.0	2.3	1.9	2.7	5.1	1.4
11/12/2024	1.6	1.2	1.7	1.4	1.6	1.5	1.5	2.1	2.9	3.1	3.0	3.9	4.3	3.4	3.5	3.1	2.3	2.7	2.5	1.6	2.5	2.4	2.8	2.2	2.4	4.3	1.2
12/12/2024	1.1	1.6	1.5	1.9	1.9	2.1	2.0	1.5	2.0	3.2	2.2	3.3	2.9	3.2	3.2	3.6	3.0	2.3	2.1	2.5	2.5	2.0	1.6	2.0	2.3	3.6	1.1
13/12/2024	1.4	2.1	1.4	1.1	1.5	2.4	2.6	2.1	2.1	3.1	3.5	4.2	3.9	4.5	3.5	3.3	2.8	2.7	3.1	2.8	2.8	2.9	1.9	2.3	2.7	4.5	1.1
14/12/2024	1.6	1.1	1.4	1.4	1.1	1.4	2.3	2.9	2.5	2.9	3.1	3.8	3.9	2.8	2.8	2.3	2.7	2.6	2.4	2.4	2.7	2.0	2.1	2.2	2.4	3.9	1.1
15/12/2024	2.5	1.4	1.4	1.5	1.9	2.4	2.7	2.5	2.2	2.8	2.9	2.9	3.4	3.2	2.9	2.9	2.5	2.5	2.2	2.5	1.9	1.9	1.6	1.6	2.3	3.4	1.4
16/12/2024	1.7	1.4	1.0	1.6	1.2	2.0	2.2	1.8	2.0	3.2	2.8	2.6	3.1	2.1	2.5	2.9	2.9	2.6	2.7	2.3	2.4	2.0	2.0	1.3	2.2	3.2	1.0
17/12/2024	1.8	1.2	1.8	1.5	1.6	1.8	2.9	2.2	2.2	2.9	2.4	3.1	3.1	3.2	3.1	3.0	2.6	2.3	2.2	2.1	2.0	2.3	2.2	2.2	2.3	3.2	1.2
18/12/2024	2.1	2.0	1.4	1.2	1.2	1.2	1.9	1.9	3.2	2.1	2.4	3.3	3.7	4.1	3.1	2.8	2.7	2.8	2.2	2.1	2.6	1.7	1.8	1.2	2.3	4.1	1.2
19/12/2024	2.0	1.4	1.6	1.7	1.6	2.4	2.6	2.7	2.8	2.6	2.1	3.2	2.9	3.3	3.2	3.4	2.5	2.9	2.4	2.4	2.4	2.5	1.8	2.4	3.4	1.4	
20/12/2024	1.6	1.9	2.0	1.5	1.4	1.8	2.3	2.6	1.9	3.3	3.3	5.1	4.5	2.9	3.7	2.9	3.6	2.8	2.7	3.0	3.2	1.9	2.1	2.0	2.7	5.1	1.4
21/12/2024	1.1	1.3	1.8	1.8	1.7	2.3	2.3	3.2	3.0	2.9	3.5	3.4	3.1	4.0	3.3	3.4	2.7	2.9	3.2	2.8	2.9	2.8	3.2	2.8	2.7	4.0	1.1
22/12/2024	1.4	2.1	1.7	1.3	1.8	1.6	2.2	2.1	2.6	2.7	3.3	5.8	3.7	3.4	3.2	3.0	2.7	2.9	2.5	2.4	2.2	2.6	1.7	2.4	2.6	5.8	1.3
23/12/2024	2.0	1.7	1.6	2.2	2.0	3.0	2.8	2.2	3.1	3.5	4.0	3.1	2.8	3.1	2.4	2.5	2.8	3.1	3.4	2.6	2.8	1.9	2.4	2.6	4.0	1.6	
24/12/2024	2.5	2.2	2.0	2.1	2.3	2.5	3.4	3.2	2.9	3.3	4.3	4.7	4.2	3.8	3.1	2.8	2.7	2.6	3.0	2.6	2.2	2.8	2.3	2.4	2.9	4.7	2.0
25/12/2024	2.3	2.9	3.0	1.9	1.4	1.7	1.5	2.3	1.9	2.2	2.3	3.9	3.7	3.5	2.8	2.2	2.4	1.3	1.8	2.0	2.2	1.5	1.5	1.5	2.2	3.9	1.3
26/12/2024	1.2	1.0	1.5	1.1	2.3	1.6	2.2	2.3	2.4	2.6	2.4	3.8	3.6	3.9	3.6	3.4	3.0	3.4	2.6	2.3	2.2	2.0	2.5	2.0	2.5	3.9	1.0
27/12/2024	2.0	1.7	1.2	1.3	2.1	1.6	2.6	2.6	2.8	3.2	3.2	2.8	2.9	3.6	2.9	2.5	3.0	3.0	2.4	3.1	2.4	2.9	2.3	2.6	2.5	3.6	1.2
28/12/2024	2.0	1.3	2.0	1.8	1.6	2.3	3.6	2.7	2.4	2.7	3.2	3.4	2.9	3.6	3.7	3.3	2.9	2.8	3.2	2.0	2.1	2.4	1.8	2.0	2.6	3.7	1.3
29/12/2024	1.7	1.7	1.7	1.9	1.5	1.4	2.2	1.9	1.7	2.1	3.6	3.7	3.6	3.5	2.7	3.0	2.6	2.8	2.2	2.7	2.6	2.6	1.7	1.6	2.4	3.7	1.4
30/12/2024	1.8	1.9	1.8	1.7	1.8	2.5	2.6	1.7	2.3	2.2	3.3	2.5	4.2	4.2	4.0	4.0	3.1	3.3	3.4	5.6	4.4	2.8	2.8	2.8	2.9	5.6	1.7
31/12/2024	1.8	2.2	1.8	1.7	2.1	2.9	2.7	2.3	2.4	2.4	3.1	2.3	2.9	3.4	3.4	2.9	2.2	3.6	2.8	2.4	3.4	3.0	2.8	2.8	2.6	3.6	1.7
Prom.	1.8	1.6	1.7	1.5	1.7	2.0	2.4	2.4	2.4	2.8	3.0	3.6	3.6	3.4	3.2	2.9	2.7	2.7	2.5	2.5	2.5	2.3	2.1	2.1	2.1	2.1	2.1
Max.	2.8	2.9	3.0	2.1	2.4	2.9	3.6	3.2	3.2	3.3	5.5	5.8	5.1	4.5	4.0	4.0	3.6	3.6	3.4	5.6	4.4	3.0	3.2	2.8	2.9	5.6	1.7
Min.	1.1	1.0	1.0	1.0	1.1	1.2	1.5	1.5	1.7	2.1	2.1	2.3	2.1	2.1	2.5	2.2	2.2	1.3	1.8	1.4	1.7	1.4	1.3	1.2	1.2	3.6	1.7

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - SULFURO DE HIDRÓGENO (H<sub>2</sub>S)

Ciudad	: Tacna	Periodo	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: THERMO SCIENTIFIC - ANALIZADOR 450i	Tipo de Data	: Horario
Última Calibración del Equipo	: julio - 2024	Unidades	: ug/m <sup>3</sup>
Coordenadas UTM (WGS 84)		Límite de Detección	: --- ug/m <sup>3</sup>
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	1.1	0.8	0.7	0.4	1.0	1.3	1.5	1.0	1.2	1.3	2.6	2.0	2.0	2.3	1.7	1.6	1.7	2.3	2.6	2.8	3.4	2.4	3.2	5.9	1.9	5.9	0.4
02/12/2024	5.9	1.5	0.8	0.4	0.5	1.1	1.0	0.8	0.6	1.1	1.5	1.3	1.4	1.6	1.6	0.8	1.8	2.3	2.1	2.4	3.0	1.3	0.8	0.7	1.5	5.9	0.4
03/12/2024	1.0	1.5	8.3	9.0	12.2	4.6	1.8	4.2	5.3	2.3	2.7	2.3	1.9	1.6	0.7	0.7	1.0	0.9	1.7	4.1	4.6	9.1	1.4	0.9	3.5	12.2	0.7
04/12/2024	0.8	0.5	0.9	1.6	1.7	2.9	2.7	1.9	2.5	1.3	3.0	2.5	1.7	2.1	1.4	1.5	1.6	2.3	2.0	3.3	4.5	5.0	6.3	7.0	2.5	7.0	0.5
05/12/2024	4.1	2.4	3.0	2.0	2.0	1.9	2.3	2.6	2.1	1.3	2.0	2.7	1.7	2.2	2.6	2.0	2.2	2.3	3.2	3.3	1.4	0.6	1.0	0.8	2.2	4.1	0.6
06/12/2024	0.7	0.7	1.2	3.2	2.8	2.4	1.6	1.3	1.9	1.1	1.0	1.8	2.2	2.1	2.0	0.8	1.5	1.9	1.8	2.4	2.2	1.7	2.1	1.6	1.8	3.2	0.7
07/12/2024	1.3	1.0	2.4	1.3	1.2	1.2	1.6	2.4	2.2	1.9	1.7	2.8	2.5	2.2	2.3	2.1	1.5	2.3	2.9	2.2	1.5	1.1	1.0	0.9	1.8	2.9	0.9
08/12/2024	0.9	0.8	0.8	0.8	0.3	0.6	0.5	1.1	1.5	1.4	2.0	2.7	2.1	1.6	2.0	2.1	2.1	1.1	1.3	2.2	1.9	0.7	1.0	0.6	1.3	2.7	0.3
09/12/2024	3.5	6.8	4.8	1.8	3.5	4.8	2.5	3.2	11.0	3.6	2.8	1.8	2.2	2.7	3.3	1.5	1.0	0.6	3.3	3.3	4.3	5.4	3.2	2.1	3.5	11.0	0.6
10/12/2024	3.8	10.6	6.4	5.7	5.8	3.3	5.1	6.5	6.9	4.7	1.8	3.3	2.9	2.5	1.8	1.9	1.5	1.6	1.4	2.0	3.0	2.7	2.8	3.3	3.8	10.6	1.4
11/12/2024	5.2	2.9	1.5	1.2	1.6	2.0	1.9	2.4	3.2	2.7	1.6	1.9	1.3	1.9	2.1	1.4	1.2	1.6	2.5	3.5	1.1	2.7	1.7	1.1	2.1	5.2	1.1
12/12/2024	1.0	0.5	0.9	0.9	1.1	2.6	1.4	3.1	1.5	0.7	1.3	1.1	0.9	1.8	1.7	1.5	1.9	2.3	1.8	2.4	2.4	1.7	0.8	0.8	1.5	3.1	0.5
13/12/2024	1.0	1.0	2.4	1.0	1.3	5.0	1.6	1.6	1.6	1.1	2.3	1.9	1.4	1.3	1.4	1.9	1.9	2.0	2.3	1.3	0.5	0.5	1.5	4.1	1.7	5.0	0.5
14/12/2024	1.9	1.5	1.0	1.6	1.6	1.9	2.2	2.0	2.1	1.9	1.8	1.4	2.0	1.9	1.1	0.6	1.3	2.6	2.8	5.5	6.7	3.2	2.0	2.1	6.7	0.6	
15/12/2024	3.2	2.2	3.0	2.8	2.6	2.1	2.0	2.7	2.2	1.1	1.9	1.5	1.3	2.0	1.8	2.3	2.3	2.1	2.5	2.6	0.9	0.3	0.6	2.7	2.0	3.2	0.3
16/12/2024	4.1	2.6	1.8	5.7	4.9	5.1	2.7	2.5	3.5	2.8	2.1	2.7	2.0	1.2	1.6	1.6	1.4	1.8	2.1	2.3	1.7	2.8	3.3	2.6	2.7	5.7	1.2
17/12/2024	1.3	1.1	2.1	0.6	5.0	2.2	2.9	3.3	1.7	1.5	1.0	0.2	1.3	1.9	2.2	1.4	2.3	1.2	1.8	2.6	2.2	1.4	4.1	2.8	2.0	5.0	0.2
18/12/2024	4.2	5.4	4.4	5.2	1.8	1.6	1.0	3.0	4.1	2.5	2.1	2.0	1.8	1.6	2.0	0.9	1.5	1.7	2.3	2.3	0.8	1.0	0.6	1.2	2.3	5.4	0.6
19/12/2024	0.6	0.6	2.0	3.9	3.3	2.7	5.9	6.8	3.2	1.4	1.3	0.9	1.1	1.8	1.4	1.9	1.7	0.9	2.1	2.3	1.5	1.3	0.5	1.6	2.1	6.8	0.5
20/12/2024	2.6	8.4	5.0	4.2	3.8	4.4	2.9	3.8	4.0	4.1	4.4	2.6	1.4	1.4	1.3	1.1	1.5	2.0	3.0	1.8	0.6	1.1	0.5	0.8	2.8	8.4	0.5
21/12/2024	5.5	3.4	1.2	0.8	1.9	1.1	1.4	5.2	5.3	4.7	3.1	2.4	1.5	2.3	2.7	3.0	1.5	1.3	1.8	3.1	1.7	0.8	0.4	0.1	2.3	5.5	0.1
22/12/2024	0.8	0.6	1.0	1.0	0.7	2.0	1.0	1.3	1.1	1.2	2.2	3.2	2.3	2.0	1.6	2.0	2.1	1.7	2.0	2.5	1.0	0.2	1.0	0.5	1.5	3.2	0.2
23/12/2024	0.4	0.6	0.9	0.5	0.7	1.1	0.4	0.9	1.1	1.5	0.5	0.2	1.0	1.7	1.4	1.8	1.2	1.7	2.7	2.7	3.7	6.4	3.7	4.2	1.7	6.4	0.2
24/12/2024	4.8	5.8	10.7	3.0	3.7	4.2	3.5	3.0	1.0	0.8	2.5	2.5	1.6	1.4	2.0	1.1	0.7	2.2	1.7	0.7	1.3	3.8	3.7	3.5	2.9	10.7	0.7
25/12/2024	2.6	2.6	2.9	3.5	3.5	3.3	2.9	1.5	2.5	1.7	1.3	3.1	2.6	1.7	1.8	1.9	1.3	2.0	1.1	1.8	1.6	0.7	0.8	0.8	2.1	3.5	0.7
26/12/2024	0.7	1.1	0.7	1.2	6.1	8.6	7.8	5.2	3.1	1.5	1.4	2.1	1.2	1.5	1.5	2.0	2.4	1.8	2.4	1.6	0.4	0.9	0.0	0.5	2.3	8.6	0.0
27/12/2024	0.5	0.5	0.5	1.1	5.8	3.1	1.5	1.4	1.3	2.3	2.0	0.9	0.5	0.4	0.9	2.2	1.4	0.7	0.6	3.1	1.8	1.9	0.9	3.3	1.6	5.8	0.4
28/12/2024	1.0	1.6	3.7	3.7	1.2	1.6	1.4	1.2	0.9	1.0	0.9	1.3	1.7	1.8	2.0	2.5	1.3	2.1	2.6	3.3	2.1	0.6	0.9	0.9	1.7	3.7	0.6
29/12/2024	1.1	2.3	1.8	0.3	0.7	0.5	0.6	1.1	1.4	1.9	2.9	2.0	1.7	0.8	1.5	1.8	1.7	1.9	1.5	0.9	0.4	0.5	0.9	0.8	1.3	2.9	0.3
30/12/2024	0.7	0.4	1.2	1.5	0.8	2.6	2.5	2.6	2.0	1.8	1.3	1.8	1.3	1.9	1.7	1.6	2.3	2.5	2.8	3.3	1.6	3.0	6.3	2.1	2.1	6.3	0.4
31/12/2024	7.3	1.7	1.6	5.1	1.0	1.0	1.3	1.9	1.1	1.2	0.9	1.2	1.1	1.6	2.1	2.3	2.8	2.2	1.8	1.5	3.0	2.4	1.8	1.2	2.0	7.3	0.9
Prom.	2.4	2.4	2.6	2.5	2.8	2.7	2.3	2.7	2.7	1.9	1.9	1.9	1.7	1.7	1.8	1.7	1.6	1.7	2.1	2.5	2.1	2.3	1.9	1.8			
Max.	7.3	10.6	10.7	9.0	12.2	8.6	7.8	6.8	11.0	4.7	4.4	3.3	2.9	2.7	3.3	3.0	2.8	2.5	3.3	4.1	5.5	9.1	6.3	7.0			
Min.	0.4	0.4	0.5	0.3	0.3	0.5	0.4	0.8	0.6	0.7	0.5	0.2	0.5	0.4	0.7	0.7	0.6	0.6	0.6	0.7	0.4	0.2	0.0	0.1			

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

Reporta: SGGA - GRRNyGA

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



<b>Ciudad</b>	: Tacna	<b>Periodo</b>	: 01 al 31 de diciembre
<b>Nombre/Número de la Estación</b>	: UNANUE	<b>Año</b>	: 2024
<b>Ubicación</b>	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	<b>Responsable</b>	: GORE - TACNA
<b>Equipo de Muestreo</b>	: THERMO SCIENTIFIC - ANALIZADOR 48i	<b>Tipo de Data</b>	: Horario
<b>Última Calibración del Equipo</b>	: julio - 2024	<b>Unidades</b>	: ug/m <sup>3</sup>
<b>Coordenadas UTM (WGS 84)</b>		<b>Límite de Detección</b>	: --- ug/m <sup>3</sup>
<b>Este</b>	: 366893		
<b>Norte</b>	: 800890		

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.
01/12/2024	244.2	240.0	250.6	269.8	386.9	751.8	579.4	358.3	430.0	368.0	315.1	315.0	296.3	264.4	237.9	204.3	210.6	217.2	294.3	324.2	416.2	393.3	385.2	330.6	336.8	751.8	204.3
02/12/2024	139.4	99.5	87.9	115.8	206.8	326.9	520.1	379.3	404.4	384.3	361.3	390.2	394.4	337.2	312.9	291.0	279.6	313.5	368.3	381.8	367.7	250.9	297.5	222.0	301.4	520.1	87.9
03/12/2024	137.7	112.7	85.8	77.8	168.5	364.4	462.5	379.1	565.4	491.3	368.8	337.5	277.2	289.1	268.7	237.2	314.0	289.7	386.5	450.4	436.7	298.9	300.0	239.1	305.8	565.4	77.8
04/12/2024	129.2	82.0	91.0	119.2	156.7	297.9	465.5	325.2	536.4	432.6	332.2	269.8	287.2	287.5	283.8	216.7	252.9	252.4	329.0	387.7	346.1	348.0	301.7	166.9	279.1	536.4	82.0
05/12/2024	122.8	82.7	85.2	75.5	175.3	418.2	343.7	345.3	474.0	410.9	239.0	280.8	274.8	296.6	227.5	206.4	245.1	240.5	321.8	389.0	333.6	273.9	260.2	217.6	264.2	474.0	75.5
06/12/2024	145.1	73.0	58.9	59.4	120.7	204.1	313.4	334.1	446.6	430.8	284.9	278.6	***	0.0	445.5	466.2	428.6	472.3	495.8	598.2	607.1	577.3	479.7	484.2	339.3	607.1	0.0
07/12/2024	370.3	341.8	297.1	318.3	377.7	455.2	737.7	749.7	729.3	524.1	539.6	490.3	518.2	519.9	443.8	416.4	428.8	466.3	509.4	575.1	640.6	602.1	534.2	475.4	502.6	749.7	297.1
08/12/2024	356.9	337.9	333.6	310.9	452.2	475.5	519.0	484.7	416.5	473.8	449.4	407.5	482.8	445.3	394.7	378.4	386.4	419.4	467.0	512.4	448.9	381.7	471.2	409.4	425.6	519.0	310.9
09/12/2024	309.2	291.0	282.5	271.6	367.7	528.8	598.6	575.0	523.3	454.9	498.3	555.8	554.1	471.8	470.4	453.2	459.7	464.3	500.1	586.6	599.7	488.4	447.7	454.1	466.9	599.7	271.6
10/12/2024	338.4	314.2	320.9	326.1	434.6	588.2	598.4	555.7	722.8	741.4	560.6	536.0	539.6	532.8	511.6	463.7	487.2	493.2	554.7	612.8	540.5	512.1	489.3	438.9	508.9	741.4	314.2
11/12/2024	350.8	317.1	314.1	316.9	397.5	514.1	445.2	580.5	584.8	705.2	604.0	553.9	538.6	522.8	532.0	434.7	497.9	493.2	535.4	539.0	556.6	538.4	503.2	395.9	490.5	705.2	314.1
12/12/2024	356.7	330.1	339.1	322.3	389.6	598.1	616.5	575.0	609.6	705.9	672.3	610.4	557.7	553.8	526.0	475.9	500.3	517.9	629.2	625.9	606.8	520.0	496.8	537.3	528.0	705.9	322.3
13/12/2024	374.2	356.3	340.6	353.8	416.1	673.5	688.3	552.8	524.4	683.1	593.3	557.3	573.9	555.3	537.3	505.8	545.2	542.8	600.4	694.0	680.8	677.1	634.2	556.8	550.7	694.0	340.6
14/12/2024	417.4	405.5	395.8	407.4	439.7	594.2	768.7	757.6	631.7	580.6	682.0	632.7	626.4	596.9	589.1	509.5	530.4	562.7	600.6	752.0	710.7	623.1	628.8	535.0	582.4	768.7	395.8
15/12/2024	501.5	422.7	471.6	524.2	572.7	629.4	824.8	661.2	665.5	582.9	566.6	581.4	530.6	538.0	507.2	547.0	506.0	521.0	558.6	592.8	612.1	570.9	630.8	551.6	569.6	824.8	422.7
16/12/2024	443.5	424.7	421.0	420.5	488.8	708.4	550.7	562.3	747.2	779.5	733.2	669.0	648.3	663.4	613.0	608.0	635.4	630.3	649.1	806.0	800.0	686.6	673.5	562.5	621.9	806.0	420.5
17/12/2024	483.3	414.3	424.5	427.0	545.6	679.6	828.7	743.4	659.7	814.6	683.8	636.0	621.3	636.0	598.7	618.5	619.4	651.7	698.2	766.0	665.2	694.5	663.5	568.1	630.9	828.7	414.3
18/12/2024	536.5	462.0	444.2	460.2	508.8	625.6	738.5	726.1	765.3	790.0	793.7	701.9	671.8	640.9	628.9	628.2	661.0	636.2	659.9	712.4	688.3	639.0	646.1	549.2	638.1	793.7	444.2
19/12/2024	506.3	461.5	472.7	474.3	550.7	675.6	742.2	795.5	820.9	798.2	728.1	722.1	739.3	756.6	***	384.6	492.7	489.0	491.3	529.7	635.7	495.5	490.1	427.3	594.8	820.9	384.6
20/12/2024	305.2	293.8	293.5	295.5	354.4	470.4	566.6	586.2	567.6	630.0	574.3	599.4	550.6	526.3	541.4	525.0	560.9	581.0	599.6	862.3	712.8	561.8	496.9	496.0	523.0	862.3	293.5
21/12/2024	361.7	324.0	330.5	348.9	446.5	568.3	722.5	782.5	671.0	600.1	645.3	546.1	569.4	524.9	502.6	480.4	503.2	529.4	584.8	673.6	753.0	629.2	565.2	521.1	549.3	782.5	324.0
22/12/2024	411.8	407.8	385.0	343.1	442.4	545.0	635.5	596.9	541.2	614.6	531.9	499.1	496.6	517.4	449.7	420.7	447.8	465.3	503.0	549.4	662.7	585.5	594.4	516.8	506.8	662.7	343.1
23/12/2024	402.1	354.0	379.1	443.1	475.6	621.3	659.0	716.6	671.8	734.3	640.3	643.8	582.8	565.6	568.5	555.7	568.6	652.8	667.8	808.0	755.3	675.8	564.1	569.0	594.8	808.0	354.0
24/12/2024	594.8	405.3	385.9	473.9	680.4	525.5	972.1	789.0	711.7	656.1	715.5	695.1	638.1	619.1	592.9	578.0	562.9	580.4	602.2	696.3	817.2	745.6	629.3	659.8	638.6	972.1	385.9
25/12/2024	537.5	619.0	627.4	573.4	482.4	502.8	511.6	518.3	504.5	510.2	507.1	489.9	498.7	479.8	479.2	445.9	454.9	476.2	514.9	585.2	659.4	540.8	535.4	537.3	524.7	659.4	445.9
26/12/2024	423.7	408.8	410.1	409.7	530.1	649.8	758.8	730.7	807.5	738.7	697.0	714.1	673.9	679.6	652.9	726.5	626.1	614.6	642.1	739.5	751.1	653.0	613.4	601.2	635.5	807.5	408.8
27/12/2024	541.8	466.9	476.2	489.9	570.0	681.8	794.8	767.0	809.6	848.1	729.2	755.8	696.4	727.7	671.6	624.3	688.1	695.6	747.5	863.5	847.7	866.1	769.1	654.9	699.3	866.1	466.9
28/12/2024	558.3	518.4	506.9	531.3	558.5	867.3	1045.4	686.2	689.1	792.0	758.5	766.2	730.9	743.3	675.1	679.4	676.6	696.2	716.6	818.2	809.5	781.8	764.5	640.7	708.8	1045.4	506.9
29/12/2024	581.3	560.2	561.0	525.4	590.8	762.0	853.4	730.7	722.6	777.9	713.3	695.1	702.7	681.9	647.4	644.7	654.9	688.7	719.4	804.3	733.1	711.2	672.9	668.4	683.5	853.4	525.4
30/12/2024	610.9	561.6	550.4	556.6	649.8	896.2	896.3	887.5	869.1	883.7	915.4	817.6	862.0	827.4	793.8	814.7	792.0	799.1	861.7	1104.2	1074.3	914.1	788.9	764.2	812.1	1104.2	550.4
31/12/2024	633.5	611.0	603.5	614.0	665.6	929.8	963.5	846.8	850.2	909.5	952.2	866.7	882.1	855.0	793.8	814.7	792.0	799.1	861.7	1104.2	1074.3	973.1	983.3	918.1	830.5	985.4	603.5
Prom.	399.4	362.0	359.2	366.2	440.5	579.3	671.4	624.0	641.5	649.3	602.4	576.7	576.6	546.4	525.0	503.3	519.3	534.3	577.8	666.6	661.3	593.9	564.2	511.3			
Max.	633.5	619.0	627.4	614.0	680.4	929.8	1045.4	887.5	869.1	909.5	952.2	866.7	882.1	855.0	793.8	814.7	792.0	799.1	861.7	1104.2	1074.3	973.1	983.3	918.1			
Min.	122.8	73.0	58.9	59.4	120.7	204.1	313.4	325.2	404.4	384.3	239.0	269.8	274.8	0.0	227.5	206.4	245.1	240.5	321.8	381.8	333.6	250.9	260.2	166.9			

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

Reporta: SGGA - GRRNyGA

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

Ciudad	: Tacna	Periodo	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: THERMO SCIENTIFIC - ANALIZADOR 48i	Tipo de Data	: Horario
Última Calibración del Equipo	: julio - 2024	Unidades	: ug/m <sup>3</sup>
Coordenadas UTM (WGS 84)		Límite de Detección	: --- ug/m <sup>3</sup>
Este	: 366893		
Norte	: 8008890		

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.
01/12/2024	****	****	****	****	****	357.2	388.9	385.1	408.3	424.3	432.4	438.1	426.7	365.8	323.1	303.9	276.5	257.6	255.0	256.2	271.2	287.3	305.7	321.5	341.3	438.1	255.0	
02/12/2024	312.5	297.8	272.1	246.0	219.8	211.5	228.4	234.5	267.6	303.2	337.4	371.6	395.1	396.4	370.5	359.4	343.8	335.0	335.9	334.8	331.5	320.7	318.8	310.2	310.6	396.4	211.5	
03/12/2024	292.4	267.3	232.0	194.0	169.1	183.3	203.9	223.5	277.0	324.3	359.7	392.2	405.8	396.4	372.1	354.4	323.0	297.8	300.0	314.1	334.0	335.3	339.2	339.4	301.3	405.8	169.1	
04/12/2024	316.3	290.4	253.4	212.0	177.0	176.9	197.6	208.3	259.2	303.1	333.2	352.0	368.4	367.1	344.3	330.8	295.3	272.8	272.4	287.1	294.5	302.1	304.3	298.1	284.0	368.4	176.9	
05/12/2024	281.8	260.6	230.1	191.1	169.8	178.5	183.8	206.1	250.0	291.0	310.2	335.9	348.3	333.1	318.6	301.3	272.6	251.3	261.7	275.2	282.5	279.7	283.8	285.2	265.9	348.3	169.8	
06/12/2024	272.7	251.8	218.9	177.7	151.1	142.4	149.0	163.6	201.3	246.0	274.3	301.7	327.5	298.4	317.2	336.1	333.5	339.4	369.6	415.2	439.2	511.4	515.6	517.9	303.0	517.9	142.4	
07/12/2024	510.6	494.3	469.4	434.5	405.8	390.5	422.8	456.0	500.8	523.6	553.9	575.4	593.0	601.1	564.4	522.7	485.1	477.9	474.1	484.7	500.0	510.3	521.6	529.0	500.1	601.1	390.5	
08/12/2024	520.0	503.9	482.0	449.0	425.4	409.6	407.7	408.8	416.3	433.3	447.8	459.8	463.6	459.9	444.3	431.0	427.3	420.5	422.7	435.8	431.6	423.6	433.2	437.0	441.4	520.0	407.7	
09/12/2024	427.4	411.3	388.3	358.2	348.0	366.4	382.3	403.1	429.8	450.3	477.3	512.8	536.1	529.0	512.9	497.7	489.8	490.9	491.2	495.0	500.7	502.8	500.0	500.1	458.4	536.1	348.0	
10/12/2024	484.9	466.2	443.8	411.2	390.6	403.0	421.9	434.6	482.6	536.0	566.0	592.2	605.3	598.4	587.6	576.1	546.6	515.6	514.9	524.5	524.6	522.0	519.2	516.1	507.7	605.3	390.6	
11/12/2024	499.1	477.1	447.0	410.0	392.1	392.4	386.8	404.5	433.8	482.3	518.5	548.2	565.8	566.9	577.7	559.5	548.6	522.1	513.6	511.7	513.9	515.9	512.3	507.4	492.0	577.7	386.8	
12/12/2024	489.8	469.4	444.9	417.8	396.9	404.4	418.5	440.9	472.5	519.5	561.1	597.2	618.2	612.6	601.3	588.9	575.3	551.8	546.4	548.3	554.5	550.2	546.6	554.3	520.1	618.2	396.9	
13/12/2024	538.5	518.3	482.2	448.2	424.4	443.6	467.5	469.5	488.2	529.1	560.7	586.1	605.8	591.0	572.2	566.3	568.9	551.4	552.2	569.3	582.7	597.9	610.0	616.4	539.2	616.4	424.4	
14/12/2024	600.4	583.3	557.7	521.9	491.7	481.4	498.2	523.3	550.1	572.0	607.7	635.9	659.2	659.6	637.1	606.1	593.5	591.2	581.0	595.9	606.5	609.8	614.7	617.9	583.2	659.6	481.4	
15/12/2024	614.3	596.8	580.7	552.2	534.9	535.7	560.2	576.0	596.5	616.5	628.4	635.6	630.3	618.9	579.2	564.9	545.0	537.2	536.2	537.6	547.8	551.9	567.4	568.0	575.5	635.6	534.9	
16/12/2024	560.1	548.1	530.9	509.4	494.0	511.2	501.1	502.5	540.4	584.8	623.8	654.9	674.8	669.2	677.0	682.7	668.7	650.1	639.6	656.7	675.7	678.6	686.1	680.4	686.1	494.0		
17/12/2024	661.4	634.4	606.3	559.0	527.2	526.3	545.7	568.3	590.4	640.4	672.8	698.9	708.4	702.9	674.2	658.6	653.5	633.2	635.0	651.2	656.7	664.0	672.1	665.8	633.6	708.4	526.3	
18/12/2024	655.5	631.8	600.0	561.8	542.2	533.6	543.0	562.7	591.3	632.3	676.0	706.2	726.6	728.5	714.8	702.6	689.5	670.3	653.6	654.9	657.0	656.7	658.9	649.0	641.6	728.5	533.6	
19/12/2024	629.7	607.8	584.4	554.7	537.5	542.1	554.1	584.9	624.2	666.3	698.2	729.2	752.7	762.9	765.8	707.1	660.2	616.1	582.2	554.7	539.9	506.2	501.1	506.4	615.2	765.8	501.1	
20/12/2024	483.0	458.6	433.8	404.6	369.4	366.3	375.8	395.7	428.5	470.5	505.6	543.6	568.2	575.1	572.0	564.3	563.5	557.4	560.5	593.4	613.7	618.1	612.5	608.9	510.1	618.1	366.3	
21/12/2024	584.0	551.9	518.3	454.1	420.8	421.6	449.8	485.6	524.3	558.8	598.1	622.8	638.1	632.7	605.2	567.5	537.7	530.1	546.0	569.0	582.0	589.9	594.9	547.1	638.1	420.8		
22/12/2024	583.5	568.3	543.3	502.0	463.2	452.7	461.5	470.9	487.1	513.0	531.3	550.8	557.6	554.2	530.9	508.9	497.2	478.6	475.0	481.2	502.0	510.5	528.6	540.6	512.2	583.5	452.7	
23/12/2024	534.9	521.0	505.5	492.2	468.8	473.3	481.4	506.4	540.1	587.6	620.3	645.4	658.8	651.8	640.5	620.4	607.5	597.3	600.7	621.2	642.8	656.6	656.0	657.7	582.8	658.8	468.8	
24/12/2024	661.0	630.0	594.8	553.0	543.7	524.9	575.9	603.4	618.0	649.3	690.5	718.2	712.9	724.6	677.2	650.8	632.2	622.8	608.6	608.7	631.1	646.9	651.5	661.7	633.0	724.6	524.9	
25/12/2024	658.5	663.4	666.5	651.2	609.3	579.0	564.2	546.6	542.4	528.8	513.8	503.4	505.4	502.5	498.5	489.4	483.2	479.0	479.9	491.8	511.9	519.6	526.6	538.0	543.9	666.5	479.0	
26/12/2024	534.1	525.7	512.6	490.7	474.5	488.1	516.1	540.2	588.2	629.4	665.3	703.3	721.3	725.0	711.8	711.3	688.6	673.1	666.2	669.4	679.0	675.7	670.8	655.1	621.5	725.0	474.5	
27/12/2024	644.6	626.1	605.4	574.2	551.6	555.2	577.8	598.6	632.0	679.7	711.3	744.5	760.3	766.1	750.7	732.8	717.6	698.6	700.9	714.3	733.2	750.5	762.7	766.5	681.5	766.5	551.6	
28/12/2024	750.3	728.2	698.1	656.6	620.4	620.6	655.1	659.0	675.4	709.6	741.0	770.4	791.9	776.4	730.2	729.3	727.8	715.8	710.5	717.0	726.9	731.7	742.9	738.0	713.5	791.9	620.4	
29/12/2024	726.1	709.1	689.7	653.0	625.7	623.2	634.3	645.6	663.3	690.5	709.5	730.7	744.7	734.7	708.9	698.2	689.7	678.6	679.4	693.0	696.8	700.5	703.6	706.6	689.0	744.7	623.2	
30/12/2024	701.1	685.2	664.1	633.1	622.7	645.8	673.8	701.2	733.4	773.7	819.3	851.9	878.5	869.9	857.1	848.0	838.3	827.8	821.0	856.9	883.4	894.2	893.6	887.3	785.9	894.2	622.7	
31/12/2024	867.5	844.0	811.7	750.4	699.3	701.3	723.1	733.5	760.6	797.9	841.5	873.1	900.1	890.8	865.3	854.9	845.0	830.6	814.1	828.3	841.2	856.0	883.9	903.3	821.5	903.3	699.3	
Prom.	546.5	527.4	502.3	467.5	442.2	442.8	458.7	475.3	505.5	541.4	571.8	598.1	614.1	609.9	592.7	577.4	561.9	547.4	544.3	555.6	566.8	572.6	577.6	578.6				
Max.	867.5	844.0	811.7	750.4	699.3	701.3	723.1	733.5	760.6	797.9	841.5	873.1	900.1	890.8	865.3	854.9	845.0	830.6	821.0	856.9	883.4	894.2	893.6	893.3				
Min.	272.7	251.8	218.9	177.7	151.1	142.4	149.0	163.6	201.3	246.0	274.3	301.7	327.5	298.4	317.2	301.3	272.6	251.3	261.7	275.2	282.5	279.7	283.8	285.2				

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

Reporta: SGGA - GRRNyGA

TABLA : HOJA DE DATOS - OZONO TROPOSFÉRICO (O<sub>3</sub>)

Ciudad	: Tacna	Periodo	: 01 al 31 de diciembre
Nombre/Número de la Estación	: UNANUE	Año	: 2024
Ubicación	: PROLONGACIÓN HIPÓLITO UNANUE 1269 (EX SEDE GORE - TACNA)	Responsable	: GORE - TACNA
Equipo de Muestreo	: THERMO SCIENTIFIC - ANALIZADOR 48i	Tipo de Data	: Horario
Última Calibración del Equipo	: julio - 2024	Unidades	: ug/m <sup>3</sup>
Coordenadas UTM (WGS 84)		Límite de Detección	: --- ug/m <sup>3</sup>
Este	: 366893		
Norte	: 8008890		

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.	
01/12/2024	****	****	****	****	****	18.4	17.4	17.4	17.3	18.5	20.9	23.8	27.6	32.5	36.8	39.9	42.2	42.5	40.9	37.8	34.3	31.0	27.7	24.6	29.0	42.5	17.3	
02/12/2024	23.6	24.0	25.3	27.5	28.6	28.0	27.1	27.4	26.3	25.3	25.5	25.0	25.7	28.7	32.3	34.5	35.9	35.8	33.7	31.8	30.2	28.2	25.9	23.7	28.3	35.9	23.6	
03/12/2024	23.1	23.1	24.2	25.8	26.5	25.6	24.3	23.8	21.9	20.1	19.3	20.1	23.1	27.0	30.8	33.7	35.9	37.0	35.8	32.9	28.6	25.3	22.5	20.3	26.3	37.0	19.3	
04/12/2024	20.0	21.5	23.6	25.4	26.8	25.3	23.6	23.2	21.9	20.8	21.2	23.1	25.4	30.0	34.4	37.2	39.1	39.0	37.1	33.7	30.5	27.0	23.8	20.9	27.3	39.1	20.0	
05/12/2024	20.0	20.6	21.5	23.3	23.7	22.6	22.2	22.2	21.5	21.5	23.7	25.6	28.6	32.8	35.9	38.7	40.4	40.0	36.8	32.9	29.3	26.5	24.5	22.7	27.4	40.4	20.0	
06/12/2024	21.2	21.6	23.0	25.0	26.2	26.5	25.3	24.2	23.2	21.9	21.9	23.1	25.3	28.5	31.9	34.5	36.9	37.7	36.0	33.0	29.3	25.4	22.6	20.2	26.9	37.7	20.2	
07/12/2024	18.6	18.2	19.2	20.3	21.2	21.4	20.6	19.9	18.7	18.1	18.1	19.2	21.3	24.0	27.7	31.4	34.2	34.9	34.2	31.7	28.9	26.2	23.2	20.6	23.8	34.9	18.1	
08/12/2024	19.1	19.2	20.3	22.2	23.3	23.5	23.6	23.7	24.1	24.5	25.7	27.5	30.4	33.3	36.1	38.3	39.0	38.8	36.9	33.9	30.8	29.1	27.0	24.9	28.1	39.0	19.1	
09/12/2024	24.8	25.2	26.1	27.7	28.3	27.1	26.0	25.4	24.1	23.6	24.2	24.5	25.6	28.1	30.6	32.7	34.2	34.2	32.5	30.0	27.5	25.3	23.8	22.0	27.2	34.2	22.0	
10/12/2024	21.4	21.6	22.1	22.9	22.9	21.4	19.8	19.0	17.1	15.9	16.7	18.8	22.8	27.0	31.0	34.2	37.0	38.2	37.1	34.3	30.6	27.8	25.2	23.1	25.3	38.2	15.9	
11/12/2024	22.0	22.2	23.2	24.8	25.6	25.2	25.3	24.6	24.2	23.6	24.5	26.0	28.1	31.2	33.5	36.1	37.5	37.9	36.0	33.2	30.6	28.3	26.2	24.9	28.1	37.9	22.0	
12/12/2024	24.7	25.7	27.4	29.3	30.4	29.7	28.9	27.9	26.5	24.9	25.0	25.6	27.3	30.0	33.3	35.4	36.9	37.4	35.5	32.2	29.4	27.2	25.1	23.4	29.1	37.4	23.4	
13/12/2024	23.1	23.8	25.4	27.4	28.1	26.7	25.3	24.9	24.5	23.9	24.3	25.9	28.4	32.1	35.3	37.2	37.6	36.9	34.8	31.0	27.1	24.0	20.9	18.5	27.8	37.6	18.5	
14/12/2024	17.9	18.3	19.5	20.9	21.6	21.1	20.6	20.5	20.2	20.8	21.9	23.9	26.1	29.0	32.0	34.4	35.6	35.0	33.0	29.4	26.7	24.5	22.4	20.4	24.8	35.6	17.9	
15/12/2024	18.9	18.7	18.1	17.9	17.1	15.7	14.4	14.0	14.3	15.0	17.6	20.4	24.5	28.5	32.2	34.4	35.5	34.9	32.6	30.1	27.0	24.3	22.0	19.9	22.8	35.5	14.0	
16/12/2024	18.8	18.4	18.6	19.6	19.9	19.0	18.9	18.7	17.8	17.5	18.5	20.1	21.6	24.2	26.1	27.9	29.6	30.2	28.9	25.9	23.3	20.9	18.6	16.1	21.6	30.2	16.1	
17/12/2024	14.6	14.5	15.2	16.7	17.1	16.5	15.7	15.8	16.0	15.5	16.2	16.8	19.7	22.8	25.9	28.4	29.4	29.8	28.2	26.3	23.8	21.7	19.9	18.2	20.2	29.8	14.5	
18/12/2024	17.6	18.2	19.7	21.5	22.7	23.0	22.8	22.4	21.5	20.3	20.1	21.2	23.6	26.7	29.7	32.4	34.5	35.7	35.2	33.0	29.8	27.2	25.1	23.7	25.3	35.7	17.6	
19/12/2024	23.0	23.2	24.1	25.5	25.9	25.2	24.4	23.2	21.8	20.6	20.7	21.7	23.8	26.7	30.2	33.0	34.9	35.5	34.3	31.7	28.7	26.1	23.1	21.1	26.2	35.5	20.6	
20/12/2024	20.1	20.2	21.0	22.3	23.2	22.7	21.8	20.8	20.1	19.3	19.4	21.0	24.0	27.3	30.2	32.6	33.9	34.1	32.8	29.1	25.0	21.9	19.9	18.0	24.2	34.1	18.0	
21/12/2024	17.6	18.1	18.7	19.9	20.4	19.9	18.8	18.0	16.9	16.8	18.2	20.3	23.0	26.2	29.3	31.6	33.0	32.7	30.4	27.0	23.3	19.8	17.1	15.2	22.2	33.0	15.2	
22/12/2024	14.5	14.1	14.8	16.2	17.3	17.2	16.8	16.4	16.1	16.7	18.6	20.2	22.2	25.2	28.4	30.9	32.1	32.1	30.1	27.5	24.6	22.1	19.1	16.9	21.3	32.1	14.1	
23/12/2024	16.3	16.1	16.3	16.8	17.3	16.9	16.3	16.2	15.6	15.6	17.0	19.0	21.9	24.8	27.4	29.0	29.8	29.4	27.1	24.1	20.4	17.7	16.0	13.1	20.0	29.8	13.1	
24/12/2024	10.6	10.4	11.3	10.9	10.2	9.6	8.1	9.1	10.6	11.4	12.6	15.5	19.0	21.9	25.4	27.7	28.8	28.6	26.8	24.4	21.5	19.3	17.0	14.9	16.9	28.8	8.1	
25/12/2024	13.0	10.9	9.8	9.6	9.7	9.6	9.2	9.2	10.2	12.5	15.6	18.5	21.6	24.9	28.1	30.5	31.8	31.9	30.3	27.9	25.1	22.4	20.0	18.1	18.8	31.9	9.2	
26/12/2024	17.3	17.3	17.5	18.3	18.8	18.5	17.8	17.2	16.1	15.4	15.9	17.2	19.7	23.3	26.5	29.1	30.8	31.6	30.8	28.6	25.8	22.6	20.4	18.5	21.5	31.6	15.4	
27/12/2024	18.1	18.2	19.0	20.3	21.2	20.9	19.9	19.3	17.9	16.4	16.1	16.3	17.2	19.5	22.0	24.3	25.9	27.1	26.5	24.8	22.7	20.0	17.6	15.4	20.3	27.1	15.4	
28/12/2024	14.2	14.2	14.9	15.7	16.6	16.3	15.0	15.4	15.7	15.6	16.5	18.0	20.1	23.9	28.3	30.0	31.1	31.3	29.8	27.8	24.9	21.8	18.9	17.0	20.5	31.3	14.2	
29/12/2024	16.1	15.9	16.3	17.6	18.8	18.8	18.7	18.6	18.4	18.8	20.0	21.8	23.9	27.0	29.9	32.1	33.0	32.5	30.7	27.5	24.5	21.6	19.0	17.1	22.4	33.0	15.9	
30/12/2024	16.3	16.3	16.8	17.8	18.0	17.4	16.6	15.8	14.9	13.8	13.4	14.2	16.3	19.3	21.8	24.0	25.4	26.2	25.6	23.2	20.0	16.8	14.4	12.3	18.2	26.2	12.3	
31/12/2024	11.4	11.5	12.4	13.7	15.1	15.2	15.1	15.3	14.9	14.3	14.5	16.5	18.8	21.9	24.6	26.5	27.8	27.8	28.9	28.4	25.5	22.1	19.2	16.3	14.3	18.5	28.9	11.4
Prom.	18.6	18.7	19.5	20.8	21.4	20.9	20.1	19.7	19.1	18.7	19.4	20.9	23.3	26.5	29.7	32.1	33.6	33.8	32.3	29.5	26.4	23.7	21.2	19.2				
Max.	24.8	25.7	27.4	29.3	30.4	29.7	28.9	27.9	26.5	25.3	25.7	27.5	30.4	33.3	36.1	38.7	40.4	40.0	37.1	34.3	30.8	29.1	27.0	24.9				
Min.	10.6	10.4	9.8	9.6	9.7	9.6	8.1	9.1	10.2	11.4	12.6	14.2	16.3	19.3	21.8	24.0	25.4	26.2	25.6	23.2	20.0	16.8	14.4	12.3				

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

Reporta: SGGA - GRRNyGA