

**UNIVERSIDAD PRIVADA DE TACNA
FACULTAD DE INGENIERÍA
ESCUELA PROFESIONAL DE INGENIERÍA CIVIL**



TESIS

**“IMPLEMENTACIÓN DE LA METODOLOGÍA GEM CON
OPENQUAKE: EVENT-BASED DAMAGE PARA ESTIMAR EL
RIESGO SÍSMICO PROBABILÍSTICO EN LAS EDIFICACIONES
DE USO RESIDENCIAL EN LA CIUDAD DE TACNA, 2023”**

PARA OPTAR:

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DE USO RESIDENCIAL EN LA CIUDAD DE TACNA, 2023”**

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DEDICATORIA

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ÍNDICE GENERAL

| | |
|---------------------------------------------------|------|
| PÁGINA DE JURADOS..... | ii |
| DECLARACIÓN JURADA DE ORIGINALIDAD | iii |
| DEDICATORIA..... | v |
| AGRADECIMIENTO..... | vii |
| ÍNDICE DE TABLAS | xi |
| ÍNDICE DE FIGURAS | xii |
| ÍNDICE DE ANEXOS | xv |
| RESUMEN | xvi |
| ABSTRACT | xvii |
| INTRODUCCIÓN | 1 |
| CAPÍTULO I: EL PROBLEMA DE LA INVESTIGACIÓN | 2 |
| 1.1. Descripción del Problema..... | 2 |
| 1.2. Formulación del Problema | 5 |
| 1.2.1. Problema General | 5 |
| 1.2.2. Problemas Específicos | 5 |
| 1.3. Justificación e Importancia..... | 5 |
| 1.4. Objetivos | 6 |
| 1.4.1. Objetivo General..... | 6 |
| 1.4.2. Objetivos Específicos | 6 |
| 1.5. Hipótesis..... | 6 |
| 1.5.1. Hipótesis General | 6 |
| 1.5.2. Hipótesis Específicas..... | 6 |
| CAPÍTULO II: MARCO TEÓRICO | 7 |
| 2.1. Antecedentes de la Investigación | 7 |
| 2.1.1. Antecedentes Nacionales | 7 |
| 2.1.1. Antecedentes Internacionales..... | 10 |
| 2.2. Bases Teóricas..... | 13 |

| | | |
|----------------------------------------|--------------------------------------------------------------|----|
| 2.2.1. | Amenaza Sísmica..... | 13 |
| 2.2.2. | Vulnerabilidad Sísmica | 24 |
| 2.2.3. | Riesgo Sísmico..... | 45 |
| 2.3. | Definición de Términos | 47 |
| CAPÍTULOS III: MARCO METODOLÓGICO..... | | 49 |
| 3.1. | Tipo y diseño de la investigación | 49 |
| 3.1.1. | Tipo de investigación | 49 |
| 3.1.2. | Diseño de Investigación..... | 49 |
| 3.2. | Acciones y actividades | 49 |
| 3.3. | Instrumentos de recolección de datos utilizados..... | 50 |
| 3.4. | Tipo y Población y/o muestra de estudio | 51 |
| 3.4.1. | Población de Estudio | 51 |
| 3.4.2. | Muestra de Estudio..... | 52 |
| 3.4.3. | Técnicas de tratamiento de la muestra | 52 |
| 3.5. | Operacionalización de Variables | 54 |
| 3.6. | Procesamiento y análisis de datos..... | 54 |
| 3.6.1. | Tratamiento de datos..... | 54 |
| 3.6.2. | Análisis estadístico | 55 |
| CAPÍTULO IV: RESULTADOS | | 56 |
| 4.1. | Descripción de datos de entrada | 56 |
| 4.2. | Presentación de resultados | 57 |
| 4.2.1. | Actualización del modelo de exposición..... | 57 |
| 4.2.2. | Modelo de exposición del Distrito Alto de la Alianza | 57 |
| 4.2.3. | Curvas de fragilidad..... | 59 |
| 4.2.4. | Modelo de fuentes sísmicas | 64 |
| 4.3. | Resultados del análisis de riesgo sísmico..... | 65 |
| 4.3.1. | Escenarios de Amenaza Sísmica con Eventos Estocásticos | 65 |
| 4.3.2. | Pérdida Anual Promedio Esperada (AAL)..... | 67 |
| 4.3.3. | Pérdidas Máximas Probables (PML)..... | 64 |

| | |
|----------------------------------------------------------------|----|
| CAPÍTULO V: DISCUSIÓN | 67 |
| 5.1. Interpretación de resultados | 67 |
| 5.1.1. Hipótesis específicas | 67 |
| 5.1.2. Hipótesis general | 70 |
| 5.2. Análisis de incertidumbre y limitaciones del estudio..... | 71 |
| 5.3. Proyecciones para estudios futuros | 73 |
| CONCLUSIONES | 75 |
| RECOMENDACIONES | 77 |
| REFERENCIAS BIBLIOGRÁFICAS | 79 |
| ANEXOS | 83 |

ÍNDICE DE TABLAS

| | |
|-------------------------------------------------------------------------------------------------------------|----|
| Tabla 1. Coordenadas geográficas de las fuentes sismogénicas interface..... | 15 |
| Tabla 2. Ubicación geográfica de las fuentes sismogénicas superficiales. | 16 |
| Tabla 3. Coordenadas geográficas de las fuentes sismogénicas interface..... | 17 |
| Tabla 4. Valores de la relación Gutenberg-Richter para cada fuente sismogénica | 21 |
| Tabla 5. Descripción de los estados de daño | 34 |
| Tabla 6. Índice de Valor expuesto por área construida (USD\$/m ²). | 46 |
| Tabla 7. Acciones y actividades | 50 |
| Tabla 8. Muestra reducida de las viviendas por zonas del distrito Alto de la Alianza .. | 53 |
| Tabla 9. Operacionalización de las variables..... | 54 |
| Tabla 10. Variación del modelo de exposición del Distrito Alto de la Alianza del año 2017 al año 2023 | 57 |
| Tabla 11. Taxonomía del modelo de exposición del Distrito Alto de la Alianza..... | 57 |
| Tabla 12. Taxonomía GEM | 59 |
| Tabla 13. Distribución de Eventos Estocásticos | 65 |
| Tabla 14. Daños anuales promedio esperados por activo, según su taxonomía | 67 |
| Tabla 15. Pérdidas económicas Máximas Probables por Periodo de Retorno..... | 64 |
| Tabla 16. Cuadro comparativo de Pérdidas Máximas Probables en el Perú | 69 |
| Tabla 17. Pérdida Promedio Anual en la ciudad de Tacna | 70 |

ÍNDICE DE FIGURAS

| | |
|------------------------------------------------------------------------------------------------------|----|
| Figura 1. Catálogo de tensores de momento centroide global entre 1976-2014..... | 2 |
| Figura 2. Mapa de Amenaza Sísmica del Perú..... | 3 |
| Figura 3. Mapa de sismicidad para el Perú, periodo 1960 al 2012. | 3 |
| Figura 4. Resumen de daños en distritos afectados por el sismo del 23 de junio del 2001 – Tacna..... | 4 |
| Figura 5. Clasificación de peligros originados por fenómenos naturales..... | 7 |
| Figura 6. Plano clave de la sectorización del distrito Alto de la Alianza | 9 |
| Figura 7. Esquema general del análisis de riesgo probabilista. | 10 |
| Figura 8. Pérdida máxima probable en el departamento de Tacna..... | 11 |
| Figura 9. Pérdida promedio anual esperada en el departamento de Tacna..... | 11 |
| Figura 10. Curvas de excedencia de pérdidas promedio para los países andinos..... | 12 |
| Figura 11. Ubicación geográfica de las fuentes sismogénicas interface. | 14 |
| Figura 13. Ubicación geográfica de las fuentes sismogénicas superficiales. | 15 |
| Figura 15. Ubicación geográfica de las fuentes sismogénicas Interplaca | 16 |
| Figura 17. Ángulos de Ruptura de una Falla Sísmica..... | 18 |
| Figura 18. Pasos para el análisis del peligro sísmico determinístico | 19 |
| Figura 19. Pasos para el análisis del Peligro Sísmico Probabilístico. | 20 |
| Figura 20. Ejemplo de resultados de GMPE..... | 22 |
| Figura 21. Mapa de Zonificación Sísmica – Geotécnica para la ciudad de Alto de la Alianza. | 23 |
| Figura 22. Curva de Fragilidad MUR+ADO/H:1 desarrollada por Villar-Vega y otro, 2017. | 25 |
| Figura 23. Curva de Fragilidad MUR+ADO/H:2 desarrollada por Villar-Vega et al. (2017). | 26 |
| Figura 24. Curva de Fragilidad LFINF/HEX:1/RES desarrollada por Villar-Vega et al. (2017)..... | 26 |
| Figura 25. Curva de Fragilidad LFINF/HEX:2/RES desarrollada por Villar-Vega et al. (2017)..... | 27 |
| Figura 26. Curva de Fragilidad LFINF/HEX:3/RES desarrollada por Villar-Vega et al. (2017)..... | 27 |
| Figura 27. Curva de Fragilidad LFINF/HEX:4/RES desarrollada por Villar-Vega et al. (2017)..... | 28 |
| Figura 28. Curva de Fragilidad MCF/DUC/HEX:1/RES desarrollada por Villar-Vega et al. (2017)..... | 28 |

| | |
|---------------------------------------------------------------------------------------------------------------------------------------|----|
| Figura 29. Curva de Fragilidad MCF/DNO/HEX:1/RES desarrollada por Villar-Vega et al. (2017)..... | 29 |
| Figura 30. Curva de Fragilidad MCF/DUC/HEX:2/RES desarrollada por Villar-Vega et al. (2017)..... | 29 |
| Figura 31. Curva de Fragilidad MCF/DNO/HEX:2/RES desarrollada por Villar-Vega et al. (2017)..... | 30 |
| Figura 32. Curva de Fragilidad MCF/DUC/HEX:3/RES desarrollada por Villar-Vega et al. (2017)..... | 30 |
| Figura 33. Curva de Fragilidad MCF/DNO/HEX:3/RES desarrollada por Villar-Vega et al. (2017). Fuente. OpenQuake Platform, (2023) | 31 |
| Figura 34. Curva de Fragilidad MUR/HEX:1/RES desarrollada por Acevedo et al. (2017). | 32 |
| Figura 35. Curva de Fragilidad MUR/HEX:2/RES desarrollada por Acevedo et al. (2017). | 32 |
| Figura 36. Curva de Fragilidad MUR/HEX:3/RES desarrollada por Acevedo et al. (2017). | 33 |
| Figura 37. Curva de Fragilidad MUR/HEX:6/RES desarrollada por Acevedo et al. (2017). | 33 |
| Figura 38. Zonificación por manzanas del Alto de la Alianza, Tacna | 35 |
| Figura 39. Taxonomía de Edificación de GEM | 36 |
| Figura 40. Taxonomía: CR/LFINF+DUC/HEX:1/RES | 37 |
| Figura 41. Taxonomía: CR/LFINF+DUC/HEX:2/RES | 37 |
| Figura 42. Taxonomía: CR/LFINF+DUC/HEX:3/RES | 38 |
| Figura 43. Taxonomía: CR/LFINF+DUC/HEX:4/RES | 38 |
| Figura 44. Taxonomía: CR/LFINF+DNO/HEX:4/RES | 39 |
| Figura 45. Taxonomía: MCF/LWAL+DNO/HEX:1/RES..... | 39 |
| Figura 46. Taxonomía: MCF/LWAL+DNO/HEX:2/RES..... | 40 |
| Figura 47. Taxonomía: MCF/LWAL+DNO/HEX:3/RES..... | 40 |
| Figura 48. Taxonomía: MCF/LWAL+DUC/HEX:1/RES | 41 |
| Figura 49. Taxonomía: MCF/LWAL+DUC/HEX:2/RES | 41 |
| Figura 50. Taxonomía: MCF/LWAL+DUC/HEX:3/RES | 42 |
| Figura 51. Taxonomía: MUR/HEX:1 | 42 |
| Figura 52. Taxonomía: MUR/HEX:2..... | 43 |
| Figura 53. Taxonomía: MUR/HEX:3..... | 43 |
| Figura 54. Taxonomía: MUR/HEX:6..... | 44 |
| Figura 55. Taxonomía: MUR+ADO/LWAL+DNO/HEX:1/RES..... | 44 |
| Figura 56. Diagrama de Costos Promedio de Inmuebles en el Perú. | 46 |

| | |
|------------------------------------------------------------------------------------------------------------------------------|----|
| Figura 58. Diagrama de Índice de Valor expuesto por uso residencial según el nivel socioeconómico. | 46 |
| Figura 59. Mapa Provincial de Tacna | 52 |
| Figura 60. Porcentaje de incidencia por taxonomía del modelo exposición del Distrito Alto de la Alianza | 58 |
| Figura 61. Categorización del modelo exposición del Distrito Alto de la Alianza, por Zona y Taxonomía. | 59 |
| Figura 62. Intensidad de Movimiento: PGA = 0.1g | 60 |
| Figura 63. Intensidad de Movimiento: PGA = 0.2g | 61 |
| Figura 64. Intensidad de Movimiento: PGA = 0.4g | 61 |
| Figura 65. Intensidad de Movimiento: PGA = 0.5g | 62 |
| Figura 66. Intensidad de Movimiento: PGA = 0.6g | 62 |
| Figura 67. Intensidad de Movimiento: PGA = 0.8g | 63 |
| Figura 68. Intensidad de Movimiento: PGA = 1.0g | 63 |
| Figura 69. Distribución de Eventos Estocásticos | 66 |
| Figura 70. Daños anuales promedio esperados por activo, según su taxonomía | 68 |
| Figura 71. Porcentaje de incidencia del estado de daño anual promedio esperados.. | 68 |
| Figura 72. Pérdida máxima Probable por tipología de Edificación. | 65 |
| Figura 73. Porcentaje de Pérdida máxima Probable por tipología de Edificación. | 65 |
| Figura 74. Pérdida Económica Máxima Probable (PML) vs Periodo de Retorno desglosado por Taxonomía de las edificaciones | 66 |
| Figura 75. Pérdida Económica Máxima Probable (PML) vs Periodo de Retorno del Distrito Alto de la Alianza..... | 66 |

ÍNDICE DE ANEXOS

| | |
|-----------------------------------------------------------------------------------------------------|-----|
| Anexo 1. Matriz de Consistencia de la Tesis | 84 |
| Anexo 2. Actualización de Muestra Óptima en Campo del Año 2017 al 2023..... | 85 |
| Anexo 3. Planos de Modelo de Exposición..... | 99 |
| Anexo 4. Plataforma OQ Engine: Archivos de Entrada..... | 109 |
| Anexo 5. Modelo de Amenaza: Rupturas Sísmicas | 216 |
| Anexo 6. Resultados de Riesgo Sísmico: Pérdida Promedio Anual (AAL)..... | 242 |
| Anexo 7. Resultados de Riesgo Sísmico: Pérdidas Máximas Probables por Periodo de Retorno (PML)..... | 268 |

RESUMEN

Esta investigación se enfocó en la evaluación del riesgo sísmico probabilístico en el distrito Alto de la Alianza de la ciudad de Tacna, para lo cual se empleó la metodología GEM en la plataforma OpenQuake Engine, utilizando la calculadora Event-Based Damage. Se recopiló y actualizó la información de tipologías estructurales, se asignaron curvas de fragilidad para definir la vulnerabilidad de las edificaciones, además se utilizaron múltiples fuentes sísmicas para desarrollar un modelo de amenaza sísmica representativa mediante la generación de eventos estocásticos, finalmente se llevaron a cabo cálculos probabilísticos de riesgo sísmico con un horizonte de tiempo de 500,000 años. Los resultados revelaron que la tipología con mayor incidencia en el distrito Alto de la Alianza es MUR/HEX:1 con 56 % y MUR/HEX:2 con 16 %, destacando que las tipologías más vulnerables ante diferentes niveles de aceleración del suelo según las funciones de fragilidad son el MCF/LWAL+DNO/HEX:3/RES y el MUR/HEX:2/RES. Del análisis de riesgo se obtuvieron como principales resultados la Pérdida Anual Promedio Esperada (AAL) que asciende a 1,191 millones US\$ y las Pérdidas Máxima Probable (PML) que asciende los 11,79, 15,26, 33,20 y 26,76 millones US\$ para periodos de retorno representativos 50, 250, 500 y 750 años, también se observó que la tipología con mayores daños promedio anuales corresponden a MUR/HEX:2 y MCF/LWAL+DNO/HEX:2 con 46 y 26 viviendas afectadas respectivamente; asimismo, la tipología que presenta una mayor pérdida económica máxima probable en todas las escalas de periodo de retorno del estudio de riesgo sísmico son MUR/HEX:2, MCF/LWAL+DNO/HEX:2 con un rango de pérdidas entre el 38 % - 43 % y 14 % - 22 % respectivamente. Dichos resultados nos permitieron comprender la amplitud del riesgo sísmico en la zona de estudio y su repercusión económica en la sociedad. Estas conclusiones brindan una base sólida para futuras estrategias de mitigación y planificación urbana en el distrito, contribuyendo al conocimiento y la gestión efectiva del riesgo sísmico en la región.

Palabras Clave. Evaluación de Riesgo Sísmico Probabilístico; Openquake: Evaluación de Daños Basada en Eventos; Vulnerabilidad de Edificaciones; Peligro Sísmico; Pérdidas Económicas.

ABSTRACT

This research focused on the probabilistic seismic risk assessment in the Alto de la Alianza district of Tacna city. The GEM methodology was employed within the OpenQuake Engine platform, utilizing the Event-Based Damage calculator. Information on structural typologies was collected and updated, and fragility curves were assigned to define building vulnerability. Multiple seismic sources were used to develop a representative seismic hazard model through the generation of stochastic events. Subsequently, probabilistic seismic risk calculations were conducted with a 500,000-year time horizon. The results revealed that the most prevalent structural typology in the Alto de la Alianza district is MUR/HEX:1, accounting for 56 %, followed by MUR/HEX:2 with 16 %. Notably, the most vulnerable typologies to various ground acceleration levels, as per fragility functions, were MCF/LWAL+DNO/HEX:3/RES and MUR/HEX:2/RES. From the risk analysis, the primary findings included the Annual Average Expected Loss (AAL) amounting to 1.191 billion US dollars and the Maximum Probable Losses (PML) reaching 11,79, 15,26, 33,20, and 26,76 million US dollars for representative return periods of 50, 250, 500, and 750 years. Additionally, it was observed that the typologies with the highest annual average damages were MUR/HEX:2 and MCF/LWAL+DNO/HEX:2, affecting 46 and 26 dwellings, respectively. Furthermore, the typologies MUR/HEX:2 and MCF/LWAL+DNO/HEX:2 showed the highest maximum probable economic losses across all return period scales in the seismic risk study, with losses ranging from 38 % to 43 % and 14 % to 22 %, respectively. These results provided valuable insights into the extent of seismic risk in the study area and its economic implications for society. These conclusions offer a solid foundation for future mitigation strategies and urban planning in the district, contributing to enhanced knowledge and effective seismic risk management in the region.

Keywords: Probabilistic Seismic Risk Assessment; Openquake: Event-Based Damage; Building Vulnerability; Seismic Hazard; Economic Losses.

INTRODUCCIÓN

La gestión del riesgo de desastres a nivel nacional requiere una evaluación precisa del riesgo de catástrofe y eventos extremos. Esto implica el uso de metodologías confiables que estimen y cuantifiquen las posibles pérdidas en un período específico. Sin embargo, esta tarea presenta desafíos debido a la falta de datos detallados para construir bases de datos sólidas y la escasez de metodologías que integren amenazas, vulnerabilidad y riesgo de manera integral.

Para lograr el objetivo general de identificar y cuantificar el riesgo de catástrofe a nivel nacional, es esencial emplear o incluso desarrollar un método que aborde de manera completa y detallada las amenazas naturales, la exposición de la infraestructura, la vulnerabilidad de sus componentes y la evaluación del riesgo utilizando cálculos probabilistas que consideren las incertidumbres inherentes y las limitaciones de información y capacidad de cómputo.

En muchas ocasiones, es necesario simplificar y resumir la información debido a la falta de datos precisos o la baja calidad de estos, lo que puede implicar ciertos compromisos en términos de exactitud y exhaustividad. En este informe, se presenta una evaluación del riesgo catastrófico en Perú, centrándose en los terremotos, que representan la principal amenaza para el país. La metodología probabilista utilizada se considera sólida para este tipo de modelación y se enfoca en los aspectos cruciales del riesgo de catástrofe para respaldar la protección financiera del Estado. Además, los resultados pueden orientar las prioridades nacionales en gestión del riesgo de desastres.

Esta investigación proporcionara información necesaria para la formulación y actualización de la estrategia de protección financiera del Perú ante riesgos catastróficos, permitiendo estimar los riesgos contingentes relacionados con los desastres naturales y explorar posibles soluciones financieras para garantizar la responsabilidad fiscal del país en caso de eventos catastróficos.

CAPÍTULO I: EL PROBLEMA DE LA INVESTIGACIÓN

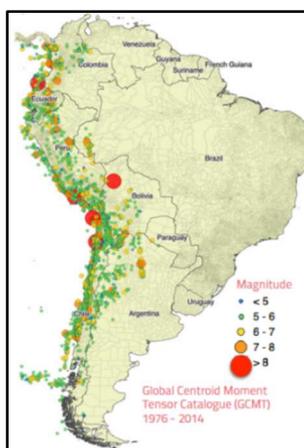
1.1 Descripción del Problema

Un vistazo a la historia devela la vulnerabilidad de las comunidades a nivel global frente a los desastres naturales, en el periodo de años 2001 al 2020 se registró un promedio anual de 364 eventos desastrosos alrededor del mundo, de los cuales los sismos corresponden a un 7,42 %, donde se contabilizaron un promedio de 37,942 muertes y desaparecidos anuales, 6,2 millones de personas afectadas y pérdidas económicas de aproximadamente 35,4 billones de USD (Emergency Event Database [EM-DAT], 2021), por lo cual es evidente que instituciones académicas, gobiernos e industrias deberían comprometerse a establecer como prioridad la toma de acciones para mitigar pérdidas humanas y económicas ante esta amenaza latente en la sociedad. Global Earthquake Model (GEM, como cita en el proyecto South American Risk Assessment, 2013-2015) América del Sur incorpora algunas de las regiones sísmicamente más activas del planeta.

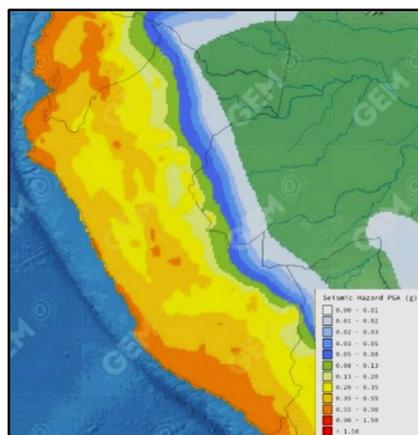
La Figura 1, muestra la zona de subducción de América del Sur genera las fuerzas para crear las montañas de los Andes e impulsa la ocurrencia de terremotos destructivos en Chile, el oeste de Argentina, Bolivia, Ecuador, Perú, Colombia y Venezuela (referido a la figura 1). A su vez, La figura 2, indica la alta vulnerabilidad de muchas estructuras y la alta densidad poblacional de las principales ciudades son factores que contribuyen al alto riesgo sísmico de la región (referido a la figura 2).

Figura 1

*Catálogo de tensores de momento
centroide global entre 1976-2014.*

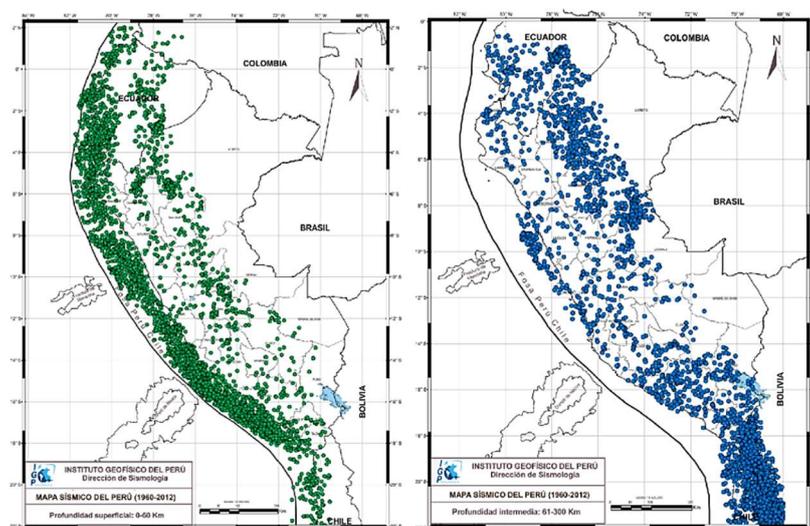


Nota. Adaptado de South American Risk Assessment [SARA], 2013-2015.

Figura 2*Mapa de Amenaza Sísmica del Perú.*

Nota. Adaptado de Global Earthquake Model [GEM], 2018.

El Instituto Geofísico del Perú (IGP, 2014) señala a Perú como uno de los países más sísmicos de América del Sur, debido a que se encuentra ubicada en el borde occidental del continente, donde se tiene presente la interacción entre las placas de Nazca y Sudamericana, históricamente ha sido testigo de la ocurrencia de grandes terremotos que han producido pérdidas tanto humanas como materiales. Los sismos de foco superficial se encuentran distribuidos entre las líneas de la fosa peruano-chilena y la costa, desde el departamento de Tumbes hasta Tacna, y definen a la principal fuente sismogénica del país (referido en la figura 3).

Figura 3*Mapa de sismicidad para el Perú, periodo 1960 al 2012.*

Nota. Instituto Geofísico del Perú [IGP], 2014.

Tavera y Bernal (2005) afirman que las zonas de silencio sísmico en el Perú se encuentran frente a la región Lima, Pisco, frente a las costas de las localidades de Lomas y Chala y, finalmente, frente a las costas de las regiones de Moquegua y Tacna, esta última involucra una gran laguna sísmica correspondiendo al área de ruptura del sismo de 2001 (150 km de longitud), el cual tuvo su epicentro en Arequipa, habiendo sido Tacna una de las zonas afectadas por este, tomando un saldo de 252 heridos, 10 fallecidos, 14,404 viviendas afectadas, 3,772 viviendas destruidas y un total de 58,135 personas damnificadas en la provincia de Tacna (Sistema Nacional de Defensa Civil [SINADECI], 2001).

La figura 4, indica la población y viviendas afectadas por el sismo ocasionado en la ciudad de Tacna en el año 2001 (referido en la figura 4).

Figura 4

Resumen de daños en distritos afectados por el sismo del 23 de junio del 2001 – Tacna.

| DISTRITOS AFECTADOS | POBLACIÓN | | | | VIVIENDAS | |
|--------------------------------|---------------|---------------|------------|------------|---------------|--------------|
| | Damnificados | Desaparecidos | Heridos | Fallecidos | Afectadas | Destruídas |
| Provincia Tacna | 58,135 | 0 | 252 | 10 | 14,404 | 3,772 |
| Albarracín | 5,150 | 0 | 16 | 0 | 2,089 | 58 |
| Alto de la Alianza | 9,932 | 0 | 43 | 2 | 1,626 | 484 |
| Calana | 465 | 0 | 0 | 0 | 100 | 102 |
| Ciudad Nueva | 9,500 | 0 | 30 | 3 | 1,753 | 889 |
| Pachia | 520 | 0 | 3 | 0 | 138 | 231 |
| Palca | 585 | 0 | 26 | 1 | 169 | 134 |
| Pocollay | 3,169 | 0 | 3 | 1 | 570 | 295 |
| Sama Inclán | 950 | 0 | 3 | 0 | 100 | 178 |
| Sama Las Yaras | 1,564 | 0 | 8 | 0 | 157 | 333 |
| Tacna | 26,300 | 0 | 120 | 3 | 7,702 | 1,068 |
| Provincia Candarave | 8,703 | 0 | 28 | 3 | 220 | 1,874 |
| Cairani | 1,250 | 0 | 2 | 1 | 32 | 339 |
| Camilaca | 1,960 | 0 | 5 | 0 | 14 | 252 |
| Candarave | 3,470 | 0 | 5 | 0 | 86 | 830 |
| Curibaya | 226 | 0 | 2 | 1 | 39 | 36 |
| Huanuara | 780 | 0 | 2 | 0 | 29 | 190 |
| Quilahuani | 1,017 | 0 | 12 | 1 | 20 | 227 |
| Provincia Tarata | 2,445 | 0 | 15 | 0 | 453 | 441 |
| Chucatamani | 320 | 0 | 2 | 0 | 49 | 50 |
| Estiquepampa | 110 | 0 | 1 | 0 | 15 | 13 |
| Estiquepueblo | 280 | 0 | 1 | 0 | 53 | 15 |
| Sitajara | 170 | 0 | 1 | 0 | 25 | 10 |
| Susapaya | 460 | 0 | 2 | 0 | 84 | 60 |
| Tarata | 630 | 0 | 8 | 0 | 75 | 130 |
| Tarucachi | 250 | 0 | 0 | 0 | 65 | 10 |
| Ticaco | 225 | 0 | 0 | 0 | 87 | 153 |
| Provincia Jorge Basadre | 5,484 | 0 | 68 | 1 | 430 | 889 |
| Dist. Ite | 2,424 | 0 | 27 | 0 | 140 | 220 |
| Ilabaya | 2,136 | 0 | 17 | 1 | 255 | 363 |
| Locumba | 924 | 0 | 24 | 0 | 35 | 306 |
| Total Tacna | 74,767 | 0 | 363 | 14 | 15,507 | 6,976 |

Nota. Adaptado de Sistema Nacional de Defensa Civil [SINADECI], 2001.

La Región de Tacna al hallarse señalada por múltiples instituciones como una zona de alto peligro sísmico y al mismo tiempo mostrar su vulnerabilidad al verse impactada por grandes pérdidas en el devastador terremoto del año 2001, admite la necesidad de realizar estudios científicos que concilien el peligro sísmico y el estado

actual de vulnerabilidad sísmica de las edificaciones, a fin de estimar el riesgo sísmico con la cual las autoridades puedan prepararse y responder con estrategias para mitigar pérdidas materiales y humanas en posibles escenarios de eventos sísmicos que estén por ocurrir.

1.2 Formulación del Problema

1.2.1 Problema General

¿Es posible contribuir al estudio de riesgo sísmico en el distrito de Alto de la Alianza, ubicado en la ciudad de Tacna en el año 2023, mediante la implementación de la metodología de GEM utilizando OpenQuake: Event-Based Damage, a través de la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica?

1.2.2 Problemas Específicos

- a. ¿Cómo podemos determinar la vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna?
- b. ¿Cómo podemos estimar la amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna?
- c. ¿Cómo podemos estimar el riesgo sísmico de las edificaciones en el distrito del Alto de la Alianza de la ciudad de Tacna?

1.3 Justificación e Importancia

La región sur del país en la que Tacna se encuentra ubicada es una zona que involucra una gran laguna sísmica, lo cual corresponde a un alto potencial de amenaza sísmica que implica grandes cantidades de daños y pérdida económica, el riesgo en la exposición de personas y bienes físicos son referentes que motivaron a la realización de la presente investigación.

Como señalan Yepes-Estrada y Silva (2017): *“Comprender el potencial de pérdidas económicas a través de estudios de evaluación de riesgos es el primer paso para reducir el riesgo sísmico en una región. Este tipo de análisis contribuye al desarrollo de estrategias de reducción del riesgo de desastres (RRD), creación de planes de emergencia antes y después de un desastre, promoción de campañas de concientización sobre el riesgo y desarrollo de mecanismos para transferir el riesgo financiero al sector privado”*.

Evaluar el riesgo sísmico de las edificaciones del distrito del Alto de la Alianza – Tacna tiene la finalidad de brindar a las entidades gubernamentales y de gestión del riesgo información objetiva y métrica que les permitan tomar acciones de

prevención y respuesta ante la ocurrencia de un terremoto, para de este modo buscar al máximo la mitigación del riesgo, al mismo tiempo que se preparan para afrontar gastos en caso de que ocurra uno de estos eventos y poder tener recursos destinados con anterioridad para el mismo.

1.4 Objetivos

1.4.1 Objetivo General

Contribuir al estudio de riesgo sísmico del distrito del Alto de la Alianza de la ciudad de Tacna al año 2023 con la implementación de la metodología de GEM utilizando OpenQuake: Event-Based Damage, mediante la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica.

1.4.2 Objetivos Específicos

- a. Determinar la vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna.
- b. Estimar la amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna.
- c. Estimar el riesgo sísmico de las edificaciones en el distrito Alto de la Alianza de la ciudad de Tacna.

1.5 Hipótesis

1.5.1 Hipótesis General

El estudio del Riesgo Sísmico del Distrito del Alto de la Alianza – Tacna, es viable aplicando la metodología de la fundación GEM utilizando OpenQuake: Event-Based Damage, mediante la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica.

1.5.2 Hipótesis Específicas

- a. La vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna, se determina mediante la asignación de curvas de fragilidad según la tipología estructural de las edificaciones.
- b. La amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna se determina de manera prospectiva anticipando posibles eventos sísmicos derivados de las fuentes sismogénicas de la región.
- c. El riesgo sísmico de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna se determina mediante la generación de múltiples escenarios de daño, lo que nos permite estimar las potenciales pérdidas económicas asociadas.

CAPÍTULO II: MARCO TEÓRICO

2.1 Antecedentes de la Investigación

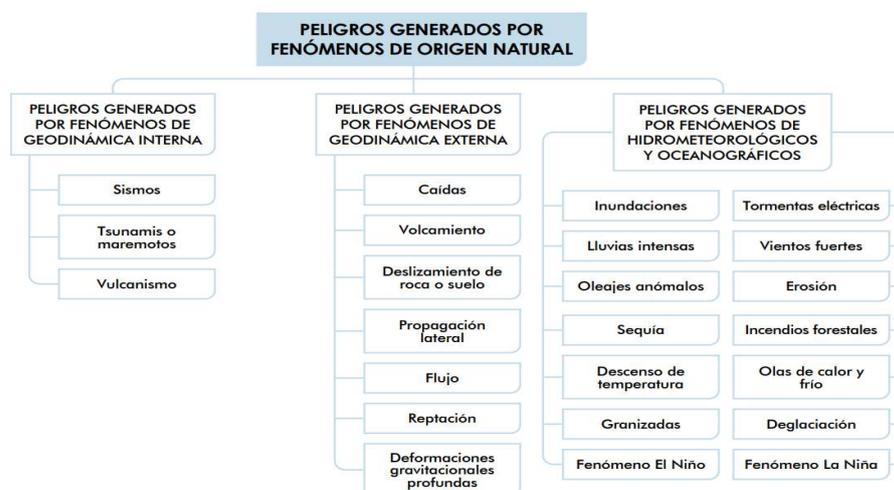
2.1.1 Antecedentes Nacionales

2.1.1.1 Manual para la Evaluación de Riesgos Originados por Fenómenos Naturales – 2da Versión (2014)

El manual técnico desarrollado por CENEPRED (2014) constituye un instrumento técnico orientador en el estudio y aplicación de los procedimientos metodológicos para la evaluación de riesgos originados por fenómenos de origen natural en el Perú; tales como, sismos, tsunamis, erupciones volcánicas, movimientos en masas, descenso de temperatura, erosiones de suelos, entre otros (referido en la figura 5). Incluye una descripción detallada de los conceptos de peligro (amenaza), vulnerabilidad y riesgo; además desarrolla una ruta metodológica para la generación de los mapas de peligrosidad y vulnerabilidad. El manual también argumenta que los niveles de riesgo no solo dependen de los fenómenos de origen natural, sino que es el resultado de relacionar el peligro (amenaza) con la vulnerabilidad de los elementos expuestos ($R_{ie}|_t = f(P_i, V_e)|_t$), dichos estudios se realizan con el fin de determinar los posibles efectos y consecuencias sociales, económicas y ambientales asociadas a los fenómenos peligrosos, y así capacitar a la población para organizarse, asimilar y/o recuperarse ante el impacto (resiliencia).

Figura 5

Clasificación de peligros originados por fenómenos naturales



Nota. Adaptado de CENEPRED (2014).

2.1.1.2 Re-Evaluación del Peligro Sísmico Probabilístico para el Perú (2014)

El proyecto desarrollado por el IGP (2014) es una actualización de los estudios previos de peligro sísmico en el país, considerando nuevos conocimientos y tecnologías. El estudio incluye la modelación de la amenaza sísmica, para ello se estudiaron las fuentes sísmicas que generan los terremotos de nuestro país, se recopiló y analizó información geológica, sísmica, tectónica y geodésica de la zona, y se elaboró un modelo de la estructura de la corteza terrestre. Los resultados mostraron que las zonas más propensas a generar terremotos en el país son la costa norte y central, la región de Arequipa y la frontera sur con Chile. Además, se identificaron algunas fallas activas y se evaluó su capacidad de generar terremotos de magnitud significativa. Con esta información se actualizó la evaluación del peligro sísmico en Perú, lo que permitió mejorar la planificación territorial y la gestión del riesgo de desastres en el país, además los resultados de este estudio son utilizados para la elaboración de normas y reglamentos de construcción.

2.1.1.3 Microzonificación Sísmica de la Ciudad de Tacna (2008)

En la tesis para obtener el título profesional de Ingeniero Civil, Cotrado (2008) realizó un análisis geológico, geotécnico y de amenaza sísmica, donde se identificaron las características del suelo y realizaron pruebas de geofísica y mediciones de aceleración de suelo. Se encontró que la ciudad de Tacna está en una zona de alta sismicidad y que hay una variabilidad significativa de las propiedades geotécnicas y de las características de respuesta sísmica del suelo en diferentes partes de la ciudad, se determinaron las zonas de mayor riesgo y se propusieron medidas de prevención y mitigación, como la implementación de normativas de construcción, la reubicación de infraestructuras críticas, la elaboración de planes de emergencia y la educación a la población sobre medidas de seguridad ante sismos.

Podemos concluir de la investigación que la ciudad de Tacna presenta una alta vulnerabilidad sísmica debido a la presencia de zonas con suelos blandos, así como a la antigüedad y calidad de las edificaciones, por lo tanto, es importante la implementación de medidas de mitigación y prevención, como la actualización de las normas de construcción y la implementación de programas de reforzamiento y rehabilitación de estructuras existentes.

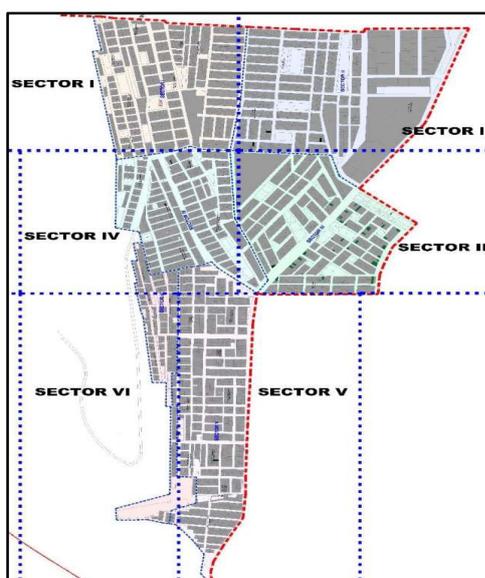
2.1.1.4 Estimación del Riesgo Sísmico de las Viviendas Informales de Albañilería Construidas con Blocker II en el Distrito de Alto de la Alianza, Tacna – 2018 (2018)

En la tesis para obtener el título profesional de Ingeniero Civil, Cabello y Apaza (2018) utilizaron la metodología propuesta por la Arq. Lozano para estimar el riesgo sísmico en las edificaciones del distrito de Alto de la Alianza, extrayendo de campo los siguientes parámetros de vulnerabilidad: Número de pisos (N), Materiales (M), Usos de suelo (U), Sistema estructural (S), Modalidad de Construcción (W) y estado de conservación (E). Evaluando un total de 7077 viviendas, de las cuales podemos decir: 69.78 % son de 1 piso, el 39.51 % son construidas con unidades de albañilería como Bloqueta, y el 55.90 % de estas son construidas con Blocker II, el 97.32 % tienen un uso residencial, el 74.09 % tienen un sistema estructural de albañilería informal, el 99.12 % de las viviendas son Informales y el 53.83% se encuentra en un estado de conservación regular. Con lo cual finalmente se concluye que el 14.95 % (1058 viviendas) se encuentran en Muy Alto riesgo; el 50.57 % (3576 viviendas), en Alto riesgo; el 27.18 % (1924 viviendas), en Medio riesgo; y el 7.3 % (520 viviendas), en Bajo Riesgo.

La figura 6, muestra cómo se encuentra zonificada la zona de evaluación realizada por la investigación de Cabello y Apaza (referido en la figura 6).

Figura 6

Plano clave de la sectorización del distrito Alto de la Alianza



Nota. Adaptado de Cabello y Apaza (2017).

2.1.1 Antecedentes Internacionales

2.1.1.1 Perfil de Riesgo de Desastres para Perú (2014)

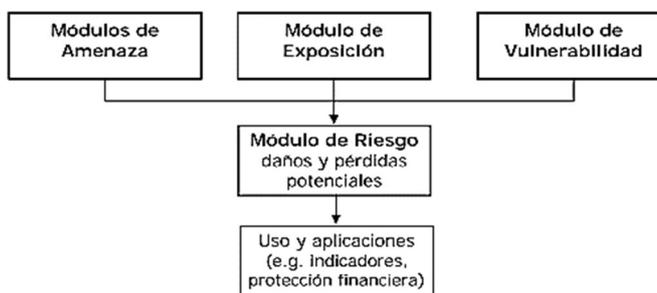
En la nota técnica del Banco Interamericano de Desarrollo (2014) se realiza un análisis de riesgo a nivel nacional en Perú en el que señala que los terremotos forman parte de los fenómenos naturales que representan mayor riesgo para el país, mostrando que en caso de ocurrir un terremoto con periodo de retorno de 500 años el país perdería más de US\$ 65.000 millones del valor de sus infraestructuras.

Para la estimación del riesgo sísmica se desarrollan modelos de pronóstico de terremotos que permitan la estimación de daños, pérdidas científicamente posibles que puedan ocurrir en el futuro, cabe resaltar que se realizó el estudio con altas incertidumbres inherentes a los modelos de análisis con respecto a la severidad y a la frecuencia de ocurrencia de los eventos.

La Figura 7, ilustra el modelo de riesgo probabilista (MRP), construido a partir de una secuencia de módulos, cuantifica las pérdidas potenciales (referido en la figura 7).

Figura 7

Esquema general del análisis de riesgo probabilista.



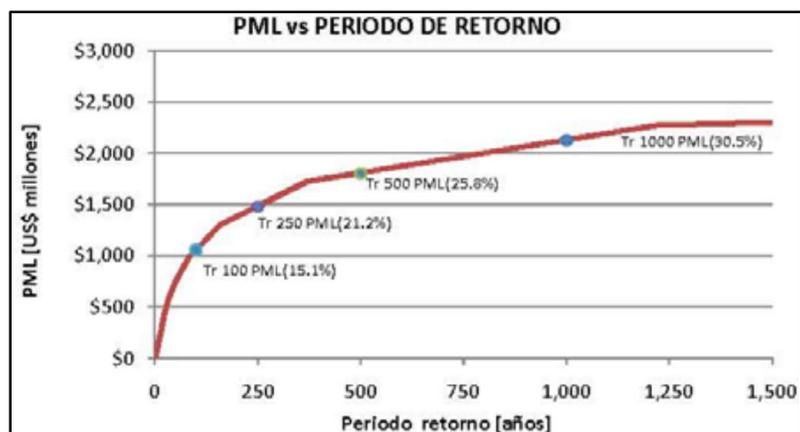
Nota. Adaptado del Banco Interamericano de Desarrollo [BID] (2014).

En el anexo 5 de la investigación, entre los resultados del departamento de Tacna, se muestra una curva de pémica máxima probable y un gráfico de barras de la pérdida anual esperada en las construcciones de uso residencial de 2.5, 14 y 12 millones US\$ en los niveles socio - económico bajo, medio y alto, respectivamente.

La Figura 8, muestra un gráfico que muestra la relación PML y el Periodo de retorno, según los datos obtenidos por el BID (referido en la figura 8).

Figura 8

Pérdida máxima probable en el departamento de Tacna

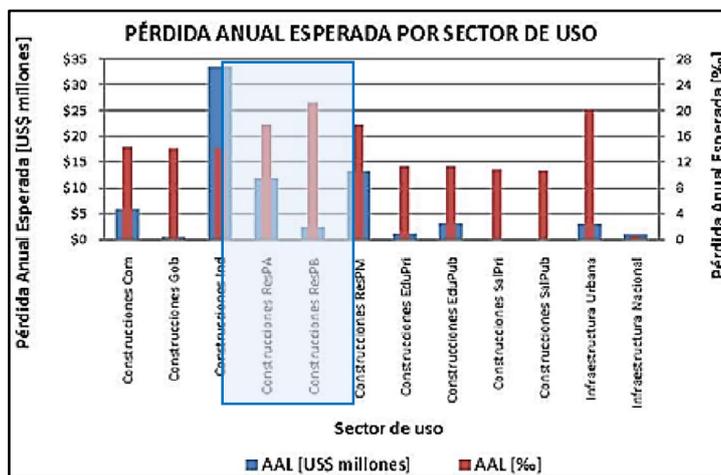


Nota. Adaptado del Banco Interamericano de Desarrollo [BID] (2014).

La Figura 9, indica un gráfico que muestra la pérdida promedio anual por sector de uso en el departamento de Tacna, según los datos obtenidos por el BID (referido en la figura 9).

Figura 9

Pérdida promedio anual esperada en el departamento de Tacna.



Nota. Banco Interamericano de Desarrollo [BID] (2014).

2.1.1.2 Probabilistic Seismic Risk Assessment of the Residential Building Stock in South America (2017)

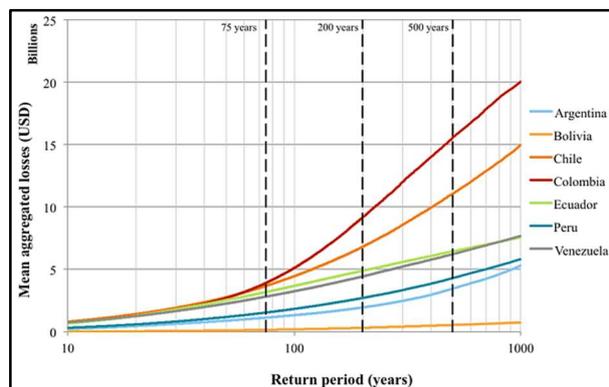
En el artículo de investigación de Yepes-Estrada y Silva (2017) presentan una evaluación probabilística integral del riesgo sísmico de las edificaciones residenciales de los países de América del Sur propensos a terremotos: Argentina, Bolivia, Chile,

Colombia, Ecuador, Perú y Venezuela. Resultando de la investigación componen métricas de riesgo en varias resoluciones espaciales: mapas de pérdida económica anual promedio, curvas de exceso de pérdida media por país y distribución estadística de pérdidas por clase de edificio.

La Figura 10, muestran los resultados que ubican a Perú en el 5° lugar de los países mencionados en las curvas de excedencia de pérdidas promedio, calculando una pérdida económica aproximada de 4 billones de USD en un periodo de retorno de 500 años, que corresponde al 10 % de probabilidad de excedencia en la vida útil de 50 años de una estructura, en las que la clase de edificación que presentan mayores pérdidas económicas son las de adobe, mampostería no reforzada y mampostería confinada, respectivamente. Atribuyendo a la región de Tacna una pérdida económica promedio anual de 5 a 10 millones de USD (referido en la figura 10).

Figura 10

Curvas de excedencia de pérdidas promedio para los países andinos



Nota. Adaptado de Yepes-Estrada y Silva (2017).

2.1.1.3 Estimation of a Source Model and Strong Motion Simulation for Tacna City, South Peru (2014)

El artículo de investigación de Pulido et al. (2014) describe un estudio de simulación de movimiento fuerte y modelado de fuente sísmica en la ciudad de Tacna, en el sur de Perú. El estudio se basó en la estimación de los parámetros de la fuente del terremoto de Pucará de 2001, utilizando datos de registros de aceleración y datos de GPS, con los cuales se calcularon la distribución espacial del deslizamiento de la falla y las características de la fuente del terremoto.

Los resultados de las simulaciones de movimiento fuerte en la ciudad de Tacna mostraron que la amplificación del suelo es significativa en la ciudad,

especialmente en las zonas cercanas al río Caplina y en las laderas de las colinas. El estudio concluye que la ciudad de Tacna es vulnerable a terremotos debido a la presencia de sedimentos y suelos blandos que pueden amplificar la energía sísmica, y que las características del movimiento del suelo pueden variar significativamente en diferentes partes de la ciudad.

2.2 Bases Teóricas

2.2.1 Amenaza Sísmica

2.2.1.1 Sismicidad de la Ciudad de Tacna

Los sismos son fenómenos que representan la liberación de energía interna de la tierra, mediante la ruptura de las capas de la corteza y que se manifiestan como movimientos ondulatorios que pueden llegar a alcanzar magnitudes variadas (INDECI, 2018).

Un sismo se inicia como un episodio de ruptura y desplazamiento discontinuo en cierta parte de un sistema de fallas, que se convierte en una fuente sísmica. Estos episodios se alternan con deformaciones más lentas en las secuencias de “stick-slip”. Casi un millón de terremotos de magnitud 2 o más se registran cada año en todo el mundo. Alrededor de un centenar de ellos causan daños considerables y una o dos veces en una década se produce un terremoto catastrófico. Los epicentros de los terremotos se concentran en cinturones sísmicos que abarcan placas tectónicas, los bloques principales que componen la litosfera (Keilis-Borok, 2002).

a. Fuentes Sísmicas

Una fuente sismogénica se define como una entidad geológica, geofísica y sísmica que exhibe similitudes notables en términos de sus propiedades geológicas, geofísicas y sísmicas. Esto implica que su potencial sísmico es uniforme en toda la fuente, es decir, que el proceso de generación y repetición de sismos se mantiene constante tanto en el espacio como en el tiempo. Establecer con precisión la geometría de una fuente sismogénica es de importancia fundamental para la evaluación del peligro sísmico, ya que proporciona los parámetros esenciales que rigen la sismo-tectónica de la región bajo investigación (Ancco Huanacuni, 2018).

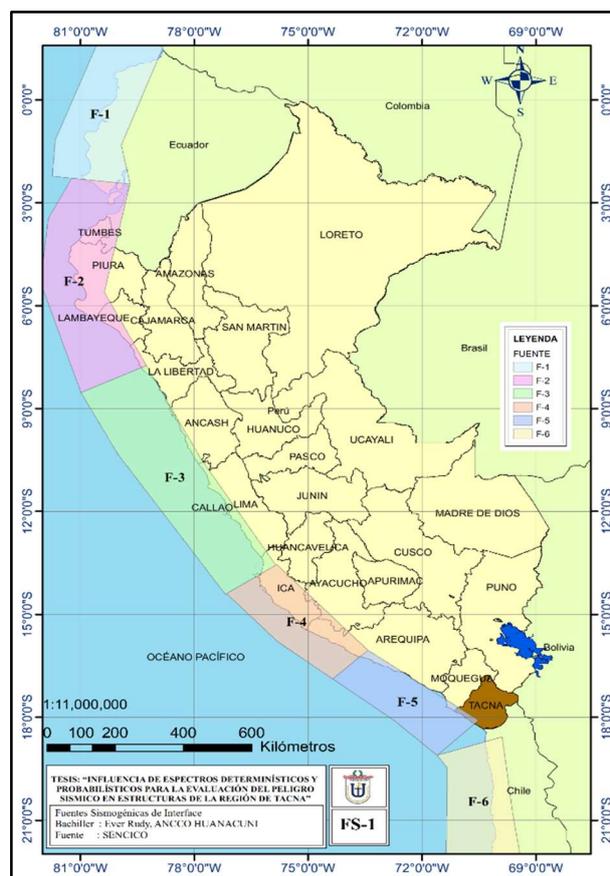
Las fuentes sísmicas se refieren a las áreas geológicas donde se originan los terremotos. Estas fuentes pueden ser fallas tectónicas, puntos calientes, o zonas de subducción, y se caracterizan por liberar energía sísmica debido a la actividad de las placas tectónicas. El estudio de estas fuentes es fundamental para comprender y prevenir terremotos y sus efectos en áreas pobladas.

Para el presente trabajo de investigación se utilizarán las siguientes fuentes sísmicas cuyos datos fueron extraídos de la investigación “Actualización del programa de cómputo orientado a la determinación del peligro sísmico del país”, desarrollada por SENCICO y cuyos mapas fueron adaptados por el Ing. Ancco en la tesis “Influencia de Espectros Determinísticos y Probabilísticos para la Evaluación del Peligro Sísmico en Estructuras de la Región de Tacna”:

La Figura 11, representa las fuentes sismogénicas del tipo interface que se encuentran ubicadas en Perú (referido en la figura 11) y la Tabla 1 muestra las coordenadas geográficas de la fuente sismogénica 5 ubicada cerca de la ciudad de Tacna (referido en la tabla 1).

Figura 11

Ubicación geográfica de las fuentes sismogénicas interface.



Nota. Adaptado de Ancco Huanacuni (2018)

Tabla 1

Coordenadas geográficas de las fuentes sismogénicas interface.

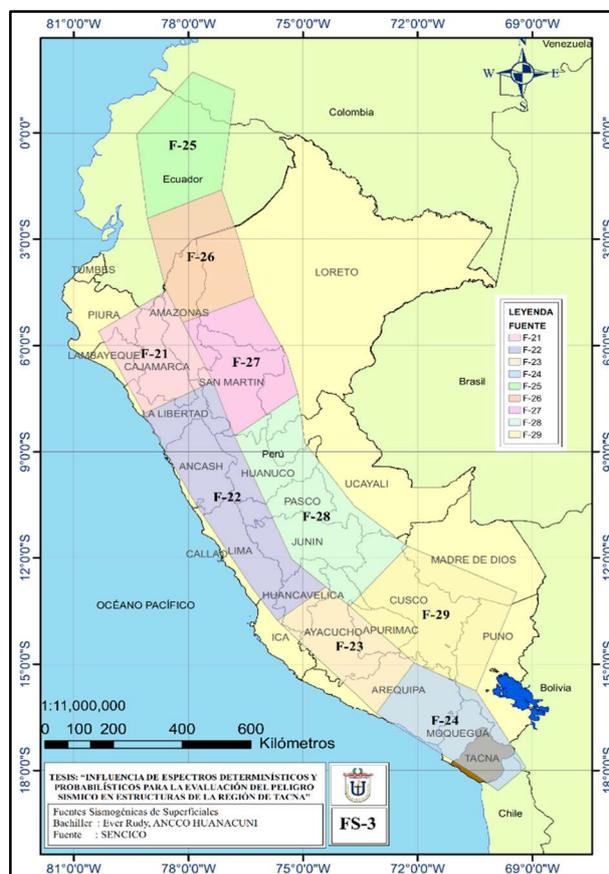
| Fuente | Longitud (°S) | Latitud (°W) | Profundidad (km) |
|--------|---------------|--------------|------------------|
| F5 | -73,430 | -16,039 | 70 |
| F5 | -74,360 | -16,880 | 30 |
| F5 | -72,727 | -18,100 | 30 |
| F5 | -71,602 | -19,101 | 30 |
| F5 | -70,517 | -18,082 | 75 |

Nota. Adaptado de SENCICO (2016)

La Figura 12, representa las fuentes sismogénicas del tipo superficial que se encuentran ubicadas en Perú (referido en la figura 12) y la Tabla 2 muestra las coordenadas geográficas de la fuente sismogénica 24 ubicada cerca de la ciudad de Tacna (referido en la tabla 2).

Figura 12

Ubicación geográfica de las fuentes sismogénicas superficiales.



Nota. Adaptado de Ancco Huanacuni (2018)

Tabla 2

Ubicación geográfica de las fuentes sismogénicas superficiales.

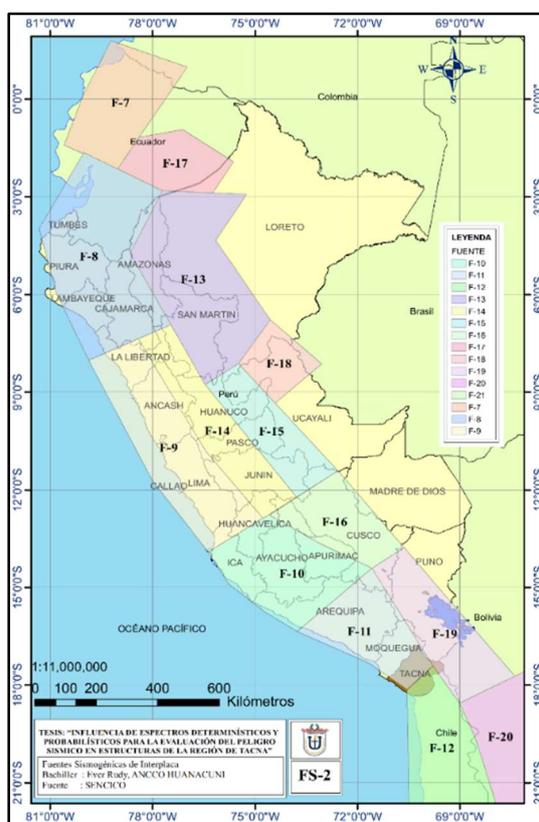
| Fuente | Longitud (°S) | Latitud (°W) | Profundidad (km) |
|--------|---------------|--------------|------------------|
| F24 | -73,090 | -16,383 | 30 |
| F24 | -70,517 | -18,096 | 30 |
| F24 | -69,900 | -18,564 | 30 |
| F24 | -69,174 | -17,909 | 30 |
| F24 | -70,484 | -15,743 | 30 |
| F24 | -72,106 | -14,949 | 30 |

Nota. Adaptado de SENCICO (2016)

La Figura 13, representa las fuentes sismogénicas del tipo interplaca que se encuentran ubicadas en Perú (referido en la figura 13) y la Tabla 3 muestra las coordenadas geográficas de la fuente sismogénica 11, 12 y 19 ubicadas cerca de la ciudad de Tacna (referido en la tabla 3).

Figura 13

Ubicación geográfica de las fuentes sismogénicas Interplaca



Nota. Ancco Huanacuni (2018)

Tabla 3*Coordenadas geográficas de las fuentes sismogénicas interface*

| Fuente | Longitud (°S) | Latitud (°W) | Profundidad (km) |
|---------------|----------------------|---------------------|-------------------------|
| F11 | -71,660 | -17,328 | 70 |
| F11 | -70,558 | -18,134 | 70 |
| F11 | -69,800 | -17,400 | 140 |
| F11 | -71,584 | -14,405 | 140 |
| F11 | -73,778 | -16,347 | 65 |
| F12 | -70,480 | -22,999 | 70 |
| F12 | -69,275 | -22,999 | 100 |
| F12 | -67,872 | -22,999 | 150 |
| F12 | -67,911 | -21,766 | 150 |
| F12 | -68,560 | -19.6 10 | 155 |
| F12 | -69,020 | -18,550 | 150 |
| F12 | -69,800 | -17,400 | 140 |
| F12 | -70,558 | -18,143 | 100 |
| F19 | -70,592 | -16,070 | 150 |
| F19 | -69,800 | -17,400 | 140 |
| F19 | -69,020 | -18,550 | 150 |
| F19 | -68,246 | -18,155 | 200 |
| F19 | -67,398 | -17,724 | 250 |
| F19 | -70,646 | -13,766 | 250 |
| F19 | -71,584 | -14,405 | 175 |

*Nota. Adaptado de SENCICO (2016)***b. Ruptura o Falla Sísmica**

Según el boletín denominado “Proceso de Ruptura Sísmica” (1992), indica que se han observado que los procesos de ruptura de grandes terremotos globales exhiben una gran variabilidad, mientras que estudios actuales sugieren que el comportamiento de ruptura promedio podría ser inesperadamente simple. Existen dos tipos de ruptura especiales: terremotos desbocados con fases de crecimiento débiles y terminación relativamente abrupta, y terremotos complejos con todos los mecanismos de falla, pero en su mayoría son de orígenes superficiales (<40 km). La diversidad de patrones de liberación de momentos temporales impone un límite en la previsibilidad de la magnitud en la alerta temprana de terremotos.

La propagación de la ruptura va a depender principalmente del estado de esfuerzos a la que se encuentre sometida la zona a fallar. Antes de producirse la

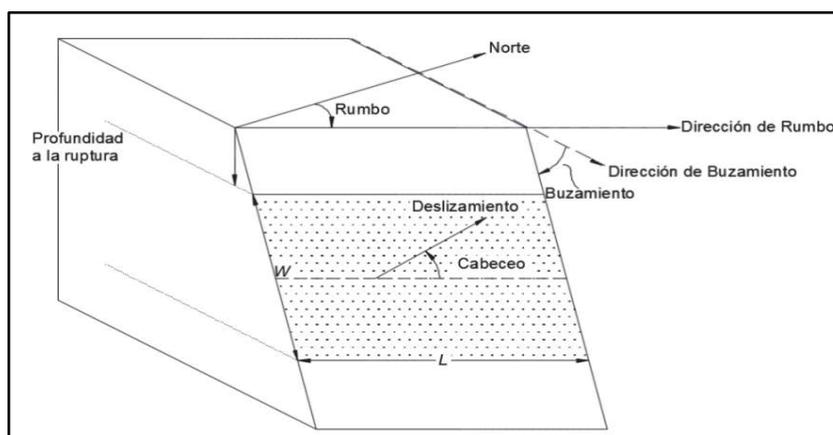
ruptura, la fuente sísmica es abordada por una fuerte concentración de esfuerzos. Si la sola resistencia al desplazamiento es sobrepasada, entonces se produce un relajamiento de esfuerzos debido a la ruptura de esta zona frágil llamada aspereza (Tavera, 1992).

La Figura 14, representa en el contexto de la tectónica de placas, los mecanismos de falla cuyos elementos clave para entender cómo la corteza terrestre responde a las fuerzas internas (referido en la figura 14).

- **Strike (Φ):** Ángulo de Rumbo. Indica la dirección de falla en grados decimales entre 0° a 360° , en relación con el norte.
- **Dip (δ):** Ángulo de buzamiento. Indica el ángulo de la falla en grados decimales entre 0° a 90° en relación con la horizontal.
- **Rake (λ):** Angulo de deslizamiento o cabeceo. Indica la dirección del movimiento de un segmento durante la ruptura, medida en rumbo de la falla.

Figura 14

Ángulos de Ruptura de una Falla Sísmica.



Nota. Adaptado de Contreras y otros, 2022.

2.2.1.2 Peligro Sísmico

a. Metodología para el Cálculo del Peligro Sísmico Determinístico

Según la investigación desarrollada por Kramer (1996), la metodología de análisis de riesgo sísmico determinista (DSHA), se enfoca en evaluar el peligro sísmico basado en un escenario sísmico específico, lo que hace que la metodología parezca simple, pero también conlleva limitaciones en términos de considerar incertidumbres y variabilidad en los eventos sísmicos, dicha metodología se compone de los siguientes pasos (referencia en la figura 15):

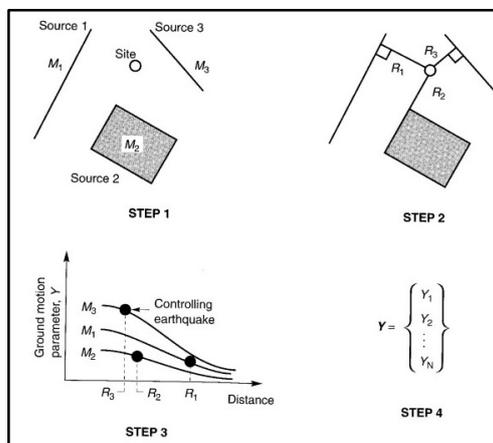
- **Identificación y Caracterización de Fuentes Sísmicas:** Se identifican y describen las fuentes sísmicas que pueden generar movimientos del suelo

en el sitio. Esto incluye definir la geometría de cada fuente y su potencial sísmico.

- **Selección de Distancias de Origen al Sitio:** Se elige un parámetro de distancia (epicentral o hipocentro) desde la fuente sísmica al sitio de interés. Se suele seleccionar la distancia más corta entre la fuente y el sitio.
- **Selección del Terremoto de Control:** Se selecciona el terremoto que se espera genere el nivel más fuerte de temblor en el sitio. Esto se hace comparando los niveles de temblores estimados para los terremotos identificados en el paso 1, que ocurren a las distancias identificadas en el paso 2.
- **Definición del Peligro Sísmico en el Sitio:** Se cuantifica formalmente el peligro sísmico en el sitio en términos de los movimientos del suelo generados por el terremoto de control. Esto se hace utilizando parámetros como la aceleración máxima, la velocidad máxima y el espectro de respuesta.

Figura 15

Pasos para el análisis del peligro sísmico determinístico



Nota. Adaptado de Kramer, 1996.

b. Metodología para el Cálculo del Peligro Sísmico Probabilístico

En las últimas dos o tres décadas, se ha adoptado el uso de conceptos probabilísticos en la evaluación de peligros sísmicos, lo que permite tener en cuenta las incertidumbres relacionadas con los terremotos, como su magnitud, ubicación y tasa de recurrencia, así como las variaciones en las características del movimiento del suelo. El Probabilistic Seismic Hazard Analysis (PSHA) proporciona un marco para

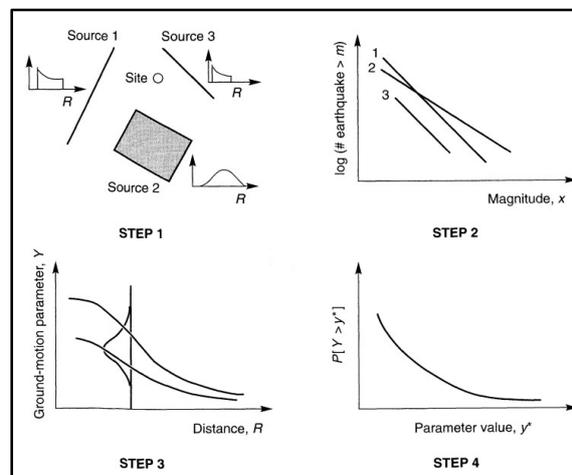
identificar, cuantificar y combinar estas incertidumbres de manera coherente, brindando una imagen más completa del peligro sísmico.

Según la investigación desarrollada por Kramer (1996), el PSHA puede describirse como un procedimiento de cuatro pasos, que comparte cierta similitud con el procedimiento Deterministic Seismic Hazard Analysis (DSHA) (referencia en la figura 16):

- Identificación y caracterización de las fuentes de terremotos, considerando la probabilidad de ubicaciones potenciales de ruptura dentro de cada fuente.
- Caracterización de la sismicidad o la frecuencia de recurrencia de los terremotos en cada fuente utilizando relaciones de recurrencia.
- Determinación del movimiento del suelo en el sitio causado por terremotos de diferentes tamaños en todas las fuentes utilizando relaciones predictivas.
- Combinación de las incertidumbres en la ubicación, el tamaño y la predicción del movimiento del suelo para calcular la probabilidad de que se supere un cierto parámetro del movimiento del suelo en un período de tiempo específico.

Figura 16

Pasos para el análisis del Peligro Sísmico Probabilístico.



Nota. Adaptado de Kramer, 1996.

Un PSHA efectivo requiere una atención cuidadosa a la caracterización de las fuentes sísmicas y la predicción de los parámetros del movimiento del suelo, así como una comprensión sólida de la mecánica de los cálculos de probabilidad.

c. Recurrencia Sísmica

En un análisis probabilístico de peligro sísmico, se parte de la hipótesis fundamental de que la relación de recurrencia derivada de la actividad sísmica pasada es

adecuada para proyectar la actividad sísmica futura. Cada una de las fuentes generadoras de terremotos posee atributos específicos definidos por sus parámetros sismológicos. Estos parámetros incluyen la magnitud mínima de ocurrencia homogénea (M_{min}), la pendiente de la distribución Gutenberg-Richter.

La Tabla 4, indican los valores de la relación Gutenberg-Richter para cada fuente sismogénica necesarios para realizar un análisis probabilístico sísmico (referido en la tabla 4).

Tabla 4

Valores de la relación Gutenberg-Richter para cada fuente sismogénica

| | Interface | | Intraplaca | | Superficial |
|--------------------------------------------------|-----------|-----------|------------|-----------|-------------|
| | Fuente 5 | Fuente 11 | Fuente 12 | Fuente 19 | Fuente 24 |
| a (Gutenberg-Richter) | 3,708 | 3,873 | 6,159 | 3,672 | 4,155 |
| b (Gutenberg-Richter) | 0,671 | 0,764 | 1,081 | 0,710 | 0,960 |
| M_0 (Magnitud Mínima) | 4,500 | 4,500 | 4,500 | 4,500 | 4,500 |
| λ (Mo) tasa anual de excedencia de M_0 | 5,758 | 2,561 | 13,324 | 2,488 | 0,631 |
| $\sigma(b)$ | 0,033 | 0,026 | 0,106 | 0,115 | 0,118 |
| $\beta = \ln(10) b$ | 1,546 | 1,759 | 2,489 | 1,636 | 2,210 |
| $\sigma(\beta) = \ln(10) \sigma(b)$ | 0,077 | 0,059 | 0,244 | 0,265 | 0,271 |
| $E(\mu)$ | 8,000 | 6,000 | 6,500 | 6,000 | 6,000 |
| $\sigma(\mu)$ | 0,000 | 0,000 | 0,000 | 0,000 | 0,000 |
| $M1 = E(\mu) - \sigma(\mu)$ | 8,000 | 6,000 | 6,500 | 6,000 | 6,000 |
| $M1 = E(\mu) + \sigma(\mu)$ | 8,000 | 6,000 | 6,500 | 6,000 | 6,000 |

Nota. Ancco Huanacuni (2018).

d. Modelos de Movimiento de Terreno (GMPEs - MMT)

Las ecuaciones de predicción del movimiento del suelo (GMPE) o relaciones de "atenuación", proporcionan un medio para predecir el nivel de temblor del suelo y su incertidumbre asociada en cualquier sitio o ubicación dada, en función de la magnitud del terremoto, la distancia de la fuente al sitio, el suelo local condiciones, mecanismo de falla, etc. Los GMPE se utilizan de manera eficiente para estimar los movimientos del suelo para su uso en análisis de peligro sísmico tanto deterministas como probabilísticos (Pacific Earthquake Engineering Research Center [PEER], s.f.).

A nivel mundial son dos los grupos principales que han venido trabajando en el desarrollo de base de datos de ecuaciones de predicción de movimiento fuerte estos son: PEER y GEM. De los cuales podemos destacar para el presente estudio:

- **YoungsEtAl1997SSlab, YoungsEtAl1997SInter.** Desarrollada por R.R Youngs, S-J Chiou, W.J. Silva, J.R. Humphrey (1997), esta implementa las ecuaciones para la región tectónica de tipo "subducción intraplaca" y "subducción interfase".

- **SadighEtAl1997**. Desarrollada por K. Sadigh, C-Y Chang, J.A. Egan, F. Makdisi, R.R. Youngs (1997), esta implementa las ecuaciones para la región tectónica de tipo “corteza superficial activa”.

e. Nivel de truncamiento

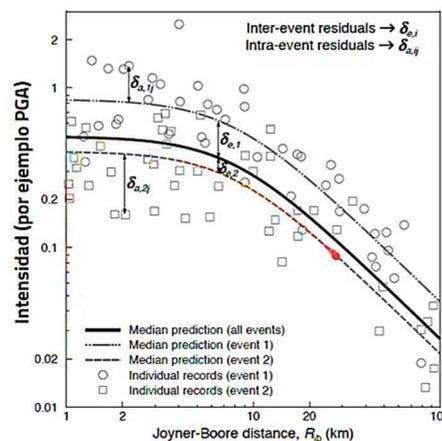
El nivel de truncamiento es un parámetro crítico en la Probabilistic Seismic Hazard Analysis (PSHA) que se emplea para definir la incertidumbre en la amplitud y la dirección de los movimientos sísmicos en un área determinada, este nivel hace referencia a una configuración específica relacionada con el modelado de amenazas sísmicas.

Según Pagani et al. (2023) en el Manual de OpenQuake Engine el nivel de truncamiento es un parámetro de la distribución gaussiana del logaritmo del movimiento del suelo utilizado en el cálculo del peligro. El nivel de truncamiento determina cuántas de las frecuencias más altas se incluirán en el modelo de amenaza sísmica, lo que afecta la representación de la incertidumbre en los campos de movimiento. Por lo que podemos concluir que reducir el nivel de truncamiento implica eliminar algunas de las frecuencias más altas, lo que puede simplificar el análisis y reducir la incertidumbre, pero también podría llevar a subestimar el riesgo sísmico en términos de movimientos de alta frecuencia. En situaciones de variabilidad, se utiliza una desviación estándar de hasta 3 veces la media, mientras que en ausencia de variabilidad se utiliza 0.

La Figura 17, representa un ejemplo de los resultados generados por las ecuaciones de predicción del movimiento del suelo (referido en la figura 17).

Figura 17

Ejemplo de resultados de GMPE.



Nota. Adaptado de OpenQuake, 2020.

f. Condiciones de sitio

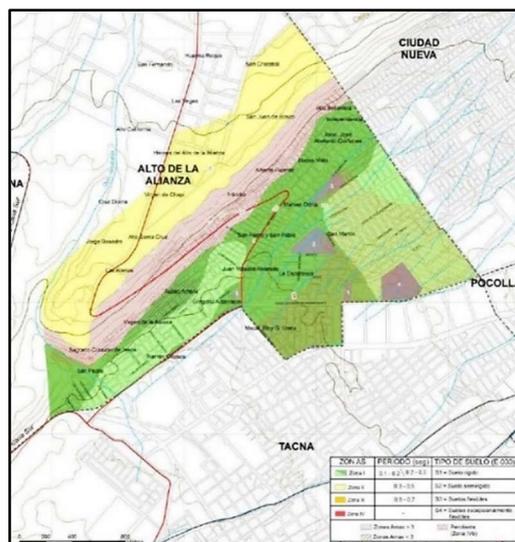
El distrito de Alto de la Alianza clasificado según la geotecnia del suelo como Zona II, correspondiente a suelos de clasificación SM arenas limosas de origen fluvial, presenta asentamientos con resultados de 3,32cm, por ello edificaciones mayores de 4 pisos originarían un problema estructural. El distrito también presenta zonas consentidas por material antropogénico o de relleno (referido en la figura 18) (INDECI, 2007).

Para el presente estudio se tomarán en consideración los siguientes parámetros:

- **VS30 (m/s).** La velocidad media de las ondas de corte en los primeros 30 metros de terreno, se escoge entre los 500 m/s a 1500 m/s, perfil tipo S1 de la NTE 030 (Ministerio de Vivienda, Contrucción y Saneamiento, 2018).
- **Profundidad mínima VS30 \geq 1 km/s (m).** La distancia vertical desde la superficie terrestre hasta donde las ondas sísmicas empiezan a propagarse con una velocidad mayor a 1 km/s, se escoge por defecto de 100 metros.
- **Profundidad mínima VS30 \geq 2,5 km/s (km).** Se escoge 2 km por defecto.

Figura 18

Mapa de Zonificación Sísmica – Geotécnica para la ciudad de Alto de la Alianza.



Nota. Adaptado del Instituto Geofísico del Perú, 2018.

2.2.2 Vulnerabilidad Sísmica

2.2.2.1 Metodología

- **Método empírico:** Son modelos de vulnerabilidad basados en la experimentación, observación y análisis estadístico. Se define la vulnerabilidad como el resultado de un análisis empírico de terremotos históricos, opinión de expertos, observación a estructuras afectadas, registros de acelerógrafos y análisis de estadísticas obtenidas en diversos escenarios sísmicos. Los resultados de análisis de vulnerabilidad empírico pueden ser expresados de manera cualitativa y cuantitativa usando matrices de probabilidad de daños, índices de vulnerabilidad y curvas de fragilidad continuas (Calvi, y otros, 2006).
- **Método analítico:** Se construyen curvas por medio de modelaciones matemáticas a partir de criterios de ensayos de laboratorio, ecuaciones que describen el comportamiento estructural dinámico y criterios de expertos en ingeniería estructural. Las curvas de fragilidad analíticas se elaboran en su mayoría usando métodos de análisis estructural estáticos o dinámicos, no lineales. La no linealidad considera la degradación de la rigidez de la estructura a medida que se somete a mayores esfuerzos. El método de empuje progresivo también llamado “Pushover” es un método ampliamente usado para considerar la no-linealidad de los materiales y a partir de esto, definir los estados límites de daño de una estructura a partir de desplazamientos y distorsiones (derivadas) de pisos (Hinestroza Farfán, 2018).

2.2.2.2 Modelo de vulnerabilidad

a. Curva de Fragilidad

Las curvas de fragilidad se definen como la representación gráfica de la función de distribución acumulada, de la probabilidad de alcanzar o exceder un estado de daño límite específico, dada una respuesta estructural, ante una acción sísmica determinada (Federal Emergency Management Agency [FEMA], 1999).

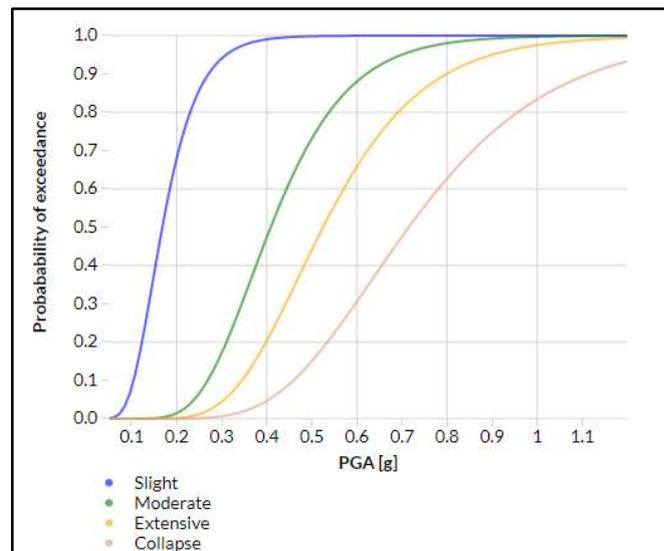
Una curva de fragilidad o sísmica es una función que relaciona la intensidad sísmica con el daño o pérdida esperada en un elemento expuesto específico. Asimismo, representan la probabilidad de que la respuesta de una estructura exceda un determinado estado límite, en función a un parámetro que define la intensidad del suelo, también definido como una medida de vulnerabilidad sísmica de una estructura en términos probabilísticos (Bonett Díaz, 2003).

En el presente estudio se consideran las curvas de fragilidad de:

- **Villar-Vega** (2014), evalúa la vulnerabilidad sísmica de las edificaciones por la metodología analítica, basándose en los análisis no lineales de la historia temporal (NLTHA) emplea acelerogramas sintéticos para calcular la respuesta estructural y derivar conjuntos de funciones de fragilidad. Dichas funciones se utilizaron en las estimaciones de pérdidas para tres escenarios sísmicos diferentes en diferentes países de América del Sur, tales como: Argentina, Bolivia, Chile, Colombia, Ecuador, Perú y Venezuela. Las curvas de fragilidad utilizadas según el en esta investigación son las siguientes figuras (En referencia de la figura 19, figura 20, figura 21, figura 22, figura 23, figura 24, figura 25, figura 26, figura 27, figura 28, figura 29 y figura 30).

Figura 19

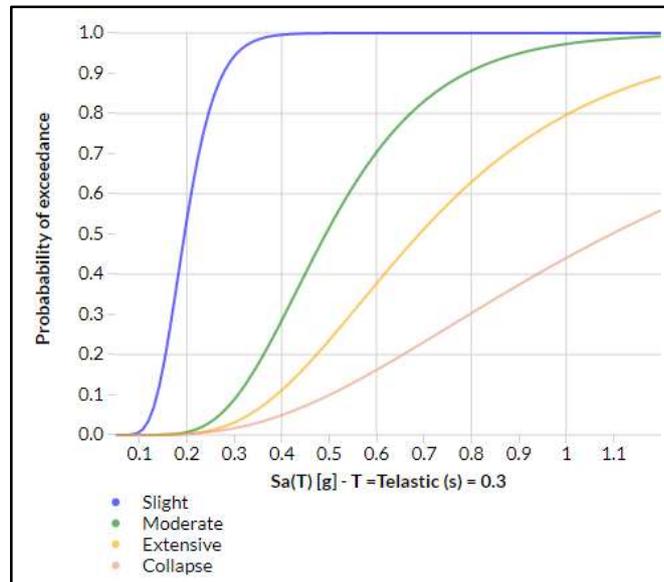
Curva de Fragilidad MUR+ADO/H:1 desarrollada por Villar-Vega y otro, 2017.



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 20

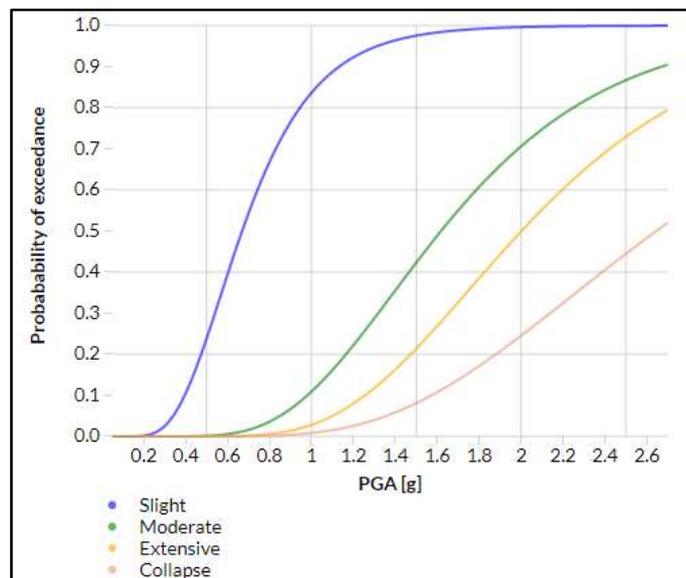
Curva de Fragilidad MUR+ADO/H:2 desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 21

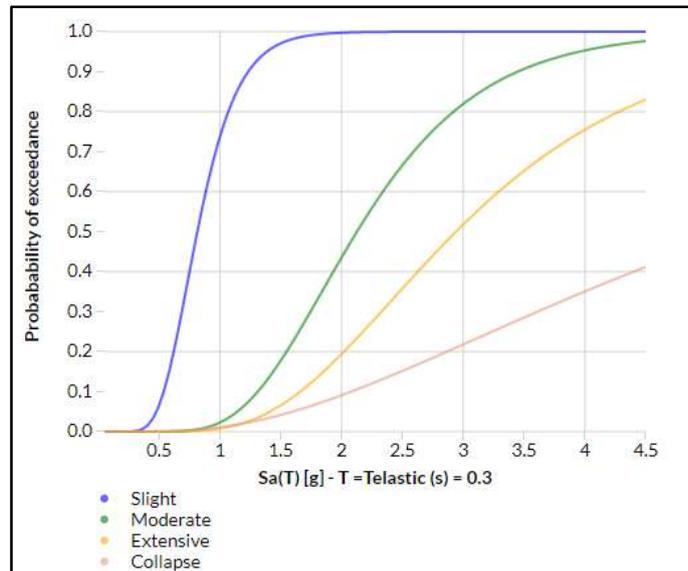
Curva de Fragilidad LFINF/HEX:1/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 22

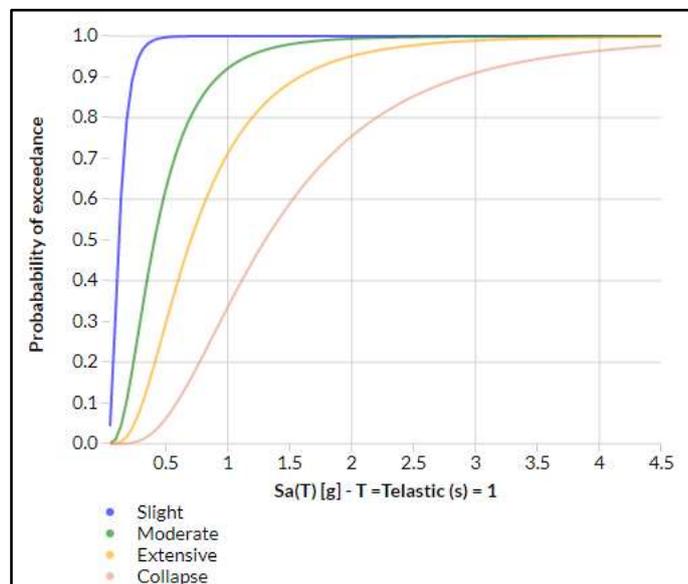
Curva de Fragilidad LFINF/HEX:2/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 23

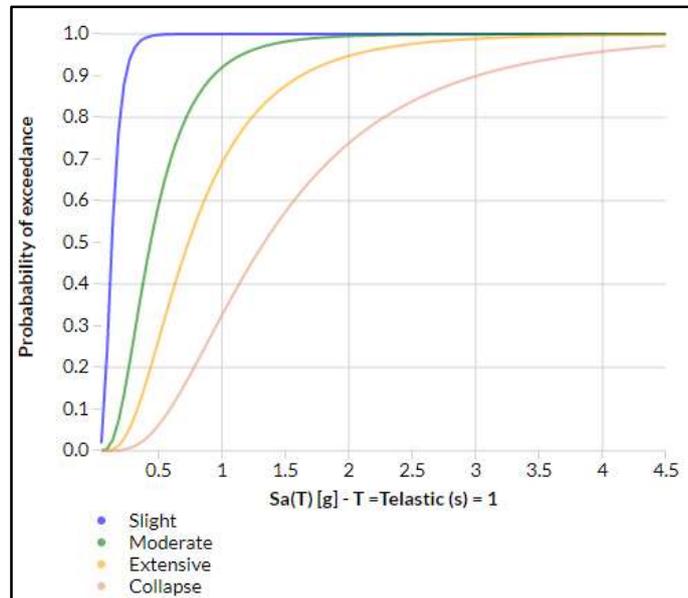
Curva de Fragilidad LFINF/HEX:3/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 24

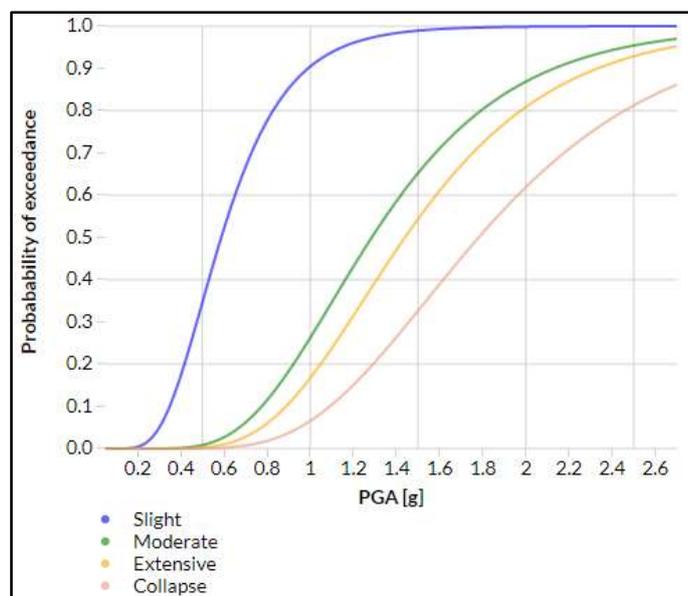
Curva de Fragilidad LFINF/HEX:4/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 25

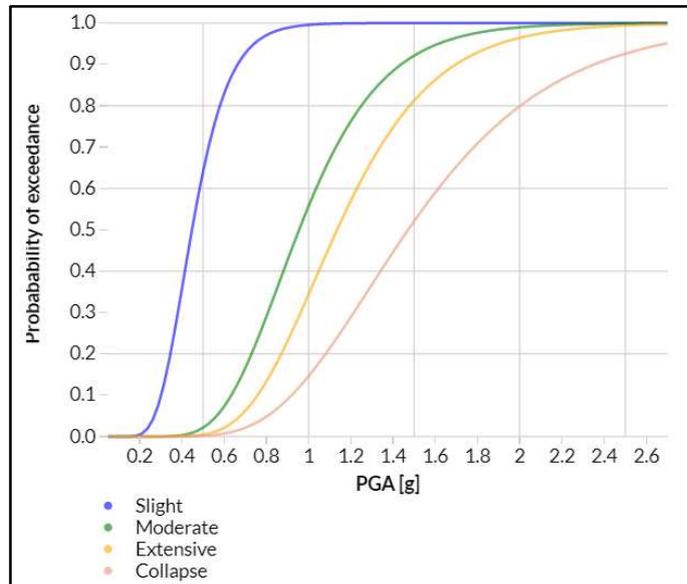
Curva de Fragilidad MCF/DUC/HEX:1/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 26

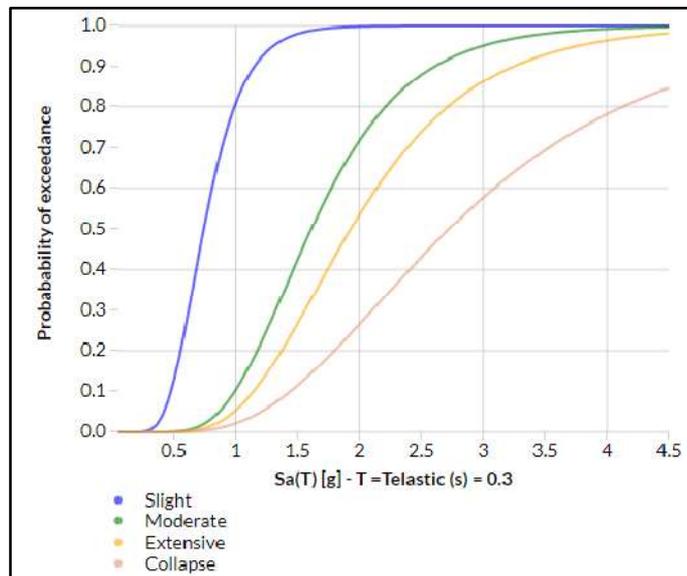
Curva de Fragilidad MCF/DNO/HEX:1/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 27

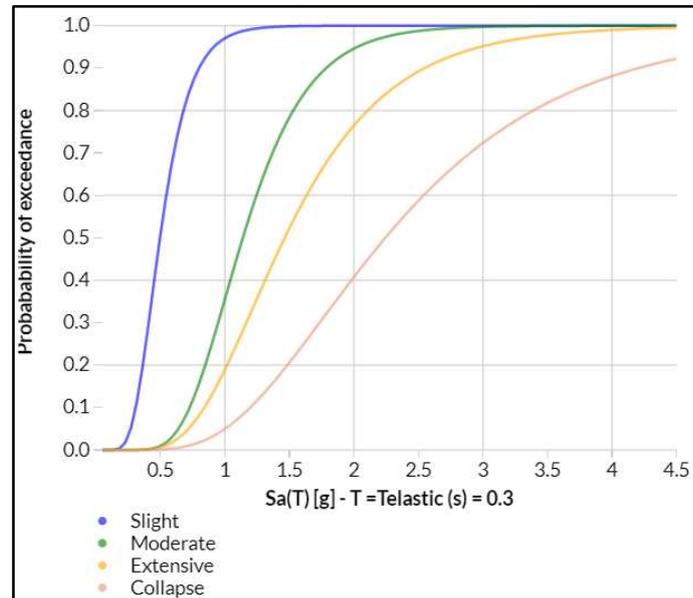
Curva de Fragilidad MCF/DUC/HEX:2/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 28

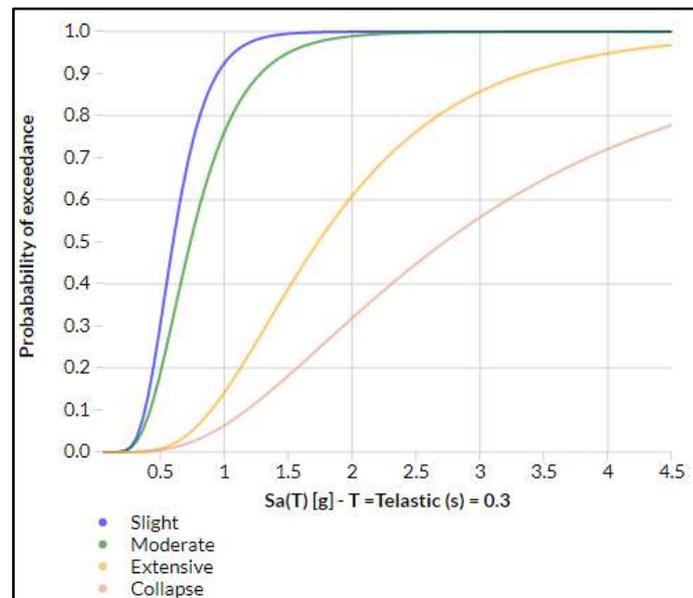
Curva de Fragilidad MCF/DNO/HEX:2/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 29

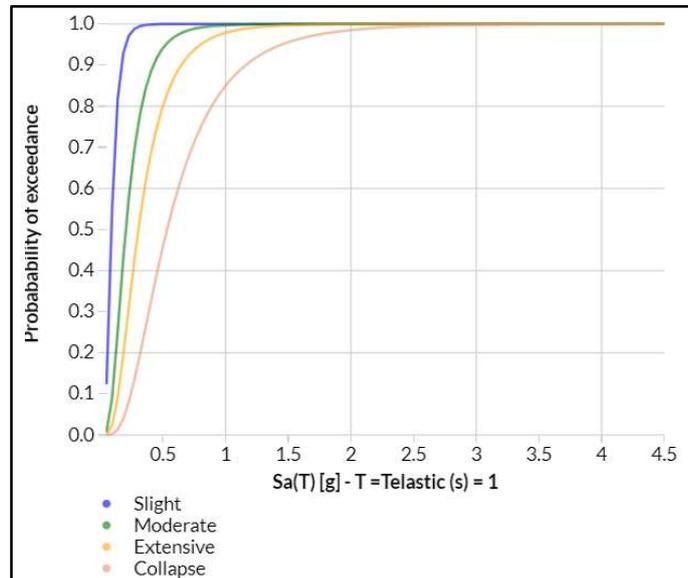
Curva de Fragilidad MCF/DUC/HEX:3/RES desarrollada por Villar-Vega et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 30

Curva de Fragilidad MCF/DNO/HEX:3/RES desarrollada por Villar-Vega et al. (2017). Fuente. OpenQuake Platform, (2023)

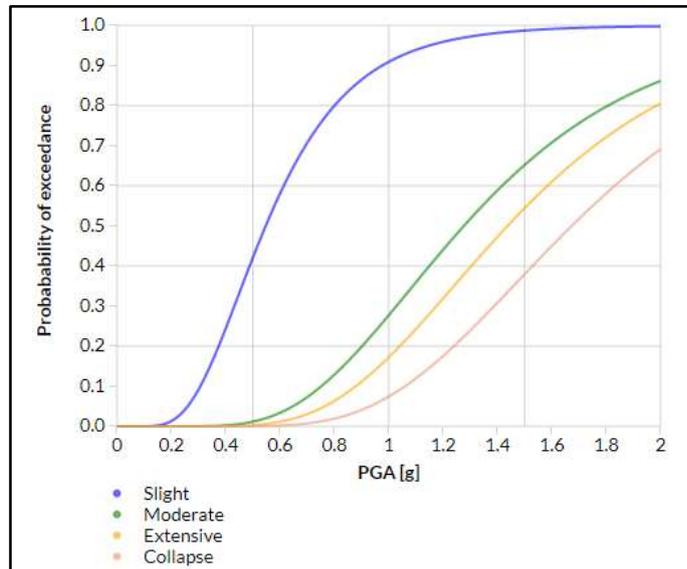


Nota. Adaptado de OpenQuake Platform [GEM] (2023).

- **Acevedo et al. (2017)**, desarrollan funciones de fragilidad para edificios de mampostería no reforzada y la estimación de daños en edificios para dos posibles eventos sísmicos. Las funciones de fragilidad se derivaron utilizando análisis no lineales de la historia temporal sobre osciladores de un solo grado de libertad, para estructuras de mampostería no reforzada. Las curvas de fragilidad utilizadas según el en esta investigación son las siguientes (En referencia de la figura 31, figura 32, figura 33 y figura 34):

Figura 31

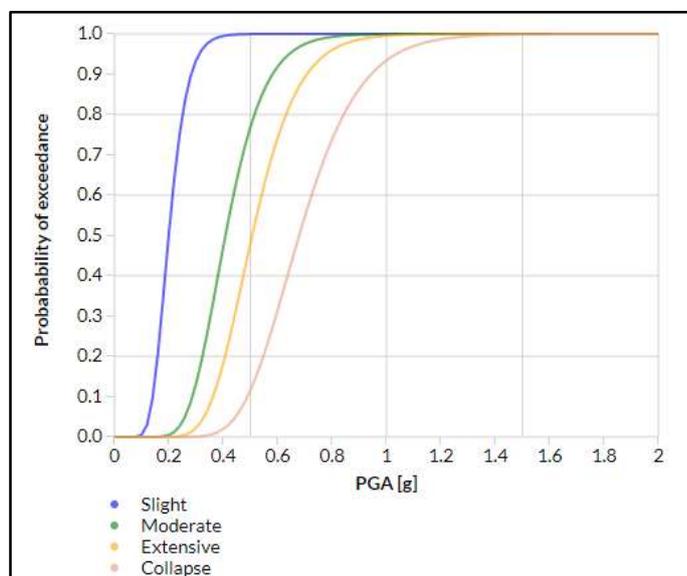
Curva de Fragilidad MUR/HEX:1/RES desarrollada por Acevedo et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 32

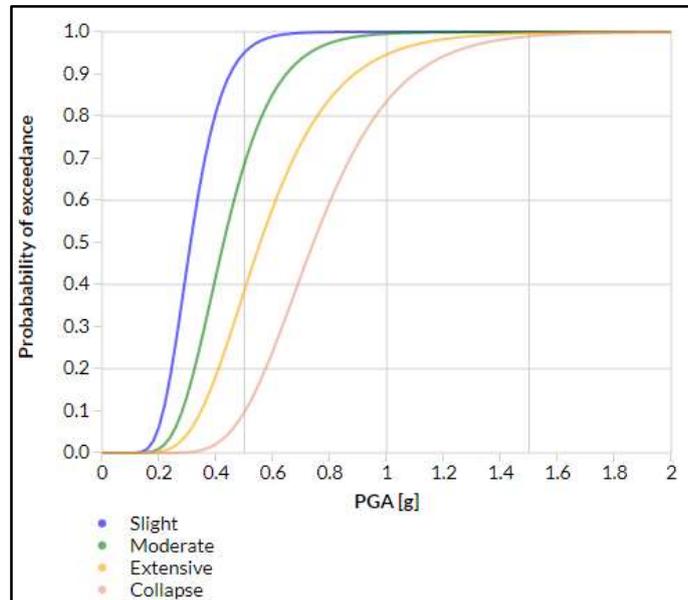
Curva de Fragilidad MUR/HEX:2/RES desarrollada por Acevedo et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 33

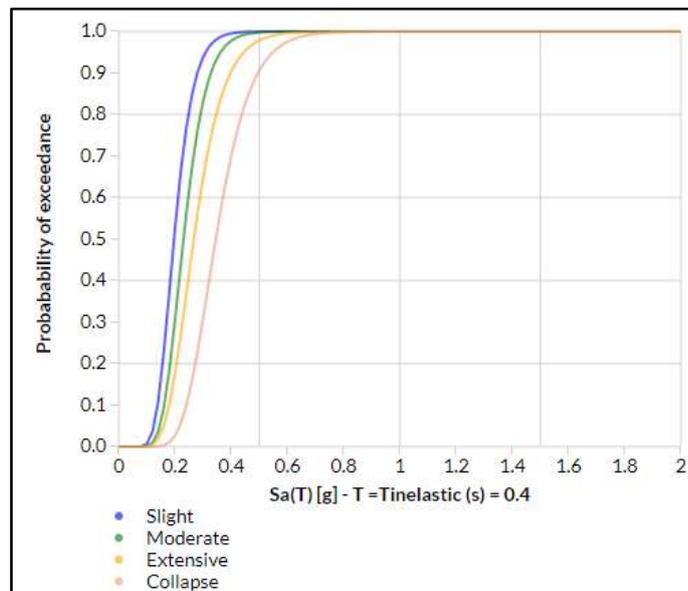
Curva de Fragilidad MUR/HEX:3/RES desarrollada por Acevedo et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

Figura 34

Curva de Fragilidad MUR/HEX:6/RES desarrollada por Acevedo et al. (2017).



Nota. Adaptado de OpenQuake Platform [GEM] (2023).

b. Modelo de Consecuencia

Indican la potencial distribución de pérdidas, transforman costo de reposición con el número de objetos a reponer, o tiempo de reposición con el número de objetos a reparar (Tarque, 2016).

c. Factor de Pérdida por Estados de daño

Según Hwang y Lin (2002) se define el Factor de Pérdida (Fi) como el porcentaje (%) del costo de la obra que se pierde durante el evento sísmico y que se puede correlacionar de manera aproximada con el estado de daño. A continuación, se muestran estos valores para cada estado de daño, según la experiencia internacional (Referido a la Tabla 5).

Tabla 5

Descripción de los estados de daño

| | Estado de daño | Descripción | Factor de Pérdida (Fi) |
|---|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
| 0 | Sin Daño | Sin daño estructural, con posible presencia de pequeños daños en componentes no estructurales. | 0 % |
| 1 | Daño Leve | Presencia de pocas, localizadas y muy pequeñas grietas en elementos estructurales. Evidentes grietas en los elementos no estructurales, separación entre la tabiquería y los elementos. | 5 % |
| 2 | Daño Moderado | Grietas evidentes en elementos estructurales con pérdida de recubrimiento en algunos casos. La mayoría de las paredes de tabiquería exhibe grandes grietas diagonales y horizontales y algunas pueden perder su estabilidad. | 20 % |
| 3 | Daño Severo | Falla localizada de algunos elementos estructurales o sus conexiones sin pérdida de la estabilidad vertical del sistema. La mayoría de la tabiquería presenta grandes grietas y varias paredes pueden volcarse. La mayoría del mobiliario no anclado se ha volcado. La estructura presenta una deformación lateral permanente. | 65 % |
| 4 | Daño Completo | Desplazamiento lateral excesivo. Pérdida de la estabilidad vertical. Representa el colapso parcial o total de la edificación. | 100 % |

Nota. Adaptado de Hwang y Lin (2002)

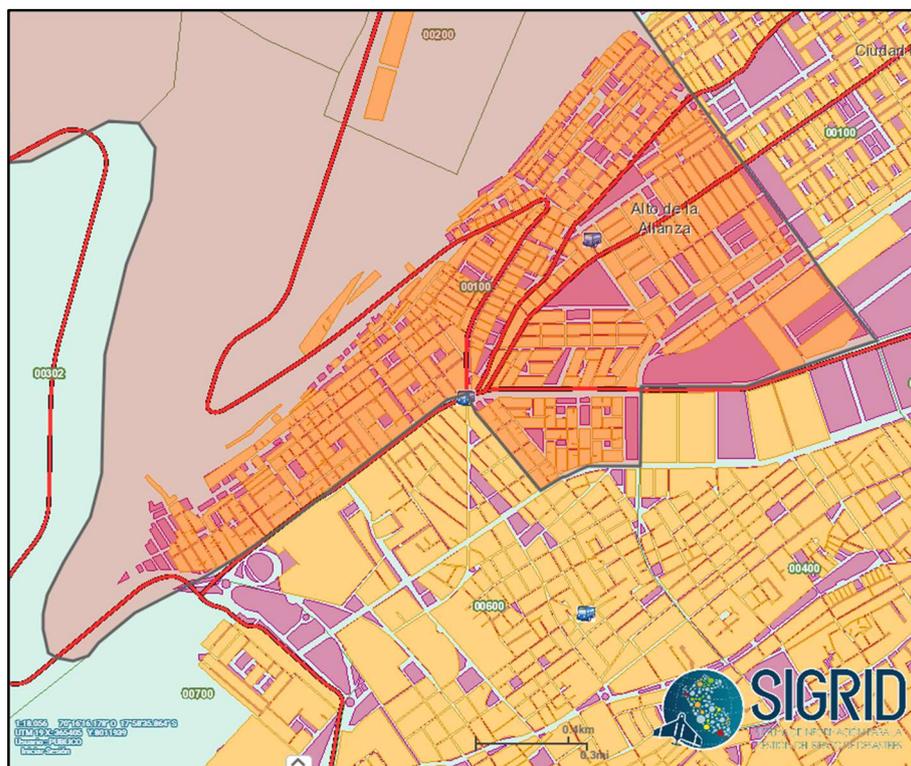
2.2.2.3 Modelo de exposición

Un modelo de exposición tiene como finalidad estudiar las características principales de los bienes físicos de la ciudad. Para este fin se realizan inventarios de edificaciones que permitan conocer sus características de material, sistema de resistencia sísmica, número de pisos, ubicación geográfica y costo de reposición. Para realizar el modelo de exposición fue necesario conocer la zona de estudio, la cultura constructiva de la ciudad e identificar distribuciones socioeconómicas de la población. En esta sección se abarcan investigaciones previas sobre la información de interés en el modelo de exposición, se ilustran propuestas para la recopilación de información requerida en el desarrollo del modelo y se expone la clasificación de estructuras que se usará en el inventario de edificios.

La Figura 35, muestra la zonificación vulnerable del distrito del Alto de la Alianza, frente a desastres naturales mediante la plataforma SIGRID (referenciada en la figura 35).

Figura 35

Zonificación por manzanas del Alto de la Alianza, Tacna



Nota. Adaptado del Sistema de Información para la Gestión del Riesgo de Desastres [SIGRID], 2022)

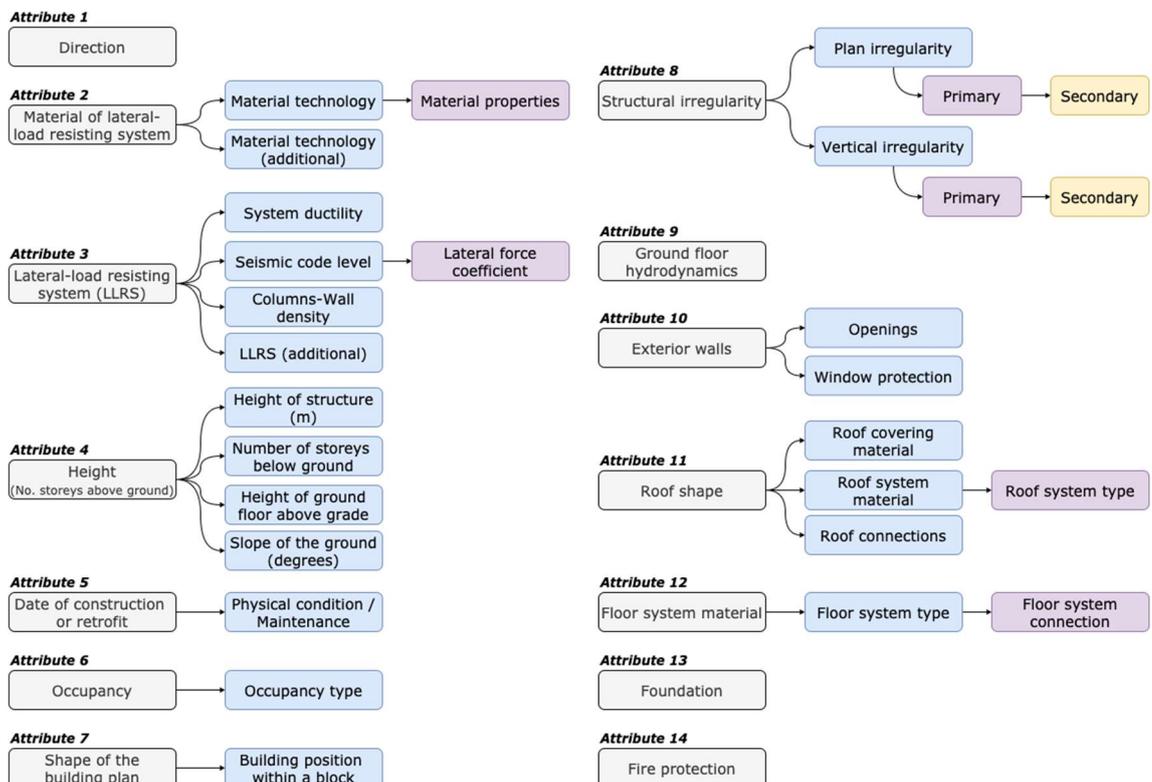
a. Taxonomía de las edificaciones

Según GEM (Global Earthquake Model), clasifica los bienes según los elementos o atributos que pueden influir en la probabilidad de daños debido a los efectos ocasionados por los peligros naturales. Cuya taxonomía contiene 13 atributos relevantes de las edificaciones, entre ellos material de construcción, sistema de resistencia a cargas laterales, fecha de construcción y el número de pisos o plantas (Yepes, 2021).

La taxonomía estructural empleada se determina según del modelo de exposición por GEM, su clasificación se puede identificar de una mejor manera a continuación (referido en la figura 36):

Figura 36

Taxonomía de Edificación de GEM



Nota. Adaptado de Global Earthquake Model, 2021.

b. Tipología de viviendas en el Distrito Alto de la Alianza

La tipología de viviendas se refiere a la clasificación y categorización de las viviendas en función de sus características arquitectónicas, funcionales y estructurales. Estas categorías ayudan a comprender y organizar el mercado de la vivienda, planificar el desarrollo urbano y diseñar políticas de vivienda.

Dicha clasificación se encuentra determinada por el tipo de material general de construcción como son, “concreto reforzado con marcos de relleno” (en referencia a la figura 37, figura 38, figura 39, figura 40 y figura 41), “mampostería Confinada con Muros portantes” (en referencia a la figura 42, figura 43, figura 44, figura 45, figura 46 y figura 47), “mampostería no reforzada” (en referencia a la figura 48, figura 49, figura 50 y figura 51), “mampostería no reforzada con unidades de barro” (en referencia a la figura 52).

- **Concreto reforzado con Marco de Relleno:**

Figura 37

Taxonomía: CR/LFINF+DUC/HEX:1/RES



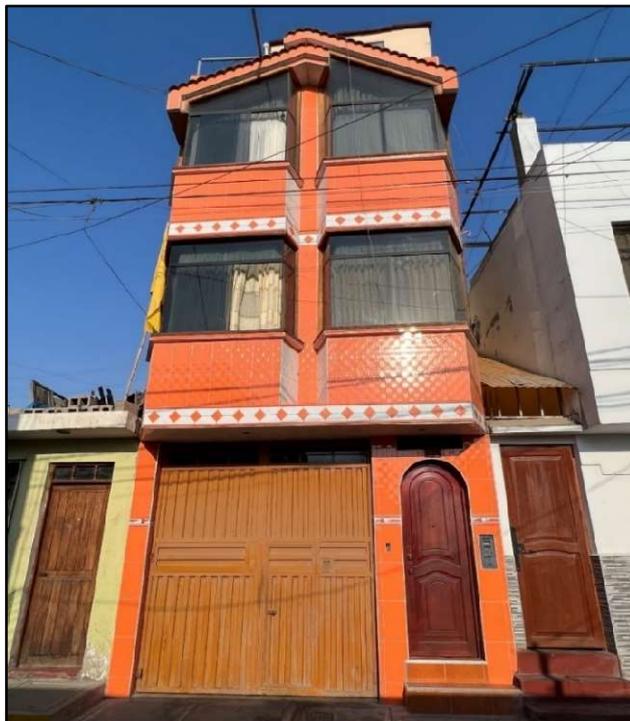
Figura 38

Taxonomía: CR/LFINF+DUC/HEX:2/RES



Figura 39

Taxonomía: CR/LFINF+DUC/HEX:3/RES

**Figura 40**

Taxonomía: CR/LFINF+DUC/HEX:4/RES



Figura 41

Taxonomía: CR/LFINF+DNO/HEX:4/RES



- **Mampostería Confinada con Muros portantes**

Figura 42

Taxonomía: MCF/LWAL+DNO/HEX:1/RES



Figura 43

Taxonomía: MCF/LWAL+DNO/HEX:2/RES

**Figura 44**

Taxonomía: MCF/LWAL+DNO/HEX:3/RES



Figura 45

Taxonomía: MCF/LWAL+DUC/HEX:1/RES

**Figura 46**

Taxonomía: MCF/LWAL+DUC/HEX:2/RES



Figura 47

Taxonomía: MCF/LWAL+DUC/HEX:3/RES



- **Mampostería no reforzada:**

Figura 48

Taxonomía: MUR/HEX:1



Figura 49

Taxonomía: MUR/HEX:2

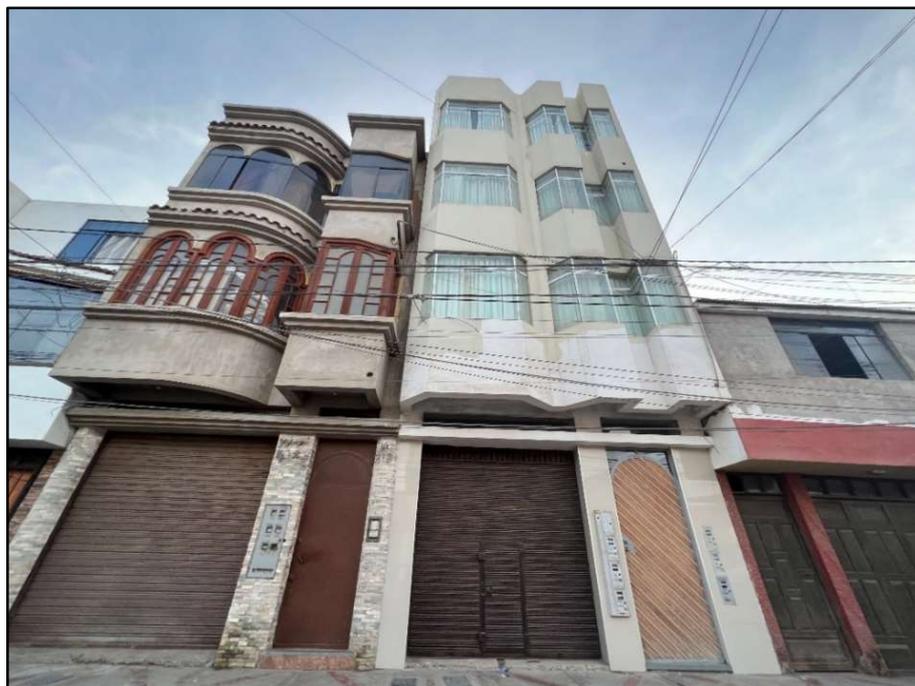
**Figura 50**

Taxonomía: MUR/HEX:3



Figura 51

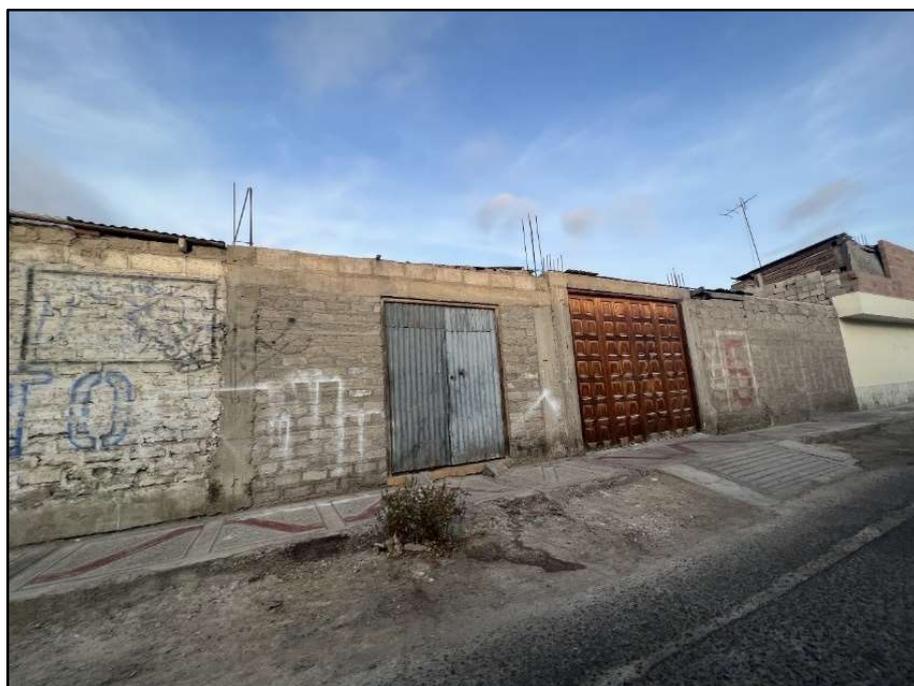
Taxonomía: MUR/HEX:6



- **Mampostería no reforzada con unidades de barro:**

Figura 52

Taxonomía: MUR+ADO/LWAL+DNO/HEX:1/RES



2.2.3 Riesgo Sísmico

Según CENEPRED (2014): "El expresar los conceptos de peligro (amenaza), vulnerabilidad y riesgo, ampliamente aceptada en el campo técnico científico Cardona (1985), Fournier d'Albe (1985), Milutinovic y Petrovsky (1985) y Coburn y Spence (1992), está fundamentada en la ecuación adaptada a la Ley N°29664 Ley que crea el Sistema Nacional de Gestión del Riesgo de Desastres, mediante la cual se expresa que el riesgo es una función del peligro y la vulnerabilidad.". Es decir, el Riesgo se entiende como el resultado de la interacción del peligro sobre la vulnerabilidad, este se puede expresar tanto en forma cualitativa (grados o niveles la calificación), como también en forma cuantitativa, estimando los daños o pérdidas esperadas para un determinado escenario de riesgo (INDECI, 2011).

La cuantificación de daños y/o pérdidas debido al impacto de un peligro se manifiesta en el costo económico aproximado que implica la afectación de los elementos expuestos, como el deterioro de acabados de interiores y exteriores, pérdida total de equipamiento mobiliario, electrodomésticos, áreas de cultivo, los días que se dejó de percibir salario o ser productivo por causa de un peligro. Estos costos varían de acuerdo con el tipo de infraestructura y al grado de afectación.

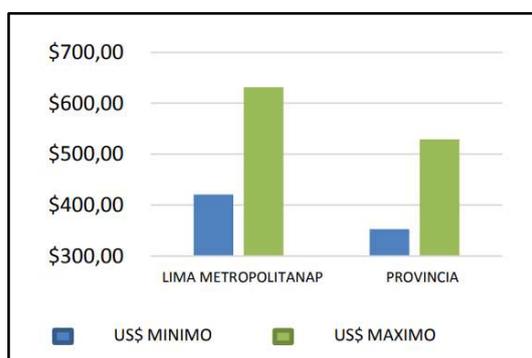
2.2.3.1 Costo de Reposición

Los costos de reposición se refieren a todos los costos requeridos para construir una edificación y todas las actividades que llevan a su ejecución, también se debe de incluir el valor comercial, el valor del lote y la valorización del inmueble. Para el presente estudio, es de interés conocer el costo de reposición puesto que es el valor por el cual habría que reponer las construcciones dañadas o colapsadas sin incluir costo de lote y su valorización (Hinestroza Farfán, 2018).

Según el estudio de Costos unitarios de construcción de proyectos inmobiliarios desarrollado por la empresa Tinsa, el costo unitario de la ciudad de Lima se encuentra en el rango de US\$ 421/m² y US\$ 632/m² y para el caso de provincias el rango es de US\$ 353/m² y US\$ 529/m² (referido en la figura 53) (TINSA, 2017).

Figura 53

Diagrama de Costos Promedio de Inmuebles en el Perú.



Nota. Adaptado de TINSA, 2017.

Según la investigación desarrollada por el Banco Interamericano de Desarrollo (BID), afirma que para el cálculo del valor promedio por m² de construcción para los diferentes tipos de edificaciones de uso residencial de nivel socioeconómico del sector en el que se encuentran y catalogan, como bajo, medio o alto (referido en la tabla 6 y figura 54) (Banco Interamericano de Desarrollo [BID], 2014).

Tabla 6

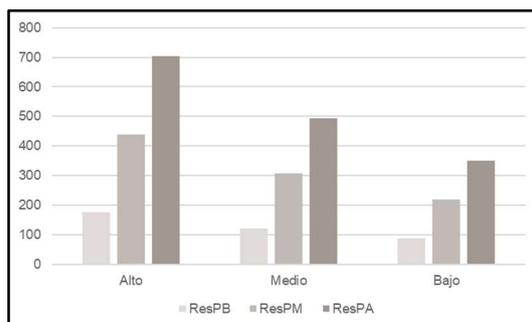
Índice de Valor expuesto por área construida (USD\$/m²).

| Nivel de Complejidad | Uso (US\$/M2) | | |
|----------------------|---------------|-------|-------|
| | ResPB | ResPM | ResPA |
| Alto | 176 | 440 | 704 |
| Medio | 123 | 308 | 493 |
| Bajo | 88 | 220 | 352 |

Nota. Adaptado del BID (2014)

Figura 54

Diagrama de Índice de Valor expuesto por uso residencial según el nivel socioeconómico.



Nota. Adaptado del BID (2014)

2.2.3.2 Software OpenQuake

El Software de uso abierto OpenQuake, permite explorar conjuntos de datos, como modelos de exposición, indicadores como vulnerabilidad social, así como mapas relacionados con la amenaza y el riesgo de terremotos para comprender los impulsores de la amenaza y el riesgo en el área. Además, OpenQuake Engine calcula mediante el procesamiento de datos un análisis de costo-beneficio de la transferencia de riesgos, así como la modernización de la información ("seismic upgrade"). Los resultados de los mapas resultantes mostrarán intuitivamente a los usuarios, tanto en términos relativos como absolutos, cómo cada vecindario se beneficiará de la evaluación de una política. Posteriormente, pueden cargar estos mapas en la Plataforma, para compartirlos con la comunidad en general y aumentar la conciencia (OpenQuake, 2018).

El Software de uso abierto OpenQuake, permite explorar conjuntos de datos, como modelos de exposición, indicadores como vulnerabilidad social, así como mapas relacionados con la amenaza y el riesgo de terremotos para comprender los impulsores de la amenaza y el riesgo en el área. Además, OpenQuake Engine calcula mediante el procesamiento de datos un análisis de costo-beneficio de la transferencia de riesgos, así como la modernización de la información ("seismic upgrade"). Los resultados de los mapas resultantes mostrarán intuitivamente a los usuarios, tanto en términos relativos como absolutos, cómo cada vecindario se beneficiará de la evaluación de una política. Posteriormente, pueden cargar estos mapas en la Plataforma, para compartirlos con la comunidad en general y aumentar la conciencia (OpenQuake, 2018).

2.3 Definición de Términos

2.3.1 Amenaza sísmica

Es probabilidad de ocurrencia de eventos sísmicos y los movimientos del terreno que pueden generar para un sitio particular en un periodo de tiempo determinado (Tinjacá Cárdenas, 2021).

2.3.2 Escenario sísmico

Es un sismo ficticio diseñado e ingresado a un programa de cálculo, con el fin de crear eventos sísmicos que permitan predecir niveles de daños que se asemejen a la realidad y permitan a la prevención de estos.

2.3.3 Incertidumbre

Es la dificultad para hacer un pronóstico acerca del futuro. Desde el punto de vista estadístico, esto significa que es imposible determinar causas que hagan proveer un efecto específico, por lo que solo pueden considerarse aleatoriedad y probabilidades (ECONOMIA, 2014).

2.3.4 Laguna sísmica

Se dice que los sismos de gran magnitud tienden a volver a darse en un periodo de tiempo, cuando este no se presenta con un periodo de retorno aproximado de 100 años, se denominará zonas sísmicamente “mudas” o “lagunas sísmicas”.

2.3.5 Pérdidas

Es la reducción del patrimonio de una persona o empresa, ya sea a nivel económico o por daño de este.

2.3.6 Taxonomía de edificaciones

Es el esquema de clasificación de edificaciones que considera una serie de atributos que incluyen el sistema de resistencia a la carga lateral y su material, altura y año de construcción. La taxonomía se usa actualmente para vincular los activos en el modelo de exposición a la función de vulnerabilidad o función de fragilidad relevante.

2.3.7 Vulnerabilidad sísmica

Susceptibilidad o fragilidad física, económica, social, ambiental o institucional que tiene un territorio de ser afectado o de sufrir efectos adversos ante un sismo.

CAPÍTULOS III: MARCO METODOLÓGICO

3.1 Tipo y diseño de la investigación

3.1.1 Tipo de investigación

La investigación a realizar según la Universidad Privada de Tacna (2017), corresponde a una de *tipo exploratorio – explicativo*, debido a que se busca evaluar el riesgo sísmico del distrito del Alto de la Alianza – Tacna (variable dependiente), en función de la vulnerabilidad de las edificaciones (variable independiente 1) y amenaza sísmica inferida artificialmente (variable independiente 2), implementando el uso de la metodología de Global Earthquake Model (GEM) y utilizando OpenQuake (OQ): Scenario Damage.

La población que se consideró en el estudio estuvo conformada por las viviendas destinadas a uso residencial ubicadas en el distrito Alto de la Alianza.

3.1.2 Diseño de Investigación

El proceso de recolección de datos según la Universidad Privada de Tacna (2017), se dará con el *diseño documental y diseño de laboratorio*, puesto que la obtención de información de las edificaciones del distrito Alto de la Alianza (variable independiente 1) y la fragilidad de los sistemas estructurales se realizarán a partir de tesis y artículos de investigación, siendo información de la muestra ratificada en campo; por otro lado, la amenaza sísmica (variable independiente 2) será generada artificialmente utilizando el “Kit de Herramientas de Preparación de Entrada” (IPT) del software OpenQuake.

3.1.3 Acciones y actividades

Para el desarrollo de los escenarios de daño de las edificaciones del distrito Alto de la Alianza - Tacna, se utilizará la calculadora de OpenQuake: Scenario Damage Calculator, metodología propuesta por Fundación Global Earthquake Model (2014), respaldada en el artículo de investigación: “OpenQuake Engine: An Open Hazard (and Risk) Software for the Global Earthquake Model”. El análisis de los datos en gabinete se realizará utilizando en software Microsoft Excel con la metodología de análisis estadístico para evaluar el riesgo sísmico del distrito Alto de la Alianza.

A continuación, la tabla 7 presenta en detalle las actividades a realizar durante la investigación (referido en la tabla 7):

Tabla 7*Acciones y actividades*

| | Actividad | Descripción |
|---------------------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Variable Independiente 1. Vulnerabilidad de las edificaciones | | |
| 1.1 | Información del modelo de exposición | Realizar una visita de campo al distrito Alto de la Alianza para ratificar la información documentada en la tesis de referencia, actualizar y adicionar información de ser necesario. |
| 1.2 | Coordenadas catastrales de las edificaciones | Georreferenciar y corregir coordenadas catastrales de las edificaciones estudiadas en el distrito Alto de la Alianza, utilizando los softwares Civil 3D y QGIS. |
| 1.2 | Tipología estructural de las edificaciones | Clasificar por tipología estructural las edificaciones, utilizando la nomenclatura de GEM. |
| 1.3 | Curvas de fragilidad | Asignar curvas de fragilidad a cada tipología estructural, lo cual nos permite conocer así la vulnerabilidad del modelo de exposición. |
| Variable Independiente 2. Amenaza sísmica inducida artificialmente | | |
| 2.1 | Modelo de Fuentes Sísmicas | Identificar los modelos de fuentes sísmicas presentes en la región de estudio. |
| 2.2 | GMPEs o MMT | Asignar modelos de movimiento de terreno que correspondan a la zona de estudio. |
| 2.3 | Escenarios sísmicos | Ingresar los datos de los ítems 2.1 y 2.2 a la calculadora de OpenQuake: Event Based Damage Calculator, para obtener los campos de movimiento del terreno. |
| Variable Dependiente. Riesgo sísmico en el distrito Alto de la Alianza – Tacna | | |
| 3.1 | Calculadora OQ: Event Based Damage | Ingresar a la calculadora de OpenQuake: Event Based Damage, las variables de: Modelo de Exposición, Funciones de Fragilidad, Amenaza Sísmica y Modelos de Consecuencia. Dando como resultado Escenarios de Daño en pérdidas económicas. |
| 3.2 | Análisis de resultados | Tratamiento de datos para estimar el riesgo sísmico expresado en pérdida económica, haciendo uso de gráficos estadísticos en el software Microsoft Excel. |

Nota. Adaptado de la Metodología de GEM (2014)

3.2 Instrumentos de recolección de datos utilizados

3.2.1.1 Materiales

- Planos de lotización del distrito Alto de la Alianza
- Cámara fotográfica
- Libreta de Apuntes de campo

- Computadora portátil

3.2.1.2 Programas de computación

- Software OpenQuake
- Software QGIS
- Software AutoCAD
- Software AutoCAD Civil 3D
- Software Microsoft Excel

3.2.1.3 Fuentes de recolección de datos

Con el propósito de cumplir con los objetivos establecidos, se empleará como técnica: documentación de las investigaciones. Para ello se utilizaron como principales fuentes:

- Cabello y Apaza en el “Estimación del Riesgo Sísmico de las Viviendas Informales de Albañilería Construidas con Blocker II en el Distrito de Alto de la Alianza, Tacna - 2018”.
- Carvajal y Guevara en el “Estudio de riesgo sísmico para el Barrio San Enrique de Velasco de la ciudad de Quito”.
- Mantilla Calisaya en la tesis denominada “Modelos de deformación cortical durante la fase intersísmica y su comparación con velocidades GPS para la zona de subducción del Perú”.
- Ancco Huanacuni en la tesis denominada “Influencia de espectros determinísticos y probabilísticos para la evaluación del peligro sísmico en estructuras de la región de Tacna”.

3.3 Tipo y Población y/o muestra de estudio

3.3.1 Población de Estudio

La población de estudio seleccionada para esta investigación son las edificaciones residenciales ubicadas en la provincia de Tacna, departamento de Tacna (referencia en la figura 55).

Figura 55*Mapa Provincial de Tacna**Nota. Adaptado de (Postales de Tacna, 2017).*

3.3.2 Muestra de Estudio

De acuerdo con el mapa de “Zonificación de peligros geológico-geotécnicos” elaborado por INDECI (2004), se ha determinado que los distritos que se encuentran ubicados en zonas de peligro alto son Ciudad Nueva, Alto de la Alianza, Gregorio Albarracín, y el Cercado de Tacna, con una incidencia de 44 %, 35 %, 19 % y 2 %, respectivamente.

Según el mapa de “Microzonificación Sísmica de la Ciudad de Tacna” elaborado por Cotrado (2008), la Zona III corresponde a la zona norte de la ciudad de Tacna y está conformada en su mayor parte por los distritos de Ciudad Nueva, Alto de la Alianza y Gregorio Albarracín. Estas áreas presentan características geotécnicas desfavorables y representan a la zona más crítica y propensa a sufrir los mayores daños ante un evento sísmico, por lo que es considerada la zona más peligrosa de la ciudad de Tacna.

Por lo expuesto anteriormente, se tomó la decisión de utilizar las edificaciones de uso residencial del distrito de Alto de la Alianza como muestra de estudio para la presente investigación.

3.3.3 Técnicas de tratamiento de la muestra

Se empleó la tesis de Cabello y Apaza (2018) como marco de referencia para conocer la vulnerabilidad de las estructuras residenciales en este distrito, y se actualizó dicha información mediante el uso de la Distribución Normal Estándar, de manera que pudiera ser utilizada en esta investigación.

Considerando una muestra de $N = 7,167$ lotes, un nivel de confianza del 97 %, un nivel de significancia o de error de $e = 4$ %, las máximas probabilidades son $p = 0.5$ y $q = 0.5$. Con estos valores obtiene una muestra óptima.

La ecuación 1, permite realizar la reducción de muestra óptima mediante los valores indicados por la misma (referido en la ecuación 1).

- **Reducción de muestra:**

$$n^{\circ} = \frac{Z^2 * N * p * q}{Z^2 * p * q + N * e^2} \quad (1)$$

$$n^{\circ} = \frac{2.171^2 * 7,167 * 0.5 * 0.5}{2.171^2 * 0.5 * 0.5 + 7,167 * 0.04^2}$$

$$n^{\circ} = 668 \text{ viviendas}$$

Donde:

Z = Nivel de confianza

N = Tamaño de la población

p = Probabilidad a favor

q = Probabilidad en contra

e = Error de estimación

Del cálculo de reducción de muestra, se determinó un total de 668 viviendas a evaluar. Sin embargo, en el distrito Alto de la Alianza-Tacna termino por considerar un total de 36 manzanas que en conjunto resultan 671 viviendas.

A continuación, se proporciona la lista de manzanas y el número de lotes que se inspeccionaron previamente como parte de la muestra óptima (referido a la Tabla 8).

Tabla 8

Muestra reducida de las viviendas por zonas del distrito Alto de la Alianza

| Zona | | | | | | | | | | Total | |
|-------|-------|------|------|------|------|------|------|------|------|-------|-----|
| I | MZ | 1099 | 1105 | 1121 | 1158 | 1171 | | | | 5 | |
| | Casas | 15 | 37 | 16 | 22 | 28 | | | | 118 | |
| II | MZ | 2201 | 2229 | 2230 | 2232 | 2256 | | | | 5 | |
| | Casas | 28 | 18 | 22 | 28 | 20 | | | | 116 | |
| III | MZ | 3304 | 3318 | 3321 | 3342 | 3347 | 3372 | | | 6 | |
| | Casas | 32 | 15 | 24 | 22 | 16 | 16 | | | 125 | |
| IV | MZ | 4402 | 4384 | 4385 | 4431 | 4445 | 4459 | 4486 | | | 7 |
| | Casas | 21 | 12 | 10 | 28 | 16 | 8 | 12 | | | 107 |
| V | MZ | 5513 | 5514 | 5533 | 5535 | 5541 | 5560 | 5569 | 5593 | 8 | |
| | Casas | 20 | 21 | 10 | 8 | 13 | 24 | 20 | 20 | 136 | |
| VI | MZ | 5602 | 5612 | 5628 | 5638 | 5649 | | | | 5 | |
| | Casas | 19 | 18 | 5 | 9 | 18 | | | | 69 | |
| Total | MZ | | | | | | | | | 36 | |
| | Casas | | | | | | | | | 671 | |

3.4 Operacionalización de Variables

La Tabla 9, describe la Operacionalización de variables del presente estudio (referido en la tabla 9).

Tabla 9

Operacionalización de las variables

| Variable | Definición operacional | Dimensión | Indicador |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------|
| Riesgo sísmico del distrito Alto de la Alianza | Probabilidad de ocurrencia de un evento sísmico de determinada magnitud e intensidad, que genere pérdidas económicas y humanas en la zona de estudio. | Pérdidas económicas. | Monetario (US\$) |
| Vulnerabilidad sísmica de las edificaciones del distrito Alto de la Alianza | Medida en que las edificaciones del distrito son susceptibles a sufrir daños debido a un evento sísmico, determinada por la combinación de su calidad constructiva, su diseño estructural y su ubicación geográfica. | Modelo de exposición. Curvas de fragilidad. | Porcentaje de viviendas según su tipología estructural |
| Peligro sísmico el distrito Alto de la Alianza | Simulaciones de sismos artificiales que podrían ocurrir en el distrito debido a la ruptura sísmica y modelos de movimiento de terreno | Ruptura Sísmica Modelos de movimiento de terreno (GMPE/MMT) | Número de sismos artificiales generados y su intensidad. |

3.5 Procesamiento y análisis de datos

3.5.1 Tratamiento de datos

Para procesar la información obtenida del trabajo en laboratorio y gabinete se tendrá en cuenta los siguientes parámetros:

- Unidad experimental : Edificaciones Residenciales
- Tratamiento : Tipología estructural
- Factores fijos : Fuentes sismogénicas
Curvas de fragilidad y consecuencia
- Factores no controlados : Escenarios de amenaza sísmica
- Variable de Respuesta : Nivel de daño
Pérdidas económicas

3.5.2 Análisis estadístico

La calculadora "event_based_damage" de OpenQuake ofrece la capacidad de realizar análisis estadísticos utilizando el análisis de MonteCarlo para evaluar la propagación de la incertidumbre en los resultados del riesgo sísmico.

Al realizar un análisis de Monte Carlo en OpenQuake, se generan múltiples simulaciones aleatorias donde los valores de los parámetros de entrada se toman de distribuciones de probabilidad definidas. Cada simulación aleatoria produce un conjunto de resultados, como las pérdidas económicas, el daño en las estructuras o la probabilidad de ocurrencia de diferentes niveles de daño.

El análisis de Monte Carlo es una herramienta utilizada para explorar la incertidumbre en los resultados y obtener estimaciones estadísticas más completas del riesgo sísmico. Te permite tomar decisiones informadas y tener en cuenta la variabilidad inherente en los eventos sísmicos y los datos utilizados en el análisis.

CAPÍTULO IV: RESULTADOS

4.1 Descripción de datos de entrada

Generar un estudio de riesgo sísmico mediante el programa OpenQuake (en referencia al Anexo 4), requiere de tres componentes principales: (a) Modelo de exposición, (b) Modelo de vulnerabilidad y (c) Modelo de fuentes de amenaza sísmica.

- Para la *determinación del modelo de exposición* del distrito Alto de la Alianza se ha utilizado como base la tesis de Cabello y Apaza (2018), donde se describe la distribución y características de las edificaciones expuestas al riesgo sísmico en el distrito Alto de la Alianza, modelo que fue georreferenciado como se muestra en el Anexo 3. Además, para evaluar la evolución de este modelo al año 2023, se ha realizado un análisis comparativo para estimar el porcentaje de cambio en la muestra de edificaciones seleccionadas. Posteriormente se ha definido una taxonomía específica a cada edificación de uso residencial, considerando las siguientes categorías: (a) Nivel de pisos y (b) Configuración Estructural.
- Para la *determinación del modelo de vulnerabilidad*, se han utilizado como base los estudios realizados por Villar Vega et al. (2017), y Acevedo et al. (2017), donde desarrollan curvas de fragilidad que relacionan la intensidad sísmica con la probabilidad de ocurrencia de diferentes niveles de daño esperados según los diferentes tipos de elementos expuestos.
- Para la *determinación del modelo de fuentes de amenaza sísmica*, se han utilizado como base los estudios realizados por Ancco (2018), donde desarrolla el peligro sísmico probabilístico para la región de Tacna, se consideraron diferentes fuentes sismogénicas de origen interplaca, intraplaca y corteza superficial, cuyo registro histórico de eventos sísmicos que abarca desde el 1965 hasta el 2018. Para la estimación probabilística del Peligro Sísmico se requiere de la integración de tres componentes: a) Modelo de fuentes sismogénicas, b) Relación Gutenberg-Richter y c) Campos de movimiento del terreno con su nivel de truncamiento.

Finalmente, en el archivo *job.ini* se ingresó un horizonte de tiempo de 500 000 años para realizar el análisis de riesgo sísmico, periodo en el cual mediante métodos de simulación se calcula la respuesta de las estructuras ante diferentes escenarios

de eventos sísmicos estocásticos, generando así una distribución espacial de los niveles de daño estimados.

4.2 Presentación de resultados

4.2.1 Actualización del modelo de exposición

En este estudio, se realizó una actualización del Modelo de Exposición de las viviendas de uso residencial del Distrito Alto de la Alianza del año 2017 al año 2023, con el propósito de analizar las posibles variaciones y cambios en dicho modelo (referido en la Tabla 10 y el Anexo 2).

Tabla 10

Variación del modelo de exposición del Distrito Alto de la Alianza del año 2017 al año 2023

| Zona | Sin cambio | Actualizado | Nuevo | Total |
|-------------------|-------------|-------------|------------|--------------|
| I | 59 | 22 | 37 | 118 |
| II | 148 | 20 | 16 | 184 |
| III | 114 | 16 | 0 | 130 |
| IV | 92 | 30 | 4 | 126 |
| V | 189 | 23 | 19 | 231 |
| VI | 27 | 14 | 0 | 41 |
| TOTAL | 629 | 125 | 76 | 830 |
| INCIDENCIA | 76 % | 15 % | 9 % | 100 % |

4.2.2 Modelo de exposición del Distrito Alto de la Alianza

Después de realizar el tratamiento de la base de datos del estudio de Cabello y Apaza (2018), se obtuvo la siguiente distribución de taxonomías que describe los tipos de construcciones presentes en el estudio (referido en la tabla 11).

Tabla 11

Taxonomía del modelo de exposición del Distrito Alto de la Alianza

| Taxonomía | Zona I | Zona II | Zona III | Zona IV | Zona V | Zona VI | Total |
|----------------------------|--------|---------|----------|---------|--------|---------|-------|
| MUR+ADO/LWAL+DNO/HEX:1/RES | 16 | 30 | 0 | 10 | 4 | 211 | 271 |
| MUR/HEX:1 | 1063 | 414 | 508 | 926 | 735 | 255 | 3901 |
| MUR/HEX:2 | 190 | 96 | 251 | 275 | 275 | 38 | 1125 |
| MUR/HEX:3 | 11 | 6 | 37 | 20 | 24 | 0 | 98 |
| MUR/HEX:6 | 0 | 1 | 6 | 0 | 1 | 0 | 8 |
| MCF/LWAL+DNO/HEX:1/RES | 100 | 165 | 91 | 14 | 179 | 3 | 552 |
| MCF/LWAL+DNO/HEX:2/RES | 45 | 204 | 226 | 30 | 341 | 1 | 847 |
| MCF/LWAL+DNO/HEX:3/RES | 5 | 24 | 42 | 0 | 43 | 0 | 114 |
| CR/LFINF+DNO/HEX:4/RES | 0 | 1 | 2 | 1 | 0 | 0 | 4 |
| MCF/LWAL+DUC/HEX:1/RES | 0 | 1 | 1 | 1 | 0 | 0 | 3 |
| MCF/LWAL+DUC/HEX:2/RES | 0 | 1 | 4 | 1 | 10 | 0 | 16 |

| Taxonomía | Zona I | Zona II | Zona III | Zona IV | Zona V | Zona VI | Total |
|------------------------|---------------|---------------|---------------|---------------|---------------|--------------|-------------|
| MCF/LWAL+DUC/HEX:3/RES | 0 | 0 | 1 | 0 | 6 | 0 | 7 |
| CR/LFINF+DUC/HEX:1/RES | 1 | 0 | 2 | 2 | 0 | 0 | 5 |
| CR/LFINF+DUC/HEX:2/RES | 1 | 0 | 1 | 12 | 1 | 0 | 15 |
| CR/LFINF+DUC/HEX:3/RES | 2 | 0 | 0 | 3 | 0 | 0 | 5 |
| CR/LFINF+DUC/HEX:4/RES | 0 | 0 | 2 | 1 | 3 | 0 | 6 |
| TOTAL | 1434 | 944 | 1177 | 1297 | 1622 | 511 | 6977 |
| INCIDENCIA | 20,6 % | 13,5 % | 16,9 % | 18,6 % | 23,2 % | 7,3 % | |

A continuación, se presenta una visión general de la distribución de las taxonomías, lo cual nos permite apreciar el nivel de relevancia que tienen ciertas taxonomías con respecto a otras debido a su incidencia en el modelo de exposición. Esta información es esencial para comprender la influencia que cada taxonomía tiene en los resultados del estudio de riesgo sísmico. Entre las taxonomías de mayor relevancia se encuentran: MUR/HEX:1 con 56 % de incidencia, MUR/HEX:2 con 16 % de incidencia, MCF/LWAL+DNO/HEX:2 con 12 % de incidencia, MCF/LWAL+DNO/HEX:1 con 8% de incidencia, MUR+ADO/LWAL+DNO/HEX:1 con 4 % de incidencia, MCF/LWAL+DNO/HEX:3 con 2 % de incidencia (referido en la figura 56 y figura 57).

Figura 56

Porcentaje de incidencia por taxonomía del modelo exposición del Distrito Alto de la Alianza

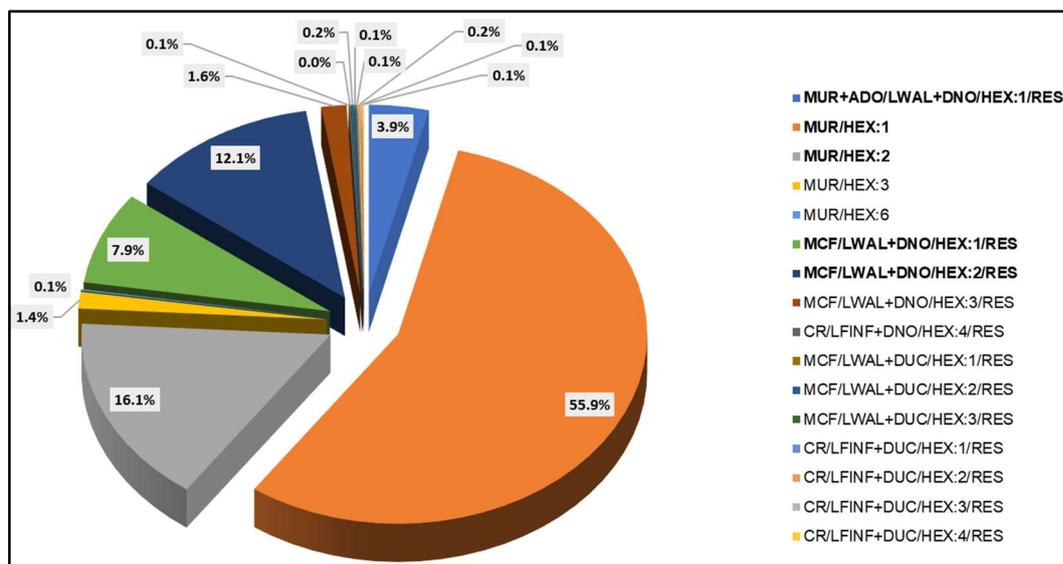
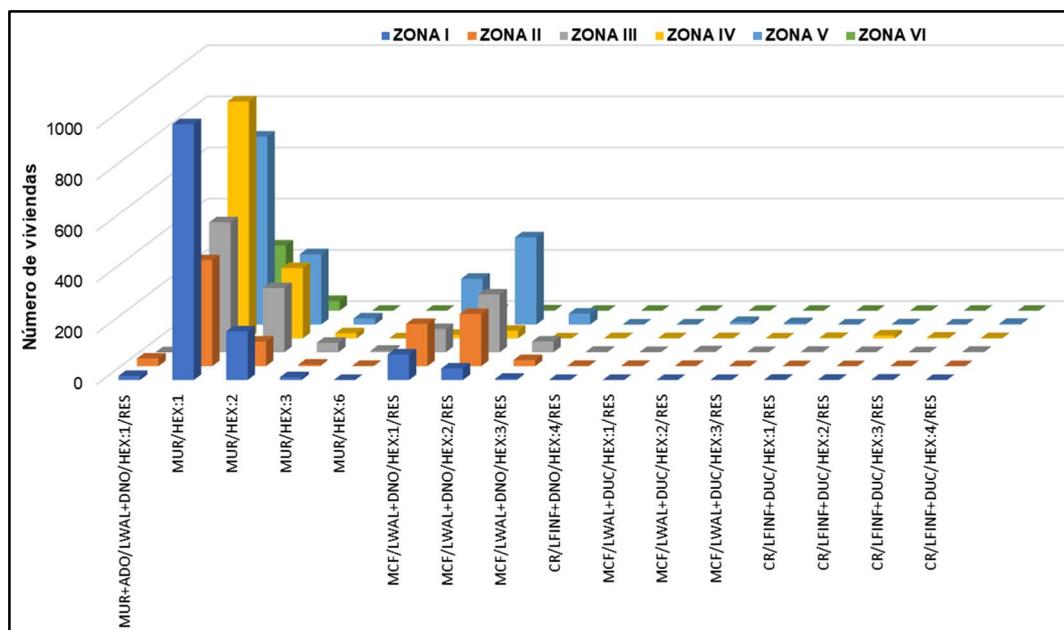


Figura 57

Categorización del modelo exposición del Distrito Alto de la Alianza, por Zona y Taxonomía.



4.2.3 Curvas de fragilidad

En este estudio se emplearon las curvas de fragilidad desarrolladas por los autores Villar-Vega et al. (2014) y Acevedo et al. (2017) los cuales evalúan la vulnerabilidad de las edificaciones residenciales representativas en América del Sur. En dicho contexto, dichas curvas nos permitieron tener una aproximación válida de la vulnerabilidad de las estructuras ante eventos sísmicos. Si bien es importante tener en cuenta posibles variaciones o limitaciones representativas de la región, consideramos que estas curvas proporcionaron una base sólida y relevante para nuestro estudio de riesgo sísmico (referido en la tabla 12).

Tabla 12

Taxonomía GEM

| Taxonomía GEM | Descripción Tipológica | | Autor |
|--------------------|------------------------|---------------------|--------------------|
| | Inglés | Español | |
| MUR+ADO/HEX:1/RES | Adobe | Adobe | Villar-Vega (2014) |
| LFINF/HEX:1/RES | | Concreto | |
| LFINF/HEX:2/RES | Reinforced concrete, | reforzado, pórticos | Villar-Vega (2014) |
| LFINF/HEX:3/RES | infilled frame | rellenos con muros | |
| LFINF/HBET:4,6/RES | | de mampostería | |
| MCF/DUC/HEX:1/RES | | Mampostería | |
| MCF/DUC/HEX:2/RES | Confined masonry, | confinada | Villar-Vega (2014) |
| MCF/DUC/HEX:3/RES | ductile, | | |
| MCF/HBET:4,6/RES | | | |
| MCF/DNO/HEX:1/RES | Confined masonry, | Mampostería | Villar-Vega (2014) |
| MCF/DNO/HEX:2/RES | non-ductile | confinada no dúctil | |

MCF/DNO/HEX:3/RES

MUR/HBET:4,6/RES

MUR/HEX:1/RES

MUR/HEX:2/RES

MUR/HEX:3/RES

Unreinforced
masonryMampostería no
reforzadaAcevedo et al.
(2017)

A continuación, se presenta un gráfico en barras que muestra la probabilidad de ocurra un nivel específico de daño en función de la intensidad del movimiento sísmico, comparando las tipologías de edificaciones residenciales más incidentes (referido en la figura 58, figura 59, figura 60, figura 61, figura 62, figura 63 y figura 64).

Figura 58

Intensidad de Movimiento: PGA = 0,1g

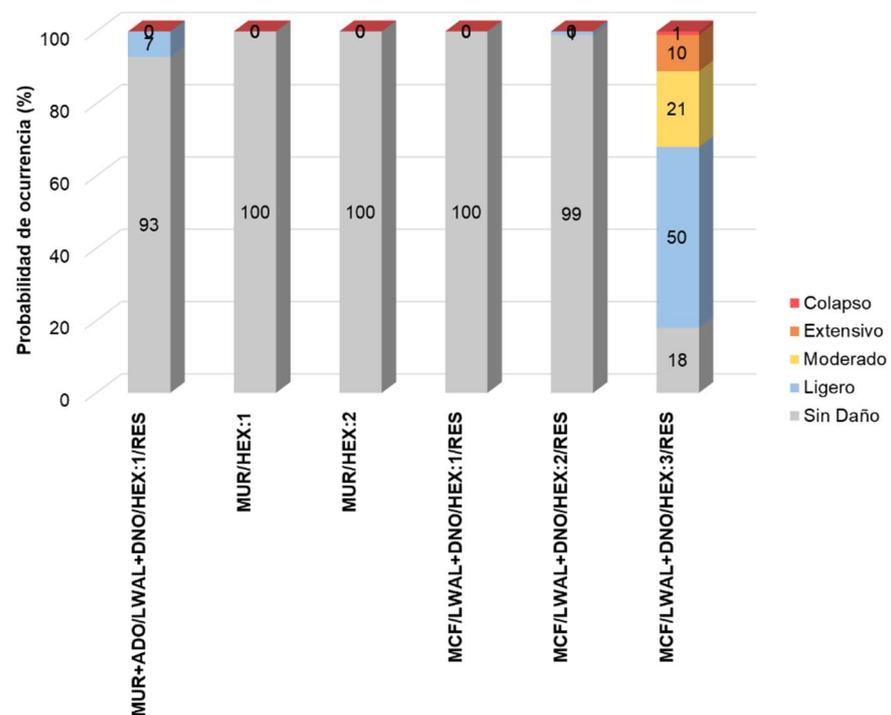


Figura 59

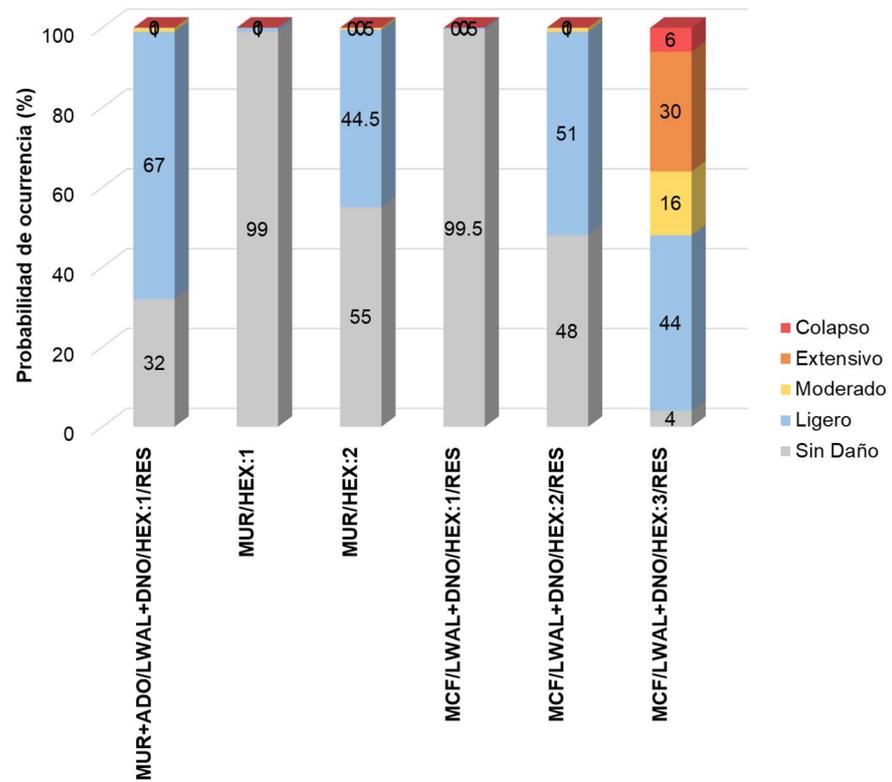
Intensidad de Movimiento: $PGA = 0,2g$ 

Figura 60

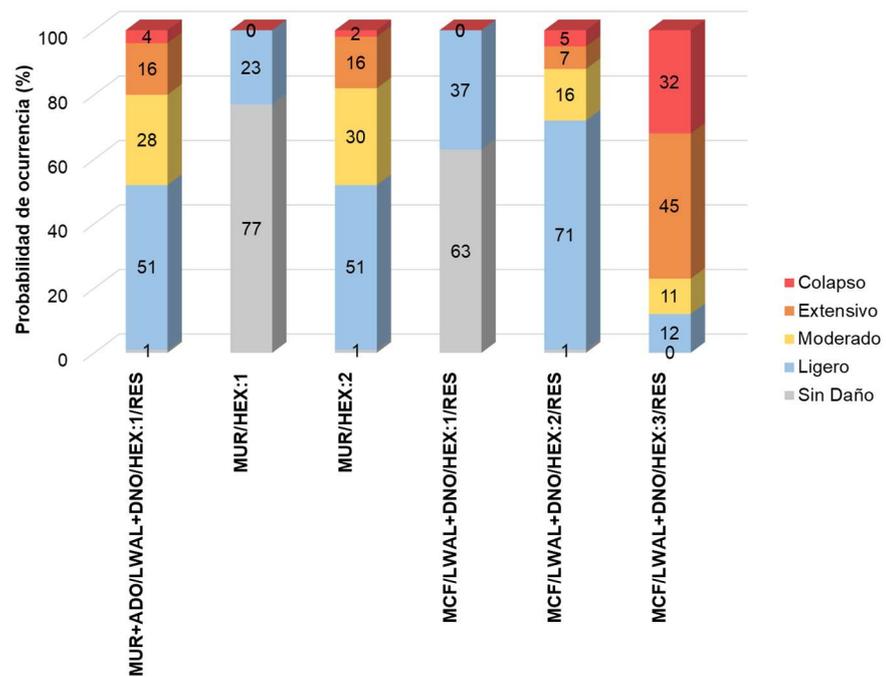
Intensidad de Movimiento: $PGA = 0,4g$ 

Figura 61

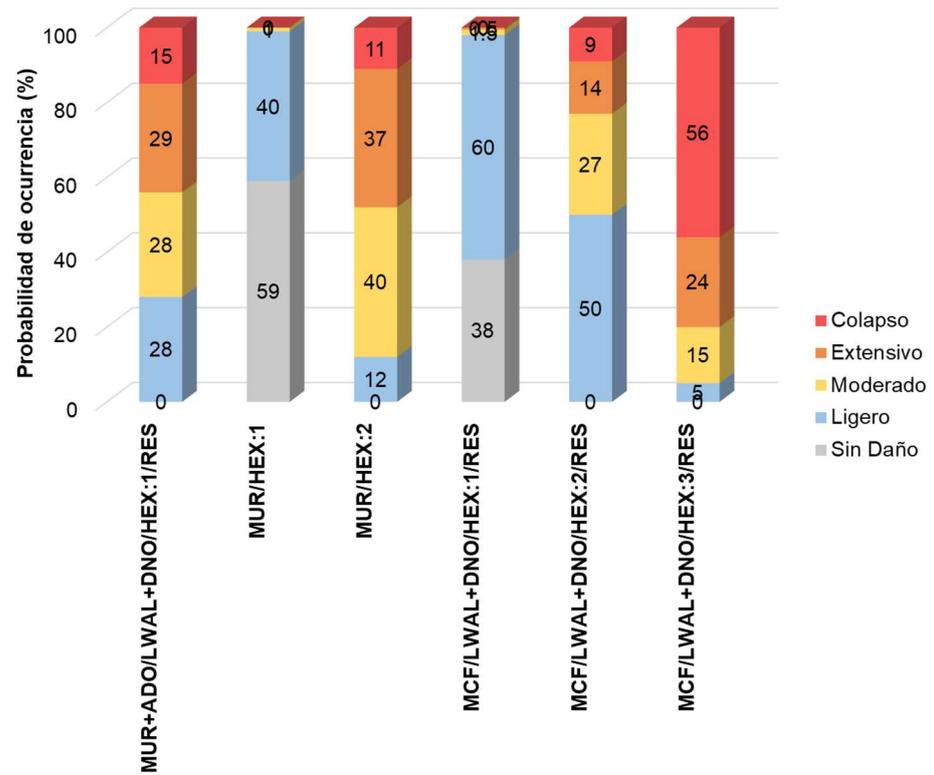
Intensidad de Movimiento: $PGA = 0,5g$ 

Figura 62

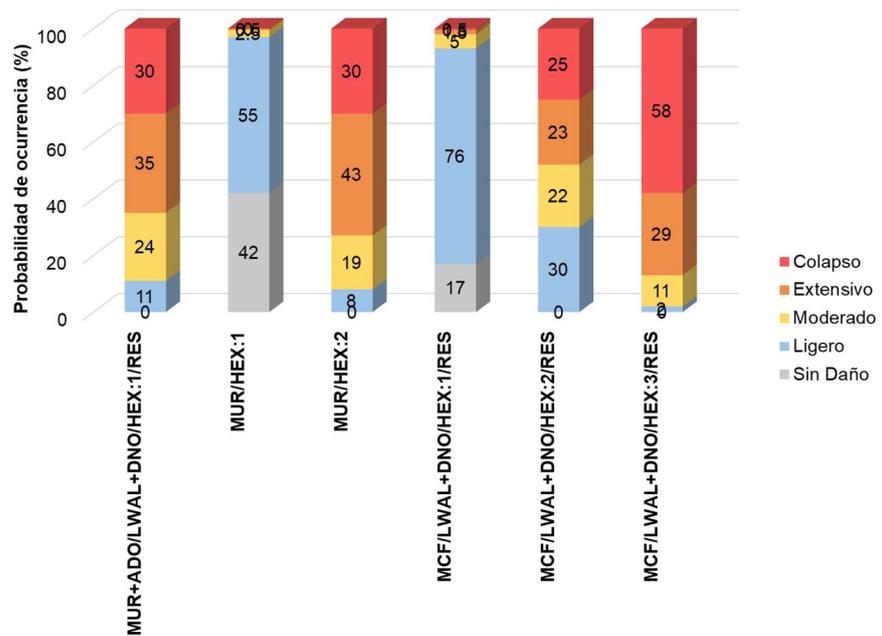
Intensidad de Movimiento: $PGA = 0,6g$ 

Figura 63

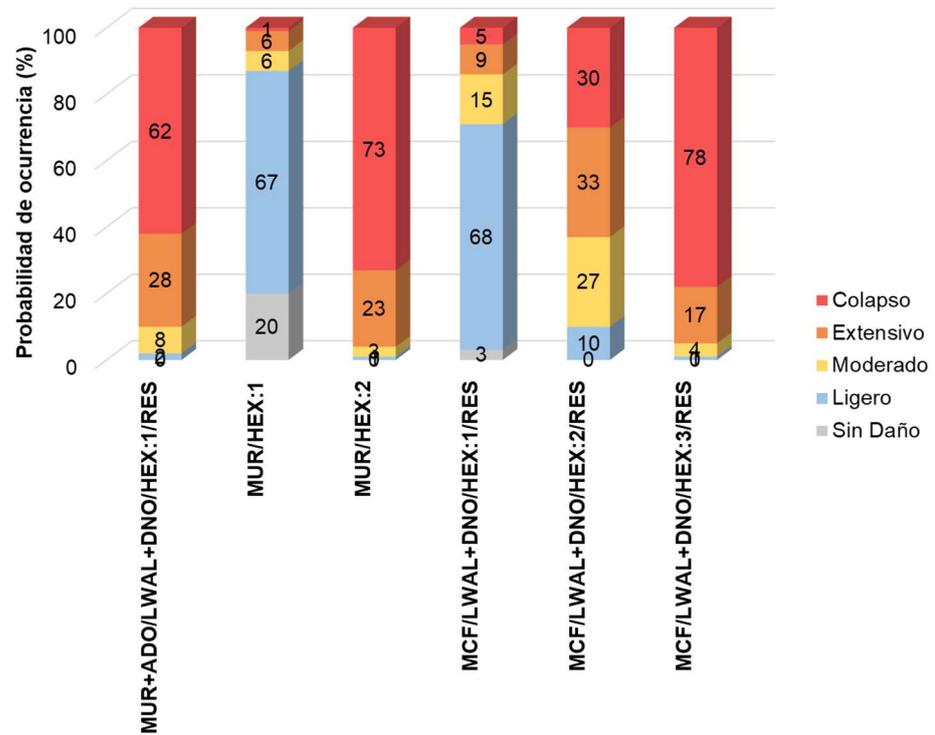
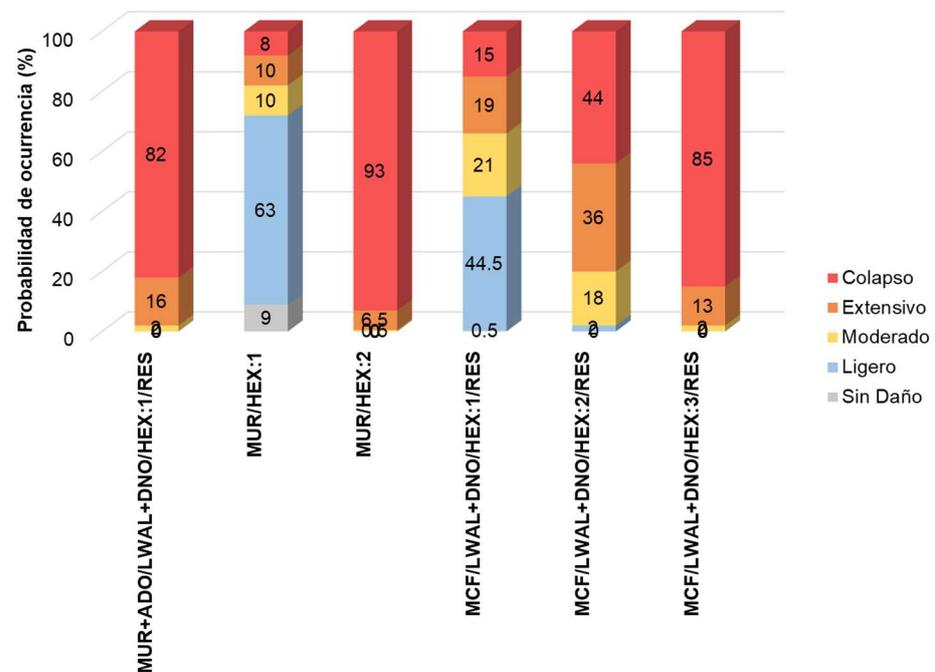
Intensidad de Movimiento: $PGA = 0,8g$ 

Figura 64

Intensidad de Movimiento: $PGA = 1,0g$ 

De los gráficos de barras anteriores podemos inferir que en el distrito Alto de la Alianza las edificaciones que presentan una mayor vulnerabilidad frente a ciertos niveles de aceleración del suelo son:

- Con un **PGA = 0,1g**, mayor probabilidad a sufrir daño ligero:

| | |
|--------------------|-------------------|
| MCF/LWAL+DNO/HEX:3 | Daño ligero 50% |
| | Daño moderado 21% |

- Con un **PGA = 0,2g**, mayor probabilidad a sufrir daño ligero:

| | |
|------------------------|--------------------|
| MCF/LWAL+DNO/HEX:3 | Daño ligero 44% |
| | Daño moderado 16% |
| | Daño extensivo 30% |
| MUR+ADO/LWAL+DNO/HEX:1 | Daño ligero 67% |
| MCF/LWAL+DNO/HEX:2 | Daño ligero 51% |
| MUR/HEX:2 | Daño ligero 45% |

- Con un **PGA = 0,6g**, mayor probabilidad a sufrir colapso o daño extensivo:

| | |
|------------------------|--------------------|
| MCF/LWAL+DNO/HEX:3 | Daño extensivo 29% |
| | Colapso 58% |
| MUR/HEX:2 | Daño extensivo 43% |
| | Colapso 30% |
| MUR+ADO/LWAL+DNO/HEX:1 | Daño extensivo 35% |
| | Colapso 30% |
| MCF/LWAL+DNO/HEX:2 | Daño extensivo 23% |
| | Colapso 25% |

- Con un **PGA = 1,0g**, con mayor probabilidad a sufrir colapso:

| | |
|------------------------|-------------|
| MUR/HEX:2 | Colapso 93% |
| MCF/LWAL+DNO/HEX:3 | Colapso 85% |
| MUR+ADO/LWAL+DNO/HEX:1 | Colapso 82% |
| MCF/LWAL+DNO/HEX:2 | Colapso 44% |
| MCF/LWAL+DNO/HEX:1 | Colapso 15% |
| MUR/HEX:1 | Colapso 8% |

4.2.4 Modelo de fuentes sísmicas

Se utilizó la clasificación de fuentes sísmicas de SENCICO (2016), el cual clasifica las fuentes según su ubicación espacial en relación con las placas tectónicas: interface, interplaca y superficiales; además brinda datos como las coordenadas geográficas y profundidad de las fuentes sismogénicas. Para el presente estudio se

utilizaron las fuentes de interfase (F5), fuentes de intraplaca (F11, F12, F19) y fuente de corteza superficial (F24).

La distribución magnitud-frecuencia escogida para el presente estudio corresponde a la distribución de Gutenberg-Richter doblemente truncada, la cual se caracteriza por la inclusión de una magnitud mínima (minMag) y una magnitud máxima (maxMag), así como los parámetros a y b de la relación de Gutenberg-Richter. Estos valores fueron obtenidos del trabajo de investigación realizado por Ancco (2018), con lo cual se modeló de manera adecuada la frecuencia de ocurrencia de los eventos sísmicos en nuestra región de estudio, teniendo en cuenta tanto los límites inferiores como superiores de las magnitudes sísmicas.

4.3 Resultados del análisis de riesgo sísmico

4.3.1 Escenarios de Amenaza Sísmica con Eventos Estocásticos

Se realizó un cálculo probabilístico de peligro sísmico con un horizonte de tiempo de 500 000 años. Se emplearon archivos de modelos de fuentes sísmicas y modelos de predicción de movimiento del suelo, estableciendo un nivel de truncamiento de 3. Además, se consideraron magnitudes mínimas para cada tipo de fuente sísmica. Para garantizar la reproducibilidad, se utilizó una semilla aleatoria con un valor de 73 (referido en la tabla 13 y el Anexo 5).

Tabla 13

Distribución de Eventos Estocásticos

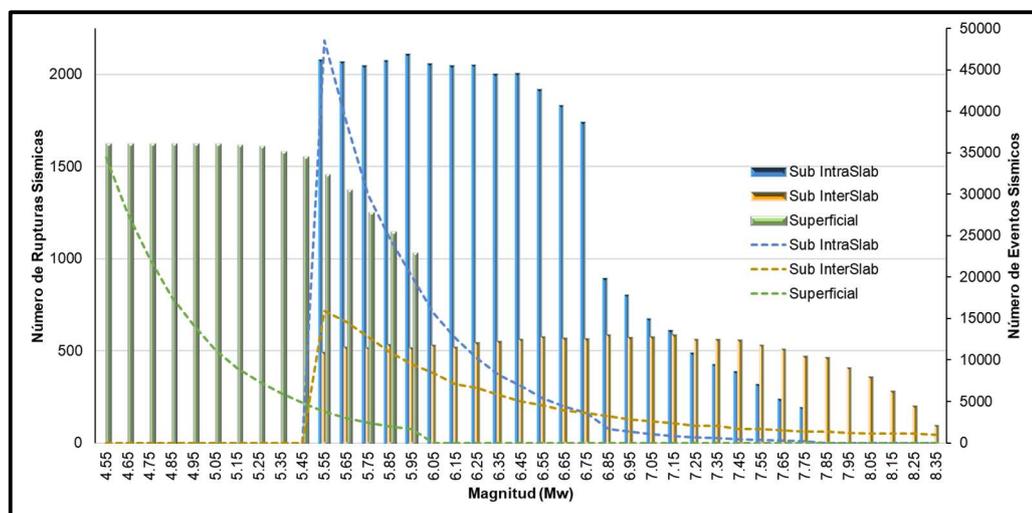
| MAG (Mw) | Rupturas | | | | Eventos | | | |
|-------------|------------------|------------------|-------------|-------|------------------|------------------|-------------|-------|
| | Sub IntraSlab | Sub InterSlab | Superficial | Total | Sub IntraSlab | Sub InterSlab | Superficial | Total |
| 4,55 | 0 | 0 | 1621 | 1621 | 0 | 0 | 34468 | 34468 |
| 4,65 | 0 | 0 | 1621 | 1621 | 0 | 0 | 27677 | 27677 |
| 4,75 | 0 | 0 | 1621 | 1621 | 0 | 0 | 22242 | 22242 |
| 4,85 | 0 | 0 | 1621 | 1621 | 0 | 0 | 17632 | 17632 |
| 4,95 | 0 | 0 | 1621 | 1621 | 0 | 0 | 14208 | 14208 |
| 5,05 | 0 | 0 | 1621 | 1621 | 0 | 0 | 11245 | 11245 |
| 5,15 | 0 | 0 | 1612 | 1612 | 0 | 0 | 9053 | 9053 |
| 5,25 | 0 | 0 | 1604 | 1604 | 0 | 0 | 7403 | 7403 |
| 5,35 | 0 | 0 | 1578 | 1578 | 0 | 0 | 6041 | 6041 |
| 5,45 | 0 | 0 | 1549 | 1549 | 0 | 0 | 4815 | 4815 |
| 5,55 | 2077 | 486 | 1453 | 4016 | 48524 | 15951 | 3728 | 68203 |
| 5,65 | 2066 | 513 | 1370 | 3949 | 38667 | 14582 | 2956 | 56205 |
| 5,75 | 2045 | 512 | 1248 | 3805 | 30055 | 12830 | 2415 | 45300 |
| 5,85 | 2072 | 528 | 1142 | 3742 | 24656 | 10950 | 1986 | 37592 |
| 5,95 | 2107 | 512 | 1025 | 3644 | 20085 | 9486 | 1645 | 31216 |
| 6,05 | 2054 | 525 | 0 | 2579 | 15581 | 8441 | 0 | 24022 |
| 6,15 | 2045 | 514 | 0 | 2559 | 12630 | 7058 | 0 | 19688 |
| 6,25 | 2047 | 539 | 0 | 2586 | 10227 | 6604 | 0 | 16831 |
| 6,35 | 2000 | 545 | 0 | 2545 | 8200 | 5748 | 0 | 13948 |
| 6,45 | 2004 | 555 | 0 | 2559 | 6894 | 5036 | 0 | 11930 |
| 6,55 | 1914 | 570 | 0 | 2484 | 5389 | 4508 | 0 | 9897 |

| MAG (Mw) | Rupturas | | | | Eventos | | | |
|--------------|------------------|------------------|--------------|--------------|------------------|------------------|---------------|---------------|
| | Sub IntraSlab | Sub InterSlab | Superficial | Total | Sub IntraSlab | Sub InterSlab | Superficial | Total |
| 6,65 | 1828 | 562 | 0 | 2390 | 4404 | 3909 | 0 | 8313 |
| 6,75 | 1739 | 561 | 0 | 2300 | 3589 | 3572 | 0 | 7161 |
| 6,85 | 890 | 579 | 0 | 1469 | 1702 | 3214 | 0 | 4916 |
| 6,95 | 799 | 568 | 0 | 1367 | 1368 | 2798 | 0 | 4166 |
| 7,05 | 671 | 570 | 0 | 1241 | 1018 | 2630 | 0 | 3648 |
| 7,15 | 608 | 580 | 0 | 1188 | 808 | 2342 | 0 | 3150 |
| 7,25 | 488 | 557 | 0 | 1045 | 632 | 2070 | 0 | 2702 |
| 7,35 | 422 | 557 | 0 | 979 | 544 | 2038 | 0 | 2582 |
| 7,45 | 384 | 551 | 0 | 935 | 464 | 1677 | 0 | 2141 |
| 7,55 | 315 | 525 | 0 | 840 | 373 | 1644 | 0 | 2017 |
| 7,65 | 234 | 504 | 0 | 738 | 261 | 1497 | 0 | 1758 |
| 7,75 | 190 | 465 | 0 | 655 | 214 | 1364 | 0 | 1578 |
| 7,85 | 0 | 458 | 0 | 458 | 0 | 1375 | 0 | 1375 |
| 7,95 | 0 | 403 | 0 | 403 | 0 | 1214 | 0 | 1214 |
| 8,05 | 0 | 355 | 0 | 355 | 0 | 1161 | 0 | 1161 |
| 8,15 | 0 | 278 | 0 | 278 | 0 | 1097 | 0 | 1097 |
| 8,25 | 0 | 197 | 0 | 197 | 0 | 1114 | 0 | 1114 |
| 8,35 | 0 | 92 | 0 | 92 | 0 | 1001 | 0 | 1001 |
| TOTAL | 30999 | 14161 | 22307 | 67467 | 236285 | 136911 | 167514 | 540710 |

De acuerdo con los cálculos de amenaza sísmica realizados por OpenQuake, en función de las diferentes tipos de fuentes sísmicas que contribuyen a la actividad sísmica en la región de estudio, se registró la siguiente actividad sísmica: Para las fuentes sísmicas intraplaca (intraslab), se registraron 30 999 rupturas sísmicas y 236 285 eventos asociados, en el caso de las fuentes sísmicas interfase (interslab), se identificaron 14 161 rupturas sísmicas y 136 911 eventos, para las fuentes sísmicas de la corteza superficial, se encontraron 22 307 rupturas sísmicas y 167 514 eventos, siendo un total de 67 467 rupturas sísmicas y 540 710 eventos los que se utilizaron para evaluar el riesgo sísmico en el área de estudio (referido en la figura 65).

Figura 65

Distribución de Eventos Estocásticos



4.3.2 Pérdida Anual Promedio Esperada (AAL)

En la siguiente sección se muestran la distribución de daños y pérdidas anuales promedios esperados para diferentes tipos de activos expuestos al riesgo sísmico, clasificados según su taxonomía (referido en la tabla 14 y el Anexo 6).

Tabla 14

Daños anuales promedio esperados por activo, según su taxonomía

| Taxonomía | Ligero (vivienda) | Moderado (vivienda) | Extensivo (vivienda) | Colapso (vivienda) | Pérdida (millón US\$) | Pérdida (%) |
|----------------------------|----------------------|------------------------|-------------------------|-----------------------|-----------------------------|----------------|
| MUR+ADO/LWAL+DNO/HEX:1/RES | 13,846 | 1,200 | 0,723 | 0,468 | 0,054 | 0,69 |
| MUR/HEX:1 | 19,940 | 0,532 | 0,316 | 0,194 | 0,055 | 0,04 |
| MUR/HEX:2 | 37,180 | 4,363 | 2,995 | 1,759 | 0,484 | 0,57 |
| MUR/HEX:3 | 0,839 | 0,368 | 0,271 | 0,130 | 0,046 | 0,43 |
| MUR/HEX:6 | 0,152 | 0,113 | 0,176 | 0,297 | 0,073 | 5,51 |
| MCF/LWAL+DNO/HEX:1/RES | 3,371 | 0,155 | 0,078 | 0,057 | 0,012 | 0,06 |
| MCF/LWAL+DNO/HEX:2/RES | 22,197 | 1,352 | 1,391 | 0,666 | 0,236 | 0,35 |
| MCF/LWAL+DNO/HEX:3/RES | 10,386 | 1,467 | 0,858 | 0,412 | 0,210 | 1,56 |
| CR/LFINF+DNO/HEX:4/RES | 0,271 | 0,029 | 0,015 | 0,007 | 0,007 | 0,91 |
| MCF/LWAL+DUC/HEX:1/RES | 0,011 | 0,000 | 0,000 | 0,000 | 0,000 | 0,03 |
| MCF/LWAL+DUC/HEX:2/RES | 0,173 | 0,009 | 0,008 | 0,007 | 0,002 | 0,14 |
| MCF/LWAL+DUC/HEX:3/RES | 0,040 | 0,088 | 0,007 | 0,007 | 0,004 | 0,44 |
| CR/LFINF+DUC/HEX:1/RES | 0,013 | 0,000 | 0,000 | 0,000 | 0,000 | 0,02 |
| CR/LFINF+DUC/HEX:2/RES | 0,133 | 0,005 | 0,001 | 0,003 | 0,001 | 0,07 |
| CR/LFINF+DUC/HEX:3/RES | 0,273 | 0,024 | 0,008 | 0,002 | 0,003 | 0,52 |
| CR/LFINF+DUC/HEX:4/RES | 0,236 | 0,021 | 0,008 | 0,002 | 0,003 | 0,91 |
| TOTAL | 109,06 | 9,73 | 6,86 | 4,01 | 1,19 | 0,34 |

Se observa que la tipología de edificaciones residenciales con mayores daños es la MUR/HEX:2, con un promedio anual de 37 viviendas con daño ligero, 4 con daño moderado, 3 con daño extenso y 2 en colapso. Las siguientes tipologías más relevantes son MCF/LWAL+DNO/HEX:2/RES, MUR/HEX:1, MUR+ADO/LWAL+DNO/HEX:1/RES y MCF/LWAL+DNO/HEX:3/RES, con un promedio anual de 22, 20, 14 y 10 viviendas con daño ligero respectivamente; 1, 1, 1 y 1 viviendas con daño moderado respectivamente (referido en la figura 66 y figura 67).

Figura 66

Daños anuales promedio esperados por activo, según su taxonomía

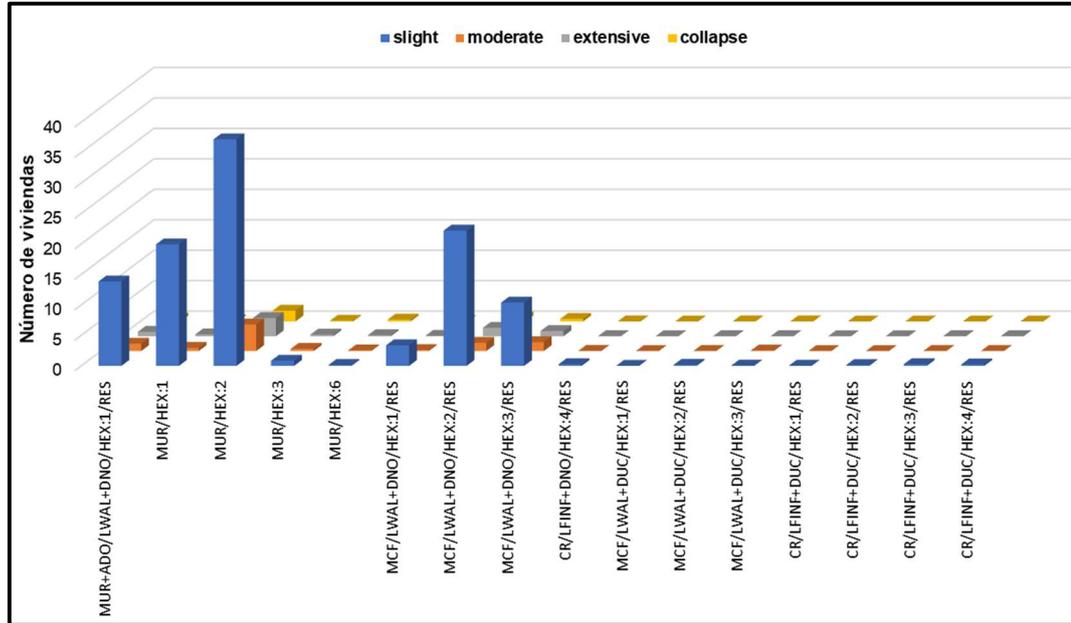
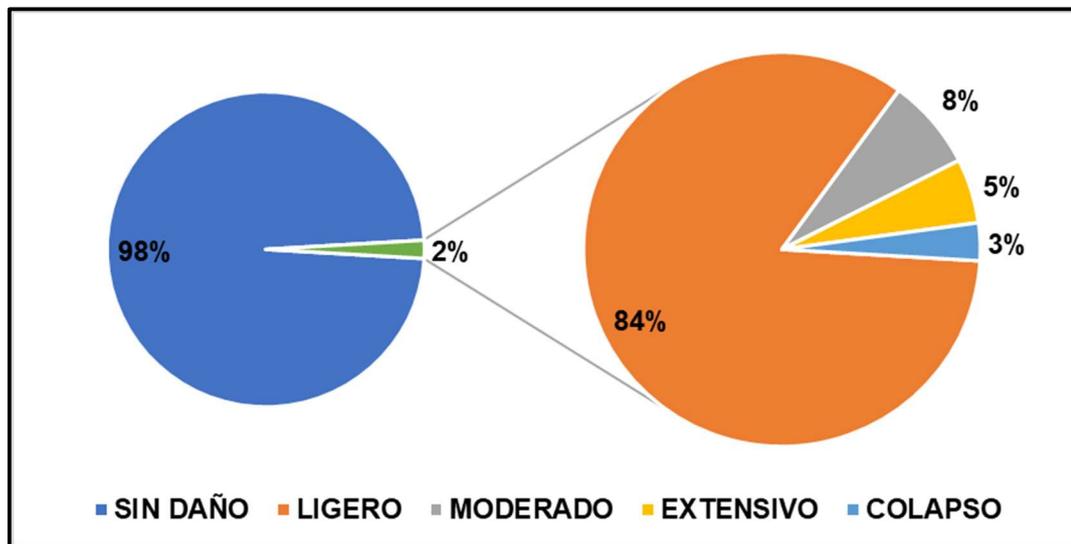


Figura 67

Porcentaje de incidencia del estado de daño anual promedio esperados



4.3.3 Pérdidas Máximas Probables (PML)

Los cálculos de pérdidas económicas derivadas del análisis de riesgo sísmico mediante OpenQuake muestran una visión detallada de la evaluación financiera de los activos expuestos. Estos cálculos abarcan el costo total de las pérdidas económicas asociadas a cada taxonomía y la probabilidad de excedencia de dichas pérdidas económicas, para cada periodo de retorno considerado en el estudio de riesgo sísmico (referido en la tabla 15 y el Anexo 7).

Tabla 15

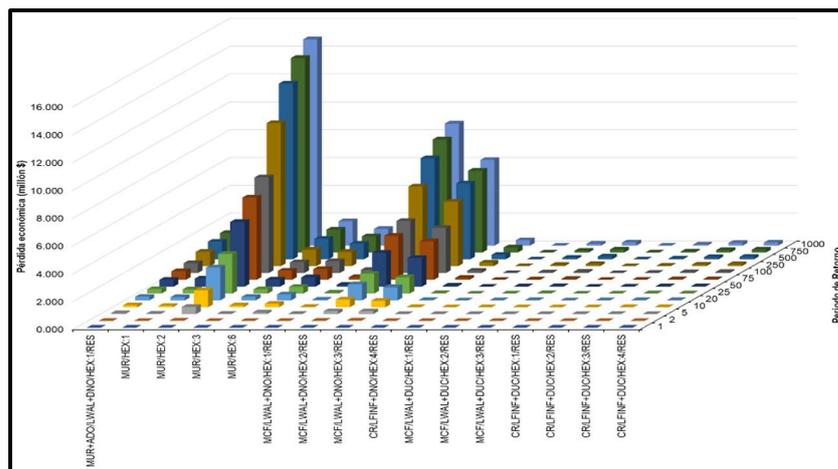
Pérdidas económicas Máximas Probables por Periodo de Retorno

| T (años) | 1 | 2 | 5 | 10 | 20 | 25 | 50 | 75 | 100 | 250 | 500 | 750 | 1000 |
|-----------------------------------------|----------------|----------------|----------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| MUR+ADO/LWAL+DNO/HEX:1/RES | 0,0000 | 0,0050 | 0,0618 | 0,1434 | 0,2652 | 0,3142 | 0,4992 | 0,6231 | 0,7152 | 1,0330 | 1,2740 | 1,4019 | 1,4879 |
| MUR/HEX:1 | 0,0000 | 0,0000 | 0,0365 | 0,1018 | 0,2380 | 0,3037 | 0,5849 | 0,8054 | 0,9862 | 1,7042 | 2,3720 | 2,8330 | 3,1646 |
| MUR/HEX:2 | 0,0000 | 0,0305 | 0,5124 | 1,2138 | 2,3656 | 2,8471 | 4,6595 | 5,9164 | 6,8779 | 10,2875 | 12,6340 | 13,9805 | 14,8244 |
| MUR/HEX:3 | 0,0000 | 0,0000 | 0,0294 | 0,1224 | 0,2552 | 0,3114 | 0,5153 | 0,6591 | 0,7735 | 1,1794 | 1,4775 | 1,6437 | 1,7589 |
| MUR/HEX:6 | 0,0000 | 0,0000 | 0,1151 | 0,2500 | 0,4290 | 0,4851 | 0,6719 | 0,7806 | 0,8505 | 1,0293 | 1,1194 | 1,1658 | 1,2070 |
| MCF/LWAL+DNO/HEX:1/RES | 0,0000 | 0,0000 | 0,0070 | 0,0209 | 0,0535 | 0,0694 | 0,1359 | 0,1877 | 0,2291 | 0,3918 | 0,5396 | 0,6266 | 0,6990 |
| MCF/LWAL+DNO/HEX:2/RES | 0,0000 | 0,0119 | 0,2069 | 0,5511 | 1,1600 | 1,4225 | 2,4409 | 3,1714 | 3,7403 | 5,7297 | 7,2671 | 8,1290 | 8,7809 |
| MCF/LWAL+DNO/HEX:3/RES | 0,0000 | 0,0372 | 0,2075 | 0,4614 | 0,9483 | 1,1653 | 2,0679 | 2,7707 | 3,2512 | 4,6303 | 5,4573 | 5,8840 | 6,1600 |
| CR/LFINF+DNO/HEX:4/RES | 0,0000 | 0,0000 | 0,0000 | 0,0106 | 0,0207 | 0,0292 | 0,0764 | 0,1392 | 0,1649 | 0,2534 | 0,3283 | 0,3625 | 0,3884 |
| MCF/LWAL+DUC/HEX:1/RES | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0016 | 0,0029 | 0,0029 | 0,0029 | 0,0038 |
| MCF/LWAL+DUC/HEX:2/RES | 0,0000 | 0,0000 | 0,0000 | 0,0033 | 0,0062 | 0,0071 | 0,0158 | 0,0305 | 0,0512 | 0,0858 | 0,1093 | 0,1308 | 0,1411 |
| MCF/LWAL+DUC/HEX:3/RES | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0216 | 0,0268 | 0,0454 | 0,0700 | 0,0915 | 0,1448 | 0,2030 | 0,2155 | 0,2314 |
| CR/LFINF+DUC/HEX:1/RES | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0015 | 0,0016 | 0,0023 | 0,0023 | 0,0026 |
| CR/LFINF+DUC/HEX:2/RES | 0,0000 | 0,0000 | 0,0000 | 0,0000 | 0,0037 | 0,0039 | 0,0069 | 0,0099 | 0,0123 | 0,0318 | 0,0633 | 0,0730 | 0,0784 |
| CR/LFINF+DUC/HEX:3/RES | 0,0000 | 0,0000 | 0,0039 | 0,0075 | 0,0158 | 0,0168 | 0,0311 | 0,0509 | 0,0616 | 0,1169 | 0,1660 | 0,1804 | 0,1974 |
| CR/LFINF+DUC/HEX:4/RES | 0,0000 | 0,0000 | 0,0000 | 0,0072 | 0,0144 | 0,0158 | 0,0347 | 0,0490 | 0,0690 | 0,1361 | 0,1806 | 0,2054 | 0,2238 |
| Total (millón US\$) | 0,0000 | 0,0847 | 1,1805 | 2,8935 | 5,7971 | 7,0182 | 11,7857 | 15,2639 | 17,8776 | 26,7583 | 33,1965 | 36,8373 | 39,3496 |
| Probabilidad de excedencia (POE) | 63,21 % | 39,35 % | 18,13 % | 9,52 % | 4,88 % | 3,92 % | 1,98 % | 1,32 % | 1,00 % | 0,40 % | 0,20 % | 0,13 % | 0,10 % |

Los resultados muestran que la tipología de edificaciones residenciales con mayores pérdidas económicas corresponde a MUR/HEX:2, para el cual se estima una pérdida económica de \$ 2,85 millones, \$ 4,66 millones, \$ 6,88 millones, \$ 12,63 millones y \$ 14,82 millones para un periodo de retorno de 25, 50, 100, 500 y 10000 años respectivamente (referido en la figura 68).

Figura 68

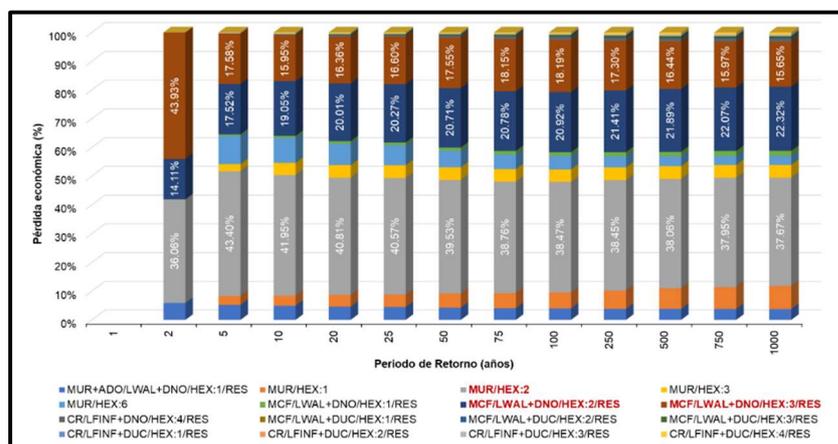
Perdida máxima Probable por tipología de Edificación.



Del gráfico presentado a continuación, se puede inferir que la categoría predominante en términos de pérdidas económicas en todas las escalas de periodo de retorno del estudio de riesgo sísmico es la de edificaciones residenciales con taxonomía MUR/HEX:2. Esta categoría abarca un rango significativo de pérdidas, representando entre el 38,06 % al 43,40 % del total de pérdidas económicas registradas (referido en la figura 69).

Figura 69

Porcentaje de Perdida máxima Probable por tipología de Edificación.



Las curvas generadas a continuación proporcionan una representación gráfica que muestra cómo varían las pérdidas económicas estimadas en función del período de retorno, es decir, en función de la probabilidad de ocurrencia de eventos sísmicos de diferentes magnitudes, observamos que, en las diferentes tipologías estructurales, el cambio incremental de las pérdidas económicas esperadas a medida que aumenta el período de retorno. Si la curva muestra una pendiente pronunciada, esto podría indicar que las pérdidas económicas aumentan significativamente a medida que se consideran períodos de retorno más largos, lo que podría implicar que las edificaciones en esta categoría son particularmente vulnerables a eventos sísmicos infrecuentes, pero de alta magnitud (referido en la figura 70 y figura 71).

Figura 70

Pérdida Económica Máxima Probable (PML) vs Período de Retorno desglosado por Taxonomía de las edificaciones

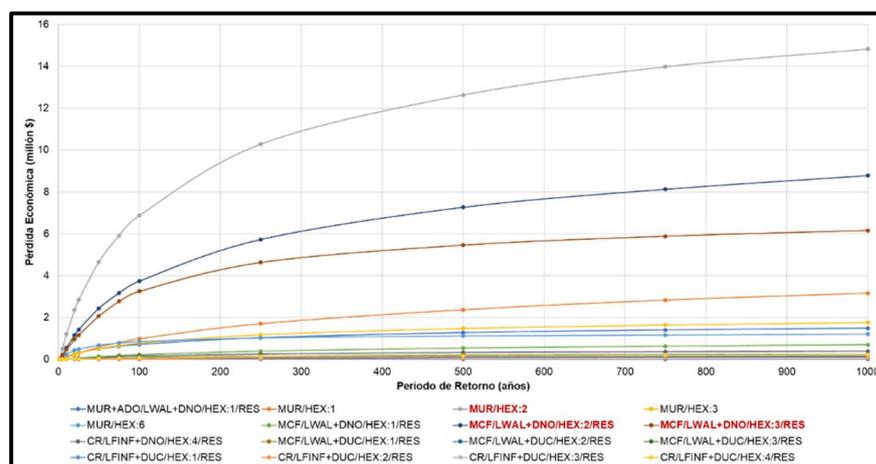
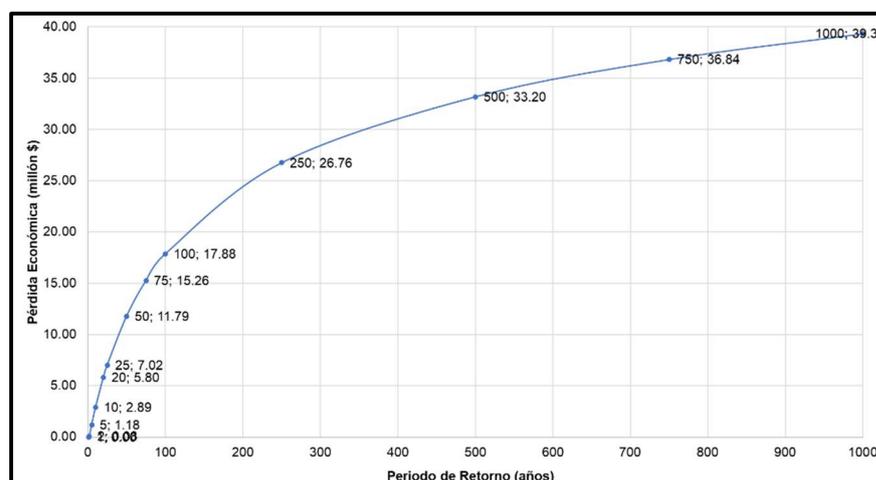


Figura 71

Pérdida Económica Máxima Probable (PML) vs Período de Retorno del Distrito Alto de la Alianza.



CAPÍTULO V: DISCUSIÓN

En el presente capítulo desarrollamos en primer lugar las hipótesis de investigación planteadas al inicio de este estudio, respaldadas por los resultados obtenidos del estudio de riesgo sísmico.

Asimismo, se llevó a cabo una evaluación crítica de las limitaciones inherentes al diseño y ejecución de este estudio, discutiendo las limitaciones de datos y suposiciones realizadas durante el proceso de análisis. Esta evaluación crítica es esencial para comprender la validez y la robustez de nuestros resultados, así como para brindar una perspectiva realista sobre la interpretación de estos.

Finalmente, este capítulo también de ofrecieron posibles proyecciones para estudios futuros utilizando la metodología OpenQuake, empleada en este estudio para la evaluación de riesgo sísmico.

5.1 Interpretación de resultados

5.1.1 Hipótesis específicas

Hipótesis específica 01. “La vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna, se determina mediante la asignación de curvas de fragilidad según la tipología estructural de las edificaciones.”

El capítulo tres del FEMA P-58-1 (2018) titulado: “*Assemble Building Performance Model*” desarrolla una metodología para construir un modelo de desempeño de edificaciones; es decir, construir un modelo que represente y prediga el comportamiento de una edificación ante las cargas sísmicas. Este modelo es una colección organizada de datos necesarios para definir los activos de un edificio que están en riesgo y son vulnerables, lo cual incluye: (a) Datos básicos del edificio (b) Ocupación, (c) Modelos de población, (d) Componentes estructurales y (e) Componentes no estructurales. El capítulo también aborda la asignación de grupos de fragilidad para englobar componentes que tienen características similares de construcción y establecer así la capacidad de la edificación para responder a eventos sísmicos.

En la presente investigación, utilizando la metodología de Openquake, resaltamos dos etapas para la construcción del modelo de exposición: (a) La categorización de las edificaciones mediante la asignación de una taxonomía específica, y (b) La determinación de su vulnerabilidad a través de la asignación de curvas de fragilidad. Dicho proceso nos permitió obtener una visión más clara de

cómo estas edificaciones podrían comportarse ante eventos sísmicos. Los resultados demostraron que las taxonomías que se presentan mayor incidencia en el distrito Alto de la Alianza son MUR/HEX:1 y MUR/HEX:2 en un 56 % y 16 % respectivamente, también ciertas tipologías presentaron una mayor susceptibilidad a daños en comparación con otras, corroborando así la influencia significativa de la tipología estructural en la vulnerabilidad sísmica; por ejemplo, ante una aceleración del suelo de hasta 0,2g, la tipología MCF/LWAL+DNO/HEX:3 muestra más probabilidades a sufrir daño ligero que otras edificaciones, con una aceleración del suelo de 0,6g a 1,0g, las tipologías MUR/HEX:2 y MCF/LWAL+DNO/HEX:3 muestran mayor probabilidad de colapso. Dichos resultados enfatizan la importancia de abordar la vulnerabilidad de las edificaciones considerando sus características intrínsecas para desarrollar estrategias de mitigación y planificación urbana más efectivas.

Hipótesis específica 02. “La amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna se determina de manera prospectiva anticipando posibles eventos sísmicos derivados de las fuentes sismogénicas de la región.”

El componente de peligro sísmico utilizado por OpenQuake para la siguiente investigación corresponde al tipo: Análisis probabilístico de peligro sísmico basado en eventos (EPSHA), el mediante el modelo de entrada de PSHA con los ajustes de cálculo: (a) Fuentes sismogénicas, (b) Ecuaciones de predicción de movimiento, (c) Distribución Magnitud-Frecuencia y (c) Condiciones de sitio. Genera un conjunto de registros sintéticos de movimiento del suelo para eventos sísmicos individuales, estos registros se utilizan luego para estimar la intensidad de movimiento potencial del suelo en diversas ubicaciones dentro del área de estudio.

La exploración de los posibles escenarios de daño resultantes de un evento sísmico en el distrito Alto de la Alianza, en la ciudad de Tacna, se abordó mediante una metodología prospectiva con un horizonte de tiempo de 500 000 años. De un total de cinco (5) fuentes sismogénicas y tres (3) campos de movimiento de terreno ingresados, se generaron un total de 67 467 rupturas sísmicas de las cuales condujeron a la obtención de 540 710 eventos sísmicos con los cuales se pudo estimar diversos escenarios posibles de riesgo sísmico.

Finalmente es necesario mencionar que, aunque estos escenarios generados no proporcionan predicciones precisas de eventos sísmicos individuales, desempeñan un papel crucial como herramientas valiosas para entender la diversidad y alcance del riesgo sísmico en una determinada área. Estos escenarios

representan una gama de posibles resultados en términos de movimiento del suelo, daños a las edificaciones y posibles pérdidas económicas.

Hipótesis específica 03. *“El riesgo sísmico de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna se determina mediante la generación de múltiples escenarios de daño, lo que nos permite estimar las potenciales pérdidas económicas asociadas.”*

El Banco Interamericano de Desarrollo (2014) en el informe titulado “Perfil de Riesgo de Desastres para Perú” desarrolla un modelo de riesgo probabilista (MRP) para cuantificar los efectos de los desastres naturales en potenciales pérdidas económicas y efectos sobre la población, otorgando como principales resultados la Pérdidas Máxima Probable (PML) y la Pérdida Anual Promedio Esperada (AAL), las cuales son mencionadas como *“métricas de especial importancia para el futuro diseño de instrumentos de retención (financieros) o transferencia de riesgo, y por lo tanto serán un aporte de especial valor para definir con estudios complementarios una estrategia de protección financiera para cubrir la responsabilidad fiscal del Estado”* (Banco Interamericano de Desarrollo [BID], 2014). Dicho riesgo sísmico ha sido calculado utilizando la plataforma ERN-CAPRA (referido en la tabla 16 y tabla 17) (Central America Probabilistic Risk Assessment).

Tabla 16

Cuadro comparativo de Pérdidas Máximas Probables en el Perú

| TR (años) | Edificaciones de Uso Residencial | Todas las Edificaciones | Edificaciones de Uso Residencial |
|--------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| | País: Perú (Yepes-Estrada & Silva (2017)) PML (Millons USD) | Departamento: Tacna (BID (2009)) PML (Millons USD) | Distrito: Alto de la Alianza (Alania & Vizcarra (2023)) PML (Millons USD) |
| 10 | 300 | 300 | 2,89 |
| 20 | 600 | 400 | 5,80 |
| 25 | 700 | 550 | 7,02 |
| 50 | 1250 | 750 | 11,79 |
| 75 | 1750 | 900 | 15,26 |
| 100 | 2000 | 1056 | 17,88 |
| 250 | 2750 | 1481 | 26,76 |
| 500 | 4500 | 1804 | 33,20 |
| 750 | 5050 | 1950 | 36,84 |
| 1000 | 6000 | 2129 | 39,35 |

Nota. Adaptado de Yepes & Silva (2017) y BID (2014).

Tabla 17*Pérdida Promedio Anual en la ciudad de Tacna*

| Estudio | Tacna | Tacna | Alto de la Alianza |
|------------------------------|-------------------------|------------------|-------------------------------|
| | Yepes & Silva (2017) | (BID (2009)) | (Alania & Vizcarra (2023)) |
| AAL | 5 – 10 USD Millons | 28,5 USD Millons | 1,19 USD Millons |
| Ratio | - | 1,8% | 0,34% |
| Costo Total de Reposición | - | 1563 USD Millons | 354 USD Millons |

Nota. Adaptado de Yepes & Silva (2017) y BID (2014).

En las tablas presentadas anteriormente podemos observar una comparación de los estudios de riesgo probabilístico desarrollados por Yepes & Silva (2017), el BID (2014) y el presente estudio. El estudio de Yepes y Silva evaluó en las edificaciones de uso residencial en ciertos países Sudamericanos, entre ellos territorio peruano, mientras que el estudio del BID abarcó todas las edificaciones de dicho territorio, proporcionando un desglose detallado de los resultados por departamento; en contraste, el presente estudio se desarrolló en el distrito Alto de la Alianza del departamento de Tacna, abarcando las edificaciones de uso residencial. Es importante destacar que las herramientas y metodología utilizadas en el estudio realizado por Yepes y Silva corresponden a la plataforma OpenQuake de GEM, las mismas que se aplicaron en el presente estudio, mientras que el BID empleó la plataforma ERN-CAPRA; por otro lado, se usaron como referencia los costos de reposición utilizados por BID en su investigación a nivel nacional para este estudio.

Aunque no es posible realizar una comparación directa de resultados debido a las variaciones en los parámetros de los modelos de peligro sísmico, el modelo de exposición, los modelos de vulnerabilidad, los modelos de consecuencia, los costos de reposición y otros factores, es evidente que el análisis de riesgo sísmico probabilístico ofrece una integración completa de todas estas variables. Además, es importante destacar que este estudio es ampliamente reconocido y utilizado por otras instituciones que también comprenden la importancia de llevar a cabo esta evaluación de riesgo. Los resultados obtenidos nos permiten apreciar la relevancia de implementar estrategias de protección financiera a nivel nacional para hacer frente al riesgo de un evento catastrófico.

5.1.2 Hipótesis general

Hipótesis General: *El estudio del Riesgo Sísmico del Distrito del Alto de la Alianza – Tacna, es viable aplicando la metodología de la fundación GEM utilizando*

OpenQuake: Event-Based Damage, mediante la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica.

En la tesis de Cabello & Apaza (2018) desarrollan la metodología heurística propuesta por la Arq. Olga Lozano Cortillo para el análisis de riesgo, basada en la asignación y caracterización de conjuntos con indicadores críticos, se establece una correlación entre los aspectos cualitativos y cuantitativos, teniendo en cuenta criterios profesionales, proporcionando de esta manera una base de datos e información geográfica verídica. De acuerdo con esta metodología, el riesgo sísmico se halla mediante la siguiente fórmula. $\text{Riesgo} = (\text{Vulnerabilidad de un elemento} \times \text{Peligro}) / \text{Capacidad}$ (0,8). Estudio del cual se concluye que el 7 %, 27 %, 51 % y 15 % de las viviendas del Distrito alto de la Alianza se encuentran en un nivel de riesgo sísmico Bajo, Medio, Alto y Muy Alto respectivamente.

Por otro lado, la presente tesis adopta la metodología propuesta por GEM, el cual basa el análisis de riesgo en un enfoque probabilístico utilizando la plataforma OpenQuake Engine. Esta metodología se centra en la generación de escenarios sísmicos para evaluar el peligro sísmico, la asignación de curvas de fragilidad a diferentes tipologías de edificaciones para evaluar su vulnerabilidad los cuales finalmente nos permiten cuantificar el riesgo sísmico en términos de pérdidas económicas y daños esperados en función de la probabilidad de ocurrencia de eventos sísmicos.

Observamos que ambas metodologías comparten el mismo principio fundamental de que el riesgo sísmico se compone de peligro y vulnerabilidad; sin embargo, existen diferencias significativas en la forma en que abordan este análisis. La metodología de Cabello y Apaza centra sus resultados en una evaluación del nivel de riesgo sísmico, mientras que la presente tesis se centra en cuantificar pérdidas económicas y daños esperados.

5.2 Análisis de incertidumbre y limitaciones del estudio

La presente investigación se llevó a cabo mediante la recopilación de datos obtenidos de diversos estudios realizados por diferentes autores, por lo que a continuación se presentan la incertidumbre y limitaciones identificadas en el desarrollo del estudio:

- **Modelo de exposición.** Se usó como base de datos la tesis de Cabello y Apaza del año 2017, la cual fue actualizada al año 2023 con una muestra óptima con un nivel de confianza del 97 % y un margen de error del 4%. Se observó que el 15 % de la muestra original experimentó modificaciones en su tipología y un 9 % adicional se agregó durante el período de 2017 a 2023; por

otro lado, un 76 % se mantuvo sin cambios. Estos resultados validaron el uso de la muestra en el contexto de este estudio; sin embargo, aún existe un porcentaje del 24 % de datos que no fueron actualizados y correspondiendo al año 2017 muestra una limitación a tener en cuenta para este estudio.

- **Costo de reposición.** Se utilizaron costos proporcionados del Banco Interamericano de Desarrollo (BID) en el año 2014 donde se realizó un estudio de riesgo sísmico probabilístico para Perú, específicamente se utilizaron los costos que respectan edificaciones de uso residencial de niveles socioeconómicos bajo con niveles de complejidad bajo y medio, comparando los resultados con los costos unitarios de construcción de proyectos inmobiliarios en provincias del Perú desarrollado por la empresa Tinsa en el año 2017.
- **Vulnerabilidad sísmica.** Para representar la vulnerabilidad de las edificaciones se usaron las curvas de fragilidad desarrolladas por los autores Villar Vega et al. (2017) y Acevedo et al. (2017), cuyos estudios han sido de referencia para representar edificaciones en Perú y otros países de América del Sur; sin embargo, es importante tener en cuenta la incertidumbre asociada al aplicar estas curvas en un contexto diferente al de su desarrollo, debido a diversos factores entre los que podemos mencionar: la variabilidad local en las condiciones geológicas y geotécnicas, diferencias en la técnica de construcción, materiales y estándares de diseño que pueden afectar el estudio de desempeño de las edificaciones.
- **Peligro sísmico.** Se utilizaron las fuentes sísmicas de un estudio realizado por SENCICO en el año 2016, parámetros de magnitud-frecuencia de cada fuente sísmica desarrollada por Ancco en el año 2018, ecuaciones de predicción de movimiento de Youngs et al. (1997) y Sadigh et al. (1997), así como condiciones de sitio uniformes por conveniencia del autor, considerando el mapa de zonificación sísmica del Instituto Geofísico del Perú (2018).
- **Análisis de Riesgo Sísmico Probabilístico.** Es necesario considerar la incertidumbre inherente en los datos y modelos utilizados durante la aplicación de Monte Carlo en la evaluación de la probabilidad de peligro sísmico. Cualquier análisis probabilístico, como el realizado, está sujeto a cierto grado de incertidumbre debido a la variabilidad intrínseca de los eventos sísmicos y las limitaciones en los datos disponibles. Si bien se han utilizado modelos y datos confiables, existen incertidumbres inherentes en la predicción de eventos sísmicos y sus efectos.

5.3 Proyecciones para estudios futuros

Por lo mencionado anteriormente, a continuación, se plantean proyecciones para investigaciones que pueden enriquecer el estudio de riesgo sísmico en el distrito de Alto de la Alianza en la ciudad de Tacna.

- **Actualizar el Modelo de Exposición.** Continuar actualizando y ampliando la base de datos de edificaciones, incluyendo información detallada sobre la calidad de la construcción, materiales utilizados y antigüedad de las estructuras. Esto proporcionaría una base más sólida para las evaluaciones de vulnerabilidad.
- **Modelo de Exposición de Edificaciones Esenciales.** Extender el análisis de riesgo a edificaciones esenciales como hospitales, escuelas y servicios de emergencia, para comprender cómo podrían verse afectados en caso de un terremoto y cómo pueden mejorarse en términos de resiliencia.
- **Costo de Reposición.** Un enfoque más detallado en el costo de reposición permitiría obtener estimaciones más precisas de las pérdidas económicas en caso de un terremoto y, por lo tanto, mejorar la toma de decisiones en términos de planificación de la mitigación y la resiliencia ante desastres sísmicos en el distrito.
- **Evaluación Costo-Beneficio.** Este proceso de cálculo proporciona una herramienta de apoyo a la toma de decisiones para determinar si la aplicación de medidas de refuerzo o fortalecimiento en un conjunto de edificaciones existentes es ventajosa desde un punto de vista económico. El procedimiento planteado GEM se resume en la ecuación 2.

$$\text{Beneficio} = (AAL_{\text{reforzado}} - AAL_{\text{original}}) * \frac{1 - e^{-rt}}{r} \quad (2)$$

$AAL_{\text{reforzado}} = \text{Pérdida Anual Promedio de edificación reforzada}$

$AAL_{\text{original}} = \text{Pérdida Anual Promedio de edificación original}$

$t = \text{tiempo de vida útil de la edificación}$

$r = \text{tasa de interés de descuento}$

- **Vulnerabilidad Humana.** Desarrollar funciones de vulnerabilidad humana y agregar a los estudios de riesgo dicha variable para estimar las posibles pérdidas humanas durante un terremoto.
- **Microzonificación Sísmica.** Realizar estudios de microzonificación sísmica en la región para identificar áreas específicas que puedan tener un mayor riesgo debido a las condiciones geológicas y geotécnicas locales.

- **Evaluación de Riesgo Sísmico Determinista.** Un enfoque donde se analiza un único escenario sísmico específico, generalmente el terremoto más grande y probablemente destructivo que podría afectar a una región en particular, por lo cual proporciona resultados específicos para un evento particular.

CONCLUSIONES

El estudio de riesgo sísmico probabilístico, realizado mediante la metodología GEM en la plataforma OpenQuake Engine: Event-Based Damage, nos proporcionó una comprensión integral del riesgo sísmico en la región del distrito Alto de la Alianza de la ciudad de Tacna. Al asignar curvas de fragilidad basadas en la tipología estructural encontradas, se identificó las edificaciones más susceptibles a daños en diferentes niveles de aceleración del suelo; y al crear escenarios de riesgo sísmico que reflejan la combinación de fuentes sísmicas en la región, se obtuvo información esencial sobre la probabilidad y la magnitud de los eventos sísmicos que podrían afectar la ciudad de Tacna. Como resultado, se generaron escenarios que estimaron las posibles pérdidas económicas para las edificaciones. Este enfoque integrado de evaluación de riesgo contribuye significativamente al conocimiento y la gestión efectiva del riesgo sísmico en la región, permitiendo tomar medidas informadas para la protección de vidas y propiedades. A continuación, se presentan los resultados del estudio en relación con los objetivos específicos:

Del *modelo que vulnerabilidad* sísmica podemos concluir que las tipologías que tienen presencia significativa en el distrito Alto de la Alianza son MUR/HEX:1 y MUR/HEX:2 con un 56 % y 16 % de incidencia respectivamente. Las curvas de fragilidad desarrolladas por Villar Vega et al. (2017) y Acevedo et al. (2017) revelan que las edificaciones con $PGA = 0,2g$ son más propensas a sufrir daños ligeros con un enfoque particular en la tipología MCF/LWAL+DNO/HEX:3. A medida que la aceleración del suelo aumenta a un $PGA = 0,6g$ y $PGA = 1,0g$, la probabilidad de daño extensivo y colapso se vuelve más significativa, y las tipologías MUR/HEX:2 y MCF/LWAL+DNO/HEX:3 muestran mayor probabilidad de colapso.

Del *modelo de amenaza sísmica* derivado de las fuentes sísmicas de la ciudad de Tacna podemos concluir que, el análisis de eventos sísmicos estocásticos generados de manera aleatoria revela que el 44 % de estos eventos tiene su origen en una región tectónica de subducción intraplaca, el 31 % se origina en la corteza superficial, y el 25 % restante en región tectónica de subducción interfase. Además, el nivel de magnitud sísmica con mayor incidencia registrada es de 5,55 Mw, representando el 13 % de los eventos sísmicos, seguido por una magnitud de 5,65 Mw, que constituye el 10 % de los sismos registrados. Cabe mencionar que los sismos con magnitudes superiores a 6,45 Mw e inferiores a 8,35 Mw, aunque representen individualmente

menos al 2 % de los eventos generados, en su conjunto constituyen el 13 % de la incidencia total de eventos sísmicos generados.

Del *análisis de riesgo sísmico probabilístico* obtenemos tablas de resumen de pérdida anual promedio esperada (AAL) y pérdida máxima probable (PML) por periodo de retorno, por lo que podemos concluir:

La pérdida anual promedio esperado (AAL) para las edificaciones de uso residencial del distrito Alto de la Alianza asciende a 1,191 millones US\$. Además, se observa que las tipologías que presentaron mayor cantidad de edificaciones afectadas debido a la amenaza sísmica son:

| | |
|------------------------|-----------------------------------------------|
| MUR/HEX:2 | 46 viviendas afectadas 0,484 millones US\$ |
| MCF/LWAL+DNO/HEX:2 | 26 viviendas afectadas 0,236 millones US\$ |
| MUR/HEX:1 | 21 viviendas afectadas 0,055 millones US\$ |
| MUR+ADO/LWAL+DNO/HEX:1 | 16 viviendas afectadas 0,054 millones US\$ |
| MCF/LWAL+DNO/HEX:3 | 13 viviendas afectadas 0,210 millones US\$ |

Las curvas de *Probabilidad de Pérdida Máxima Probable* (PML) son una herramienta esencial para comprender la vulnerabilidad económica ante eventos sísmicos a lo largo de diferentes horizontes temporales.

En este estudio, hemos evaluado y presentado las PML para varios Periodos de Retorno (TR), con un enfoque particular en periodos de 25, 50, 75, 250, **500** y 750 años, con una PML de 7,02, 11,79, 15,26, 26,76, **33,19** y 36,84 millones US\$ y una probabilidad de excedencia de 3,92 %, 1,98 %, 1,32 %, 0,40 %, 0,20 % y 0,13 % respectivamente. Además, podemos destacar el TR de 500 años correspondiente a 10% de probabilidad de excedencia en 50 años.

También se ha observado que las taxonomías con mayor PML son MUR/HEX:2, MCF/LWAL+DNO/HEX:2 y MCF/LWAL+DNO/HEX:3 con un rango de pérdidas entre el 38 % - 43 %, 14 % - 22 % y 15 %-44 % del total de pérdidas económicas respectivamente.

RECOMENDACIONES

Se recomienda a las instituciones académicas competentes, tales como: Universidades, INDECI y el IGP; la implementación de la plataforma OpenQuake como herramienta para la estimación del riesgo sísmico en la ciudad de Tacna. Esta plataforma, siendo una herramienta de código abierto cuenta con el respaldo del GEM y ha sido validada mediante numerosos estudios en diversas regiones del mundo, los cuales han sido publicados en distintas revistas científicas, brindando así confiabilidad. Por ello se sugiere explorar oportunidades de capacitación virtual ofrecidas por la entidad GEM, como la participación en programas de formación virtuales que permitirá a los equipos de investigación adquirir habilidades especializadas en el uso óptimo de OpenQuake, maximizando así el potencial de la herramienta. A continuación, se presentan recomendaciones relacionadas a los resultados obtenidos durante la presente investigación.

En relación con el modelo de vulnerabilidad sísmica, se recomienda que las universidades y centros de investigación realicen estudios específicos sobre las tipologías estructurales con mayor incidencia identificadas en este estudio, así como aquellas que presentan una mayor vulnerabilidad en función de investigaciones previas en contextos nacionales diferentes. Estos estudios deberían incluir análisis detallados de la vulnerabilidad sísmica de las edificaciones, mediante el uso de curvas de fragilidad adaptadas a las condiciones y materiales locales. Dado que estas tipologías son las más comunes y representan un riesgo significativo en caso de eventos sísmicos, también investigar su comportamiento sísmico y proponer soluciones de mejora podría tener un impacto sustancial en la resiliencia de la comunidad frente a futuros sismos.

En relación al modelo de amenaza sísmica, se recomienda a instituciones como el Instituto Geofísico del Perú (IGP) y afines, llevar a cabo estudios geotécnicos exhaustivos para conocer las condiciones de sitio en los diversos distritos de la ciudad de Tacna, estudios como las mediciones de microtrepidaciones nos permitirán conocer datos esenciales como la velocidad de onda de corte a una profundidad de 30 metros (V_{S30}), entre otros, junto con ello se recomienda la elaboración de mapas de zonificación sísmica que reflejen las variaciones en las condiciones de sitio en la región de Tacna. Por otro lado, es importante la colaboración con instituciones especializadas para actualizar los datos de recurrencia sísmica de las fuentes

sismogénicas en la región. Fomentar la colaboración activa de expertos en sismología y geotecnia permitirá enriquecer la calidad de los resultados mediante la recopilación de información detallada, esto asegurará que los modelos de amenaza sísmica reflejen con precisión las condiciones más actuales de la región a evaluar.

Se recomienda a la Municipalidad de Alto de la Alianza de la ciudad de Tacna y al Instituto Nacional de Defensa Civil (INDECI) implementar programas de educación pública que destaquen la importancia de la construcción responsable en la preparación para eventos sísmicos, esto puede lograrse mediante la difusión de investigaciones sobre riesgo sísmico y estrategias de gestión del riesgo sísmico, dando a conocer las edificaciones particularmente vulnerables ante posibles escenarios sísmicos. Asimismo, se aconseja desarrollar un plan de respuesta ante emergencias sísmicas, para ello es importante destacar la necesidad de desarrollar una continua actualización de los modelos de riesgo sísmicos, que muestren la realidad de la comunidad y nos permitan estar preparados para responder de manera resiliente a los daños y pérdidas causados por eventos sísmicos, para ello también se sugiere considerar la posibilidad de establecer fondos de garantía para la reconstrucción de edificaciones afectadas, de manera que facilite la recuperación temprana de la comunidad tras un evento sísmico.

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ANEXOS

Anexo 1. MATRIZ DE CONSISTENCIA

| Problemática | Objetivo | Hipótesis | Variables e indicadores | Metodología |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1. Interrogante Principal ¿Es posible contribuir al estudio de riesgo sísmico en el distrito de Alto de la Alianza, ubicado en la ciudad de Tacna en el año 2023, mediante la implementación de la metodología de GEM utilizando OpenQuake: Event-Based Damage, a través de la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica?</p> <p>2. Interrogantes Específicas a) ¿Cómo podemos determinar la vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna? b) ¿Cómo podemos estimar la amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna? c) ¿Cómo podemos estimar el riesgo sísmico de las edificaciones en el distrito del Alto de la Alianza de la ciudad de Tacna?</p> | <p>1. Objetivo General Contribuir al estudio de riesgo sísmico del distrito del Alto de la Alianza de la ciudad de Tacna al año 2023 con la implementación de la metodología de GEM utilizando OpenQuake: Event-Based Damage, mediante la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica.</p> <p>2. Objetivos Específicos a) Determinar la vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna. b) Estimar la amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna. c) Estimar el riesgo sísmico de las edificaciones en el distrito Alto de la Alianza de la ciudad de Tacna.</p> | <p>1. Hipótesis General El estudio del Riesgo Sísmico del Distrito del Alto de la Alianza – Tacna, es viable aplicando la metodología de la fundación GEM utilizando OpenQuake: Event-Based Damage, mediante la convergencia de las variables: vulnerabilidad de las edificaciones y escenarios de amenaza sísmica.</p> <p>2. Hipótesis Específicas a) La vulnerabilidad de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna, se determina mediante la asignación de curvas de fragilidad según la tipología estructural de las edificaciones. b) La amenaza sísmica probabilística del distrito Alto de la Alianza de la ciudad de Tacna se determina de manera prospectiva anticipando posibles eventos sísmicos derivados de las fuentes sismogénicas de la región. c) El riesgo sísmico de las edificaciones del distrito Alto de la Alianza de la ciudad de Tacna se determina mediante la generación de múltiples escenarios de daño, lo que nos permite estimar las potenciales pérdidas económicas asociadas.</p> | <p>1ra Variable Independiente Vulnerabilidad sísmica de las edificaciones del distrito Alto de la Alianza.</p> <p>Indicadores: Porcentaje de viviendas según su tipología estructural</p> <p>2ra Variable Independiente Independiente Peligro sísmico del distrito Alto de la Alianza</p> <p>Indicadores: Número de sismos artificiales generados y su intensidad (Mw).</p> <p>Variable Dependiente Riesgo sísmico del distrito Alto de la Alianza.</p> <p>Indicadores: Pérdidas Económicas (US\$)</p> | <p>Tipo de investigación Exploratorio-Explicativo</p> <p>Diseño de Investigación Documental</p> <p>Ámbito de Estudio Departamento de Tacna, Provincia de Tacna, Distrito de Alto de la Alianza.</p> <p>Población Edificaciones de uso residencial ubicadas en la provincia de Tacna.</p> <p>Muestra Edificaciones de uso residencial ubicadas en el Distrito Alto de la Alianza.</p> <p>Muestra Óptima 668 edificaciones de uso residencial del Distrito Alto de la Alianza.</p> |

**Anexo 2. ACTUALIZACIÓN DE MUESTRA ÓPTIMA EN CAMPO DEL
AÑO 2017 AL 2023**



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| COD MZA 1099 | | | |
| 1 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 10 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 13 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 14 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 15 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| COD MZA 1105 | | | |
| 1 | | MUR+ADO/HEX:1/RES | NUEVO |
| 2 | | MCF/DNO/HEX:2/RES | NUEVO |
| 3 | | MCF/DNO/HEX:2/RES | NUEVO |
| 4 | | MUR/HEX:1/RES | NUEVO |
| 5 | | MUR/HEX:1/RES | NUEVO |
| 6 | | MUR+ADO/HEX:1/RES | NUEVO |
| 7 | | MCF/DNO/HEX:3/RES | NUEVO |
| 8 | | MUR+ADO/HEX:1/RES | NUEVO |
| 9 | | MCF/DNO/HEX:2/RES | NUEVO |
| 10 | | MUR/HEX:2/RES | NUEVO |
| 11 | | MCF/DNO/HEX:1/RES | NUEVO |
| 12 | | MCF/DNO/HEX:2/RES | NUEVO |
| 13 | | MCF/DNO/HEX:1/RES | NUEVO |
| 14 | | MUR+ADO/HEX:1/RES | NUEVO |
| 15 | | MUR+ADO/HEX:1/RES | NUEVO |
| 16 | | MUR+ADO/HEX:1/RES | NUEVO |
| 17 | | MCF/DNO/HEX:2/RES | NUEVO |
| 18 | | MUR+ADO/HEX:1/RES | NUEVO |
| 19 | | MUR+ADO/HEX:1/RES | NUEVO |
| 1 | | MCF/DNO/HEX:2/RES | NUEVO |
| 2 | | MCF/DNO/HEX:1/RES | NUEVO |
| 3 | | MCF/DNO/HEX:2/RES | NUEVO |
| 4 | | MCF/DNO/HEX:2/RES | NUEVO |
| 5 | | MUR+ADO/HEX:1/RES | NUEVO |
| 6 | | MCF/DNO/HEX:2/RES | NUEVO |
| 7 | | MCF/DNO/HEX:2/RES | NUEVO |
| 8 | | MUR+ADO/HEX:1/RES | NUEVO |
| 9 | | MCF/DNO/HEX:3/RES | NUEVO |
| 10 | | MCF/DNO/HEX:2/RES | NUEVO |
| 11 | | MCF/DNO/HEX:2/RES | NUEVO |
| 12 | | MUR+ADO/HEX:1/RES | NUEVO |
| 13 | | MUR+ADO/HEX:1/RES | NUEVO |
| 14 | | MUR+ADO/HEX:1/RES | NUEVO |
| 15 | | MUR+ADO/HEX:1/RES | NUEVO |
| 16 | | MUR/HEX:1/RES | NUEVO |
| 17 | | MUR/HEX:1/RES | NUEVO |
| 18 | | MUR/HEX:1/RES | NUEVO |
| COD MZA 1121 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MCF/DNO/HEX:3/RES | ACTUALIZADO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:3/RES | MCF/DNO/HEX:3/RES | ACTUALIZADO |
| 16 | MUR/HEX:2/RES | MCF/DNO/HEX:3/RES | ACTUALIZADO |
| COD MZA 1158 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 4 | CR/HEX:3/RES | CR/HEX:3/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 18 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 21 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 22 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| COD MZA 1171 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | CR/HEX:1/COM | CR/HEX:1/COM | SIN CAMBIO |
| 7 | MUR/HEX:1/COM | MUR/HEX:1/COM | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 20 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 21 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 22 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 25 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 26 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 27 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 28 | MUR/HEX:2/RES | MUR/HEX:1/RES | ACTUALIZADO |
| COD MZA 2201 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 13 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 14 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 15 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 17 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 20 | MUR/HEX:1/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 21 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 22 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 25 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 26 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 27 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 28 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 2213 | | | |
| 1 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 7 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 19 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 20 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 21 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 22 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 25 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 26 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 27 | | MUR/HEX:2/RES | NUEVO |
| 28 | | MUR/HEX:1/RES | NUEVO |
| COD MZA 2223 | | | |
| 1 | | MUR/HEX:2/RES | NUEVO |
| 2 | | MUR/HEX:1/RES | NUEVO |
| 3 | | MUR/HEX:2/RES | NUEVO |
| 4 | | MCF/DNO/HEX:2/RES | NUEVO |
| 5 | | MUR/HEX:1/RES | NUEVO |
| 6 | | MCF/DNO/HEX:2/RES | NUEVO |
| 7 | | MUR/HEX:1/RES | NUEVO |
| 8 | | MUR/HEX:1/RES | NUEVO |
| COD MZA 2229 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 10 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 16 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| COD MZA 2232 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 6 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 11 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 14 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 15 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:3/RES | ACTUALIZADO |
| 16 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 21 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 22 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 23 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 24 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 25 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 26 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 27 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 28 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| COD MZA 2233 | | | |
| 1 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 9 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 16 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 17 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 18 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 20 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 21 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 22 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 25 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 26 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 28 | | MCF/DUC/HEX:3/COM | NUEVO |
| COD MZA 2234 | | | |
| 30A | | MUR/HEX:1/RES | NUEVO |
| 30B | | MUR/HEX:2/RES | NUEVO |
| COD MZA 2250 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 16 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 17 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 18 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 20 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 21 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 22 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 23 | | MUR/HEX:1/RES | NUEVO |
| 24 | | MCF/DNO/HEX:2/RES | NUEVO |
| 25 | | MUR/HEX:1/COM | NUEVO |
| COD MZA 2256 | | | |
| 1 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HBET:4,6/RES | MUR/HBET:4,6/RES | SIN CAMBIO |
| 9 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 10 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 20 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| COD MZA 3304 | | | |
| 1 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 17 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 18 | MUR/HEX:2/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 19 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 21 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 22 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |



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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 24 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 25 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 26 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 27 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 28 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 29 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 30 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 31 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 32 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 3318 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 2 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 14 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 15 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| COD MZA 3321 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 17 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 18 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 19 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 20 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 21 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 22 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 3342 | | | |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 7 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:3/RES | ACTUALIZADO |
| 8 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 9 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |



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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 21 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 22 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| COD MZA 3347 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7A | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 7B | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 11A | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HBET:4,6/RES | ACTUALIZADO |
| 14 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 15 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 3372 | | | |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 1A | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 2 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 7 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 10A | CR/HBET:4,6/RES | CR/HBET:4,6/RES | SIN CAMBIO |
| 10B | CR/HBET:4,6/RES | CR/HBET:4,6/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 15 | MUR/HEX:2/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 15A | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 4384 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 2 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 7 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 4385 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| COD MZA 4401 | | | |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 6 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | CR/HBET:4,6/RES | CR/HBET:4,6/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 4402 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | CR/HEX:3/RES | ACTUALIZADO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:1/RES | ACTUALIZADO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:2/RES | MUR/HEX:1/RES | ACTUALIZADO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:2/RES | MUR/HEX:1/RES | ACTUALIZADO |
| 15 | MUR/HEX:2/RES | MUR/HEX:1/RES | ACTUALIZADO |
| 16 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 17 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 18 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 20 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 21 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 22 | | MUR/HEX:2/RES | NUEVO |
| COD MZA 4431 | | | |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 9 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 16 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 19 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 21 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 22 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 23 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | MUR/HEX:2/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 25 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 26 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 27 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 28 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 4445 | | | |



UNIVERSIDAD PRIVADA DE TACNA
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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 13 | MUR/HEX:2/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 16 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| COD MZA 4459 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 1 | | MCF/DNO/HEX:2/RES | NUEVO |
| 2 | | MCF/DNO/HEX:2/RES | NUEVO |
| 3 | | MUR/HEX:1/RES | NUEVO |
| 4 | | MUR/HEX:2/RES | NUEVO |
| COD MZA 4486 | | | |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 4 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8B | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 11 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 5513 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:3/RES | ACTUALIZADO |
| 3 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 8 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 1 | MUR/HEX:2/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 2 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/COM | MUR/HEX:2/EDU | ACTUALIZADO |
| COD MZA 5514 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |



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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 13 | | MCF/DNO/HEX:1/COM | NUEVO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 18 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 19 | MUR/HEX:3/RES | MUR/HEX:3/RES | SIN CAMBIO |
| 20 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 21 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 5533 | | | |
| 12 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 15 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 16 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 17 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 18 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 19 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 20 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| COD MZA 5535 | | | |
| 15 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 18 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 19 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 21 | CR/HEX:2/EDU | CR/HEX:2/EDU | SIN CAMBIO |
| COD MZA 5541 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 11 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| COD MZA 5544 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 7 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
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ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|----------------------|----------------------|-------------|
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 1 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 7 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 11 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 13 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 24 | | MUR/HEX:1/RES | NUEVO |
| 25 | | MUR/HEX:1/RES | NUEVO |
| COD MZA 5560 | | | |
| 1 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 4 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 9 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 10 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 14 | MCF/DUC/HBET:4,6/RES | MCF/DUC/HBET:4,6/RES | SIN CAMBIO |
| 15 | MCF/DUC/HEX:3/RES | MCF/DUC/HEX:3/RES | SIN CAMBIO |
| 16 | MCF/DUC/HBET:4,6/RES | MCF/DUC/HBET:4,6/RES | SIN CAMBIO |
| 17 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 18 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 19 | MCF/DUC/HEX:3/RES | MCF/DUC/HEX:3/RES | SIN CAMBIO |
| 20 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 21 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 22 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 23 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 24 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| COD MZA 5569 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 7 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 8 | MUR/HEX:2/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 9 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 11 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 12 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 16 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 19 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 20 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| COD MZA 5592 | | | |
| 1 | | MCF/DNO/HEX:2/RES | NUEVO |
| 3 | | MCF/DNO/HEX:2/RES | NUEVO |
| 4 | | MCF/DNO/HEX:2/RES | NUEVO |
| 5 | | MCF/DNO/HEX:3/RES | NUEVO |
| 6 | | MCF/DNO/HEX:2/RES | NUEVO |
| 7 | | MCF/DNO/HEX:2/RES | NUEVO |
| 8 | | MCF/DNO/HEX:2/RES | NUEVO |
| 9 | | MCF/DNO/HEX:2/RES | NUEVO |
| 10 | | MCF/DNO/HEX:2/RES | NUEVO |
| 11 | | MCF/DNO/HEX:2/RES | NUEVO |
| 12 | | MCF/DNO/HEX:2/RES | NUEVO |
| 13 | | MCF/DNO/HEX:3/RES | NUEVO |
| COD MZA 5593 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 7 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:3/RES | ACTUALIZADO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 16 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 20 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| COD MZA 5602 | | | |
| 1 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 6 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 12 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 15 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 16 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 17 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 18 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 19 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| COD MZA 5604 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:2/RES | MUR/HEX:2/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 9 | | MUR/HEX:1/RES | NUEVO |
| 10 | | MUR/HEX:1/RES | NUEVO |
| 11 | | MUR/HEX:1/COM | NUEVO |
| 12 | | MUR/HEX:1/RES | NUEVO |
| COD MZA 5612 | | | |
| 1 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 2 | MCF/DNO/HEX:3/RES | MCF/DNO/HEX:3/RES | SIN CAMBIO |
| 3 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

ACTUALIZACIÓN DE MODELO DE EXPOSICIÓN DEL AÑO 2017 AL 2023

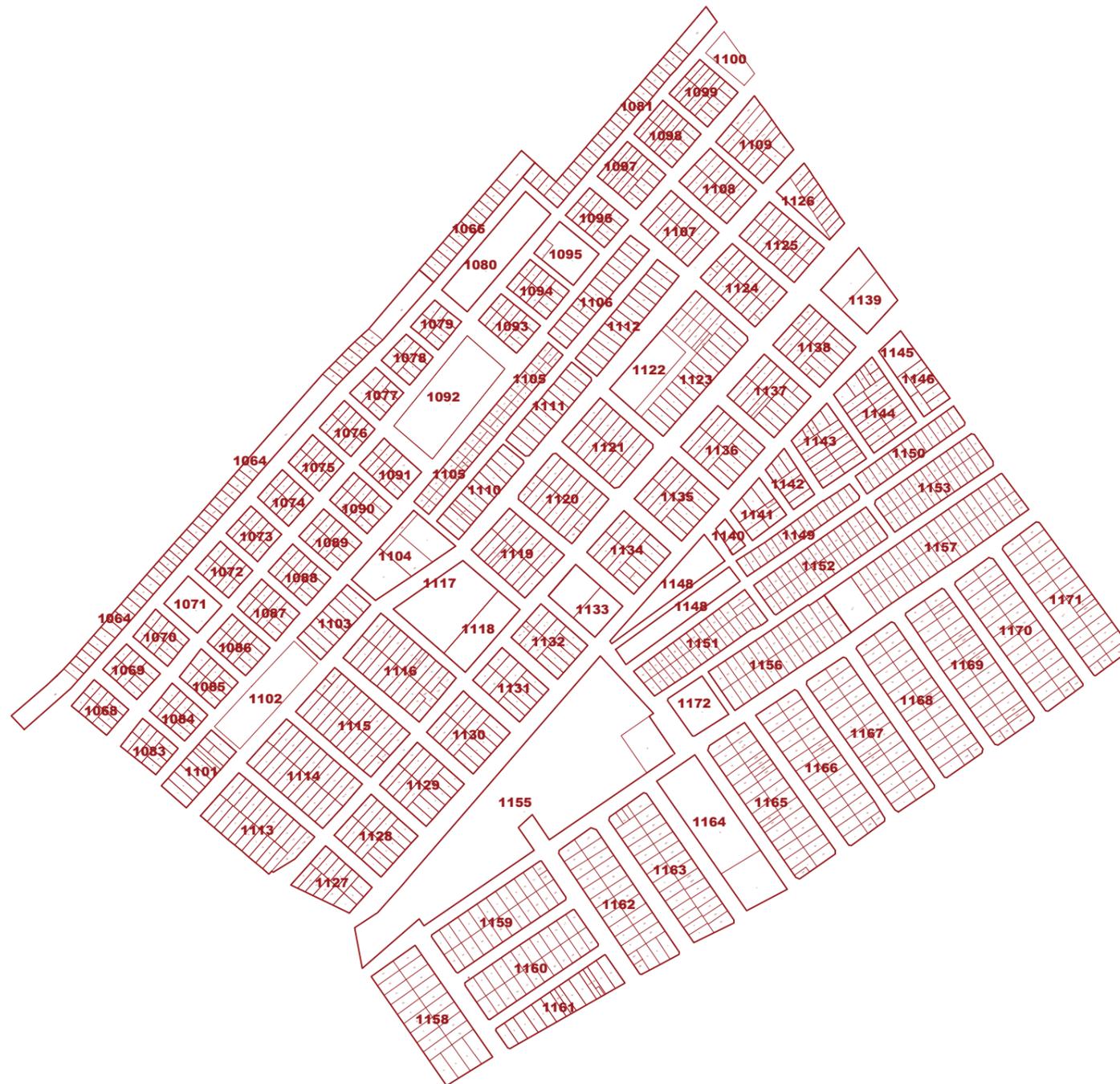
| MANZANA | TIPOLOGÍA 2017 | TIPOLOGÍA 2023 | ESTADO |
|---------------------|-------------------|-------------------|-------------|
| 4 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 5 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 6 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 7 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 8 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 9 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 10 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 11 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 12 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 13 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 14 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 15 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 16 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| 17 | MCF/DNO/HEX:2/RES | MCF/DNO/HEX:2/RES | SIN CAMBIO |
| 18 | MCF/DNO/HEX:1/RES | MCF/DNO/HEX:1/RES | SIN CAMBIO |
| COD MZA 5628 | | | |
| 1 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 2 | MUR+ADO/HEX:1/RES | MCF/DNO/HEX:2/RES | ACTUALIZADO |
| 3 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 4 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 5 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:2/RES | ACTUALIZADO |
| COD MZA 5638 | | | |
| 1 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 2 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 3 | MUR/HEX:1/RES | MUR+ADO/HEX:1/RES | ACTUALIZADO |
| 4 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 5 | MUR/HEX:1/RES | MUR+ADO/HEX:1/RES | ACTUALIZADO |
| 6 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 7 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 9 | MUR+ADO/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| COD MZA 5646 | | | |
| 1 | MUR+ADO/HEX:1/RES | MUR/HEX:1/RES | ACTUALIZADO |
| 2 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 3 | MUR+ADO/HEX:1/RES | MUR/HEX:1/RES | ACTUALIZADO |
| 4 | MUR+ADO/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 5 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 6 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 7 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 8 | MUR/HEX:1/RES | MUR+ADO/HEX:1/RES | ACTUALIZADO |
| 9 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| COD MZA 5649 | | | |
| 1 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 2 | MUR/HEX:1/RES | MUR/HEX:1/RES | SIN CAMBIO |
| 3 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 4 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 5 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 6 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 7 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 8 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 9 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 10 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 11 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:2/RES | ACTUALIZADO |
| 12 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:2/RES | ACTUALIZADO |
| 13 | MUR/HEX:1/RES | MUR/HEX:2/RES | ACTUALIZADO |
| 14 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 15 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 16 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 17 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |
| 18 | MUR+ADO/HEX:1/RES | MUR+ADO/HEX:1/RES | SIN CAMBIO |

Anexo 3. PLANOS DE MODELO DE EXPOSICIÓN



ESQUEMA DE LOCALIZACIÓN

1/5000



ZONIFICACIÓN :

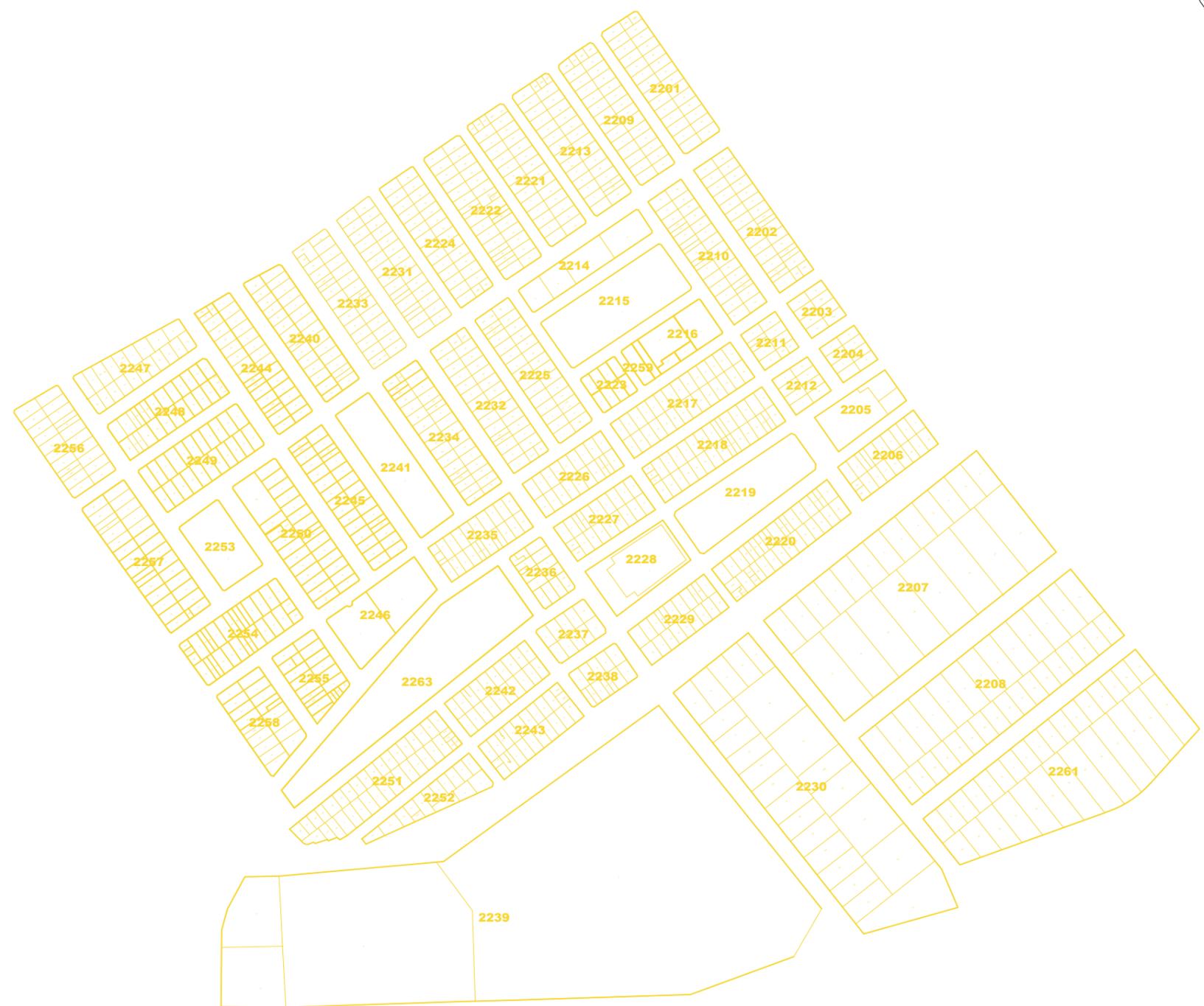
DEPARTAMENTO : TACNA
 PROVINCIA : TACNA
 DISTRITO : ALTO DE LA ALIANZA

LEYENDA

| | | |
|----------|---|--|
| ZONA I | : | |
| ZONA II | : | |
| ZONA III | : | |
| ZONA IV | : | |
| ZONA V | : | |
| ZONA VI | : | |

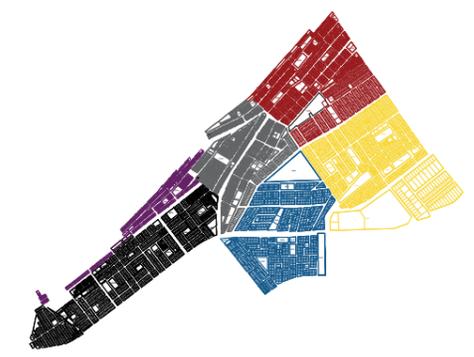
PLANO DE UBICACIÓN ZONA I
 ESC: 1:500

| | | |
|----------------------------------------------------------------------------------------------------------|--------------------|-----------------|
| UNIVERSIDAD PRIVADA DE TACNA FACULTAD DE INGENIERIA ESCUELA PROFESIONAL DE INGENIERIA CIVIL | | |
| PLANO DE ZONIFICACIÓN - ALTO DE LA ALIANZA | | Z-01 |
| UBICACION: DISTRITO: ALTO DE LA ALIANZA, TACNA | | |
| ELABORADORES: Bach. Milton Zoe Gabriel Sosa Vizcarra Bach. Natali Abigail Alania Cotrado | ESCALA : 1: 400 | FECHA: 09/23 |



ESQUEMA DE LOCALIZACIÓN

1/5000



ZONIFICACIÓN :

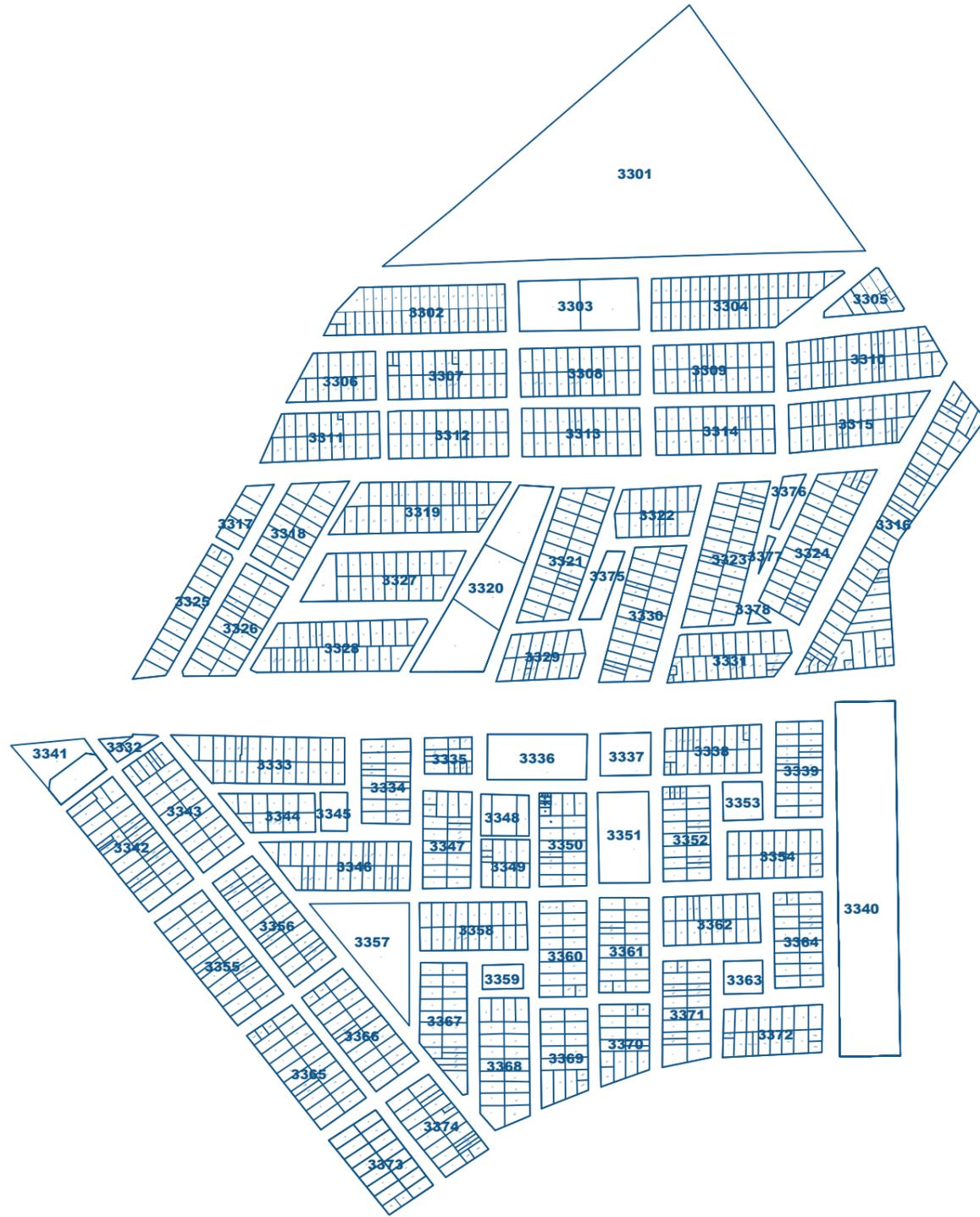
| | |
|--------------|----------------------|
| DEPARTAMENTO | : TACNA |
| PROVINCIA | : TACNA |
| DISTRITO | : ALTO DE LA ALIANZA |

LEYENDA

| | | |
|----------|---|--|
| ZONA I | : | |
| ZONA II | : | |
| ZONA III | : | |
| ZONA IV | : | |
| ZONA V | : | |
| ZONA VI | : | |

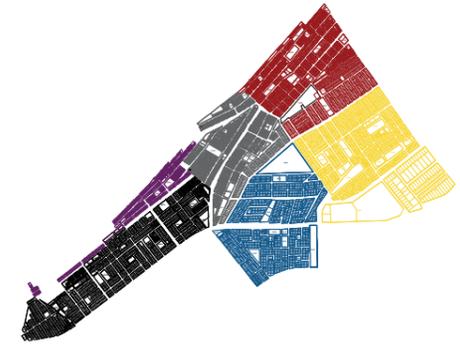
PLANO DE UBICACIÓN ZONA II
ESC: 1:500

| | | | |
|------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------|-----------------|
| | UNIVERSIDAD PRIVADA DE TACNA FACULTAD DE INGENIERIA ESCUELA PROFESIONAL DE INGENIERIA CIVIL | | |
| | PLANO DE ZONIFICACIÓN - ALTO DE LA ALIANZA | | Z-02 |
| | UBICACION: DISTRITO: ALTO DE LA ALIANZA, TACNA | | |
| ELABORADORES: Bach. Milton Zoe Gabriel Sosa Vizcarra Bach. Natalí Abigail Alania Cotrado | | ESCALA : 1: 400 | FECHA: 09/23 |



ESQUEMA DE LOCALIZACIÓN

1/5000



ZONIFICACIÓN :

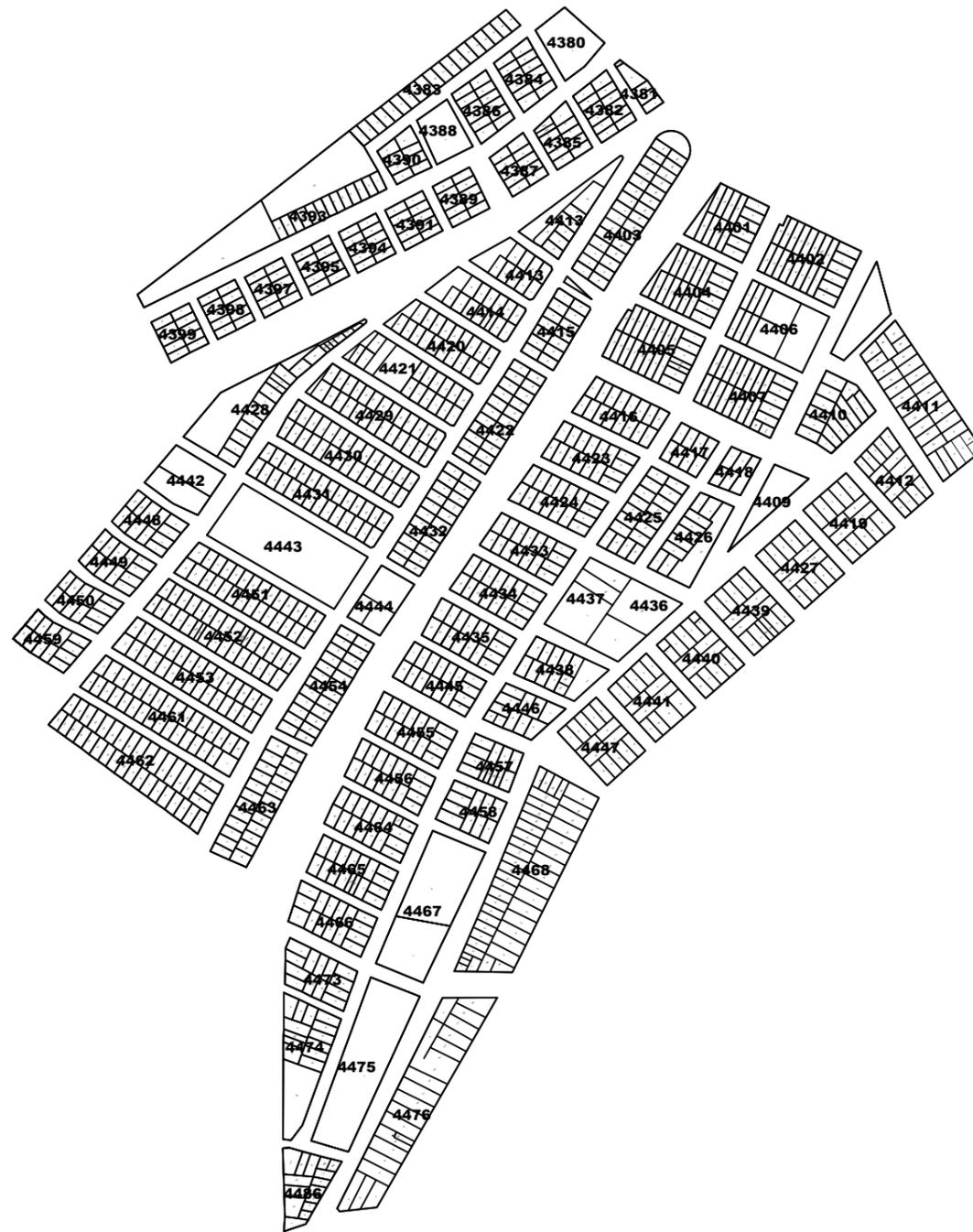
DEPARTAMENTO : TACNA
 PROVINCIA : TACNA
 DISTRITO : ALTO DE LA ALIANZA

LEYENDA

| | | |
|----------|---|--|
| ZONA I | : | |
| ZONA II | : | |
| ZONA III | : | |
| ZONA IV | : | |
| ZONA V | : | |
| ZONA VI | : | |

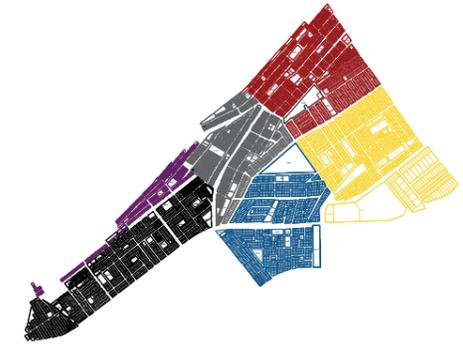
PLANO DE UBICACIÓN ZONA III
 ESC: 1:500

| | | | |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------|
| | UNIVERSIDAD PRIVADA DE TACNA FACULTAD DE INGENIERIA ESCUELA PROFESIONAL DE INGENIERIA CIVIL | | |
| | PLANO DE ZONIFICACIÓN - ALTO DE LA ALIANZA | | Z-03 |
| UBICACION: DISTRITO: ALTO DE LA ALIANZA, TACNA | | ELABORADORES: Bach. Milton Zoe Gabriel Sosa Vizcarra Bach. Natalí Abigail Alania Cotrado | ESCALA : 1: 400 |
| | | FECHA: 09/23 | |



ESQUEMA DE LOCALIZACIÓN

1/5000



ZONIFICACIÓN :

DEPARTAMENTO : TACNA
 PROVINCIA : TACNA
 DISTRITO : ALTO DE LA ALIANZA

LEYENDA

| | | |
|----------|---|--|
| ZONA I | : | |
| ZONA II | : | |
| ZONA III | : | |
| ZONA IV | : | |
| ZONA V | : | |
| ZONA VI | : | |

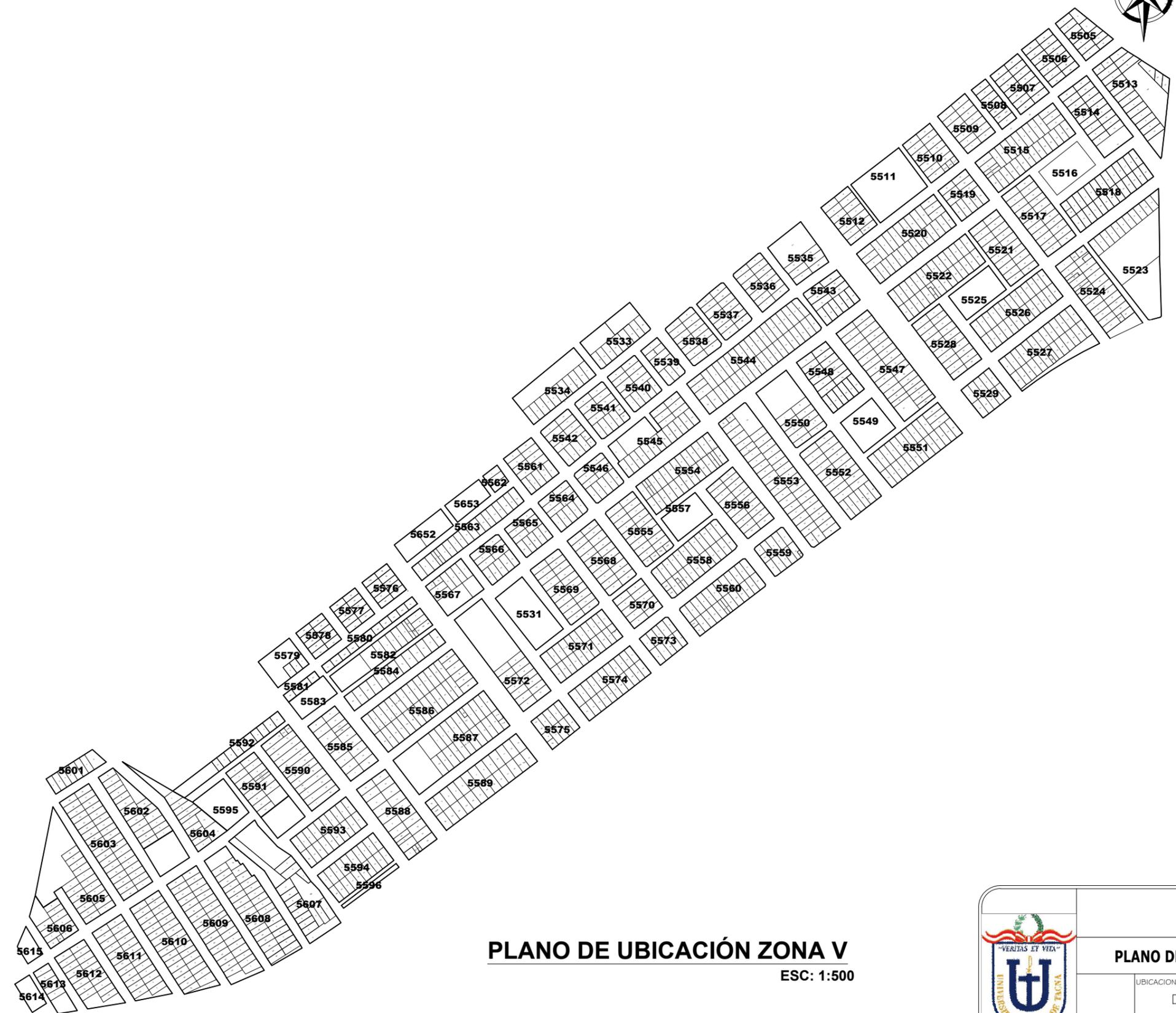
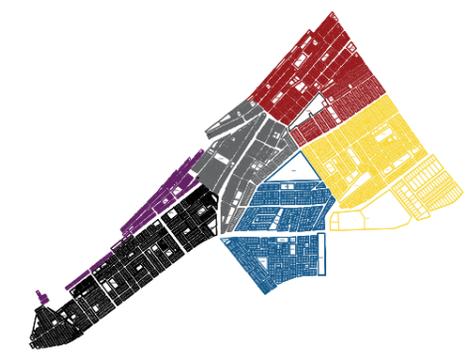
PLANO DE UBICACIÓN ZONA IV
 ESC: 1:500

| | | | |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------|
| | UNIVERSIDAD PRIVADA DE TACNA FACULTAD DE INGENIERIA ESCUELA PROFESIONAL DE INGENIERIA CIVIL | | |
| | PLANO DE ZONIFICACIÓN - ALTO DE LA ALIANZA | | Z-04 |
| UBICACION: DISTRITO: ALTO DE LA ALIANZA, TACNA | | ELABORADORES: Bach. Milton Zoe Gabriel Sosa Vizcarra Bach. Natalí Abigail Alania Cotrado | ESCALA : 1: 400 |
| | | FECHA: 09/23 | |



ESQUEMA DE LOCALIZACIÓN

1/5000



PLANO DE UBICACIÓN ZONA V

ESC: 1:500

ZONIFICACIÓN :

| | |
|--------------|----------------------|
| DEPARTAMENTO | : TACNA |
| PROVINCIA | : TACNA |
| DISTRITO | : ALTO DE LA ALIANZA |

LEYENDA

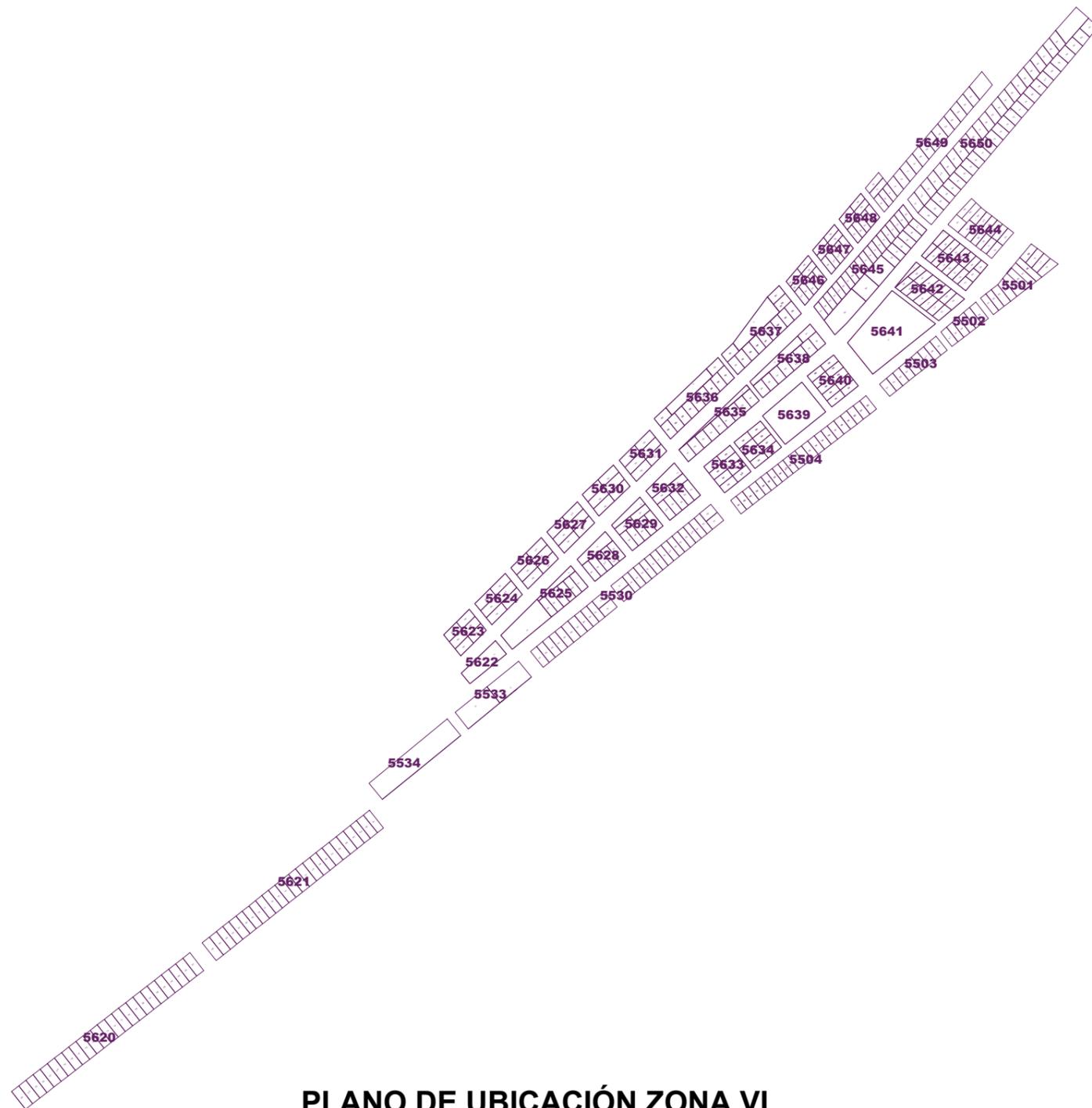
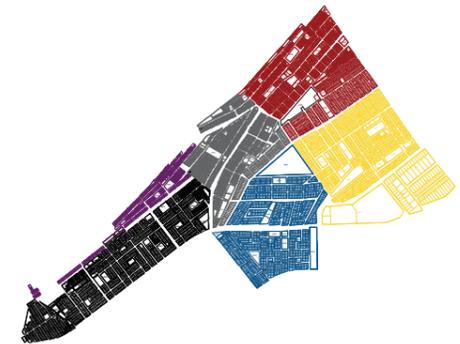
| | | |
|----------|---|--|
| ZONA I | : | |
| ZONA II | : | |
| ZONA III | : | |
| ZONA IV | : | |
| ZONA V | : | |
| ZONA VI | : | |

| | | | | |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------|-----------------|
| | UNIVERSIDAD PRIVADA DE TACNA FACULTAD DE INGENIERIA ESCUELA PROFESIONAL DE INGENIERIA CIVIL | | <h1>Z-05</h1> | |
| | PLANO DE ZONIFICACIÓN - ALTO DE LA ALIANZA | | | |
| UBICACION: DISTRITO: ALTO DE LA ALIANZA, TACNA | | ELABORADORES: Bach. Milton Zoe Gabriel Sosa Vizcarra Bach. Natalí Abigail Alania Cotrado | ESCALA : 1: 400 | FECHA: 09/23 |



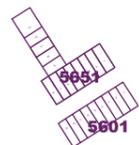
ESQUEMA DE LOCALIZACIÓN

1/5000



PLANO DE UBICACIÓN ZONA VI

ESC: 1:500



ZONIFICACIÓN :

DEPARTAMENTO : TACNA
 PROVINCIA : TACNA
 DISTRITO : ALTO DE LA ALIANZA

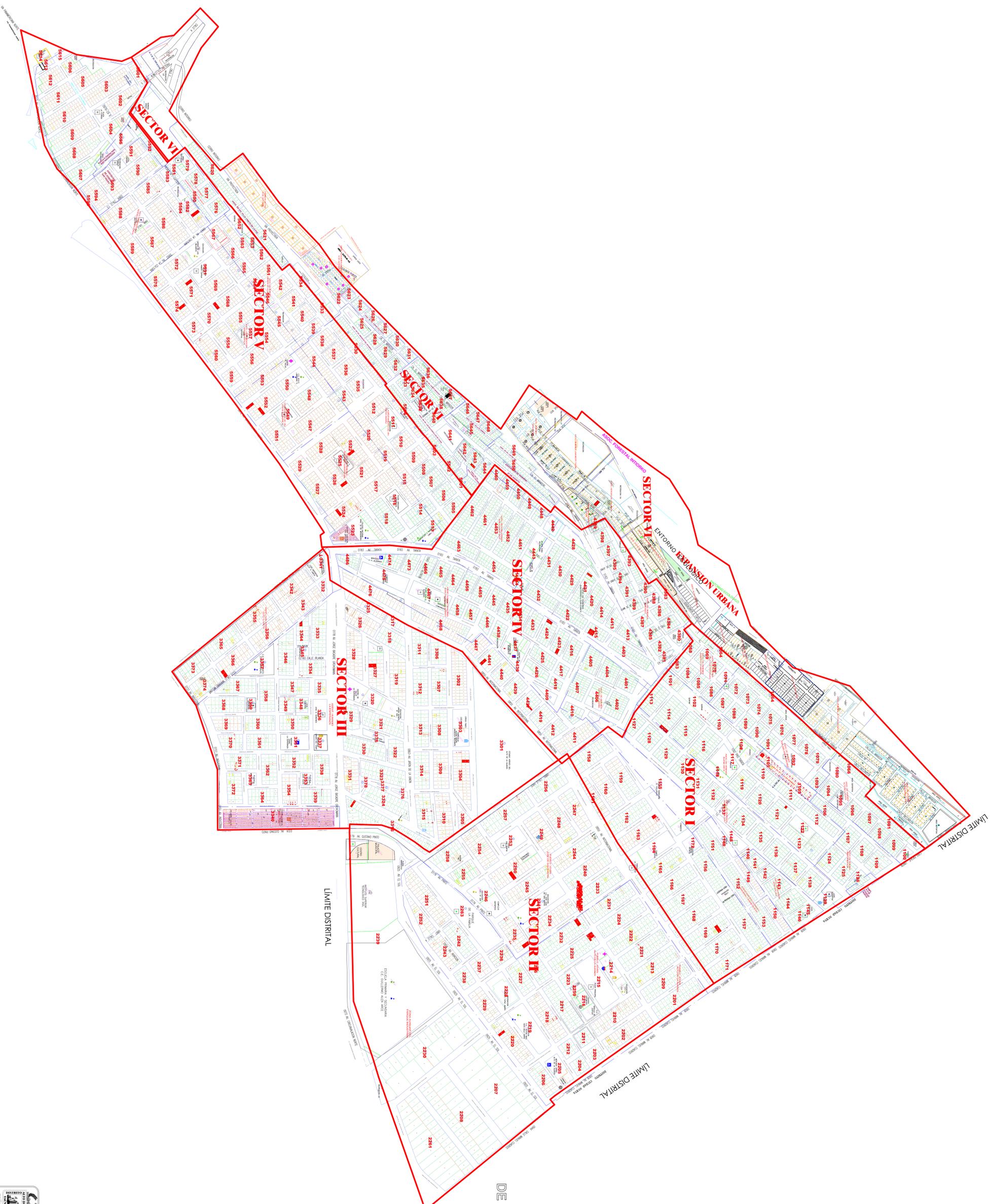
LEYENDA

| | | |
|----------|---|--|
| ZONA I | : | |
| ZONA II | : | |
| ZONA III | : | |
| ZONA IV | : | |
| ZONA V | : | |
| ZONA VI | : | |

| | | | |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------|
| | UNIVERSIDAD PRIVADA DE TACNA FACULTAD DE INGENIERIA ESCUELA PROFESIONAL DE INGENIERIA CIVIL | | |
| | PLANO DE ZONIFICACIÓN - ALTO DE LA ALIANZA | | Z-06 |
| UBICACION: DISTRITO: ALTO DE LA ALIANZA, TACNA | | ELABORADORES: Bach. Milton Zoe Gabriel Sosa Vizcarra Bach. Natali Abigail Alania Cotrado | ESCALA : 1: 400 |
| | | FECHA: 09/23 | |

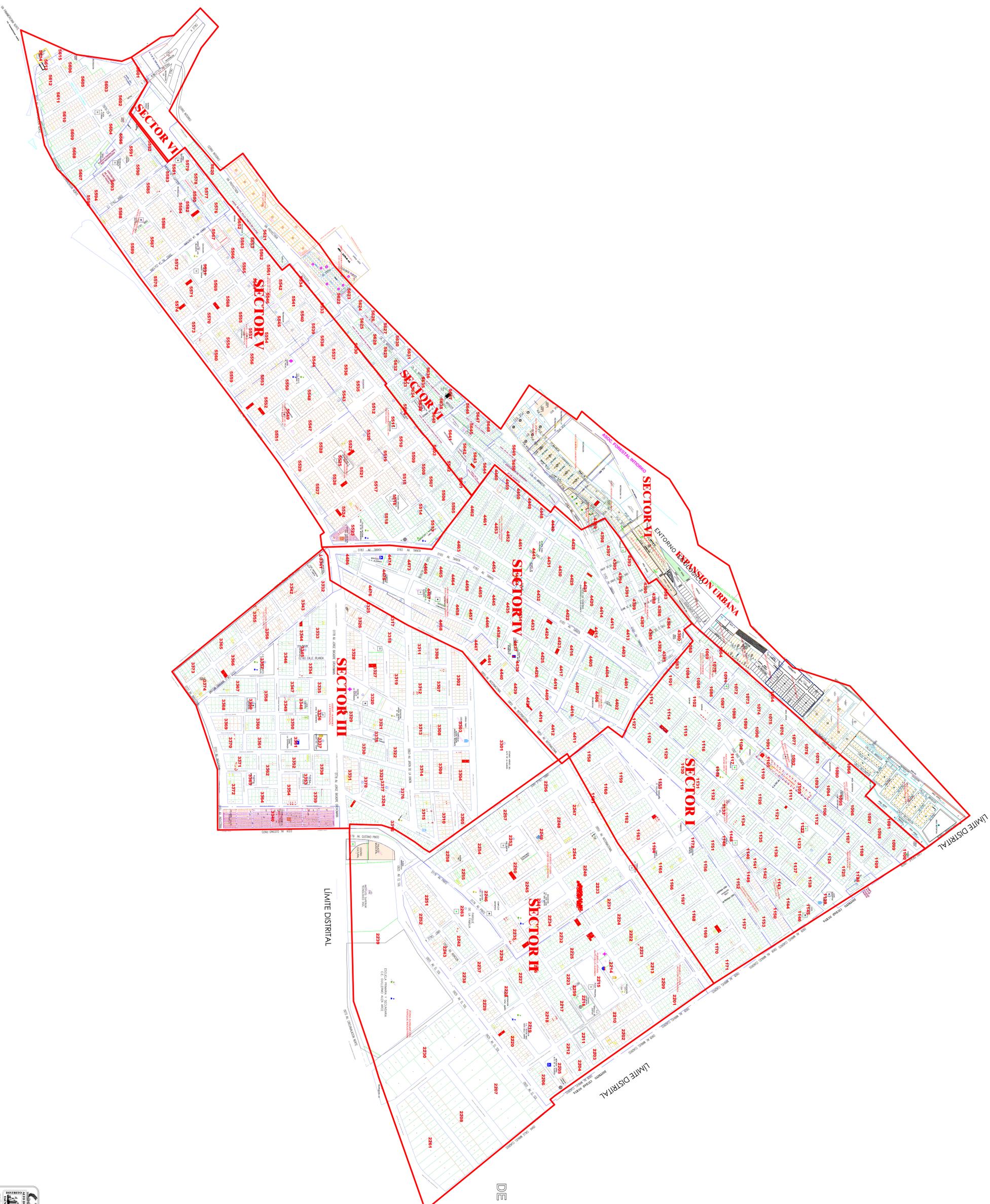


DISTRITO
DE CIUDAD NUEVA



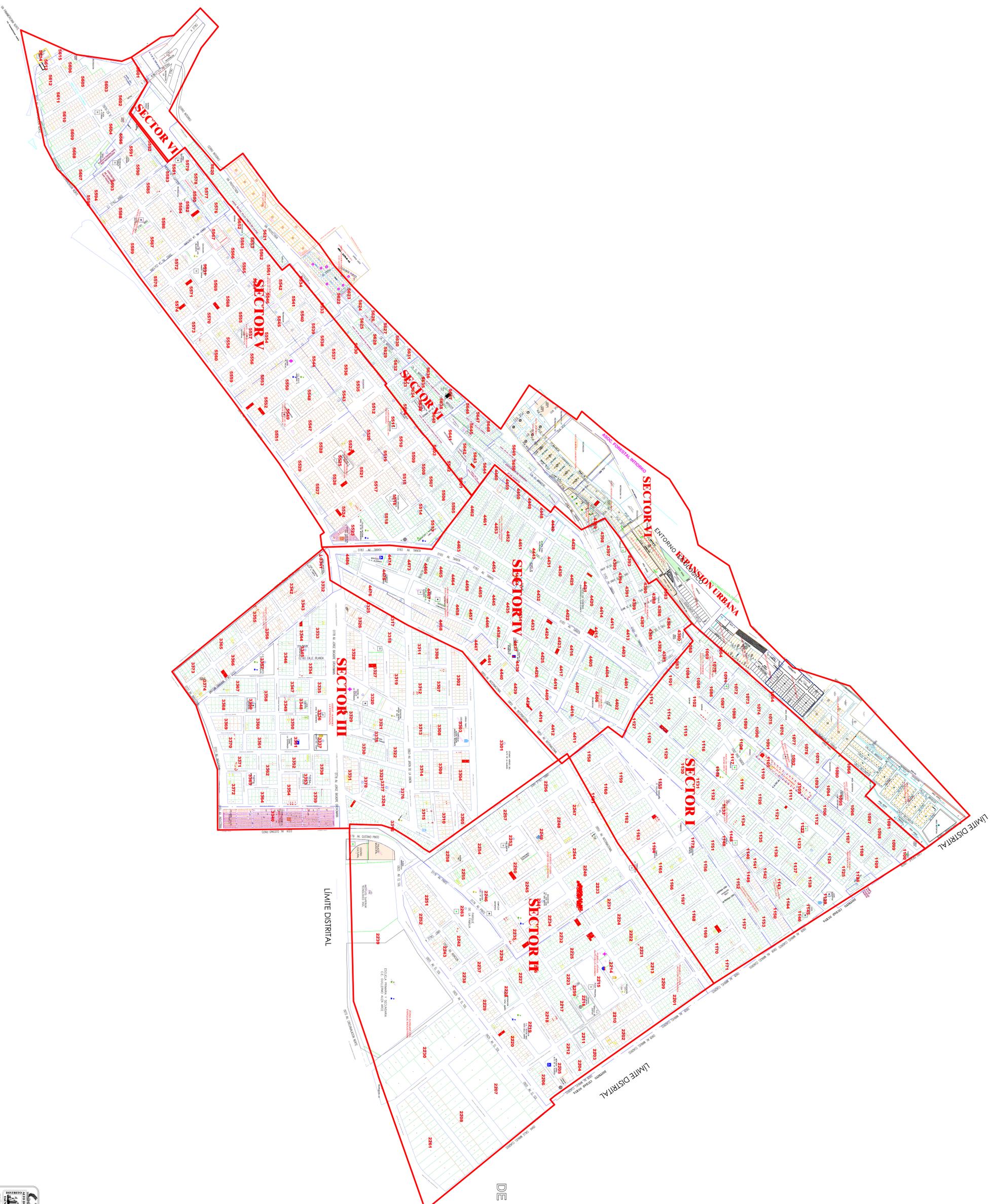


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Anexo 4. PLATAFORMA OQ ENGINE: ARCHIVOS DE ENTRADA



UNIVERSIDAD PRIVADA DE TACNA

ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: “Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023”

ARCHIVOS DE ENTRADA PARA CALCULADORA: EVENT_BASED_DAMAGE

- **JOB.INI**

[general]

description = Stochastic Event-Based Damage (Tesis Final)
calculation_mode = event_based_damage
aggregate_by = taxonomy
ignore_master_seed = True

[Hazard sites]

region_grid_spacing = 0.05
region = -70.24 -17.97, -70.23 -17.99, -70.26 -18.01, -70.27 -17.99

[erf]

width_of_mfd_bin = 0.1
rupture_mesh_spacing = 5
complex_fault_mesh_spacing = 5
area_source_discretization = 5

[site_params]

reference_vs30_type = inferred
reference_vs30_value = 400
reference_depth_to_2pt5km_per_sec = 5.0
reference_depth_to_1pt0km_per_sec = 100.0

[logic_trees]

source_model_logic_tree_file = source_model_logic_tree.xml
gsim_logic_tree_file = gmpe_logic_tree.xml
number_of_logic_tree_samples = 10

[hazard_calculation]

truncation_level = 3.0
investigation_time = 1
maximum_distance = 150.0
ses_per_logic_tree_path = 50000
minimum_intensity = { "PGA" : 0.05, "SA(0.3)" : 0.05, "SA(0.4)" : 0.05, "SA(1.0)" : 0.05 }
minimum_asset_loss = { "structural" : 500 }
minimum_magnitude = { "Subduction IntraSlab" : 5.5, "Subduction InterSlab" : 5.5, "Active Shallow Crust" : 4.0 }
intensity_measure_types = PGA, SA(0.3), SA(0.4), SA(1.0)
random_seed = 73

[Exposure model]

exposure_file = exposure_model.xml
taxonomy_mapping_csv = taxonomy_mapping.csv

[Vulnerability model]

structural_fragility_file = structural_fragility_model.xml
consequence_file = {'taxonomy': 'consequences_by_taxonomy.csv'}

[Risk calculation]

risk_investigation_time = 1
asset_hazard_distance = 0.1
num_rlzs_disagg = 10

[outputs]

ground_motion_fields = True
individual_curves = True
hazard_curves_from_gmfs = False
discrete_damage_distribution = true
return_periods = 1, 2, 5, 10, 20, 25, 50, 75, 100, 250, 500, 750, 1000

- SOURCE_MODEL.XML

```

<?xml version="1.0" encoding="utf-8"?>
<nrml
xmlns="http://openquake.org/xmlns/nrml/0.5"
xmlns:gml="http://www.opengis.net/gml"
>

  <sourceModel
name="Tacna"
>

    <sourceGroup
name="group 1"
tectonicRegion="Subduction InterSlab"
>
      <complexFaultSource
id="F5"
name="F5">
        <complexFaultGeometry>

          <faultTopEdge>
            <gml:LineString>
              <gml:posList>
                -71.602 -19.101 30
                -72.727 -18.1 30
                -74.36 -16.88 30
              </gml:posList>
            </gml:LineString>
          </faultTopEdge>

          <faultBottomEdge>
            <gml:LineString>
              <gml:posList>
                -70.517 -18.082 75
                -71.702 -17.277 73
                -73.43 -16.039 70
              </gml:posList>
            </gml:LineString>
          </faultBottomEdge>
        </complexFaultGeometry>

        <magScaleRel>StrasserInterface</magScaleRel>

        <ruptAspectRatio>1.5</ruptAspectRatio>

        <truncGutenbergRichterMFD aValue="3.708" bValue="0.671" maxMag="8.4" minMag="4.5"/>

        <rake>50</rake>
      </complexFaultSource>
    </sourceGroup>

    <sourceGroup
name="group 2"
tectonicRegion="Subduction IntraSlab"
>
      <complexFaultSource
id="F11"
name="F11">
        <complexFaultGeometry>

          <faultTopEdge>
            <gml:LineString>
              <gml:posList>
                -70.558 -18.134 70
                -71.66 -17.328 70
                -73.778 -16.347 65
              </gml:posList>
            </gml:LineString>
          </faultTopEdge>

```

```

    <faultBottomEdge>
      <gml:LineString>
        <gml:posList>
          -69.8 -17.4 140
          -70.606 -16.150 140
          -71.584 -14.405 140
        </gml:posList>
      </gml:LineString>
    </faultBottomEdge>
  </complexFaultGeometry>

  <magScaleRel>StrasserIntraslab</magScaleRel>

  <ruptAspectRatio>1.5</ruptAspectRatio>

  <truncGutenbergRichterMFD aValue="3.873" bValue="0.764" maxMag="6.8" minMag="4.5"/>

  <rake>50</rake>
</complexFaultSource>

<complexFaultSource
id="F12"
name="F12">
  <complexFaultGeometry>

    <faultTopEdge>
      <gml:LineString>
        <gml:posList>
          -70.480 -22.999 70
          -70.493 -21.982 78
          -70.532 -19.733 85
          -70.543 -18.745 92
          -70.558 -18.143 100
        </gml:posList>
      </gml:LineString>
    </faultTopEdge>

    <faultBottomEdge>
      <gml:LineString>
        <gml:posList>
          -67.872 -22.999 150
          -67.911 -21.766 150
          -68.560 -19.610 155
          -69.020 -18.550 150
          -69.800 -17.400 140
        </gml:posList>
      </gml:LineString>
    </faultBottomEdge>
  </complexFaultGeometry>

  <magScaleRel>StrasserIntraslab</magScaleRel>

  <ruptAspectRatio>1.5</ruptAspectRatio>

  <truncGutenbergRichterMFD aValue="6.159" bValue="1.081" maxMag="7.8" minMag="4.5"/>

  <rake>50</rake>
</complexFaultSource>

<complexFaultSource
id="F19"
name="F19">
  <complexFaultGeometry>

    <faultTopEdge>
      <gml:LineString>
        <gml:posList>
          -69.02 -18.55 150
          -69.8 -17.4 140
          -70.592 -16.07 150

```

```

        -71.584 -14.405 175
      </gml:posList>
    </gml:LineString>
  </faultTopEdge>

  <faultBottomEdge>
    <gml:LineString>
      <gml:posList>
        -67.398 -17.724 250
        -68.307 -16.649 250
        -69.257 -15.478 250
        -70.646 -13.766 250
      </gml:posList>
    </gml:LineString>
  </faultBottomEdge>
</complexFaultGeometry>

<magScaleRel>StrasserIntraslab</magScaleRel>

<ruptAspectRatio>1.5</ruptAspectRatio>

<truncGutenbergRichterMFD aValue="3.672" bValue="0.710" maxMag="6.0" minMag="4.5"/>

  <rake>50</rake>
</complexFaultSource>
</sourceGroup>

<sourceGroup
name="group 3"
tectonicRegion="Active Shallow Crust"
>
  <complexFaultSource
id="F24"
name="F24">
    <complexFaultGeometry>

      <faultTopEdge>
        <gml:LineString>
          <gml:posList>
            -69.900 -18.564 30
            -71.576 -17.407 30
            -73.09 -16.383 30
          </gml:posList>
        </gml:LineString>
      </faultTopEdge>

      <faultBottomEdge>
        <gml:LineString>
          <gml:posList>
            -69.174 -17.909 30
            -70.484 -15.743 30
            -72.106 -14.949 30
          </gml:posList>
        </gml:LineString>
      </faultBottomEdge>
    </complexFaultGeometry>

    <magScaleRel>WC1994</magScaleRel>

    <ruptAspectRatio>1.5</ruptAspectRatio>

    <truncGutenbergRichterMFD aValue="4.155" bValue="0.960" maxMag="6.0" minMag="4.5"/>

    <rake>160</rake>
  </complexFaultSource>
</sourceGroup>

</sourceModel>
</nrm1>

```


- **SOURCE_MODEL_LOGIC_TREE.XML**

```
<?xml version="1.0" encoding="UTF-8"?>
<nrm1 xmlns:gml="http://www.opengis.net/gml" xmlns="http://openquake.org/xmlns/nrm1/0.4">
  <logicTree logicTreeID="lt1">

    <logicTreeBranchingLevel branchingLevelID="b11">
      <logicTreeBranchSet uncertaintyType="sourceModel"
        branchSetID="bs1">
        <logicTreeBranch branchID="b1">
          <uncertaintyModel>source_model.xml</uncertaintyModel>
          <uncertaintyWeight>1.0</uncertaintyWeight>
        </logicTreeBranch>
      </logicTreeBranchSet>
    </logicTreeBranchingLevel>
  </logicTree>
</nrm1>
```

- **GMPE_LOGIC_TREE.XML**

```
<?xml version="1.0" encoding="UTF-8"?>
<nrm1 xmlns:gml="http://www.opengis.net/gml" xmlns="http://openquake.org/xmlns/nrm1/0.4">

  <logicTree logicTreeID="lt1">

    <logicTreeBranchingLevel branchingLevelID="b101">
      <logicTreeBranchSet uncertaintyType="gmpeModel" branchSetID="bs01"
        applyToTectonicRegionType="Subduction InterSlab">
        <logicTreeBranch branchID="Youngs_Et_AI_1997_SInter">
          <uncertaintyModel>YoungsEtAI1997SInter</uncertaintyModel>
          <uncertaintyWeight>1.0</uncertaintyWeight>
        </logicTreeBranch>
      </logicTreeBranchSet>
    </logicTreeBranchingLevel>

    <logicTreeBranchingLevel branchingLevelID="b102">
      <logicTreeBranchSet uncertaintyType="gmpeModel" branchSetID="bs02"
        applyToTectonicRegionType="Subduction IntraSlab">
        <logicTreeBranch branchID="Youngs_Et_AI_1997_SSlab">
          <uncertaintyModel>YoungsEtAI1997SSlab</uncertaintyModel>
          <uncertaintyWeight>1.0</uncertaintyWeight>
        </logicTreeBranch>
      </logicTreeBranchSet>
    </logicTreeBranchingLevel>

    <logicTreeBranchingLevel branchingLevelID="b103">
      <logicTreeBranchSet uncertaintyType="gmpeModel" branchSetID="bs03"
        applyToTectonicRegionType="Active Shallow Crust">
        <logicTreeBranch branchID="Sadigh_Et_AI_1997">
          <uncertaintyModel>SadighEtAI1997</uncertaintyModel>
          <uncertaintyWeight>1.0</uncertaintyWeight>
        </logicTreeBranch>
      </logicTreeBranchSet>
    </logicTreeBranchingLevel>

  </logicTree>
</nrm1>
```

- **EXPOSURE_MODEL.XML**

```
<?xml version="1.0" encoding="UTF-8"?>
<nrm1 xmlns="http://openquake.org/xmlns/nrm1/0.4">
  <exposureModel id="ex1" category="buildings" taxonomySource="GEM taxonomy">
    <description></description>
    <conversions>
      <area type="per_asset" unit="SQM" />
      <costTypes>
        <costType name="structural" type="per_area" unit="$"/>
      </costTypes>
    </conversions>
  </exposureModel>
</nrm1>
```

```

    </conversions>
    <tagNames>Codigo Zona NZona</tagNames>
    <occupancyPeriods>day night </occupancyPeriods>
    <assets>
        exposure_model.csv
    </assets>
</exposureModel>
</nrml>

```

- **TAXONOMY_MAPPING.CSV**

```

taxonomy,conversion,weight
MUR/HEX:1,MUR/HEX:1,1
MUR/HEX:2,MUR/HEX:2,1
MUR/HEX:3,MUR/HEX:3,1
MUR/HEX:6,MUR/HEX:6,1
CR/LFINF+DUC/HEX:1/RES,CR/LFINF+DUC/HEX:1/RES,1
CR/LFINF+DUC/HEX:2/RES,CR/LFINF+DUC/HEX:2/RES,1
CR/LFINF+DUC/HEX:3/RES,CR/LFINF+DUC/HEX:3/RES,1
CR/LFINF+DUC/HEX:4/RES,CR/LFINF+DUC/HEX:4/RES,1
CR/LFINF+DNO/HEX:4/RES,CR/LFINF+DNO/HEX:4/RES,1
MCF/LWAL+DUC/HEX:1/RES,MCF/LWAL+DUC/HEX:1/RES,1
MCF/LWAL+DNO/HEX:1/RES,MCF/LWAL+DNO/HEX:1/RES,1
MCF/LWAL+DUC/HEX:2/RES,MCF/LWAL+DUC/HEX:2/RES,1
MCF/LWAL+DNO/HEX:2/RES,MCF/LWAL+DNO/HEX:2/RES,1
MCF/LWAL+DUC/HEX:3/RES,MCF/LWAL+DUC/HEX:3/RES,1
MCF/LWAL+DNO/HEX:3/RES,MCF/LWAL+DNO/HEX:3/RES,1
MUR+ADO/LWAL+DNO/HEX:1/RES,MUR+ADO/LWAL+DNO/HEX:1/RES,1

```

- **CONSEQUENCES_BY_TAXONOMY**

```

taxonomy,consequence,loss_type,slight,moderate,extensive,collapse
MUR/HEX:1,losses,structural,0.05,0.2,0.65,1
MUR/HEX:2,losses,structural,0.05,0.2,0.65,1
MUR/HEX:3,losses,structural,0.05,0.2,0.65,1
MUR/HEX:6,losses,structural,0.05,0.2,0.65,1
CR/LFINF+DUC/HEX:1/RES,losses,structural,0.05,0.2,0.65,1
CR/LFINF+DUC/HEX:2/RES,losses,structural,0.05,0.2,0.65,1
CR/LFINF+DUC/HEX:3/RES,losses,structural,0.05,0.2,0.65,1
CR/LFINF+DUC/HEX:4/RES,losses,structural,0.05,0.2,0.65,1
CR/LFINF+DNO/HEX:4/RES,losses,structural,0.05,0.2,0.65,1
MCF/LWAL+DUC/HEX:1/RES,losses,structural,0.05,0.2,0.65,1
MCF/LWAL+DNO/HEX:1/RES,losses,structural,0.05,0.2,0.65,1
MCF/LWAL+DUC/HEX:2/RES,losses,structural,0.05,0.2,0.65,1
MCF/LWAL+DNO/HEX:2/RES,losses,structural,0.05,0.2,0.65,1
MCF/LWAL+DUC/HEX:3/RES,losses,structural,0.05,0.2,0.65,1
MCF/LWAL+DNO/HEX:3/RES,losses,structural,0.05,0.2,0.65,1
MUR+ADO/LWAL+DNO/HEX:1/RES,losses,structural,0.05,0.2,0.65,1
MUR+ADO/LWAL+DNO/HEX:2/RES,losses,structural,0.05,0.2,0.65,1

```

- **STRUCTURAL_FRAGILITY_MODEL.XML**

```

<?xml version="1.0" encoding="utf-8"?>
<nrml xmlns="http://openquake.org/xmlns/nrml/0.5" xmlns:gml="http://www.opengis.net/gml">
  <fragilityModel id="CurvasdeFragilidadCompendio" assetCategory="EdificiosResidenciales" lossCategory="structural">
    <description>Curvas para Edificios Residenciales</description>
    <limitStates>slight moderate extensive collapse</limitStates>
    <fragilityFunction id="MUR/HEX:1" format="continuous" shape="logncdf">
      <imls imt="PGA" noDamageLimit="0.05" minIML="1e-10" maxIML="2.0"/>
      <params ls="slight" mean="0.606" stddev="0.288"/>
      <params ls="moderate" mean="1.390" stddev="0.599"/>
      <params ls="extensive" mean="1.547" stddev="0.616"/>
      <params ls="collapse" mean="1.783" stddev="0.656"/>
    </fragilityFunction>
    <fragilityFunction id="MUR/HEX:2" format="continuous" shape="logncdf">
      <imls imt="PGA" noDamageLimit="0.05" minIML="1e-10" maxIML="2.0"/>
      <params ls="slight" mean="0.207" stddev="0.057"/>
      <params ls="moderate" mean="0.424" stddev="0.119"/>
      <params ls="extensive" mean="0.524" stddev="0.139"/>
      <params ls="collapse" mean="0.702" stddev="0.183"/>
    </fragilityFunction>
  </fragilityModel>
</nrml>

```

```

</fragilityFunction>
<fragilityFunction id="MUR/HEX:3" format="continuous" shape="logncdf">
  <imls imt="PGA" noDamageLimit="0.05" minIML="1e-10" maxIML="2.0"/>
  <params ls="slight" mean="0.324" stddev="0.095"/>
  <params ls="moderate" mean="0.450" stddev="0.150"/>
  <params ls="extensive" mean="0.594" stddev="0.224"/>
  <params ls="collapse" mean="0.778" stddev="0.243"/>
</fragilityFunction>
<fragilityFunction id="MUR/HEX:6" format="continuous" shape="logncdf">
  <imls imt="SA(0.4)" noDamageLimit="0.01" minIML="1e-10" maxIML="2.0"/>
  <params ls="slight" mean="0.204" stddev="0.057"/>
  <params ls="moderate" mean="0.239" stddev="0.067"/>
  <params ls="extensive" mean="0.280" stddev="0.089"/>
  <params ls="collapse" mean="0.359" stddev="0.103"/>
</fragilityFunction>
<fragilityFunction id="CR/LFINF+DUC/HEX:1/RES" format="continuous" shape="logncdf">
  <imls imt="PGA" noDamageLimit="0.05" minIML="0.05" maxIML="2.7"/>
  <params ls="slight" mean="0.7283" stddev="0.3113"/>
  <params ls="moderate" mean="1.7468" stddev="0.7092"/>
  <params ls="extensive" mean="2.1390" stddev="0.8044"/>
  <params ls="collapse" mean="2.8724" stddev="1.2147"/>
</fragilityFunction>
<fragilityFunction id="CR/LFINF+DUC/HEX:2/RES" format="continuous" shape="logncdf">
  <imls imt="SA(0.3)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.8578" stddev="0.2843"/>
  <params ls="moderate" mean="2.2826" stddev="0.8923"/>
  <params ls="extensive" mean="3.2473" stddev="1.5230"/>
  <params ls="collapse" mean="6.9004" stddev="5.7769"/>
</fragilityFunction>
<fragilityFunction id="CR/LFINF+DUC/HEX:3/RES" format="continuous" shape="logncdf">
  <imls imt="SA(1.0)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.1381" stddev="0.0762"/>
  <params ls="moderate" mean="0.4997" stddev="0.3520"/>
  <params ls="extensive" mean="0.8581" stddev="0.6022"/>
  <params ls="collapse" mean="1.5818" stddev="1.0882"/>
</fragilityFunction>
<fragilityFunction id="CR/LFINF+DUC/HEX:4/RES" format="continuous" shape="logncdf">
  <imls imt="SA(1.0)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.1473" stddev="0.0724"/>
  <params ls="moderate" mean="0.5205" stddev="0.3353"/>
  <params ls="extensive" mean="0.8902" stddev="0.6057"/>
  <params ls="collapse" mean="1.6324" stddev="1.1521"/>
</fragilityFunction>
<fragilityFunction id="CR/LFINF+DNO/HEX:4/RES" format="continuous" shape="logncdf">
  <imls imt="SA(1.0)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.0968" stddev="0.0363"/>
  <params ls="moderate" mean="0.2706" stddev="0.1219"/>
  <params ls="extensive" mean="0.4137" stddev="0.1932"/>
  <params ls="collapse" mean="0.7775" stddev="0.4598"/>
</fragilityFunction>
<fragilityFunction id="MCF/LWAL+DUC/HEX:1/RES" format="continuous" shape="logncdf">
  <imls imt="PGA" noDamageLimit="0.05" minIML="0.05" maxIML="2.7"/>
  <params ls="slight" mean="0.6384" stddev="0.2708"/>
  <params ls="moderate" mean="1.3897" stddev="0.5701"/>
  <params ls="extensive" mean="1.5455" stddev="0.6035"/>
  <params ls="collapse" mean="1.9166" stddev="0.7601"/>
</fragilityFunction>
<fragilityFunction id="MCF/LWAL+DNO/HEX:1/RES" format="continuous" shape="logncdf">
  <imls imt="PGA" noDamageLimit="0.05" minIML="0.05" maxIML="2.7"/>
  <params ls="slight" mean="0.4692" stddev="0.1477"/>
  <params ls="moderate" mean="1.0050" stddev="0.3295"/>
  <params ls="extensive" mean="1.1923" stddev="0.3842"/>
  <params ls="collapse" mean="1.5737" stddev="0.5968"/>
</fragilityFunction>
<fragilityFunction id="MCF/LWAL+DUC/HEX:2/RES" format="continuous" shape="logncdf">
  <imls imt="SA(0.3)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.7867" stddev="0.2776"/>
  <params ls="moderate" mean="1.7297" stddev="0.6739"/>
  <params ls="extensive" mean="2.0958" stddev="0.8867"/>
  <params ls="collapse" mean="3.0786" stddev="1.6174"/>
</fragilityFunction>

```

```

<fragilityFunction id="MCF/LWAL+DNO/HEX:2/RES" format="continuous" shape="logncdf">
  <imls imt="SA(0.3)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.5320" stddev="0.2041"/>
  <params ls="moderate" mean="1.2110" stddev="0.4378"/>
  <params ls="extensive" mean="1.6070" stddev="0.7290"/>
  <params ls="collapse" mean="2.5298" stddev="1.3191"/>
</fragilityFunction>
<fragilityFunction id="MCF/LWAL+DUC/HEX:3/RES" format="continuous" shape="logncdf">
  <imls imt="SA(0.3)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.6393" stddev="0.234"/>
  <params ls="moderate" mean="0.808" stddev="0.3678"/>
  <params ls="extensive" mean="1.9783" stddev="1.0842"/>
  <params ls="collapse" mean="3.3775" stddev="2.4745"/>
</fragilityFunction>
<fragilityFunction id="MCF/LWAL+DNO/HEX:3/RES" format="continuous" shape="logncdf">
  <imls imt="SA(1.0)" noDamageLimit="0.01" minIML="0.05" maxIML="4.5"/>
  <params ls="slight" mean="0.1003" stddev="0.0529"/>
  <params ls="moderate" mean="0.2398" stddev="0.1495"/>
  <params ls="extensive" mean="0.3616" stddev="0.232"/>
  <params ls="collapse" mean="0.641" stddev="0.4283"/>
</fragilityFunction>
<fragilityFunction id="MUR+ADO/LWAL+DNO/HEX:1/RES" format="continuous" shape="logncdf">
  <imls imt="PGA" noDamageLimit="0.05" minIML="0.05" maxIML="1.2"/>
  <params ls="slight" mean="0.1803" stddev="0.0692"/>
  <params ls="moderate" mean="0.4312" stddev="0.1445"/>
  <params ls="extensive" mean="0.5541" stddev="0.1866"/>
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- **EXPOSURE_MODEL.CSV**

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id,lon,lat,taxonomy,number,structural,area,day,night,Codigo,Zona,NZona
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2,-70.24941701,-17.98529968,MUR/HEX:1,1,220,122.92,3,0,MZA 1064 - LT 2,ZONA I,2
3,-70.24937026,-17.98524691,MUR/HEX:1,1,220,124.28,3,0,MZA 1064 - LT 3,ZONA I,3
4,-70.2493202,-17.98518868,MCF/LWAL+DNO/HEX:1/RES,1,220,130.85,3,0,MZA 1064 - LT 4,ZONA I,4
5,-70.24927437,-17.98513672,MUR/HEX:1,1,220,127.69,3,0,MZA 1064 - LT 5,ZONA I,5
6,-70.24922339,-17.98507767,MUR/HEX:1,1,220,155.5,4,1,MZA 1064 - LT 6,ZONA I,6
7,-70.24917498,-17.98502216,MUR/HEX:1,1,220,156.22,4,1,MZA 1064 - LT 7,ZONA I,7
8,-70.24912658,-17.98496666,MUR/HEX:1,1,220,142.78,3,0,MZA 1064 - LT 8,ZONA I,8
9,-70.24907817,-17.98491115,MUR/HEX:1,1,220,129.29,3,0,MZA 1064 - LT 9,ZONA I,9
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137,-70.24687912,-17.98302978,MUR/HEX:1,1,220,123.76,3,0,MZA 1078 - LT 1,ZONA I,137
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141,-70.24709789,-17.98299434,MUR/HEX:1,1,220,164.76,4,1,MZA 1078 - LT 5,ZONA I,141
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143,-70.24697494,-17.98314302,MUR/HEX:1,1,220,119.99,3,0,MZA 1078 - LT 7,ZONA I,143
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154,-70.24587242,-17.98157762,MUR/HEX:1,1,220,128.84,3,0,MZA 1081 - LT 2,ZONA I,154
155,-70.24581619,-17.98162589,MUR/HEX:1,1,220,131.8,3,0,MZA 1081 - LT 3,ZONA I,155
156,-70.24575733,-17.9817255,MUR/HEX:1,1,220,131.86,3,0,MZA 1081 - LT 4,ZONA I,156
157,-70.24570758,-17.98167242,MUR/HEX:1,1,220,127.1,3,0,MZA 1081 - LT 5,ZONA I,157
158,-70.24565744,-17.98161894,MUR/HEX:1,1,220,130.04,3,0,MZA 1081 - LT 6,ZONA I,158
159,-70.24560681,-17.98156492,MUR/HEX:1,1,220,125.52,3,0,MZA 1081 - LT 7,ZONA I,159
160,-70.24555612,-17.98151083,MUR/HEX:1,1,220,121.96,3,0,MZA 1081 - LT 8,ZONA I,160
161,-70.24550589,-17.98145725,MUR/HEX:1,1,220,126.24,3,0,MZA 1081 - LT 9,ZONA I,161
162,-70.24545582,-17.98140383,MUR/HEX:1,1,220,126.27,3,0,MZA 1081 - LT 10,ZONA I,162
163,-70.24540538,-17.98135001,MUR/HEX:1,1,220,126.67,3,0,MZA 1081 - LT 11,ZONA I,163
164,-70.24535506,-17.98129633,MUR/HEX:1,1,220,122.71,3,0,MZA 1081 - LT 12,ZONA I,164
165,-70.24530429,-17.98124216,MUR/HEX:1,1,220,131.14,3,0,MZA 1081 - LT 13,ZONA I,165
166,-70.24525298,-17.98118742,MUR/HEX:1,1,220,126.03,3,0,MZA 1081 - LT 14,ZONA I,166
167,-70.24520208,-17.98113312,MUR/HEX:1,1,220,127.12,3,0,MZA 1081 - LT 15,ZONA I,167
168,-70.24515139,-17.98107903,MUR/HEX:1,1,220,127.41,3,0,MZA 1081 - LT 16,ZONA I,168
169,-70.24510052,-17.98102477,MUR/HEX:1,1,220,126.98,3,0,MZA 1081 - LT 17,ZONA I,169
170,-70.24505001,-17.98097087,MUR/HEX:1,1,220,126.2,3,0,MZA 1081 - LT 18,ZONA I,170
171,-70.24500001,-17.98091753,MUR/HEX:1,1,220,127.41,3,0,MZA 1081 - LT 19,ZONA I,171
172,-70.24494971,-17.98086387,MUR/HEX:1,1,220,125.68,3,0,MZA 1081 - LT 20,ZONA I,172
173,-70.24489918,-17.98080995,MUR/HEX:1,1,220,124.48,3,0,MZA 1081 - LT 21,ZONA I,173
174,-70.24484899,-17.98075641,MUR/HEX:1,1,220,124.6,3,0,MZA 1081 - LT 22,ZONA I,174
175,-70.24479934,-17.98070496,MUR/HEX:1,1,220,127.94,3,0,MZA 1081 - LT 23,ZONA I,175
176,-70.2447488,-17.98064952,MUR/HEX:1,1,220,125.71,3,0,MZA 1081 - LT 24,ZONA I,176
177,-70.24469837,-17.98059571,MUR/HEX:1,1,220,133.01,3,0,MZA 1081 - LT 25,ZONA I,177
178,-70.24885772,-17.98612377,MCF/LWAL+DNO/HEX:1/RES,1,220,125.41,3,0,MZA 1083 - LT 1,ZONA I,178

179,-70.2488103,-17.98607101,MCF/LWAL+DNO/HEX:1/RES,1,220,120.81,3,0,MZA 1083 - LT 2,ZONA I,179
180,-70.24891829,-17.98602591,MCF/LWAL+DNO/HEX:1/RES,1,220,120.46,3,0,MZA 1083 - LT 3,ZONA I,180
181,-70.24897458,-17.98597832,MUR/HEX:1,1,220,126.06,3,0,MZA 1083 - LT 4,ZONA I,181
182,-70.24903195,-17.98592907,MUR/HEX:1,1,220,127.08,3,0,MZA 1083 - LT 5,ZONA I,182
183,-70.24912902,-17.98603809,MUR/HEX:1,1,220,131.18,3,0,MZA 1083 - LT 6,ZONA I,183
184,-70.24907197,-17.98608609,MUR/HEX:1,1,220,130.41,3,0,MZA 1083 - LT 7,ZONA I,184
185,-70.24901513,-17.98613347,MUR/HEX:1,1,220,118.77,3,0,MZA 1083 - LT 8,ZONA I,185
186,-70.24895382,-17.98623165,MUR/HEX:1,1,220,128.82,3,0,MZA 1083 - LT 9,ZONA I,186
187,-70.24890555,-17.98617712,MCF/LWAL+DNO/HEX:2/RES,1,220,246.54,6,1,MZA 1083 - LT 10,ZONA I,187
188,-70.24861514,-17.98585407,MCF/LWAL+DNO/HEX:1/RES,1,220,122.35,3,0,MZA 1084 - LT 1,ZONA I,188
189,-70.24856638,-17.98580016,MCF/LWAL+DNO/HEX:1/RES,1,220,133.75,3,0,MZA 1084 - LT 2,ZONA I,189
190,-70.24867525,-17.98575589,MCF/LWAL+DNO/HEX:1/RES,1,220,121.27,3,0,MZA 1084 - LT 3,ZONA I,190
191,-70.24873274,-17.98570888,MUR/HEX:1,1,220,124.81,3,0,MZA 1084 - LT 4,ZONA I,191
192,-70.24879396,-17.98565827,MUR/HEX:1,1,220,147.33,3,0,MZA 1084 - LT 5,ZONA I,192
193,-70.24889039,-17.98576612,MUR/HEX:1,1,220,137.46,3,0,MZA 1084 - LT 6,ZONA I,193
194,-70.24883034,-17.98581719,MUR/HEX:1,1,220,123.58,3,0,MZA 1084 - LT 7,ZONA I,194
195,-70.24877387,-17.98586446,MUR/HEX:1,1,220,120.22,3,0,MZA 1084 - LT 8,ZONA I,195
196,-70.24871266,-17.98596242,MCF/LWAL+DNO/HEX:1/RES,1,220,133.04,3,0,MZA 1084 - LT 9,ZONA I,196
197,-70.24866344,-17.98590788,MCF/LWAL+DNO/HEX:1/RES,1,220,119.71,3,0,MZA 1084 - LT 10,ZONA I,197
198,-70.2483753,-17.98558642,MCF/LWAL+DNO/HEX:2/RES,1,220,256.34,6,1,MZA 1085 - LT 1,ZONA I,198
199,-70.24832737,-17.98553286,MCF/LWAL+DNO/HEX:2/RES,1,220,247.42,6,1,MZA 1085 - LT 2,ZONA I,199
200,-70.24843664,-17.98548791,MCF/LWAL+DNO/HEX:1/RES,1,220,128.17,3,0,MZA 1085 - LT 3,ZONA I,200
201,-70.24849311,-17.98544036,MUR/HEX:1,1,220,126.09,3,0,MZA 1085 - LT 4,ZONA I,201
202,-70.24856211,-17.98538181,MUR/HEX:1,1,220,171.47,4,1,MZA 1085 - LT 5,ZONA I,202
203,-70.24865446,-17.98549148,MUR/HEX:1,1,220,151.44,3,0,MZA 1085 - LT 6,ZONA I,203
204,-70.24858961,-17.98554762,MUR/HEX:1,1,220,122.75,3,0,MZA 1085 - LT 7,ZONA I,204
205,-70.24853282,-17.98559494,MUR/HEX:1,1,220,123.23,3,0,MZA 1085 - LT 8,ZONA I,205
206,-70.24847166,-17.98569339,MCF/LWAL+DNO/HEX:1/RES,1,220,129.8,3,0,MZA 1085 - LT 9,ZONA I,206
207,-70.24842327,-17.98564,MCF/LWAL+DNO/HEX:1/RES,1,220,120.21,3,0,MZA 1085 - LT 10,ZONA I,207
208,-70.24812655,-17.98531853,MUR/HEX:1,1,220,122.12,3,0,MZA 1086 - LT 1,ZONA I,208
209,-70.24807822,-17.98526291,MCF/LWAL+DNO/HEX:1/RES,1,220,124.35,3,0,MZA 1086 - LT 2,ZONA I,209
210,-70.2481824,-17.98522347,MCF/LWAL+DNO/HEX:1/RES,1,220,121.35,3,0,MZA 1086 - LT 3,ZONA I,210
211,-70.2482366,-17.98517866,MUR/HEX:1,1,220,120.23,3,0,MZA 1086 - LT 4,ZONA I,211
212,-70.24828936,-17.98513389,MUR/HEX:1,1,220,115.37,3,0,MZA 1086 - LT 5,ZONA I,212
213,-70.24834323,-17.98508917,MUR/HEX:1,1,220,117.96,3,0,MZA 1086 - LT 6,ZONA I,213
214,-70.24843941,-17.98520133,MUR/HEX:1,1,220,129.91,3,0,MZA 1086 - LT 7,ZONA I,214
215,-70.2483869,-17.98524479,MUR/HEX:1,1,220,122.46,3,0,MZA 1086 - LT 8,ZONA I,215
216,-70.24833432,-17.98528917,MUR/HEX:1,1,220,124.28,3,0,MZA 1086 - LT 9,ZONA I,216
217,-70.24827927,-17.98533443,MCF/LWAL+DNO/HEX:1/RES,1,220,123.6,3,0,MZA 1086 - LT 10,ZONA I,217
218,-70.24822488,-17.98542937,MCF/LWAL+DNO/HEX:2/RES,1,220,257.22,6,1,MZA 1086 - LT 11,ZONA I,218
219,-70.24817578,-17.98537387,MCF/LWAL+DNO/HEX:1/RES,1,220,122.37,3,0,MZA 1086 - LT 12,ZONA I,219
220,-70.24789055,-17.98503823,MUR/HEX:1,1,220,124.31,3,0,MZA 1087 - LT 1,ZONA I,220
221,-70.24784293,-17.98498203,MUR/HEX:2,1,220,245.86,6,1,MZA 1087 - LT 2,ZONA I,221
222,-70.24794567,-17.98494305,MCF/LWAL+DNO/HEX:1/RES,1,220,119.53,3,0,MZA 1087 - LT 3,ZONA I,222
223,-70.24799887,-17.98489794,MUR/HEX:1,1,220,124.87,3,0,MZA 1087 - LT 4,ZONA I,223
224,-70.24805227,-17.98485374,MUR/HEX:1,1,220,117.84,3,0,MZA 1087 - LT 5,ZONA I,224
225,-70.24810579,-17.9848102,MUR/HEX:1,1,220,121.52,3,0,MZA 1087 - LT 6,ZONA I,225
226,-70.24820146,-17.9849221,MUR/HEX:1,1,220,121.91,3,0,MZA 1087 - LT 7,ZONA I,226
227,-70.24814812,-17.98496657,MUR/HEX:1,1,220,119.45,3,0,MZA 1087 - LT 8,ZONA I,227
228,-70.24809451,-17.98501057,MCF/LWAL+DNO/HEX:2/RES,1,220,252.14,6,1,MZA 1087 - LT 9,ZONA I,228
229,-70.24804158,-17.98505603,MCF/LWAL+DNO/HEX:1/RES,1,220,116.84,3,0,MZA 1087 - LT 10,ZONA I,229
230,-70.24798611,-17.98515082,MCF/LWAL+DNO/HEX:1/RES,1,220,131.21,3,0,MZA 1087 - LT 11,ZONA I,230
231,-70.24793868,-17.98509377,MUR/HEX:1,1,220,119.14,3,0,MZA 1087 - LT 12,ZONA I,231
232,-70.24765424,-17.98475466,MCF/LWAL+DNO/HEX:2/RES,1,220,247.02,6,1,MZA 1088 - LT 1,ZONA I,232
233,-70.24760702,-17.98469764,MUR/HEX:1,1,220,125.61,3,0,MZA 1088 - LT 2,ZONA I,233
234,-70.24771278,-17.98465826,MCF/LWAL+DNO/HEX:1/RES,1,220,122.96,3,0,MZA 1088 - LT 3,ZONA I,234
235,-70.2477652,-17.98461411,MUR/HEX:1,1,220,119.29,3,0,MZA 1088 - LT 4,ZONA I,235
236,-70.24781822,-17.98457051,MUR/HEX:1,1,220,123.73,3,0,MZA 1088 - LT 5,ZONA I,236
237,-70.24787076,-17.98452571,MUR/HEX:1,1,220,117.35,3,0,MZA 1088 - LT 6,ZONA I,237
238,-70.24796572,-17.98464058,MUR/HEX:1,1,220,119.71,3,0,MZA 1088 - LT 7,ZONA I,238
239,-70.2479125,-17.98468421,MUR/HEX:1,1,220,119.19,3,0,MZA 1088 - LT 8,ZONA I,239
240,-70.2478595,-17.9847288,MCF/LWAL+DNO/HEX:2/RES,1,220,239.68,6,1,MZA 1088 - LT 9,ZONA I,240
241,-70.24780609,-17.98477281,MCF/LWAL+DNO/HEX:1/RES,1,220,118.05,3,0,MZA 1088 - LT 10,ZONA I,241
242,-70.24774829,-17.98486816,MUR/HEX:2,1,220,242.72,6,1,MZA 1088 - LT 11,ZONA I,242
243,-70.24770119,-17.98481128,MCF/LWAL+DNO/HEX:1/RES,1,220,122.99,3,0,MZA 1088 - LT 12,ZONA I,243
244,-70.24741343,-17.98447541,MCF/LWAL+DNO/HEX:1/RES,1,220,125.59,3,0,MZA 1089 - LT 1,ZONA I,244
245,-70.24736664,-17.98441876,MCF/LWAL+DNO/HEX:1/RES,1,220,116.84,3,0,MZA 1089 - LT 2,ZONA I,245
246,-70.24746975,-17.98438008,MCF/LWAL+DNO/HEX:1/RES,1,220,125.57,3,0,MZA 1089 - LT 3,ZONA I,246
247,-70.24752271,-17.98433468,MUR/HEX:1,1,220,121.59,3,0,MZA 1089 - LT 4,ZONA I,247
248,-70.24757604,-17.98429022,MUR/HEX:1,1,220,122.48,3,0,MZA 1089 - LT 5,ZONA I,248
249,-70.24762852,-17.98424415,MUR/HEX:1,1,220,118.47,3,0,MZA 1089 - LT 6,ZONA I,249

250,-70.2477233,-17.98435717,MUR/HEX:1,1,220,119.18,3,0,MZA 1089 - LT 7,ZONA I,250
251,-70.24767023,-17.98440285,MUR/HEX:1,1,220,123.88,3,0,MZA 1089 - LT 8,ZONA I,251
252,-70.24761794,-17.98444898,MCF/LWAL+DNO/HEX:2/RES,1,220,244.28,6,1,MZA 1089 - LT 9,ZONA I,252
253,-70.24756507,-17.98449267,MCF/LWAL+DNO/HEX:1/RES,1,220,124.34,3,0,MZA 1089 - LT 10,ZONA I,253
254,-70.2475093,-17.98458745,MUR/HEX:1,1,220,121.68,3,0,MZA 1089 - LT 11,ZONA I,254
255,-70.24746112,-17.98453125,MUR/HEX:1,1,220,122.28,3,0,MZA 1089 - LT 12,ZONA I,255
256,-70.24717628,-17.98419465,MCF/LWAL+DNO/HEX:1/RES,1,220,120.65,3,0,MZA 1090 - LT 1,ZONA I,256
257,-70.24712846,-17.98413752,MCF/LWAL+DNO/HEX:1/RES,1,220,125.66,3,0,MZA 1090 - LT 2,ZONA I,257
258,-70.24723049,-17.98409792,MCF/LWAL+DNO/HEX:1/RES,1,220,121.24,3,0,MZA 1090 - LT 3,ZONA I,258
259,-70.24728499,-17.98405464,MUR/HEX:1,1,220,120.55,3,0,MZA 1090 - LT 4,ZONA I,259
260,-70.24733862,-17.98401033,MUR/HEX:1,1,220,135.82,3,0,MZA 1090 - LT 5,ZONA I,260
261,-70.24739233,-17.98396586,MUR/HEX:1,1,220,109.63,3,0,MZA 1090 - LT 6,ZONA I,261
262,-70.24748652,-17.98407662,MUR/HEX:1,1,220,106.46,2,0,MZA 1090 - LT 7,ZONA I,262
263,-70.24743317,-17.98412207,MUR/HEX:1,1,220,133.29,3,0,MZA 1090 - LT 8,ZONA I,263
264,-70.24737978,-17.984167,MCF/LWAL+DNO/HEX:2/RES,1,220,237.86,5,1,MZA 1090 - LT 9,ZONA I,264
265,-70.24732633,-17.98421113,MCF/LWAL+DNO/HEX:1/RES,1,220,117.29,3,0,MZA 1090 - LT 10,ZONA I,265
266,-70.24727078,-17.98430561,MUR/HEX:1,1,220,115.87,3,0,MZA 1090 - LT 11,ZONA I,266
267,-70.24722268,-17.98425069,MCF/LWAL+DNO/HEX:1/RES,1,220,121.59,3,0,MZA 1090 - LT 12,ZONA I,267
268,-70.24704767,-17.98377414,MCF/LWAL+DNO/HEX:1/RES,1,220,117.9,3,0,MZA 1091 - LT 1,ZONA I,268
269,-70.24710048,-17.98372931,MUR/HEX:1,1,220,113.26,3,0,MZA 1091 - LT 2,ZONA I,269
270,-70.24715473,-17.98368526,MUR/HEX:1,1,220,120.66,3,0,MZA 1091 - LT 3,ZONA I,270
271,-70.24724943,-17.98379833,MUR/HEX:1,1,220,127.39,3,0,MZA 1091 - LT 4,ZONA I,271
272,-70.24719559,-17.98384274,MUR/HEX:1,1,220,117.82,3,0,MZA 1091 - LT 5,ZONA I,272
273,-70.24714241,-17.98388733,MUR/HEX:1,1,220,124.48,3,0,MZA 1091 - LT 6,ZONA I,273
274,-70.24708918,-17.98393139,MUR/HEX:1,1,220,113.45,3,0,MZA 1091 - LT 7,ZONA I,274
275,-70.2470333,-17.98402536,MCF/LWAL+DNO/HEX:1/RES,1,220,124.74,3,0,MZA 1091 - LT 8,ZONA I,275
276,-70.24698568,-17.98396896,MUR/HEX:1,1,220,121.6,3,0,MZA 1091 - LT 9,ZONA I,276
277,-70.24601894,-17.98284018,MCF/LWAL+DNO/HEX:1/RES,1,220,114.58,3,0,MZA 1093 - LT 1,ZONA I,278
278,-70.24597059,-17.98278453,MCF/LWAL+DNO/HEX:2/RES,1,220,241.32,6,1,MZA 1093 - LT 2,ZONA I,279
279,-70.24607249,-17.98274431,MCF/LWAL+DNO/HEX:1/RES,1,220,111.92,3,0,MZA 1093 - LT 3,ZONA I,280
280,-70.24612554,-17.98269876,MCF/LWAL+DNO/HEX:2/RES,1,220,227.38,5,1,MZA 1093 - LT 4,ZONA I,281
281,-70.24617779,-17.98265221,MCF/LWAL+DNO/HEX:1/RES,1,220,111.06,3,0,MZA 1093 - LT 5,ZONA I,282
282,-70.2462294,-17.98260675,MUR/HEX:1,1,220,110.23,3,0,MZA 1093 - LT 6,ZONA I,283
283,-70.24632437,-17.98271945,MUR/HEX:1,1,220,120.25,3,0,MZA 1093 - LT 7,ZONA I,284
284,-70.24627222,-17.98276413,MUR/HEX:1,1,220,120.66,3,0,MZA 1093 - LT 8,ZONA I,285
285,-70.24621923,-17.98280973,MCF/LWAL+DNO/HEX:1/RES,1,220,119.09,3,0,MZA 1093 - LT 9,ZONA I,286
286,-70.24616746,-17.98285569,MUR/HEX:1,1,220,116.31,3,0,MZA 1093 - LT 10,ZONA I,287
287,-70.2461156,-17.98295089,MUR/HEX:1,1,220,119.79,3,0,MZA 1093 - LT 11,ZONA I,288
288,-70.24606724,-17.98289577,MCF/LWAL+DNO/HEX:1/RES,1,220,124.34,3,0,MZA 1093 - LT 12,ZONA I,289
289,-70.24577622,-17.98256521,MUR/HEX:1,1,220,121.07,3,0,MZA 1094 - LT 1,ZONA I,290
290,-70.24572674,-17.98250901,MUR/HEX:1,1,220,119.57,3,0,MZA 1094 - LT 2,ZONA I,291
291,-70.24582854,-17.98246822,MCF/LWAL+DNO/HEX:1/RES,1,220,115.02,3,0,MZA 1094 - LT 3,ZONA I,292
292,-70.24588064,-17.98242188,MUR/HEX:1,1,220,116.96,3,0,MZA 1094 - LT 4,ZONA I,293
293,-70.24593316,-17.98237641,MUR/HEX:1,1,220,115.04,3,0,MZA 1094 - LT 5,ZONA I,294
294,-70.24598517,-17.98233074,MUR/HEX:1,1,220,110.07,3,0,MZA 1094 - LT 6,ZONA I,295
295,-70.24608364,-17.9824404,MUR/HEX:1,1,220,118.32,3,0,MZA 1094 - LT 7,ZONA I,296
296,-70.24603134,-17.9824861,MUR/HEX:1,1,220,123.22,3,0,MZA 1094 - LT 8,ZONA I,297
297,-70.24597904,-17.98253181,MCF/LWAL+DNO/HEX:2/RES,1,220,244.6,1,MZA 1094 - LT 9,ZONA I,298
298,-70.2459264,-17.98257784,MCF/LWAL+DNO/HEX:1/RES,1,220,122.92,3,0,MZA 1094 - LT 10,ZONA I,299
299,-70.24587333,-17.98267488,MCF/LWAL+DNO/HEX:1/RES,1,220,121.53,3,0,MZA 1094 - LT 11,ZONA I,300
300,-70.24582529,-17.98262026,MUR/HEX:1,1,220,123.68,3,0,MZA 1094 - LT 12,ZONA I,301
301,-70.24525454,-17.98197068,MUR/HEX:1,1,220,122.86,3,0,MZA 1096 - LT 1,ZONA I,302
302,-70.24520539,-17.98191679,MUR/HEX:1,1,220,120.52,3,0,MZA 1096 - LT 2,ZONA I,303
303,-70.24530804,-17.98187489,MCF/LWAL+DNO/HEX:1/RES,1,220,121.36,3,0,MZA 1096 - LT 3,ZONA I,304
304,-70.24536035,-17.98182916,MUR/HEX:1,1,220,124.61,3,0,MZA 1096 - LT 4,ZONA I,305
305,-70.24541264,-17.98178341,MUR/HEX:1,1,220,118.52,3,0,MZA 1096 - LT 5,ZONA I,306
306,-70.24546485,-17.98173798,MUR/HEX:1,1,220,114.19,3,0,MZA 1096 - LT 6,ZONA I,307
307,-70.24556335,-17.98184644,MUR/HEX:1,1,220,114.8,3,0,MZA 1096 - LT 7,ZONA I,308
308,-70.24551113,-17.98189224,MUR/HEX:1,1,220,117.65,3,0,MZA 1096 - LT 8,ZONA I,309
309,-70.24545887,-17.98193809,MCF/LWAL+DNO/HEX:2/RES,1,220,238.04,5,1,MZA 1096 - LT 9,ZONA I,310
310,-70.2454066,-17.98198392,MCF/LWAL+DNO/HEX:1/RES,1,220,121.08,3,0,MZA 1096 - LT 10,ZONA I,311
311,-70.24535343,-17.98207936,MUR/HEX:1,1,220,116.21,3,0,MZA 1096 - LT 11,ZONA I,312
312,-70.24530319,-17.98202476,MCF/LWAL+DNO/HEX:2/RES,1,220,236.3,5,1,MZA 1096 - LT 12,ZONA I,313
313,-70.24494272,-17.981633,MUR/HEX:1,1,220,121.09,3,0,MZA 1097 - LT 1,ZONA I,314
314,-70.24489215,-17.9815784,MUR/HEX:1,1,220,118.94,3,0,MZA 1097 - LT 2,ZONA I,315
315,-70.24500299,-17.98155519,MCF/LWAL+DNO/HEX:1/RES,1,220,123.04,3,0,MZA 1097 - LT 3,ZONA I,316
316,-70.24504515,-17.98151842,MUR/HEX:1,1,220,121.04,3,0,MZA 1097 - LT 4,ZONA I,317
317,-70.24508718,-17.98148208,MUR/HEX:1,1,220,118.43,3,0,MZA 1097 - LT 5,ZONA I,318
318,-70.24512877,-17.9814462,MUR/HEX:1,1,220,120.91,3,0,MZA 1097 - LT 6,ZONA I,319
319,-70.24517091,-17.98140972,MUR/HEX:1,1,220,120.32,3,0,MZA 1097 - LT 7,ZONA I,320
320,-70.24529672,-17.98154462,MUR/HEX:1,1,220,119.99,3,0,MZA 1097 - LT 8,ZONA I,321

321,-70.24525502,-17.9815808,MCF/LWAL+DNO/HEX:2/RES,1,220,236.34,5,1,MZA 1097 - LT 9,ZONA I,322
322,-70.24521378,-17.98161683,MCF/LWAL+DNO/HEX:1/RES,1,220,116.82,3,0,MZA 1097 - LT 10,ZONA I,323
323,-70.24517207,-17.98165304,MCF/LWAL+DNO/HEX:2/RES,1,220,241.96,6,1,MZA 1097 - LT 11,ZONA I,324
324,-70.24512995,-17.98169029,MCF/LWAL+DNO/HEX:1/RES,1,220,120.2,3,0,MZA 1097 - LT 12,ZONA I,325
325,-70.24509335,-17.98179509,MUR/HEX:1,1,220,122.05,3,0,MZA 1097 - LT 13,ZONA I,326
326,-70.2450428,-17.98173992,MUR/HEX:1,1,220,118.79,3,0,MZA 1097 - LT 14,ZONA I,327
327,-70.24499205,-17.98168672,MCF/LWAL+DNO/HEX:2/RES,1,220,245.34,6,1,MZA 1097 - LT 15,ZONA I,328
328,-70.24461695,-17.98127901,MCF/LWAL+DNO/HEX:1/RES,1,220,114.86,3,0,MZA 1098 - LT 1,ZONA I,329
329,-70.24456703,-17.98122539,MUR/HEX:1,1,220,117.6,3,0,MZA 1098 - LT 2,ZONA I,330
330,-70.24467916,-17.98120136,MCF/LWAL+DNO/HEX:1/RES,1,220,118.26,3,0,MZA 1098 - LT 3,ZONA I,331
331,-70.24471974,-17.98116476,MUR/HEX:1,1,220,118.47,3,0,MZA 1098 - LT 4,ZONA I,332
332,-70.24476234,-17.98112992,MUR/HEX:1,1,220,119.42,3,0,MZA 1098 - LT 5,ZONA I,333
333,-70.2448056,-17.98109339,MUR/HEX:1,1,220,123.63,3,0,MZA 1098 - LT 6,ZONA I,334
334,-70.24484795,-17.98105638,MUR/HEX:1,1,220,118.45,3,0,MZA 1098 - LT 7,ZONA I,335
335,-70.24497201,-17.98119284,MUR/HEX:1,1,220,111.81,3,0,MZA 1098 - LT 8,ZONA I,336
336,-70.24492886,-17.98122898,MCF/LWAL+DNO/HEX:2/RES,1,220,233.98,5,1,MZA 1098 - LT 9,ZONA I,337
337,-70.24488633,-17.98126635,MCF/LWAL+DNO/HEX:1/RES,1,220,113.07,3,0,MZA 1098 - LT 10,ZONA I,338
338,-70.24484568,-17.9813036,MCF/LWAL+DNO/HEX:2/RES,1,220,226.44,5,1,MZA 1098 - LT 11,ZONA I,339
339,-70.2448036,-17.98133871,MCF/LWAL+DNO/HEX:1/RES,1,220,113.58,3,0,MZA 1098 - LT 12,ZONA I,340
340,-70.2447673,-17.98144452,MUR/HEX:1,1,220,110.59,3,0,MZA 1098 - LT 13,ZONA I,341
341,-70.24471782,-17.98138923,MUR/HEX:1,1,220,117.57,3,0,MZA 1098 - LT 14,ZONA I,342
342,-70.24466691,-17.98133363,MUR/HEX:1,1,220,122.65,3,0,MZA 1098 - LT 15,ZONA I,343
343,-70.24430173,-17.98094415,MCF/LWAL+DNO/HEX:1/RES,1,220,119.96,3,0,MZA 1099 - LT 1,ZONA I,344
344,-70.24425055,-17.98089047,MUR/HEX:1,1,220,124.4,3,0,MZA 1099 - LT 2,ZONA I,345
345,-70.24436222,-17.98086722,MCF/LWAL+DNO/HEX:1/RES,1,220,120.98,3,0,MZA 1099 - LT 3,ZONA I,346
346,-70.24440419,-17.98083282,MUR/HEX:1,1,220,119.58,3,0,MZA 1099 - LT 4,ZONA I,347
347,-70.2444454,-17.9807977,MUR/HEX:1,1,220,121.83,3,0,MZA 1099 - LT 5,ZONA I,348
348,-70.24448657,-17.980762,MUR/HEX:1,1,220,112.98,3,0,MZA 1099 - LT 6,ZONA I,349
349,-70.24452799,-17.98072567,MUR/HEX:2,1,220,231.36,5,1,MZA 1099 - LT 7,ZONA I,350
350,-70.24465675,-17.98085972,MUR/HEX:1,1,220,118.55,3,0,MZA 1099 - LT 8,ZONA I,351
351,-70.24461457,-17.98089535,MCF/LWAL+DNO/HEX:2/RES,1,220,237.36,5,1,MZA 1099 - LT 9,ZONA I,352
352,-70.24457238,-17.98093106,MCF/LWAL+DNO/HEX:2/RES,1,220,252.4,6,1,MZA 1099 - LT 10,ZONA I,353
353,-70.24453046,-17.98096681,MCF/LWAL+DNO/HEX:2/RES,1,220,246.14,6,1,MZA 1099 - LT 11,ZONA I,354
354,-70.24448919,-17.98100293,MCF/LWAL+DNO/HEX:2/RES,1,220,247.04,6,1,MZA 1099 - LT 12,ZONA I,355
355,-70.24445393,-17.98110602,MUR/HEX:2,1,220,245.28,6,1,MZA 1099 - LT 13,ZONA I,356
356,-70.24440304,-17.98105178,MUR/HEX:2,1,220,242.46,6,1,MZA 1099 - LT 14,ZONA I,357
357,-70.24435219,-17.98099831,MCF/LWAL+DNO/HEX:1/RES,1,220,119.16,3,0,MZA 1099 - LT 15,ZONA I,358
358,-70.2486967,-17.98642217,MUR/HEX:2,1,220,513.96,12,3,MZA 1101 - LT 1,ZONA I,359
359,-70.24864027,-17.98636709,MUR/HEX:1,1,220,239.76,6,1,MZA 1101 - LT 2,ZONA I,360
360,-70.24859068,-17.98631274,MUR/HEX:1,1,220,237.92,5,1,MZA 1101 - LT 3,ZONA I,361
361,-70.24854158,-17.98625787,MUR/HEX:1,1,220,239.9,6,1,MZA 1101 - LT 4,ZONA I,362
362,-70.24849201,-17.9862024,MUR/HEX:1,1,220,237.38,5,1,MZA 1101 - LT 5,ZONA I,363
363,-70.24844933,-17.98614133,MUR/HEX:1,1,220,236.14,5,1,MZA 1101 - LT 6,ZONA I,364
364,-70.24840265,-17.98608508,MUR/HEX:2,1,220,496.12,11,3,MZA 1101 - LT 7,ZONA I,365
365,-70.24835493,-17.98602856,MUR/HEX:2,1,220,495.78,11,3,MZA 1101 - LT 8,ZONA I,366
366,-70.24765535,-17.98524547,MUR/HEX:1,1,220,233.17,5,1,MZA 1103 - LT 1,ZONA I,367
367,-70.24760684,-17.9851885,MUR/HEX:2,1,220,460.2,11,3,MZA 1103 - LT 2,ZONA I,368
368,-70.24755837,-17.98513242,MUR/HEX:1,1,220,224.96,5,1,MZA 1103 - LT 3,ZONA I,369
369,-70.24750978,-17.98507661,MUR/HEX:1,1,220,229.43,5,1,MZA 1103 - LT 4,ZONA I,370
370,-70.24746121,-17.98502132,MUR/HEX:1,1,220,222.23,5,1,MZA 1103 - LT 5,ZONA I,371
371,-70.24741507,-17.98496421,MUR/HEX:1,1,220,221.21,5,1,MZA 1103 - LT 6,ZONA I,372
372,-70.247367,-17.98490762,MUR/HEX:2,1,220,422.68,10,3,MZA 1103 - LT 7,ZONA I,373
373,-70.24731844,-17.98485053,MUR/HEX:1,1,220,235.3,5,1,MZA 1103 - LT 8,ZONA I,374
374,-70.24577692,-17.98304746,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,77.55,2,0,MZA 1105 - LT 1,ZONA I,376
375,-70.2458312,-17.98311905,MCF/LWAL+DNO/HEX:2/RES,1,220,161.72,4,1,MZA 1105 - LT 2,ZONA I,377
376,-70.24588838,-17.98318355,MCF/LWAL+DNO/HEX:2/RES,1,220,162.86,4,1,MZA 1105 - LT 3,ZONA I,378
377,-70.24594353,-17.98324613,MUR/HEX:1,1,220,82.47,2,0,MZA 1105 - LT 4,ZONA I,379
378,-70.24600709,-17.9833055,MUR/HEX:1,1,220,81.69,2,0,MZA 1105 - LT 5,ZONA I,380
379,-70.2460621,-17.9833792,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,83.08,2,0,MZA 1105 - LT 6,ZONA I,381
380,-70.24612238,-17.98344213,MCF/LWAL+DNO/HEX:3/RES,1,220,247.86,6,1,MZA 1105 - LT 7,ZONA I,382
381,-70.24617775,-17.98349738,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,83.77,2,0,MZA 1105 - LT 8,ZONA I,383
382,-70.24623924,-17.98344968,MCF/LWAL+DNO/HEX:2/RES,1,220,160.06,4,1,MZA 1105 - LT 9,ZONA I,384
383,-70.24618172,-17.98338286,MUR/HEX:2,1,220,159.4,1,MZA 1105 - LT 10,ZONA I,385
384,-70.24611952,-17.98332471,MCF/LWAL+DNO/HEX:1/RES,1,220,80.88,2,0,MZA 1105 - LT 11,ZONA I,386
385,-70.24606332,-17.9832573,MCF/LWAL+DNO/HEX:2/RES,1,220,159.18,4,1,MZA 1105 - LT 12,ZONA I,387
386,-70.24600492,-17.98318974,MCF/LWAL+DNO/HEX:1/RES,1,220,81.64,2,0,MZA 1105 - LT 13,ZONA I,388
387,-70.24594376,-17.98312713,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,81.68,2,0,MZA 1105 - LT 14,ZONA I,389
388,-70.24588552,-17.98306562,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,80.06,2,0,MZA 1105 - LT 15,ZONA I,390
389,-70.24582928,-17.98300275,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,78.34,2,0,MZA 1105 - LT 16,ZONA I,391
390,-70.24577101,-17.98290419,MCF/LWAL+DNO/HEX:2/RES,1,220,155.18,4,1,MZA 1105 - LT 17,ZONA I,392
391,-70.24573609,-17.98293986,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,87.21,2,0,MZA 1105 - LT 18,ZONA I,393

392,-70.2456937,-17.98297416,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,82.76,2,0,MZA 1105 - LT 19,ZONA I,394
393,-70.24626503,-17.98359656,MCF/LWAL+DNO/HEX:2/RES,1,220,171.34,4,1,MZA 1105 - LT 1,ZONA I,395
394,-70.24633058,-17.98367518,MCF/LWAL+DNO/HEX:1/RES,1,220,84.7,2,0,MZA 1105 - LT 2,ZONA I,396
395,-70.2463895,-17.98373767,MCF/LWAL+DNO/HEX:2/RES,1,220,166.4,4,1,MZA 1105 - LT 3,ZONA I,397
396,-70.24645068,-17.98380803,MCF/LWAL+DNO/HEX:2/RES,1,220,170.52,4,1,MZA 1105 - LT 4,ZONA I,398
397,-70.2465074,-17.98387909,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,83.25,2,0,MZA 1105 - LT 5,ZONA I,399
398,-70.24657107,-17.98394618,MCF/LWAL+DNO/HEX:2/RES,1,220,170.54,4,1,MZA 1105 - LT 6,ZONA I,400
399,-70.24663294,-17.98401365,MCF/LWAL+DNO/HEX:2/RES,1,220,166.52,4,1,MZA 1105 - LT 7,ZONA I,401
400,-70.2466911,-17.98407439,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,83.43,2,0,MZA 1105 - LT 8,ZONA I,402
401,-70.24675466,-17.98414317,MCF/LWAL+DNO/HEX:3/RES,1,220,256.38,6,1,MZA 1105 - LT 9,ZONA I,403
402,-70.24681271,-17.98408857,MCF/LWAL+DNO/HEX:2/RES,1,220,170.9,4,1,MZA 1105 - LT 10,ZONA I,404
403,-70.24675357,-17.98402244,MCF/LWAL+DNO/HEX:2/RES,1,220,170.4,4,1,MZA 1105 - LT 11,ZONA I,405
404,-70.24669316,-17.9839541,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,85.38,2,0,MZA 1105 - LT 12,ZONA I,406
405,-70.24662792,-17.98389044,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,86.2,2,0,MZA 1105 - LT 13,ZONA I,407
406,-70.24657005,-17.98382678,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,84.76,2,0,MZA 1105 - LT 14,ZONA I,408
407,-70.24651189,-17.98375486,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,86.68,2,0,MZA 1105 - LT 15,ZONA I,409
408,-70.24644744,-17.98368099,MUR/HEX:1,1,220,85.44,2,0,MZA 1105 - LT 16,ZONA I,410
409,-70.24638436,-17.98361634,MUR/HEX:1,1,220,85.77,2,0,MZA 1105 - LT 17,ZONA I,411
410,-70.24632435,-17.98355182,MUR/HEX:1,1,220,87.79,2,0,MZA 1105 - LT 18,ZONA I,412
411,-70.24557733,-17.98278632,MUR/HEX:1,1,220,169.12,4,1,MZA 1106 - LT 1,ZONA I,413
412,-70.24552847,-17.98273055,MCF/LWAL+DNO/HEX:2/RES,1,220,331.44,8,2,MZA 1106 - LT 2,ZONA I,414
413,-70.24547911,-17.98267537,MUR/HEX:1,1,220,176.17,4,1,MZA 1106 - LT 3,ZONA I,415
414,-70.24543033,-17.98261945,MCF/LWAL+DNO/HEX:2/RES,1,220,338.08,8,2,MZA 1106 - LT 4,ZONA I,416
415,-70.24538171,-17.98256474,MUR/HEX:1,1,220,170.57,4,1,MZA 1106 - LT 5,ZONA I,417
416,-70.24533307,-17.98250928,MUR/HEX:1,1,220,172.36,4,1,MZA 1106 - LT 6,ZONA I,418
417,-70.24528292,-17.98245375,MCF/LWAL+DNO/HEX:1/RES,1,220,164.77,4,1,MZA 1106 - LT 7,ZONA I,419
418,-70.24523455,-17.98239824,MUR/HEX:1,1,220,173.15,4,1,MZA 1106 - LT 8,ZONA I,420
419,-70.24518645,-17.98234295,MCF/LWAL+DNO/HEX:1/RES,1,220,165.23,4,1,MZA 1106 - LT 9,ZONA I,421
420,-70.24513655,-17.98228754,MCF/LWAL+DNO/HEX:1/RES,1,220,174.27,4,1,MZA 1106 - LT 10,ZONA I,422
421,-70.24508667,-17.98223091,MCF/LWAL+DNO/HEX:1/RES,1,220,172.57,4,1,MZA 1106 - LT 11,ZONA I,423
422,-70.24503642,-17.98217305,MUR/HEX:1,1,220,175.54,4,1,MZA 1106 - LT 12,ZONA I,424
423,-70.2449816,-17.98212445,MUR/HEX:2,1,220,332.06,8,2,MZA 1106 - LT 13,ZONA I,425
424,-70.2456271,-17.98284215,MUR/HEX:1,1,220,170.44,4,1,MZA 1106 - LT 14,ZONA I,426
425,-70.244518,-17.98219774,MUR/HEX:1,1,220,166.63,4,1,MZA 1107 - LT 1,ZONA I,427
426,-70.24457512,-17.98214902,MCF/LWAL+DNO/HEX:1/RES,1,220,158.47,4,1,MZA 1107 - LT 2,ZONA I,428
427,-70.2446303,-17.98210138,MCF/LWAL+DNO/HEX:1/RES,1,220,159.37,4,1,MZA 1107 - LT 3,ZONA I,429
428,-70.24468582,-17.98205384,MCF/LWAL+DNO/HEX:1/RES,1,220,167.95,4,1,MZA 1107 - LT 4,ZONA I,430
429,-70.2447422,-17.98200649,MUR/HEX:1,1,220,165.04,4,1,MZA 1107 - LT 5,ZONA I,431
430,-70.24479802,-17.98195841,MUR/HEX:1,1,220,166.7,4,1,MZA 1107 - LT 6,ZONA I,432
431,-70.24485573,-17.98190911,MUR/HEX:1,1,220,172.59,4,1,MZA 1107 - LT 7,ZONA I,433
432,-70.24472952,-17.98177369,MUR/HEX:2,1,220,316.12,7,2,MZA 1107 - LT 8,ZONA I,434
433,-70.244672,-17.98182278,MUR/HEX:2,1,220,297.32,7,2,MZA 1107 - LT 9,ZONA I,435
434,-70.24461705,-17.98187008,MUR/HEX:1,1,220,152.53,4,1,MZA 1107 - LT 10,ZONA I,436
435,-70.24456108,-17.98191703,MCF/LWAL+DNO/HEX:1/RES,1,220,161.15,4,1,MZA 1107 - LT 11,ZONA I,437
436,-70.24450512,-17.98196488,MCF/LWAL+DNO/HEX:1/RES,1,220,153.01,4,1,MZA 1107 - LT 12,ZONA I,438
437,-70.24445044,-17.98201204,MCF/LWAL+DNO/HEX:1/RES,1,220,156.81,4,1,MZA 1107 - LT 13,ZONA I,439
438,-70.24439457,-17.98205964,MUR/HEX:1,1,220,165.6,4,1,MZA 1107 - LT 14,ZONA I,440
439,-70.24419744,-17.98184947,MUR/HEX:1,1,220,155.08,4,1,MZA 1108 - LT 1,ZONA I,441
440,-70.24425589,-17.98180074,MUR/HEX:1,1,220,147.26,3,0,MZA 1108 - LT 2,ZONA I,442
441,-70.24431,-17.98175284,MCF/LWAL+DNO/HEX:1/RES,1,220,158.95,4,1,MZA 1108 - LT 3,ZONA I,443
442,-70.24436438,-17.98170734,MUR/HEX:1,1,220,159.43,4,1,MZA 1108 - LT 4,ZONA I,444
443,-70.24441992,-17.98166021,MCF/LWAL+DNO/HEX:2/RES,1,220,316.68,7,2,MZA 1108 - LT 5,ZONA I,445
444,-70.24447641,-17.98161223,MUR/HEX:1,1,220,146.12,3,0,MZA 1108 - LT 6,ZONA I,446
445,-70.244535,-17.98156147,MCF/LWAL+DNO/HEX:1/RES,1,220,179.72,4,1,MZA 1108 - LT 7,ZONA I,447
446,-70.24440997,-17.98142615,MUR/HEX:1,1,220,175.49,4,1,MZA 1108 - LT 8,ZONA I,448
447,-70.24435109,-17.98147591,MUR/HEX:2,1,220,312.62,7,2,MZA 1108 - LT 9,ZONA I,449
448,-70.24429496,-17.98152392,MUR/HEX:1,1,220,156.29,4,1,MZA 1108 - LT 10,ZONA I,450
449,-70.2442393,-17.98157149,MUR/HEX:1,1,220,160.05,4,1,MZA 1108 - LT 11,ZONA I,451
450,-70.24418355,-17.98161858,MCF/LWAL+DNO/HEX:1/RES,1,220,161.29,4,1,MZA 1108 - LT 12,ZONA I,452
451,-70.24412933,-17.98166683,MCF/LWAL+DNO/HEX:1/RES,1,220,146.08,3,0,MZA 1108 - LT 13,ZONA I,453
452,-70.24407173,-17.98171521,MUR/HEX:1,1,220,160.88,4,1,MZA 1108 - LT 14,ZONA I,454
453,-70.24389814,-17.98153049,MUR/HEX:2,1,220,384.36,9,2,MZA 1109 - LT 1,ZONA I,455
454,-70.24395475,-17.98148106,MUR/HEX:1,1,220,162.94,4,1,MZA 1109 - LT 2,ZONA I,456
455,-70.24401008,-17.98143318,MCF/LWAL+DNO/HEX:1/RES,1,220,153.54,4,1,MZA 1109 - LT 3,ZONA I,457
456,-70.24406551,-17.98138503,MCF/LWAL+DNO/HEX:1/RES,1,220,161.78,4,1,MZA 1109 - LT 4,ZONA I,458
457,-70.24412104,-17.98133597,MUR/HEX:1,1,220,154.87,4,1,MZA 1109 - LT 5,ZONA I,459
458,-70.24417722,-17.98128866,MUR/HEX:2,1,220,302.42,7,2,MZA 1109 - LT 6,ZONA I,460
459,-70.24423235,-17.98124014,MUR/HEX:1,1,220,156.57,4,1,MZA 1109 - LT 7,ZONA I,461
460,-70.24407488,-17.98106127,MUR/HEX:1,1,220,263.07,6,1,MZA 1109 - LT 8,ZONA I,462
461,-70.24402989,-17.98111244,MUR/HEX:1,1,220,185.23,4,1,MZA 1109 - LT 9,ZONA I,463
462,-70.24397661,-17.98116814,MUR/HEX:1,1,220,303.49,7,2,MZA 1109 - LT 10,ZONA I,464

463,-70.24390282,-17.98124795,MUR/HEX:1,1,220,329.2,8,2,MZA 1109 - LT 11,ZONA I,465
464,-70.24384362,-17.98140089,MUR/HEX:1,1,220,170.34,4,1,MZA 1109 - LT 12,ZONA I,466
465,-70.24377818,-17.98132366,MCF/LWAL+DNO/HEX:2/RES,1,220,478.58,11,3,MZA 1109 - LT 13,ZONA I,467
466,-70.24651134,-17.98430996,MUR/HEX:2,1,220,425.86,10,3,MZA 1110 - LT 1,ZONA I,468
467,-70.24646151,-17.98425551,MUR/HEX:1,1,220,208.6,5,1,MZA 1110 - LT 2,ZONA I,469
468,-70.24641243,-17.98420089,MUR/HEX:1,1,220,202.31,5,1,MZA 1110 - LT 3,ZONA I,470
469,-70.24636349,-17.98414625,MUR/HEX:1,1,220,198.1,5,1,MZA 1110 - LT 4,ZONA I,471
470,-70.2463142,-17.98409151,MUR/HEX:1,1,220,202.77,5,1,MZA 1110 - LT 5,ZONA I,472
471,-70.24626521,-17.98403712,MUR/HEX:2,1,220,405.2,9,2,MZA 1110 - LT 6,ZONA I,473
472,-70.24621772,-17.98398166,MUR/HEX:1,1,220,201.05,5,1,MZA 1110 - LT 7,ZONA I,474
473,-70.24616781,-17.98392748,MUR/HEX:1,1,220,217.81,5,1,MZA 1110 - LT 8,ZONA I,475
474,-70.24611861,-17.98387313,MUR/HEX:1,1,220,184.38,4,1,MZA 1110 - LT 9,ZONA I,476
475,-70.246068,-17.98381942,MUR/HEX:1,1,220,221.01,5,1,MZA 1110 - LT 10,ZONA I,477
476,-70.24601868,-17.98376439,MUR/HEX:1,1,220,200.3,5,1,MZA 1110 - LT 11,ZONA I,478
477,-70.24594766,-17.9836791,MUR/HEX:2,1,220,406.68,9,2,MZA 1111 - LT 1,ZONA I,479
478,-70.24589758,-17.98362476,MUR/HEX:1,1,220,203.07,5,1,MZA 1111 - LT 2,ZONA I,480
479,-70.24584824,-17.9835698,MUR/HEX:1,1,220,203.56,5,1,MZA 1111 - LT 3,ZONA I,481
480,-70.24579922,-17.98351637,MUR/HEX:1,1,220,205.38,5,1,MZA 1111 - LT 4,ZONA I,482
481,-70.24575142,-17.98346136,MUR/HEX:1,1,220,174.14,4,1,MZA 1111 - LT 5,ZONA I,483
482,-70.24570233,-17.98340635,MUR/HEX:1,1,220,196.99,5,1,MZA 1111 - LT 6,ZONA I,484
483,-70.24565179,-17.98335023,MUR/HEX:2,1,220,428.9,10,3,MZA 1111 - LT 7,ZONA I,485
484,-70.24560076,-17.98329341,MUR/HEX:1,1,220,184.88,4,1,MZA 1111 - LT 8,ZONA I,486
485,-70.24555124,-17.98323766,MUR/HEX:1,1,220,211.99,5,1,MZA 1111 - LT 9,ZONA I,487
486,-70.24550299,-17.98318287,MUR/HEX:1,1,220,192.61,4,1,MZA 1111 - LT 10,ZONA I,488
487,-70.24545568,-17.98312712,MUR/HEX:1,1,220,195.12,5,1,MZA 1111 - LT 11,ZONA I,489
488,-70.24537916,-17.98304286,MUR/HEX:1,1,220,204.78,5,1,MZA 1112 - LT 1,ZONA I,490
489,-70.24533146,-17.98298825,MUR/HEX:1,1,220,206.78,5,1,MZA 1112 - LT 2,ZONA I,491
490,-70.24528299,-17.98293349,MUR/HEX:1,1,220,191.25,4,1,MZA 1112 - LT 3,ZONA I,492
491,-70.24523494,-17.98287717,MUR/HEX:1,1,220,214.51,5,1,MZA 1112 - LT 4,ZONA I,493
492,-70.24518469,-17.98282609,MUR/HEX:1,1,220,190.47,4,1,MZA 1112 - LT 5,ZONA I,494
493,-70.24514065,-17.98276686,MUR/HEX:1,1,220,192.81,4,1,MZA 1112 - LT 6,ZONA I,495
494,-70.24508766,-17.98271109,MUR/HEX:1,1,220,201.38,5,1,MZA 1112 - LT 7,ZONA I,496
495,-70.24503847,-17.98265578,MUR/HEX:1,1,220,210.53,5,1,MZA 1112 - LT 8,ZONA I,497
496,-70.24498996,-17.98260122,MUR/HEX:1,1,220,189.69,4,1,MZA 1112 - LT 9,ZONA I,498
497,-70.24494122,-17.98254655,MUR/HEX:1,1,220,193.34,4,1,MZA 1112 - LT 10,ZONA I,499
498,-70.24489325,-17.98249127,MUR/HEX:1,1,220,191.11,4,1,MZA 1112 - LT 11,ZONA I,500
499,-70.24484386,-17.98243752,MUR/HEX:1,1,220,199.8,5,1,MZA 1112 - LT 12,ZONA I,501
500,-70.24479802,-17.98238017,MUR/HEX:1,1,220,184.45,4,1,MZA 1112 - LT 13,ZONA I,502
501,-70.24474602,-17.98232211,MUR/HEX:1,1,220,210.57,5,1,MZA 1112 - LT 14,ZONA I,503
502,-70.24484213,-17.98653739,MUR/HEX:2,1,220,398.32,9,2,MZA 1113 - LT 1,ZONA I,504
503,-70.24836421,-17.98658493,MUR/HEX:1,1,220,198.18,5,1,MZA 1113 - LT 2,ZONA I,505
504,-70.24830812,-17.98663253,MUR/HEX:1,1,220,208.9,5,1,MZA 1113 - LT 3,ZONA I,506
505,-70.24825204,-17.98667973,MUR/HEX:1,1,220,199.4,5,1,MZA 1113 - LT 4,ZONA I,507
506,-70.24819561,-17.98672664,MUR/HEX:1,1,220,201.79,5,1,MZA 1113 - LT 5,ZONA I,508
507,-70.24813936,-17.98677427,MUR/HEX:1,1,220,198.81,5,1,MZA 1113 - LT 6,ZONA I,509
508,-70.24808262,-17.98682126,MUR/HEX:1,1,220,207.9,5,1,MZA 1113 - LT 7,ZONA I,510
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510,-70.24797053,-17.9869154,MUR/HEX:1,1,220,199.9,5,1,MZA 1113 - LT 9,ZONA I,512
511,-70.24791506,-17.98696236,MUR/HEX:1,1,220,193.49,4,1,MZA 1113 - LT 10,ZONA I,513
512,-70.24768922,-17.9868169,MUR/HEX:2,1,220,442.6,10,3,MZA 1113 - LT 11,ZONA I,514
513,-70.24776377,-17.98678686,MUR/HEX:1,1,220,202.44,5,1,MZA 1113 - LT 12,ZONA I,515
514,-70.2478203,-17.98674026,MUR/HEX:1,1,220,203.23,5,1,MZA 1113 - LT 13,ZONA I,516
515,-70.24787643,-17.98669398,MUR/HEX:1,1,220,197.52,5,1,MZA 1113 - LT 14,ZONA I,517
516,-70.24793257,-17.98664756,MUR/HEX:1,1,220,210.13,5,1,MZA 1113 - LT 15,ZONA I,518
517,-70.24798876,-17.9866013,MUR/HEX:1,1,220,201.75,5,1,MZA 1113 - LT 16,ZONA I,519
518,-70.24804322,-17.98655581,MUR/HEX:1,1,220,202.66,5,1,MZA 1113 - LT 17,ZONA I,520
519,-70.24809729,-17.98650933,MUR/HEX:1,1,220,214.24,5,1,MZA 1113 - LT 18,ZONA I,521
520,-70.24815276,-17.98646165,MUR/HEX:1,1,220,199.47,5,1,MZA 1113 - LT 19,ZONA I,522
521,-70.24820874,-17.98641445,MUR/HEX:1,1,220,204.28,5,1,MZA 1113 - LT 20,ZONA I,523
522,-70.24826661,-17.9863674,MUR/HEX:1,1,220,211.73,5,1,MZA 1113 - LT 21,ZONA I,524
523,-70.24784026,-17.9869699,MUR/HEX:1,1,220,108.38,3,0,MZA 1113 - LT 22,ZONA I,525
524,-70.2480403,-17.98611776,MUR/HEX:1,1,220,205.43,5,1,MZA 1114 - LT 1,ZONA I,526
525,-70.24798376,-17.98616502,MUR/HEX:1,1,220,204.84,5,1,MZA 1114 - LT 2,ZONA I,527
526,-70.24792688,-17.9862111,MUR/HEX:1,1,220,216.02,5,1,MZA 1114 - LT 3,ZONA I,528
527,-70.24787082,-17.98625733,MUR/HEX:1,1,220,208.69,5,1,MZA 1114 - LT 4,ZONA I,529
528,-70.2478149,-17.98630349,MUR/HEX:1,1,220,219.16,5,1,MZA 1114 - LT 5,ZONA I,530
529,-70.24775764,-17.98635064,MUR/HEX:1,1,220,207.13,5,1,MZA 1114 - LT 6,ZONA I,531
530,-70.24770063,-17.98639701,MUR/HEX:1,1,220,205.65,5,1,MZA 1114 - LT 7,ZONA I,532
531,-70.24764475,-17.98644294,MUR/HEX:1,1,220,220.28,5,1,MZA 1114 - LT 8,ZONA I,533
532,-70.24758861,-17.9864891,MUR/HEX:1,1,220,208.55,5,1,MZA 1114 - LT 9,ZONA I,534
533,-70.24753259,-17.98653496,MUR/HEX:1,1,220,204.08,5,1,MZA 1114 - LT 10,ZONA I,535

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535,-70.24732199,-17.98640912,MUR/HEX:1,1,220,237.38,5,1,MZA 1114 - LT 12,ZONA I,537
536,-70.24737731,-17.98636193,MUR/HEX:1,1,220,197.57,5,1,MZA 1114 - LT 13,ZONA I,538
537,-70.24743348,-17.98631581,MUR/HEX:1,1,220,207.32,5,1,MZA 1114 - LT 14,ZONA I,539
538,-70.24748989,-17.98626985,MUR/HEX:1,1,220,214.69,5,1,MZA 1114 - LT 15,ZONA I,540
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542,-70.24771539,-17.98608628,MUR/HEX:1,1,220,203.05,5,1,MZA 1114 - LT 19,ZONA I,544
543,-70.24777209,-17.98604034,MUR/HEX:1,1,220,210.22,5,1,MZA 1114 - LT 20,ZONA I,545
544,-70.24782901,-17.98599416,MUR/HEX:1,1,220,202.82,5,1,MZA 1114 - LT 21,ZONA I,546
545,-70.2478859,-17.98594809,MUR/HEX:1,1,220,198.68,5,1,MZA 1114 - LT 22,ZONA I,547
546,-70.24766465,-17.98569374,MUR/HEX:1,1,220,210.89,5,1,MZA 1115 - LT 1,ZONA I,548
547,-70.24760789,-17.98574168,MUR/HEX:1,1,220,227.35,5,1,MZA 1115 - LT 2,ZONA I,549
548,-70.24755187,-17.98578777,MUR/HEX:1,1,220,189.28,4,1,MZA 1115 - LT 3,ZONA I,550
549,-70.24749589,-17.98583468,MUR/HEX:1,1,220,199.08,5,1,MZA 1115 - LT 4,ZONA I,551
550,-70.24743945,-17.98588108,MUR/HEX:1,1,220,214.5,5,1,MZA 1115 - LT 5,ZONA I,552
551,-70.24738288,-17.98592659,MUR/HEX:1,1,220,197.94,5,1,MZA 1115 - LT 6,ZONA I,553
552,-70.24732655,-17.98597229,MUR/HEX:1,1,220,199.34,5,1,MZA 1115 - LT 7,ZONA I,554
553,-70.24726974,-17.98601876,MUR/HEX:1,1,220,190.42,4,1,MZA 1115 - LT 8,ZONA I,555
554,-70.24721251,-17.98606541,MUR/HEX:2,1,220,440.26,10,3,MZA 1115 - LT 9,ZONA I,556
555,-70.24715452,-17.98611143,MUR/HEX:1,1,220,204.38,5,1,MZA 1115 - LT 10,ZONA I,557
556,-70.2470928,-17.98615471,MUR/HEX:2,1,220,293.92,7,2,MZA 1115 - LT 11,ZONA I,558
557,-70.24691876,-17.98595847,MUR/HEX:1,1,220,214.03,5,1,MZA 1115 - LT 12,ZONA I,559
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562,-70.24722744,-17.98575424,MUR/HEX:1,1,220,203.98,5,1,MZA 1115 - LT 17,ZONA I,564
563,-70.24728363,-17.98570874,MUR/HEX:1,1,220,222.41,5,1,MZA 1115 - LT 18,ZONA I,565
564,-70.2473397,-17.98566226,MUR/HEX:1,1,220,196.47,5,1,MZA 1115 - LT 19,ZONA I,566
565,-70.24739676,-17.98561571,MUR/HEX:1,1,220,202.35,5,1,MZA 1115 - LT 20,ZONA I,567
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567,-70.24750962,-17.98552318,MUR/HEX:1,1,220,104.41,2,0,MZA 1115 - LT 22,ZONA I,569
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570,-70.24718432,-17.98537756,MUR/HEX:1,1,220,180.4,4,1,MZA 1116 - LT 3,ZONA I,572
571,-70.24712688,-17.98542371,MUR/HEX:1,1,220,218.58,5,1,MZA 1116 - LT 4,ZONA I,573
572,-70.24707008,-17.9854703,MUR/HEX:1,1,220,198.13,5,1,MZA 1116 - LT 5,ZONA I,574
573,-70.24701355,-17.98551655,MUR/HEX:1,1,220,212.45,5,1,MZA 1116 - LT 6,ZONA I,575
574,-70.24695732,-17.98556341,MUR/HEX:1,1,220,189.22,4,1,MZA 1116 - LT 7,ZONA I,576
575,-70.2469003,-17.98560923,MUR/HEX:1,1,220,222.82,5,1,MZA 1116 - LT 8,ZONA I,577
576,-70.24684391,-17.98565544,MUR/HEX:1,1,220,199.06,5,1,MZA 1116 - LT 9,ZONA I,578
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583,-70.24680289,-17.9853914,MUR/HEX:1,1,220,197.75,5,1,MZA 1116 - LT 16,ZONA I,585
584,-70.24685827,-17.98534525,MUR/HEX:1,1,220,222.97,5,1,MZA 1116 - LT 17,ZONA I,586
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586,-70.24697306,-17.98525245,MUR/HEX:1,1,220,222.67,5,1,MZA 1116 - LT 19,ZONA I,588
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594,-70.2460136,-17.9846179,MUR/HEX:1,1,220,194.39,4,1,MZA 1119 - LT 5,ZONA I,597
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597,-70.24584317,-17.98475689,MUR/HEX:1,1,220,218.98,5,1,MZA 1119 - LT 8,ZONA I,600
598,-70.24569125,-17.98458587,MUR/HEX:1,1,220,230.46,5,1,MZA 1119 - LT 9,ZONA I,601
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601,-70.24585969,-17.98444597,MUR/HEX:1,1,220,191.65,4,1,MZA 1119 - LT 12,ZONA I,604
602,-70.2459161,-17.98439942,MUR/HEX:1,1,220,196.43,5,1,MZA 1119 - LT 13,ZONA I,605
603,-70.24597285,-17.98435283,MUR/HEX:1,1,220,196.76,5,1,MZA 1119 - LT 14,ZONA I,606
604,-70.24602996,-17.98430582,MUR/HEX:1,1,220,200.69,5,1,MZA 1119 - LT 15,ZONA I,607

605,-70.24608617,-17.98425901,MUR/HEX:1,1,220,183.03,4,1,MZA 1119 - LT 16,ZONA I,608
606,-70.24586289,-17.98400951,MUR/HEX:1,1,220,190.56,4,1,MZA 1120 - LT 1,ZONA I,609
607,-70.24580758,-17.98405655,MUR/HEX:1,1,220,209.87,5,1,MZA 1120 - LT 2,ZONA I,610
608,-70.24575054,-17.98410301,MUR/HEX:1,1,220,198.94,5,1,MZA 1120 - LT 3,ZONA I,611
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613,-70.24546658,-17.98433897,MUR/HEX:1,1,220,109.98,3,0,MZA 1120 - LT 8,ZONA I,616
614,-70.2453107,-17.98416605,MUR/HEX:1,1,220,192.13,4,1,MZA 1120 - LT 9,ZONA I,617
615,-70.24536522,-17.98411868,MUR/HEX:1,1,220,202.47,5,1,MZA 1120 - LT 10,ZONA I,618
616,-70.24542271,-17.9840712,MUR/HEX:1,1,220,220.41,5,1,MZA 1120 - LT 11,ZONA I,619
617,-70.24548143,-17.98402407,MUR/HEX:1,1,220,193.12,4,1,MZA 1120 - LT 12,ZONA I,620
618,-70.24553828,-17.98397751,MUR/HEX:1,1,220,213.54,5,1,MZA 1120 - LT 13,ZONA I,621
619,-70.24559521,-17.98393052,MUR/HEX:1,1,220,194.81,4,1,MZA 1120 - LT 14,ZONA I,622
620,-70.24565174,-17.98388392,MUR/HEX:1,1,220,213.3,5,1,MZA 1120 - LT 15,ZONA I,623
621,-70.24570888,-17.98383822,MUR/HEX:1,1,220,203.93,5,1,MZA 1120 - LT 16,ZONA I,624
622,-70.24548604,-17.98358702,MUR/HEX:2,1,220,397.8,9,2,MZA 1121 - LT 1,ZONA I,625
623,-70.24543034,-17.98363422,MUR/HEX:1,1,220,208.28,5,1,MZA 1121 - LT 2,ZONA I,626
624,-70.24537371,-17.98368058,MUR/HEX:1,1,220,213.1,5,1,MZA 1121 - LT 3,ZONA I,627
625,-70.24531654,-17.98372717,MUR/HEX:2,1,220,384.6,9,2,MZA 1121 - LT 4,ZONA I,628
626,-70.24526031,-17.98377484,MUR/HEX:1,1,220,197.13,5,1,MZA 1121 - LT 5,ZONA I,629
627,-70.24520353,-17.98382125,MUR/HEX:1,1,220,205.05,5,1,MZA 1121 - LT 6,ZONA I,630
628,-70.24514685,-17.98386832,MUR/HEX:1,1,220,191.6,4,1,MZA 1121 - LT 7,ZONA I,631
629,-70.24508979,-17.98391506,MCF/LWAL+DNO/HEX:3/RES,1,220,646.8,15,4,MZA 1121 - LT 8,ZONA I,632
630,-70.24493701,-17.98374291,MUR/HEX:1,1,220,232.43,5,1,MZA 1121 - LT 9,ZONA I,633
631,-70.24499389,-17.98369557,MUR/HEX:1,1,220,187.18,4,1,MZA 1121 - LT 10,ZONA I,634
632,-70.24505115,-17.98364901,MUR/HEX:2,1,220,470.1,11,3,MZA 1121 - LT 11,ZONA I,635
633,-70.24510766,-17.98360218,MUR/HEX:1,1,220,182.65,4,1,MZA 1121 - LT 12,ZONA I,636
634,-70.2451654,-17.98355577,MUR/HEX:1,1,220,198.42,5,1,MZA 1121 - LT 13,ZONA I,637
635,-70.24522179,-17.98350823,MUR/HEX:1,1,220,219.69,5,1,MZA 1121 - LT 14,ZONA I,638
636,-70.2452653,-17.98347289,MCF/LWAL+DNO/HEX:3/RES,1,220,606.72,14,4,MZA 1121 - LT 15,ZONA I,639
637,-70.24529001,-17.98342138,MCF/LWAL+DNO/HEX:3/RES,1,220,583.56,13,4,MZA 1121 - LT 16,ZONA I,640
638,-70.24483157,-17.98350149,MUR/HEX:3,1,220,703.65,16,5,MZA 1123 - LT 1,ZONA I,641
639,-70.24477774,-17.98344606,MUR/HEX:2,1,220,387.8,9,2,MZA 1123 - LT 2,ZONA I,642
640,-70.244729,-17.98339156,MUR/HEX:1,1,220,215.16,5,1,MZA 1123 - LT 3,ZONA I,643
641,-70.24467974,-17.98333639,MUR/HEX:1,1,220,212.33,5,1,MZA 1123 - LT 4,ZONA I,644
642,-70.24463067,-17.98328133,MUR/HEX:1,1,220,209.8,5,1,MZA 1123 - LT 5,ZONA I,645
643,-70.24458118,-17.98322686,MUR/HEX:1,1,220,202.05,5,1,MZA 1123 - LT 6,ZONA I,646
644,-70.24453177,-17.98317248,MUR/HEX:1,1,220,226.08,5,1,MZA 1123 - LT 7,ZONA I,647
645,-70.2444827,-17.98311766,MUR/HEX:1,1,220,200.78,5,1,MZA 1123 - LT 8,ZONA I,648
646,-70.24443338,-17.98306337,MUR/HEX:1,1,220,235.26,5,1,MZA 1123 - LT 9,ZONA I,649
647,-70.24438446,-17.98300918,MUR/HEX:1,1,220,204.12,5,1,MZA 1123 - LT 10,ZONA I,650
648,-70.24433472,-17.98295538,MUR/HEX:1,1,220,205.07,5,1,MZA 1123 - LT 11,ZONA I,651
649,-70.24430405,-17.98288406,MUR/HEX:1,1,220,210.12,5,1,MZA 1123 - LT 12,ZONA I,652
650,-70.24425126,-17.9828306,MUR/HEX:1,1,220,195.23,5,1,MZA 1123 - LT 13,ZONA I,653
651,-70.24420123,-17.98277672,MUR/HEX:1,1,220,239.09,6,1,MZA 1123 - LT 14,ZONA I,654
652,-70.24438326,-17.98272087,MUR/HEX:1,1,220,133.65,3,0,MZA 1123 - LT 15,ZONA I,655
653,-70.24442864,-17.98267134,MUR/HEX:1,1,220,150.79,3,0,MZA 1123 - LT 16,ZONA I,656
654,-70.24448226,-17.98263737,MUR/HEX:1,1,220,151.75,4,1,MZA 1123 - LT 17,ZONA I,657
655,-70.24453122,-17.98259542,MUR/HEX:1,1,220,151.48,3,0,MZA 1123 - LT 18,ZONA I,658
656,-70.2445823,-17.98255403,MUR/HEX:1,1,220,152.14,4,1,MZA 1123 - LT 19,ZONA I,659
657,-70.24473555,-17.98272157,MUR/HEX:3,1,220,456.42,11,3,MZA 1123 - LT 20,ZONA I,660
658,-70.24473655,-17.98282235,MUR/HEX:1,1,220,148.4,3,0,MZA 1123 - LT 21,ZONA I,661
659,-70.24463607,-17.98280538,MUR/HEX:1,1,220,157.9,4,1,MZA 1123 - LT 22,ZONA I,662
660,-70.24462676,-17.98289036,MUR/HEX:1,1,220,151.89,4,1,MZA 1123 - LT 23,ZONA I,663
661,-70.24453767,-17.9828882,CR/LFINF+DUC/HEX:1/RES,1,220,135.02,3,0,MZA 1123 - LT 24,ZONA I,664
662,-70.24396792,-17.98267185,MUR/HEX:1,1,220,174.59,4,1,MZA 1124 - LT 1,ZONA I,665
663,-70.24402465,-17.98262292,MUR/HEX:1,1,220,164.73,4,1,MZA 1124 - LT 2,ZONA I,666
664,-70.24408056,-17.98257455,MUR/HEX:1,1,220,157.97,4,1,MZA 1124 - LT 3,ZONA I,667
665,-70.24413667,-17.982528,MUR/HEX:1,1,220,156.9,4,1,MZA 1124 - LT 4,ZONA I,668
666,-70.24419238,-17.98247798,MUR/HEX:1,1,220,166.05,4,1,MZA 1124 - LT 5,ZONA I,669
667,-70.24424818,-17.98242976,MUR/HEX:1,1,220,161.28,4,1,MZA 1124 - LT 6,ZONA I,670
668,-70.24430457,-17.98238124,MUR/HEX:1,1,220,160.63,4,1,MZA 1124 - LT 7,ZONA I,671
669,-70.24436244,-17.98233115,MUR/HEX:1,1,220,176.69,4,1,MZA 1124 - LT 8,ZONA I,672
670,-70.244238,-17.9821947,MUR/HEX:1,1,220,172.26,4,1,MZA 1124 - LT 9,ZONA I,673
671,-70.24418023,-17.98224493,MUR/HEX:2,1,220,323.56,7,2,MZA 1124 - LT 10,ZONA I,674
672,-70.24412384,-17.98229367,MUR/HEX:1,1,220,164.17,4,1,MZA 1124 - LT 11,ZONA I,675
673,-70.24406784,-17.98234229,MUR/HEX:1,1,220,173.78,4,1,MZA 1124 - LT 12,ZONA I,676
674,-70.24401227,-17.98239073,MUR/HEX:1,1,220,164.95,4,1,MZA 1124 - LT 13,ZONA I,677
675,-70.24395632,-17.98243904,MUR/HEX:1,1,220,163.58,4,1,MZA 1124 - LT 14,ZONA I,678

676,-70.24390036,-17.98248767,MUR/HEX:1,1,220,173.75,4,1,MZA 1124 - LT 15,ZONA I,679
677,-70.24384361,-17.98253685,MUR/HEX:1,1,220,184.47,4,1,MZA 1124 - LT 16,ZONA I,680
678,-70.24364856,-17.9823245,MUR/HEX:1,1,220,165.11,4,1,MZA 1125 - LT 1,ZONA I,681
679,-70.24370535,-17.98227471,MUR/HEX:1,1,220,156.88,4,1,MZA 1125 - LT 2,ZONA I,682
680,-70.24376151,-17.98222637,MUR/HEX:1,1,220,159.49,4,1,MZA 1125 - LT 3,ZONA I,683
681,-70.24381689,-17.98217824,MUR/HEX:1,1,220,161.39,4,1,MZA 1125 - LT 4,ZONA I,684
682,-70.24387228,-17.98212987,MUR/HEX:1,1,220,156.27,4,1,MZA 1125 - LT 5,ZONA I,685
683,-70.24392804,-17.98208182,MUR/HEX:1,1,220,160.93,4,1,MZA 1125 - LT 6,ZONA I,686
684,-70.243984,-17.98203366,MUR/HEX:1,1,220,155.63,4,1,MZA 1125 - LT 7,ZONA I,687
685,-70.2440408,-17.98198353,MUR/HEX:1,1,220,151.94,4,1,MZA 1125 - LT 8,ZONA I,688
686,-70.24391846,-17.98184818,MUR/HEX:1,1,220,154.5,4,1,MZA 1125 - LT 9,ZONA I,689
687,-70.24385992,-17.98189976,MUR/HEX:1,1,220,158.48,4,1,MZA 1125 - LT 10,ZONA I,690
688,-70.24380402,-17.9819479,MUR/HEX:1,1,220,165.38,4,1,MZA 1125 - LT 11,ZONA I,691
689,-70.24374831,-17.98199592,MUR/HEX:2,1,220,324.38,7,2,MZA 1125 - LT 12,ZONA I,692
690,-70.24369346,-17.98204384,MUR/HEX:2,1,220,316.22,7,2,MZA 1125 - LT 13,ZONA I,693
691,-70.24363896,-17.98209124,MUR/HEX:2,1,220,319.92,7,2,MZA 1125 - LT 14,ZONA I,694
692,-70.24358257,-17.9821398,MUR/HEX:1,1,220,154.97,4,1,MZA 1125 - LT 15,ZONA I,695
693,-70.24352501,-17.98219027,MUR/HEX:1,1,220,160.5,4,1,MZA 1125 - LT 16,ZONA I,696
694,-70.24333191,-17.98197994,MUR/HEX:2,1,220,262.44,6,1,MZA 1126 - LT 1,ZONA I,697
695,-70.24336871,-17.98192103,MUR/HEX:1,1,220,119.04,3,0,MZA 1126 - LT 2,ZONA I,698
696,-70.24340699,-17.98187048,MUR/HEX:1,1,220,124.66,3,0,MZA 1126 - LT 3,ZONA I,699
697,-70.24344522,-17.98181888,MUR/HEX:1,1,220,121.9,3,0,MZA 1126 - LT 4,ZONA I,700
698,-70.24348305,-17.9817672,MUR/HEX:1,1,220,123.14,3,0,MZA 1126 - LT 5,ZONA I,701
699,-70.24352079,-17.98171567,MUR/HEX:2,1,220,242.72,6,1,MZA 1126 - LT 6,ZONA I,702
700,-70.24355897,-17.98166437,MUR/HEX:3,1,220,367.8,8,2,MZA 1126 - LT 7,ZONA I,703
701,-70.24359673,-17.9816129,MUR/HEX:3,1,220,348.24,8,2,MZA 1126 - LT 8,ZONA I,704
702,-70.24363263,-17.98155543,MUR/HEX:1,1,220,149.68,3,0,MZA 1126 - LT 9,ZONA I,705
703,-70.24731271,-17.98732741,MUR/HEX:1,1,220,184.91,4,1,MZA 1127 - LT 1,ZONA I,706
704,-70.24724274,-17.98725787,MUR/HEX:1,1,220,141.56,3,0,MZA 1127 - LT 2,ZONA I,707
705,-70.24718076,-17.98718933,MUR/HEX:2,1,220,346.94,8,2,MZA 1127 - LT 3,ZONA I,708
706,-70.24728726,-17.98714269,MUR/HEX:1,1,220,166.64,4,1,MZA 1127 - LT 4,ZONA I,709
707,-70.24734636,-17.98709652,MUR/HEX:1,1,220,160.18,4,1,MZA 1127 - LT 5,ZONA I,710
708,-70.24740466,-17.98705121,MUR/HEX:1,1,220,159.51,4,1,MZA 1127 - LT 6,ZONA I,711
709,-70.24746267,-17.98700616,MUR/HEX:1,1,220,163.19,4,1,MZA 1127 - LT 7,ZONA I,712
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712,-70.24760839,-17.98713663,MUR/HEX:1,1,220,160.52,4,1,MZA 1127 - LT 10,ZONA I,715
713,-70.24754497,-17.98716829,MUR/HEX:1,1,220,153.07,4,1,MZA 1127 - LT 11,ZONA I,716
714,-70.24748018,-17.98721003,MUR/HEX:1,1,220,161.72,4,1,MZA 1127 - LT 12,ZONA I,717
715,-70.24740237,-17.98725403,MUR/HEX:1,1,220,162.17,4,1,MZA 1127 - LT 13,ZONA I,718
716,-70.24708013,-17.98702483,MUR/HEX:1,1,220,189.24,4,1,MZA 1128 - LT 1,ZONA I,719
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720,-70.24687168,-17.98680032,MUR/HEX:1,1,220,185.4,4,1,MZA 1128 - LT 5,ZONA I,723
721,-70.24682024,-17.98674369,MUR/HEX:2,1,220,403.04,9,2,MZA 1128 - LT 6,ZONA I,724
722,-70.24698403,-17.98670544,MUR/HEX:1,1,220,207.15,5,1,MZA 1128 - LT 7,ZONA I,725
723,-70.24704018,-17.98665791,MUR/HEX:1,1,220,199.24,5,1,MZA 1128 - LT 8,ZONA I,726
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726,-70.24730826,-17.98673128,MUR/HEX:1,1,220,178.01,4,1,MZA 1128 - LT 11,ZONA I,729
727,-70.24725253,-17.98678012,MUR/HEX:1,1,220,195.53,5,1,MZA 1128 - LT 12,ZONA I,730
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731,-70.24665196,-17.98656453,MUR/HEX:2,1,220,406.16,9,2,MZA 1129 - LT 2,ZONA I,734
732,-70.24660162,-17.98651031,MUR/HEX:1,1,220,192.18,4,1,MZA 1129 - LT 3,ZONA I,735
733,-70.24655131,-17.98645593,MUR/HEX:1,1,220,195.91,5,1,MZA 1129 - LT 4,ZONA I,736
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737,-70.24667923,-17.98626637,MUR/HEX:1,1,220,198.93,5,1,MZA 1129 - LT 8,ZONA I,740
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741,-70.24683206,-17.98643415,MUR/HEX:1,1,220,197.48,5,1,MZA 1129 - LT 13,ZONA I,745
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744,-70.24627447,-17.98614974,MUR/HEX:1,1,220,186.14,4,1,MZA 1130 - LT 2,ZONA I,748
745,-70.24622289,-17.98609143,MUR/HEX:1,1,220,189.21,4,1,MZA 1130 - LT 3,ZONA I,749
746,-70.24616938,-17.9860364,MUR/HEX:1,1,220,189.21,4,1,MZA 1130 - LT 4,ZONA I,750

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748,-70.24606671,-17.98591954,MUR/HEX:1,1,220,206.79,5,1,MZA 1130 - LT 6,ZONA I,752
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750,-70.24628556,-17.98583035,MUR/HEX:2,1,220,398.44,9,2,MZA 1130 - LT 8,ZONA I,754
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754,-70.24649659,-17.98595517,MUR/HEX:1,1,220,194.72,4,1,MZA 1130 - LT 12,ZONA I,758
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774,-70.24564998,-17.98507751,MUR/HEX:1,1,220,200.33,5,1,MZA 1132 - LT 7,ZONA I,778
775,-70.24572159,-17.98501956,MUR/HEX:1,1,220,192.86,4,1,MZA 1132 - LT 8,ZONA I,779
776,-70.24584679,-17.98515395,MUR/HEX:1,1,220,185.69,4,1,MZA 1132 - LT 9,ZONA I,780
777,-70.24577634,-17.98521308,MUR/HEX:1,1,220,193.25,4,1,MZA 1132 - LT 10,ZONA I,781
778,-70.24570564,-17.9852721,MUR/HEX:1,1,220,197.01,5,1,MZA 1132 - LT 11,ZONA I,782
779,-70.24502616,-17.98479732,MUR/HEX:1,1,220,185.63,4,1,MZA 1134 - LT 1,ZONA I,783
780,-70.24497438,-17.9847394,MUR/HEX:1,1,220,211.98,5,1,MZA 1134 - LT 2,ZONA I,784
781,-70.24492318,-17.9846814,MUR/HEX:1,1,220,209.33,5,1,MZA 1134 - LT 3,ZONA I,785
782,-70.24487025,-17.98462624,MUR/HEX:1,1,220,208.45,5,1,MZA 1134 - LT 4,ZONA I,786
783,-70.24482114,-17.98457167,MUR/HEX:2,1,220,395.74,9,2,MZA 1134 - LT 5,ZONA I,787
784,-70.24476985,-17.98451319,MUR/HEX:1,1,220,191.61,4,1,MZA 1134 - LT 6,ZONA I,788
785,-70.24493201,-17.9844722,MUR/HEX:1,1,220,193.21,4,1,MZA 1134 - LT 7,ZONA I,789
786,-70.24498733,-17.98442431,MUR/HEX:1,1,220,196.63,5,1,MZA 1134 - LT 8,ZONA I,790
787,-70.24504301,-17.98437699,MUR/HEX:1,1,220,192.74,4,1,MZA 1134 - LT 9,ZONA I,791
788,-70.24510034,-17.98432913,MUR/HEX:1,1,220,177.4,4,1,MZA 1134 - LT 10,ZONA I,792
789,-70.24525555,-17.98449828,MUR/HEX:1,1,220,178.57,4,1,MZA 1134 - LT 11,ZONA I,793
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791,-70.24514526,-17.98459554,MUR/HEX:1,1,220,202.76,5,1,MZA 1134 - LT 13,ZONA I,795
792,-70.24508844,-17.9846446,MUR/HEX:1,1,220,196.76,5,1,MZA 1134 - LT 14,ZONA I,796
793,-70.24464942,-17.98437732,MUR/HEX:1,1,220,189.85,4,1,MZA 1135 - LT 1,ZONA I,797
794,-70.24459857,-17.98432198,MUR/HEX:1,1,220,209.9,5,1,MZA 1135 - LT 2,ZONA I,798
795,-70.24454715,-17.98426482,MUR/HEX:1,1,220,195.89,5,1,MZA 1135 - LT 3,ZONA I,799
796,-70.24449356,-17.9842113,MUR/HEX:1,1,220,211.26,5,1,MZA 1135 - LT 4,ZONA I,800
797,-70.24444457,-17.98415609,MUR/HEX:1,1,220,213.28,5,1,MZA 1135 - LT 5,ZONA I,801
798,-70.24439286,-17.98409705,MUR/HEX:2,1,220,399.34,9,2,MZA 1135 - LT 6,ZONA I,802
799,-70.24455178,-17.9840531,MUR/HEX:1,1,220,199.19,5,1,MZA 1135 - LT 7,ZONA I,803
800,-70.24460611,-17.98400601,MUR/HEX:1,1,220,204.1,5,1,MZA 1135 - LT 8,ZONA I,804
801,-70.24465837,-17.9839572,MUR/HEX:1,1,220,198.84,5,1,MZA 1135 - LT 9,ZONA I,805
802,-70.24471431,-17.98390715,MUR/HEX:1,1,220,188.5,4,1,MZA 1135 - LT 10,ZONA I,806
803,-70.24487299,-17.98407579,MUR/HEX:2,1,220,360.96,8,2,MZA 1135 - LT 11,ZONA I,807
804,-70.24481801,-17.9841251,MUR/HEX:1,1,220,189.14,4,1,MZA 1135 - LT 12,ZONA I,808
805,-70.24476418,-17.9841744,MUR/HEX:1,1,220,195.78,5,1,MZA 1135 - LT 13,ZONA I,809
806,-70.24470824,-17.98422245,MUR/HEX:1,1,220,190.23,4,1,MZA 1135 - LT 14,ZONA I,810
807,-70.24426593,-17.98396417,MUR/HEX:1,1,220,196.08,5,1,MZA 1136 - LT 1,ZONA I,811
808,-70.24421763,-17.98390806,MUR/HEX:1,1,220,187.15,4,1,MZA 1136 - LT 2,ZONA I,812
809,-70.24416609,-17.98384883,MUR/HEX:1,1,220,217.93,5,1,MZA 1136 - LT 3,ZONA I,813
810,-70.24411085,-17.9837966,MUR/HEX:1,1,220,195.47,5,1,MZA 1136 - LT 4,ZONA I,814
811,-70.24406295,-17.98374081,MUR/HEX:1,1,220,207.77,5,1,MZA 1136 - LT 5,ZONA I,815
812,-70.24401104,-17.9836809,MUR/HEX:1,1,220,190.81,4,1,MZA 1136 - LT 6,ZONA I,816
813,-70.24416769,-17.98363756,MUR/HEX:1,1,220,190.77,4,1,MZA 1136 - LT 7,ZONA I,817
814,-70.24422071,-17.98358884,MUR/HEX:1,1,220,193.52,4,1,MZA 1136 - LT 8,ZONA I,818
815,-70.24427363,-17.98353966,MUR/HEX:1,1,220,191.67,4,1,MZA 1136 - LT 9,ZONA I,819
816,-70.244328,-17.98349109,MUR/HEX:1,1,220,183.73,4,1,MZA 1136 - LT 10,ZONA I,820
817,-70.24448246,-17.98365778,MUR/HEX:1,1,220,186.68,4,1,MZA 1136 - LT 11,ZONA I,821

818,-70.24442823,-17.98370562,MUR/HEX:1,1,220,192.18,4,1,MZA 1136 - LT 12,ZONA I,822
819,-70.24437574,-17.98375487,MUR/HEX:2,1,220,395.34,9,2,MZA 1136 - LT 13,ZONA I,823
820,-70.24432258,-17.98380486,MUR/HEX:1,1,220,192.68,4,1,MZA 1136 - LT 14,ZONA I,824
821,-70.2438513,-17.98356966,MUR/HEX:1,1,220,191.39,4,1,MZA 1137 - LT 1,ZONA I,825
822,-70.24382792,-17.98348887,MUR/HEX:1,1,220,200.85,5,1,MZA 1137 - LT 2,ZONA I,826
823,-70.24377654,-17.98343247,MUR/HEX:1,1,220,197.66,5,1,MZA 1137 - LT 3,ZONA I,827
824,-70.24371533,-17.98338242,MUR/HEX:1,1,220,194.58,4,1,MZA 1137 - LT 4,ZONA I,828
825,-70.24367386,-17.98332197,MUR/HEX:1,1,220,196.49,5,1,MZA 1137 - LT 5,ZONA I,829
826,-70.24364144,-17.9832456,MUR/HEX:1,1,220,219.31,5,1,MZA 1137 - LT 6,ZONA I,830
827,-70.24378104,-17.98322116,MUR/HEX:1,1,220,195.29,5,1,MZA 1137 - LT 7,ZONA I,831
828,-70.24383562,-17.98317213,MUR/HEX:1,1,220,199.28,5,1,MZA 1137 - LT 8,ZONA I,832
829,-70.24388892,-17.98312261,MUR/HEX:1,1,220,190.54,4,1,MZA 1137 - LT 9,ZONA I,833
830,-70.24394302,-17.98307301,MUR/HEX:1,1,220,191.93,4,1,MZA 1137 - LT 10,ZONA I,834
831,-70.24410012,-17.98324358,MUR/HEX:1,1,220,186.27,4,1,MZA 1137 - LT 11,ZONA I,835
832,-70.24404525,-17.98329189,MUR/HEX:1,1,220,184.11,4,1,MZA 1137 - LT 12,ZONA I,836
833,-70.24399091,-17.98334079,MUR/HEX:1,1,220,193.12,4,1,MZA 1137 - LT 13,ZONA I,837
834,-70.24393598,-17.98338948,MUR/HEX:1,1,220,187.7,4,1,MZA 1137 - LT 14,ZONA I,838
835,-70.24345604,-17.98316061,MUR/HEX:1,1,220,200.36,5,1,MZA 1138 - LT 1,ZONA I,839
836,-70.24344056,-17.98307283,MUR/HEX:1,1,220,187.26,4,1,MZA 1138 - LT 2,ZONA I,840
837,-70.24338664,-17.98301729,MUR/HEX:1,1,220,210.59,5,1,MZA 1138 - LT 3,ZONA I,841
838,-70.24333228,-17.98296347,MUR/HEX:1,1,220,184.91,4,1,MZA 1138 - LT 4,ZONA I,842
839,-70.24328043,-17.98290883,MUR/HEX:2,1,220,387.78,9,2,MZA 1138 - LT 5,ZONA I,843
840,-70.24322663,-17.98285159,MUR/HEX:1,1,220,189.46,4,1,MZA 1138 - LT 6,ZONA I,844
841,-70.24338496,-17.98280551,MUR/HEX:1,1,220,185.75,4,1,MZA 1138 - LT 7,ZONA I,845
842,-70.24343942,-17.98275854,MUR/HEX:1,1,220,188.06,4,1,MZA 1138 - LT 8,ZONA I,846
843,-70.24349574,-17.98270737,MUR/HEX:1,1,220,182.63,4,1,MZA 1138 - LT 9,ZONA I,847
844,-70.24355366,-17.98265251,MUR/HEX:2,1,220,355.98,8,2,MZA 1138 - LT 10,ZONA I,848
845,-70.24370938,-17.98281899,MUR/HEX:1,1,220,185.72,4,1,MZA 1138 - LT 11,ZONA I,849
846,-70.24365433,-17.98287328,MUR/HEX:1,1,220,189.85,4,1,MZA 1138 - LT 12,ZONA I,850
847,-70.24360079,-17.9829225,MUR/HEX:1,1,220,198.37,5,1,MZA 1138 - LT 13,ZONA I,851
848,-70.24355272,-17.98297241,MUR/HEX:1,1,220,193.7,4,1,MZA 1138 - LT 14,ZONA I,852
849,-70.24417077,-17.98438078,MUR/HEX:1,1,220,175.43,4,1,MZA 1140 - LT 1,ZONA I,854
850,-70.24408858,-17.9844841,MUR/HEX:1,1,220,187.96,4,1,MZA 1140 - LT 2,ZONA I,855
851,-70.2438616,-17.98408477,MUR/HEX:1,1,220,224.42,5,1,MZA 1141 - LT 1,ZONA I,856
852,-70.24394044,-17.984155,MUR/HEX:1,1,220,229.21,5,1,MZA 1141 - LT 2,ZONA I,857
853,-70.24403592,-17.98423555,MUR/HEX:1,1,220,219.86,5,1,MZA 1141 - LT 3,ZONA I,858
854,-70.24395253,-17.98430878,MUR/HEX:1,1,220,177.7,4,1,MZA 1141 - LT 4,ZONA I,859
855,-70.24389642,-17.98437914,MUR/HEX:1,1,220,182.51,4,1,MZA 1141 - LT 5,ZONA I,860
856,-70.24375651,-17.98427675,MUR/HEX:1,1,220,178.82,4,1,MZA 1141 - LT 6,ZONA I,861
857,-70.24381301,-17.98420541,MUR/HEX:1,1,220,171.76,4,1,MZA 1141 - LT 7,ZONA I,862
858,-70.24365786,-17.98385108,MUR/HEX:1,1,220,151.2,3,0,MZA 1142 - LT 1,ZONA I,863
859,-70.24371655,-17.98389969,MUR/HEX:1,1,220,148.39,3,0,MZA 1142 - LT 2,ZONA I,864
860,-70.24376796,-17.98395084,MUR/HEX:1,1,220,148.39,3,0,MZA 1142 - LT 3,ZONA I,865
861,-70.24364426,-17.98398762,MUR/HEX:2,1,220,327.08,8,2,MZA 1142 - LT 4,ZONA I,866
862,-70.24360713,-17.98403996,MUR/HEX:1,1,220,166.84,4,1,MZA 1142 - LT 5,ZONA I,867
863,-70.24356484,-17.98409007,MUR/HEX:1,1,220,168.3,4,1,MZA 1142 - LT 6,ZONA I,868
864,-70.24352805,-17.9841431,MUR/HEX:2,1,220,320.08,7,2,MZA 1142 - LT 7,ZONA I,869
865,-70.2433174,-17.98347934,MUR/HEX:1,1,220,149.8,3,0,MZA 1143 - LT 1,ZONA I,870
866,-70.24338874,-17.98353639,MUR/HEX:2,1,220,322.7,2,MZA 1143 - LT 2,ZONA I,871
867,-70.24346829,-17.98360131,MUR/HEX:1,1,220,100.97,2,0,MZA 1143 - LT 3,ZONA I,872
868,-70.24355567,-17.98367371,MUR/HEX:1,1,220,118.8,3,0,MZA 1143 - LT 4,ZONA I,873
869,-70.24348067,-17.98371753,MUR/HEX:1,1,220,170.73,4,1,MZA 1143 - LT 5,ZONA I,874
870,-70.24343972,-17.98376919,MUR/HEX:1,1,220,157.02,4,1,MZA 1143 - LT 6,ZONA I,875
871,-70.2434012,-17.98382081,MUR/HEX:1,1,220,160.9,4,1,MZA 1143 - LT 7,ZONA I,876
872,-70.24336284,-17.98387211,MUR/HEX:1,1,220,161.15,4,1,MZA 1143 - LT 8,ZONA I,877
873,-70.24332454,-17.98392339,MUR/HEX:1,1,220,156.93,4,1,MZA 1143 - LT 9,ZONA I,878
874,-70.24328404,-17.98397593,MUR/HEX:1,1,220,160.82,4,1,MZA 1143 - LT 10,ZONA I,879
875,-70.24310909,-17.98385914,MUR/HEX:1,1,220,159.51,4,1,MZA 1143 - LT 11,ZONA I,880
876,-70.24314648,-17.98380714,MUR/HEX:1,1,220,160.49,4,1,MZA 1143 - LT 12,ZONA I,881
877,-70.24318513,-17.98375588,MUR/HEX:1,1,220,162.11,4,1,MZA 1143 - LT 13,ZONA I,882
878,-70.24322365,-17.9837048,MUR/HEX:1,1,220,161.45,4,1,MZA 1143 - LT 14,ZONA I,883
879,-70.24326341,-17.98365492,MUR/HEX:2,1,220,316.4,7,2,MZA 1143 - LT 15,ZONA I,884
880,-70.24330487,-17.98360391,MUR/HEX:1,1,220,171.4,4,1,MZA 1143 - LT 16,ZONA I,885
881,-70.2429434,-17.98313814,MUR/HEX:2,1,220,386.32,9,2,MZA 1144 - LT 1,ZONA I,886
882,-70.24301708,-17.98319659,MUR/HEX:1,1,220,197.14,5,1,MZA 1144 - LT 2,ZONA I,887
883,-70.24309448,-17.98325858,MUR/HEX:1,1,220,175.31,4,1,MZA 1144 - LT 3,ZONA I,888
884,-70.24318217,-17.98333859,MUR/HEX:1,1,220,213.7,5,1,MZA 1144 - LT 4,ZONA I,889
885,-70.24309835,-17.98339054,MUR/HEX:1,1,220,213.7,5,1,MZA 1144 - LT 5,ZONA I,890
886,-70.24306094,-17.983442,MUR/HEX:2,1,220,319.84,7,2,MZA 1144 - LT 6,ZONA I,891
887,-70.24302353,-17.98349236,MUR/HEX:2,1,220,319.88,7,2,MZA 1144 - LT 7,ZONA I,892
888,-70.24298628,-17.98354203,MUR/HEX:1,1,220,161.53,4,1,MZA 1144 - LT 8,ZONA I,893

889,-70.24294863,-17.98359238,MUR/HEX:1,1,220,165.49,4,1,MZA 1144 - LT 9,ZONA I,894
890,-70.24291015,-17.98364392,MUR/HEX:1,1,220,163.69,4,1,MZA 1144 - LT 10,ZONA I,895
891,-70.24287119,-17.9836949,MUR/HEX:1,1,220,164.04,4,1,MZA 1144 - LT 11,ZONA I,896
892,-70.24269564,-17.98357663,MUR/HEX:1,1,220,165.77,4,1,MZA 1144 - LT 12,ZONA I,897
893,-70.24273312,-17.98352445,MUR/HEX:1,1,220,164.79,4,1,MZA 1144 - LT 13,ZONA I,898
894,-70.24277129,-17.98347308,MUR/HEX:1,1,220,163.35,4,1,MZA 1144 - LT 14,ZONA I,899
895,-70.24280804,-17.98342176,MUR/HEX:1,1,220,166.55,4,1,MZA 1144 - LT 15,ZONA I,900
896,-70.24284554,-17.98337126,MUR/HEX:1,1,220,161.35,4,1,MZA 1144 - LT 16,ZONA I,901
897,-70.24288341,-17.98332066,MUR/HEX:1,1,220,163.31,4,1,MZA 1144 - LT 17,ZONA I,902
898,-70.2429219,-17.98326969,MUR/HEX:1,1,220,164.45,4,1,MZA 1144 - LT 18,ZONA I,903
899,-70.24266906,-17.98324396,MUR/HEX:1,1,220,176.81,4,1,MZA 1146 - LT 1,ZONA I,904
900,-70.24255276,-17.98339723,MUR/HEX:1,1,220,183.49,4,1,MZA 1146 - LT 2,ZONA I,905
901,-70.2424098,-17.98337654,MUR/HEX:1,1,220,162.17,4,1,MZA 1146 - LT 3,ZONA I,906
902,-70.24245481,-17.98331575,MUR/HEX:1,1,220,162.41,4,1,MZA 1146 - LT 4,ZONA I,907
903,-70.24250027,-17.98325521,MUR/HEX:1,1,220,163.99,4,1,MZA 1146 - LT 5,ZONA I,908
904,-70.24254397,-17.98319394,MUR/HEX:1,1,220,153.51,4,1,MZA 1146 - LT 6,ZONA I,909
905,-70.24259079,-17.98313153,MUR/HEX:1,1,220,165.09,4,1,MZA 1146 - LT 7,ZONA I,910
906,-70.24312321,-17.98408664,MUR/HEX:1,1,220,104.93,2,0,MZA 1149 - LT 1,ZONA I,911
907,-70.24317788,-17.98412212,MUR/HEX:1,1,220,115.3,3,0,MZA 1149 - LT 2,ZONA I,912
908,-70.24323453,-17.98415862,MUR/HEX:1,1,220,121.95,3,0,MZA 1149 - LT 3,ZONA I,913
909,-70.24328661,-17.98419356,MUR/HEX:1,1,220,107.81,2,0,MZA 1149 - LT 4,ZONA I,914
910,-70.24334111,-17.98422902,MUR/HEX:1,1,220,123.51,3,0,MZA 1149 - LT 5,ZONA I,915
911,-70.24339631,-17.98426463,MUR/HEX:1,1,220,119.69,3,0,MZA 1149 - LT 6,ZONA I,916
912,-70.24345101,-17.98430068,MUR/HEX:3,1,220,361.02,8,2,MZA 1149 - LT 7,ZONA I,917
913,-70.24350521,-17.98433656,MUR/HEX:1,1,220,112.45,3,0,MZA 1149 - LT 8,ZONA I,918
914,-70.24355994,-17.98437169,MUR/HEX:1,1,220,128.23,3,0,MZA 1149 - LT 9,ZONA I,919
915,-70.24361424,-17.98440715,MUR/HEX:1,1,220,111.69,3,0,MZA 1149 - LT 10,ZONA I,920
916,-70.24366906,-17.98444302,MUR/HEX:2,1,220,237.54,5,1,MZA 1149 - LT 11,ZONA I,921
917,-70.24372383,-17.98447892,MUR/HEX:1,1,220,112.18,3,0,MZA 1149 - LT 12,ZONA I,922
918,-70.24377812,-17.98451429,MUR/HEX:2,1,220,214.02,5,1,MZA 1149 - LT 13,ZONA I,923
919,-70.24383238,-17.98454977,MUR/HEX:1,1,220,118.48,3,0,MZA 1149 - LT 14,ZONA I,924
920,-70.24388682,-17.98458552,MUR/HEX:1,1,220,123.33,3,0,MZA 1149 - LT 15,ZONA I,925
921,-70.24394216,-17.98462098,MUR/HEX:1,1,220,113.8,3,0,MZA 1149 - LT 16,ZONA I,926
922,-70.24399753,-17.98465756,MCF/LWAL+DNO/HEX:1/RES,1,220,132.59,3,0,MZA 1149 - LT 17,ZONA I,927
923,-70.24224857,-17.98350364,MUR/HEX:1,1,220,145.57,3,0,MZA 1150 - LT 1,ZONA I,928
924,-70.24230376,-17.98353888,MUR/HEX:1,1,220,129.89,3,0,MZA 1150 - LT 2,ZONA I,929
925,-70.24235731,-17.98357436,MUR/HEX:1,1,220,131.82,3,0,MZA 1150 - LT 3,ZONA I,930
926,-70.24241096,-17.98361115,MUR/HEX:1,1,220,133.67,3,0,MZA 1150 - LT 4,ZONA I,931
927,-70.24246662,-17.98364932,MUR/HEX:1,1,220,144.19,3,0,MZA 1150 - LT 5,ZONA I,932
928,-70.24251866,-17.98368539,MUR/HEX:2,1,220,272.5,6,1,MZA 1150 - LT 6,ZONA I,933
929,-70.24257345,-17.98372181,MUR/HEX:1,1,220,135.53,3,0,MZA 1150 - LT 7,ZONA I,934
930,-70.24262797,-17.98375822,MUR/HEX:1,1,220,145.4,3,0,MZA 1150 - LT 8,ZONA I,935
931,-70.24268331,-17.983793,MUR/HEX:1,1,220,138.9,3,0,MZA 1150 - LT 9,ZONA I,936
932,-70.24273841,-17.98382727,MUR/HEX:2,1,220,258.72,6,1,MZA 1150 - LT 10,ZONA I,937
933,-70.24279316,-17.98386302,MUR/HEX:1,1,220,133.88,3,0,MZA 1150 - LT 11,ZONA I,938
934,-70.24284697,-17.98390065,MUR/HEX:1,1,220,130.11,3,0,MZA 1150 - LT 12,ZONA I,939
935,-70.24289997,-17.98393767,MUR/HEX:1,1,220,139.4,3,0,MZA 1150 - LT 13,ZONA I,940
936,-70.24295408,-17.98397444,MUR/HEX:1,1,220,125.74,3,0,MZA 1150 - LT 14,ZONA I,941
937,-70.24300862,-17.98401222,MUR/HEX:2,1,220,290.18,7,2,MZA 1150 - LT 15,ZONA I,942
938,-70.24389597,-17.98504086,MUR/HEX:1,1,220,138.92,3,0,MZA 1151 - LT 1,ZONA I,943
939,-70.24395019,-17.98507774,MUR/HEX:1,1,220,130.28,3,0,MZA 1151 - LT 2,ZONA I,944
940,-70.2440031,-17.98511576,MUR/HEX:1,1,220,115.12,3,0,MZA 1151 - LT 3,ZONA I,945
941,-70.24405668,-17.98515188,MUR/HEX:1,1,220,121.2,3,0,MZA 1151 - LT 4,ZONA I,946
942,-70.24411081,-17.98518767,MUR/HEX:1,1,220,123.68,3,0,MZA 1151 - LT 5,ZONA I,947
943,-70.24416416,-17.98522481,MUR/HEX:1,1,220,117.25,3,0,MZA 1151 - LT 6,ZONA I,948
944,-70.24421949,-17.98526045,MUR/HEX:1,1,220,117.25,3,0,MZA 1151 - LT 7,ZONA I,949
945,-70.24427338,-17.98529754,MUR/HEX:3,1,220,344.46,8,2,MZA 1151 - LT 8,ZONA I,950
946,-70.2443346,-17.98532855,MUR/HEX:1,1,220,108.29,2,0,MZA 1151 - LT 9,ZONA I,951
947,-70.2443905,-17.98536041,MUR/HEX:1,1,220,115.74,3,0,MZA 1151 - LT 10,ZONA I,952
948,-70.24444744,-17.98539516,MUR/HEX:1,1,220,114.48,3,0,MZA 1151 - LT 11,ZONA I,953
949,-70.24449634,-17.98543656,MUR/HEX:1,1,220,111.47,3,0,MZA 1151 - LT 12,ZONA I,954
950,-70.24454851,-17.98547799,MUR/HEX:1,1,220,108.47,3,0,MZA 1151 - LT 13,ZONA I,955
951,-70.24460088,-17.98550928,MUR/HEX:1,1,220,111.65,3,0,MZA 1151 - LT 14,ZONA I,956
952,-70.2446543,-17.985546,MUR/HEX:1,1,220,98.12,2,0,MZA 1151 - LT 15,ZONA I,957
953,-70.2447054,-17.98558384,MUR/HEX:1,1,220,107.45,2,0,MZA 1151 - LT 16,ZONA I,958
954,-70.24476435,-17.98562621,MUR/HEX:1,1,220,121.24,3,0,MZA 1151 - LT 17,ZONA I,959
955,-70.24401256,-17.98498142,MUR/HEX:1,1,220,131.7,3,0,MZA 1151 - LT 18,ZONA I,960
956,-70.24405536,-17.9849272,MUR/HEX:2,1,220,290.9,7,2,MZA 1151 - LT 19,ZONA I,961
957,-70.24413794,-17.98503235,MUR/HEX:1,1,220,135.28,3,0,MZA 1151 - LT 20,ZONA I,962
958,-70.24420024,-17.9850767,MUR/HEX:1,1,220,105.52,2,0,MZA 1151 - LT 21,ZONA I,963
959,-70.24425552,-17.98511582,MUR/HEX:1,1,220,103.65,2,0,MZA 1151 - LT 22,ZONA I,964

960,-70.24431129,-17.985152,MUR/HEX:1,1,220,110.12,3,0,MZA 1151 - LT 23,ZONA I,965
961,-70.24436341,-17.98519069,MUR/HEX:2,1,220,211.1,5,1,MZA 1151 - LT 24,ZONA I,966
962,-70.24442104,-17.98522039,MUR/HEX:1,1,220,100.63,2,0,MZA 1151 - LT 25,ZONA I,967
963,-70.24448255,-17.98525481,MUR/HEX:1,1,220,105.77,2,0,MZA 1151 - LT 26,ZONA I,968
964,-70.24453839,-17.98529336,MUR/HEX:2,1,220,199.56,5,1,MZA 1151 - LT 27,ZONA I,969
965,-70.24459327,-17.98533845,MUR/HEX:1,1,220,98.24,2,0,MZA 1151 - LT 28,ZONA I,970
966,-70.24464335,-17.98537234,MUR/HEX:1,1,220,100.02,2,0,MZA 1151 - LT 29,ZONA I,971
967,-70.24469646,-17.98541059,MUR/HEX:1,1,220,97.81,2,0,MZA 1151 - LT 30,ZONA I,972
968,-70.24475602,-17.98545029,MUR/HEX:2,1,220,175.86,4,1,MZA 1151 - LT 31,ZONA I,973
969,-70.244802,-17.98548678,MUR/HEX:1,1,220,100.58,2,0,MZA 1151 - LT 32,ZONA I,974
970,-70.24485635,-17.98552864,MUR/HEX:1,1,220,116.43,3,0,MZA 1151 - LT 33,ZONA I,975
971,-70.24289924,-17.98440346,MUR/HEX:1,1,220,122.09,3,0,MZA 1152 - LT 1,ZONA I,976
972,-70.24295388,-17.98443887,MUR/HEX:1,1,220,114.9,3,0,MZA 1152 - LT 2,ZONA I,977
973,-70.2430083,-17.98447427,MUR/HEX:1,1,220,126.71,3,0,MZA 1152 - LT 3,ZONA I,978
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975,-70.24311809,-17.98454547,MUR/HEX:1,1,220,117.31,3,0,MZA 1152 - LT 5,ZONA I,980
976,-70.24317257,-17.98458117,MUR/HEX:1,1,220,117.86,3,0,MZA 1152 - LT 6,ZONA I,981
977,-70.24322704,-17.98461629,MUR/HEX:1,1,220,113.98,3,0,MZA 1152 - LT 7,ZONA I,982
978,-70.24328133,-17.98465186,MUR/HEX:2,1,220,246.58,6,1,MZA 1152 - LT 8,ZONA I,983
979,-70.24333627,-17.9846875,MUR/HEX:2,1,220,225.02,5,1,MZA 1152 - LT 9,ZONA I,984
980,-70.24339086,-17.98472274,MUR/HEX:1,1,220,112.08,3,0,MZA 1152 - LT 10,ZONA I,985
981,-70.24344545,-17.98475839,MUR/HEX:1,1,220,115.2,3,0,MZA 1152 - LT 11,ZONA I,986
982,-70.2435004,-17.98479409,MUR/HEX:1,1,220,132.34,3,0,MZA 1152 - LT 12,ZONA I,987
983,-70.24355505,-17.98482959,MUR/HEX:1,1,220,112.85,3,0,MZA 1152 - LT 13,ZONA I,988
984,-70.24360941,-17.98486495,MUR/HEX:1,1,220,111.68,3,0,MZA 1152 - LT 14,ZONA I,989
985,-70.24366402,-17.98490044,MUR/HEX:1,1,220,129.63,3,0,MZA 1152 - LT 15,ZONA I,990
986,-70.24371918,-17.98493592,MUR/HEX:1,1,220,108.8,3,0,MZA 1152 - LT 16,ZONA I,991
987,-70.243774,-17.98497187,MUR/HEX:2,1,220,228.06,5,1,MZA 1152 - LT 17,ZONA I,992
988,-70.2438599,-17.98485235,MUR/HEX:1,1,220,115.52,3,0,MZA 1152 - LT 18,ZONA I,993
989,-70.24380456,-17.98481611,MUR/HEX:2,1,220,224.18,5,1,MZA 1152 - LT 19,ZONA I,994
990,-70.24374892,-17.98478038,MUR/HEX:1,1,220,127.57,3,0,MZA 1152 - LT 20,ZONA I,995
991,-70.24369452,-17.98474508,MUR/HEX:1,1,220,112.84,3,0,MZA 1152 - LT 21,ZONA I,996
992,-70.2436403,-17.98470986,MUR/HEX:1,1,220,118.15,3,0,MZA 1152 - LT 22,ZONA I,997
993,-70.2435857,-17.98467444,MUR/HEX:1,1,220,125.56,3,0,MZA 1152 - LT 23,ZONA I,998
994,-70.24353082,-17.98463884,MUR/HEX:2,1,220,224.82,5,1,MZA 1152 - LT 24,ZONA I,999
995,-70.24347599,-17.98460309,MUR/HEX:1,1,220,114.76,3,0,MZA 1152 - LT 25,ZONA I,1000
996,-70.24342126,-17.98456781,MUR/HEX:1,1,220,110.36,3,0,MZA 1152 - LT 26,ZONA I,1001
997,-70.2433667,-17.98453247,MUR/HEX:1,1,220,118.5,3,0,MZA 1152 - LT 27,ZONA I,1002
998,-70.24331235,-17.98449691,MUR/HEX:1,1,220,112.16,3,0,MZA 1152 - LT 28,ZONA I,1003
999,-70.24325778,-17.98446177,MUR/HEX:1,1,220,115.04,3,0,MZA 1152 - LT 29,ZONA I,1004
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1001,-70.24314809,-17.98439065,MUR/HEX:2,1,220,230.5,5,1,MZA 1152 - LT 31,ZONA I,1006
1002,-70.24309349,-17.98435503,MUR/HEX:2,1,220,248.1,6,1,MZA 1152 - LT 32,ZONA I,1007
1003,-70.2430388,-17.9843195,MUR/HEX:1,1,220,107.23,2,0,MZA 1152 - LT 33,ZONA I,1008
1004,-70.24298399,-17.98428404,MUR/HEX:1,1,220,110.25,3,0,MZA 1152 - LT 34,ZONA I,1009
1005,-70.24201626,-17.98383057,MUR/HEX:1,1,220,129.39,3,0,MZA 1153 - LT 1,ZONA I,1010
1006,-70.24207125,-17.98386632,MUR/HEX:2,1,220,257.36,6,1,MZA 1153 - LT 2,ZONA I,1011
1007,-70.2421263,-17.9839022,MUR/HEX:1,1,220,127.73,3,0,MZA 1153 - LT 3,ZONA I,1012
1008,-70.24218132,-17.98393796,MUR/HEX:2,1,220,230.9,5,1,MZA 1153 - LT 4,ZONA I,1013
1009,-70.24223614,-17.98397357,MUR/HEX:1,1,220,124.82,3,0,MZA 1153 - LT 5,ZONA I,1014
1010,-70.24229099,-17.98400919,MUR/HEX:1,1,220,119.1,3,0,MZA 1153 - LT 6,ZONA I,1015
1011,-70.24234544,-17.98404428,MUR/HEX:1,1,220,120.06,3,0,MZA 1153 - LT 7,ZONA I,1016
1012,-70.24239937,-17.98407947,MUR/HEX:1,1,220,123.26,3,0,MZA 1153 - LT 8,ZONA I,1017
1013,-70.24245329,-17.98411489,MUR/HEX:2,1,220,240.06,6,1,MZA 1153 - LT 9,ZONA I,1018
1014,-70.24250784,-17.98414987,MUR/HEX:1,1,220,112.37,3,0,MZA 1153 - LT 10,ZONA I,1019
1015,-70.24256266,-17.9841856,MUR/HEX:1,1,220,124.61,3,0,MZA 1153 - LT 11,ZONA I,1020
1016,-70.24261746,-17.98422124,MUR/HEX:2,1,220,235.96,5,1,MZA 1153 - LT 12,ZONA I,1021
1017,-70.24267242,-17.98425694,MUR/HEX:1,1,220,126.4,3,0,MZA 1153 - LT 13,ZONA I,1022
1018,-70.24272738,-17.98429265,MUR/HEX:1,1,220,117.12,3,0,MZA 1153 - LT 14,ZONA I,1023
1019,-70.24278237,-17.98432822,MUR/HEX:1,1,220,118.04,3,0,MZA 1153 - LT 15,ZONA I,1024
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1028,-70.24243031,-17.98392411,MUR/HEX:1,1,220,120.58,3,0,MZA 1153 - LT 24,ZONA I,1033
1029,-70.24237561,-17.98388886,MUR/HEX:1,1,220,114.84,3,0,MZA 1153 - LT 25,ZONA I,1034
1030,-70.24232107,-17.98385344,MUR/HEX:1,1,220,118.45,3,0,MZA 1153 - LT 26,ZONA I,1035

1031,-70.24226662,-17.98381808,MUR/HEX:1,1,220,109.69,3,0,MZA 1153 - LT 27,ZONA I,1036
1032,-70.24221196,-17.98378254,MUR/HEX:1,1,220,123.4,3,0,MZA 1153 - LT 28,ZONA I,1037
1033,-70.242157,-17.98374672,MUR/HEX:2,1,220,231.72,5,1,MZA 1153 - LT 29,ZONA I,1038
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1035,-70.24412205,-17.98572458,MUR/HEX:2,1,220,419.14,10,3,MZA 1156 - LT 1,ZONA I,1042
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1037,-70.24399699,-17.98564265,MUR/HEX:2,1,220,360.66,8,2,MZA 1156 - LT 3,ZONA I,1044
1038,-70.24393464,-17.98560163,MUR/HEX:1,1,220,170.4,4,1,MZA 1156 - LT 4,ZONA I,1045
1039,-70.24387225,-17.98556047,MUR/HEX:2,1,220,355.46,8,2,MZA 1156 - LT 5,ZONA I,1046
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1041,-70.24374759,-17.98547857,MUR/HEX:2,1,220,333.78,8,2,MZA 1156 - LT 7,ZONA I,1048
1042,-70.24368508,-17.98543757,MUR/HEX:2,1,220,369.3,9,2,MZA 1156 - LT 8,ZONA I,1049
1043,-70.24362252,-17.98539636,MUR/HEX:1,1,220,164.73,4,1,MZA 1156 - LT 9,ZONA I,1050
1044,-70.24356004,-17.98535514,MUR/HEX:2,1,220,373.04,9,2,MZA 1156 - LT 10,ZONA I,1051
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1046,-70.24343611,-17.98527365,MUR/HEX:1,1,220,160.48,4,1,MZA 1156 - LT 12,ZONA I,1053
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1049,-70.24324934,-17.98515091,MUR/HEX:1,1,220,198.22,5,1,MZA 1156 - LT 15,ZONA I,1056
1050,-70.2433583,-17.98500012,MUR/HEX:1,1,220,173.35,4,1,MZA 1156 - LT 16,ZONA I,1057
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1052,-70.24348353,-17.98508242,MUR/HEX:1,1,220,189.64,4,1,MZA 1156 - LT 18,ZONA I,1059
1053,-70.24354532,-17.98512339,MUR/HEX:1,1,220,157.96,4,1,MZA 1156 - LT 19,ZONA I,1060
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1055,-70.24366926,-17.98520513,MUR/HEX:2,1,220,375.28,9,2,MZA 1156 - LT 21,ZONA I,1062
1056,-70.24373148,-17.98524629,MUR/HEX:1,1,220,154.36,4,1,MZA 1156 - LT 22,ZONA I,1063
1057,-70.2437935,-17.98528727,MUR/HEX:1,1,220,177.12,4,1,MZA 1156 - LT 23,ZONA I,1064
1058,-70.24385555,-17.9853281,MUR/HEX:2,1,220,333.26,8,2,MZA 1156 - LT 24,ZONA I,1065
1059,-70.24391765,-17.98536907,MUR/HEX:1,1,220,172.4,1,MZA 1156 - LT 25,ZONA I,1066
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1061,-70.24404224,-17.98545127,MUR/HEX:1,1,220,168.47,4,1,MZA 1156 - LT 27,ZONA I,1068
1062,-70.24410433,-17.98549224,MUR/HEX:1,1,220,175.25,4,1,MZA 1156 - LT 28,ZONA I,1069
1063,-70.2441664,-17.98553313,MUR/HEX:1,1,220,173.55,4,1,MZA 1156 - LT 29,ZONA I,1070
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1075,-70.24232572,-17.98455375,MUR/HEX:1,1,220,180.45,4,1,MZA 1157 - LT 11,ZONA I,1082
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1078,-70.24213831,-17.98443145,MUR/HEX:2,1,220,334.82,8,2,MZA 1157 - LT 14,ZONA I,1085
1079,-70.24207637,-17.98439116,MUR/HEX:2,1,220,321.02,7,2,MZA 1157 - LT 15,ZONA I,1086
1080,-70.24201431,-17.98435124,MUR/HEX:2,1,220,316.4,7,2,MZA 1157 - LT 16,ZONA I,1087
1081,-70.24195326,-17.98431104,MUR/HEX:2,1,220,328.66,8,2,MZA 1157 - LT 17,ZONA I,1088
1082,-70.24189159,-17.98427123,MUR/HEX:1,1,220,167.33,4,1,MZA 1157 - LT 18,ZONA I,1089
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1086,-70.24193537,-17.98408022,MUR/HEX:2,1,220,328.74,8,2,MZA 1157 - LT 22,ZONA I,1093
1087,-70.24199839,-17.98412069,MUR/HEX:1,1,220,165.44,4,1,MZA 1157 - LT 23,ZONA I,1094
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1089,-70.24212191,-17.98420119,MUR/HEX:1,1,220,156.06,4,1,MZA 1157 - LT 25,ZONA I,1096
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1091,-70.24224632,-17.98428163,MUR/HEX:1,1,220,164.84,4,1,MZA 1157 - LT 27,ZONA I,1098
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1180,-70.24563172,-17.9882011,MUR/HEX:1,1,220,272.5,6,1,MZA 1161 - LT 6,ZONA I,1187
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1402,-70.24173813,-17.98515536,MUR/HEX:2,1,220,397.58,9,2,MZA 1170 - LT 22,ZONA I,1409
1403,-70.2417921,-17.98508127,MUR/HEX:1,1,220,205.66,5,1,MZA 1170 - LT 23,ZONA I,1410
1404,-70.24184596,-17.9850054,MUR/HEX:1,1,220,202.22,5,1,MZA 1170 - LT 24,ZONA I,1411
1405,-70.2419008,-17.98492983,MUR/HEX:1,1,220,198.71,5,1,MZA 1170 - LT 25,ZONA I,1412
1406,-70.2419545,-17.98485543,MUR/HEX:1,1,220,199.3,5,1,MZA 1170 - LT 26,ZONA I,1413
1407,-70.24200795,-17.98478119,MUR/HEX:2,1,220,402.1,9,2,MZA 1170 - LT 27,ZONA I,1414
1408,-70.24206146,-17.98470667,MUR/HEX:1,1,220,181.66,4,1,MZA 1170 - LT 28,ZONA I,1415
1409,-70.24111929,-17.9851469,MUR/HEX:1,1,220,190.8,4,1,MZA 1171 - LT 1,ZONA I,1416
1410,-70.24117263,-17.98543979,MUR/HEX:1,1,220,205.01,5,1,MZA 1171 - LT 2,ZONA I,1417
1411,-70.24122578,-17.98536543,MUR/HEX:1,1,220,193.08,4,1,MZA 1171 - LT 3,ZONA I,1418
1412,-70.241279,-17.98529037,MUR/HEX:1,1,220,198.6,5,1,MZA 1171 - LT 4,ZONA I,1419
1413,-70.24133287,-17.98521533,MUR/HEX:1,1,220,207.46,5,1,MZA 1171 - LT 5,ZONA I,1420
1414,-70.24149205,-17.98499141,MUR/HEX:1,1,220,197.71,5,1,MZA 1171 - LT 8,ZONA I,1423
1415,-70.24154559,-17.9849169,MUR/HEX:1,1,220,206.33,5,1,MZA 1171 - LT 9,ZONA I,1424
1416,-70.24159908,-17.98484147,MUR/HEX:2,1,220,403.28,9,2,MZA 1171 - LT 10,ZONA I,1425
1417,-70.24165243,-17.98476636,MUR/HEX:1,1,220,197.51,5,1,MZA 1171 - LT 11,ZONA I,1426
1418,-70.2417063,-17.98469132,MUR/HEX:1,1,220,209.7,5,1,MZA 1171 - LT 12,ZONA I,1427
1419,-70.24175978,-17.98461629,MUR/HEX:2,1,220,417.5,10,3,MZA 1171 - LT 13,ZONA I,1428
1420,-70.24181312,-17.984542,MUR/HEX:1,1,220,187.7,4,1,MZA 1171 - LT 14,ZONA I,1429
1421,-70.24096206,-17.98541341,MUR/HEX:1,1,220,195.83,5,1,MZA 1171 - LT 15,ZONA I,1430
1422,-70.24101574,-17.98533803,MUR/HEX:2,1,220,417.5,10,3,MZA 1171 - LT 16,ZONA I,1431
1423,-70.24106908,-17.98526331,MUR/HEX:1,1,220,191.71,4,1,MZA 1171 - LT 17,ZONA I,1432
1424,-70.24112269,-17.98518778,MUR/HEX:1,1,220,207.09,5,1,MZA 1171 - LT 18,ZONA I,1433
1425,-70.24117683,-17.98511236,MUR/HEX:2,1,220,429.06,10,3,MZA 1171 - LT 19,ZONA I,1434
1426,-70.24122971,-17.98503837,MUR/HEX:2,1,220,401.78,9,2,MZA 1171 - LT 20,ZONA I,1435
1427,-70.24128239,-17.98496425,MUR/HEX:1,1,220,200.95,5,1,MZA 1171 - LT 21,ZONA I,1436
1428,-70.2413354,-17.98488927,MUR/HEX:2,1,220,412.16,10,3,MZA 1171 - LT 22,ZONA I,1437
1429,-70.24138927,-17.98481429,MUR/HEX:1,1,220,213.12,5,1,MZA 1171 - LT 23,ZONA I,1438
1430,-70.24144288,-17.98473867,MUR/HEX:1,1,220,205.71,5,1,MZA 1171 - LT 24,ZONA I,1439
1431,-70.24149703,-17.98466244,MUR/HEX:2,1,220,405.84,9,2,MZA 1171 - LT 25,ZONA I,1440
1432,-70.24155142,-17.98458665,MUR/HEX:1,1,220,210.9,5,1,MZA 1171 - LT 26,ZONA I,1441
1433,-70.2416049,-17.98451162,MUR/HEX:1,1,220,215.57,5,1,MZA 1171 - LT 27,ZONA I,1442
1434,-70.24165771,-17.98443807,MUR/HEX:1,1,220,194.15,4,1,MZA 1171 - LT 28,ZONA I,1443
1435,-70.24023787,-17.98675084,MUR/HEX:1,1,220,210.7,5,1,MZA 2201 - LT 1,ZONA II,1
1436,-70.24029821,-17.98667985,MUR/HEX:1,1,220,201.1,5,1,MZA 2201 - LT 2,ZONA II,2
1437,-70.24034589,-17.98660014,MCF/LWAL+DNO/HEX:1/RES,1,220,201.29,5,1,MZA 2201 - LT 3,ZONA II,3
1438,-70.24039918,-17.98652548,MUR/HEX:1,1,220,201.63,5,1,MZA 2201 - LT 4,ZONA II,4
1439,-70.2404525,-17.98645098,MUR/HEX:1,1,220,200.85,5,1,MZA 2201 - LT 5,ZONA II,5
1440,-70.24050584,-17.98637629,MUR/HEX:2,1,220,404.9,9,2,MZA 2201 - LT 6,ZONA II,6
1441,-70.24055954,-17.98630126,MUR/HEX:1,1,220,203,5,1,MZA 2201 - LT 7,ZONA II,7
1442,-70.24061311,-17.9862263,MUR/HEX:1,1,220,202.02,5,1,MZA 2201 - LT 8,ZONA II,8
1443,-70.24066637,-17.98615147,MUR/HEX:1,1,220,201.8,5,1,MZA 2201 - LT 9,ZONA II,9
1444,-70.24071992,-17.98607669,MUR/HEX:1,1,220,202.59,5,1,MZA 2201 - LT 10,ZONA II,10
1445,-70.24077303,-17.98600222,MCF/LWAL+DNO/HEX:2/RES,1,220,399.4,9,2,MZA 2201 - LT 11,ZONA II,11
1446,-70.24082601,-17.98592828,MCF/LWAL+DNO/HEX:2/RES,1,220,400.78,9,2,MZA 2201 - LT 12,ZONA II,12
1447,-70.24087951,-17.98585354,MCF/LWAL+DNO/HEX:3/RES,1,220,611.85,14,4,MZA 2201 - LT 13,ZONA II,13
1448,-70.24093407,-17.98577723,MUR/HEX:2,1,220,417.56,10,3,MZA 2201 - LT 14,ZONA II,14
1449,-70.24008156,-17.98664958,MCF/LWAL+DNO/HEX:2/RES,1,220,422.68,10,3,MZA 2201 - LT 15,ZONA II,15
1450,-70.24013671,-17.98657274,MUR/HEX:2,1,220,396.6,9,2,MZA 2201 - LT 16,ZONA II,16
1451,-70.2401899,-17.9864982,MUR/HEX:2,1,220,397.1,9,2,MZA 2201 - LT 17,ZONA II,17
1452,-70.24024319,-17.98642344,MUR/HEX:1,1,220,199.56,5,1,MZA 2201 - LT 18,ZONA II,18
1453,-70.24029648,-17.98634886,MUR/HEX:1,1,220,198.06,5,1,MZA 2201 - LT 19,ZONA II,19
1454,-70.24034973,-17.98627419,MUR/HEX:3,1,220,600,14,4,MZA 2201 - LT 20,ZONA II,20
1455,-70.24040325,-17.98619932,MUR/HEX:2,1,220,399.24,9,2,MZA 2201 - LT 21,ZONA II,21
1456,-70.2404565,-17.98612469,MUR/HEX:1,1,220,198.7,5,1,MZA 2201 - LT 22,ZONA II,22

1457,-70.24050974,-17.9860498,MUR/HEX:1,1,220,200.71,5,1,MZA 2201 - LT 23,ZONA II,23
1458,-70.24056339,-17.98597477,MUR/HEX:1,1,220,200.39,5,1,MZA 2201 - LT 24,ZONA II,24
1459,-70.24061658,-17.98590008,MUR/HEX:2,1,220,397.14,9,2,MZA 2201 - LT 25,ZONA II,25
1460,-70.24066958,-17.98582602,MUR/HEX:2,1,220,395.68,9,2,MZA 2201 - LT 26,ZONA II,26
1461,-70.24072276,-17.98575162,MUR/HEX:1,1,220,200.43,5,1,MZA 2201 - LT 27,ZONA II,27
1462,-70.24077624,-17.98567552,MUR/HEX:1,1,220,204.97,5,1,MZA 2201 - LT 28,ZONA II,28
1463,-70.23939629,-17.98793799,MCF/LWAL+DNO/HEX:2/RES,1,220,485.92,11,3,MZA 2202 - LT 1,ZONA II,29
1464,-70.23945998,-17.98785693,MCF/LWAL+DNO/HEX:1/RES,1,220,201.75,5,1,MZA 2202 - LT 2,ZONA II,30
1465,-70.23950785,-17.98778043,MUR/HEX:1,1,220,199.28,5,1,MZA 2202 - LT 3,ZONA II,31
1466,-70.23956084,-17.98770598,MUR/HEX:1,1,220,201.02,5,1,MZA 2202 - LT 4,ZONA II,32
1467,-70.23961368,-17.98763175,MUR/HEX:1,1,220,198.07,5,1,MZA 2202 - LT 5,ZONA II,33
1468,-70.23966643,-17.98755753,MUR/HEX:1,1,220,200.76,5,1,MZA 2202 - LT 6,ZONA II,34
1469,-70.23971981,-17.98748244,MUR/HEX:1,1,220,202.76,5,1,MZA 2202 - LT 7,ZONA II,35
1470,-70.23977306,-17.98740733,MCF/LWAL+DNO/HEX:2/RES,1,220,401.04,9,2,MZA 2202 - LT 8,ZONA II,36
1471,-70.23982626,-17.9873334,MUR/HEX:1,1,220,198.23,5,1,MZA 2202 - LT 9,ZONA II,37
1472,-70.23987885,-17.98725848,MUR/HEX:1,1,220,202.74,5,1,MZA 2202 - LT 10,ZONA II,38
1473,-70.23993436,-17.98718064,MUR/HEX:2,1,220,431.82,10,3,MZA 2202 - LT 11,ZONA II,39
1474,-70.23998977,-17.98710246,MUR/HEX:2,1,220,407.44,9,2,MZA 2202 - LT 12,ZONA II,40
1475,-70.24004369,-17.9870269,MCF/LWAL+DNO/HEX:1/RES,1,220,202.71,5,1,MZA 2202 - LT 13,ZONA II,41
1476,-70.24010012,-17.98694748,MUR/HEX:1,1,220,223.87,5,1,MZA 2202 - LT 14,ZONA II,42
1477,-70.23924062,-17.98782475,MUR/HEX:1,1,220,238.94,6,1,MZA 2202 - LT 15,ZONA II,43
1478,-70.23929799,-17.98775295,MUR/HEX:1,1,220,201.32,5,1,MZA 2202 - LT 16,ZONA II,44
1479,-70.23935098,-17.98767826,MUR/HEX:1,1,220,200.594,5,1,MZA 2202 - LT 17,ZONA II,45
1480,-70.23940421,-17.98760356,MUR/HEX:1,1,220,201.68,5,1,MZA 2202 - LT 18,ZONA II,46
1481,-70.23945715,-17.98753166,MUR/HEX:1,1,220,197.88,5,1,MZA 2202 - LT 19,ZONA II,47
1482,-70.23950988,-17.98745519,MUR/HEX:1,1,220,200.75,5,1,MZA 2202 - LT 20,ZONA II,48
1483,-70.23956332,-17.98738013,MUR/HEX:1,1,220,202.64,5,1,MZA 2202 - LT 21,ZONA II,49
1484,-70.23961683,-17.98730475,MUR/HEX:1,1,220,201.87,5,1,MZA 2202 - LT 22,ZONA II,50
1485,-70.23966962,-17.98723151,MUR/HEX:1,1,220,192.89,4,1,MZA 2202 - LT 23,ZONA II,51
1486,-70.23972186,-17.98715717,MUR/HEX:1,1,220,204.3,5,1,MZA 2202 - LT 24,ZONA II,52
1487,-70.2397777,-17.98707897,MUR/HEX:1,1,220,215.48,5,1,MZA 2202 - LT 25,ZONA II,53
1488,-70.23983345,-17.98700042,MUR/HEX:1,1,220,205.06,5,1,MZA 2202 - LT 26,ZONA II,54
1489,-70.23988768,-17.98692451,MUR/HEX:1,1,220,201.94,5,1,MZA 2202 - LT 27,ZONA II,55
1490,-70.23994421,-17.98684507,MUR/HEX:1,1,220,223.22,5,1,MZA 2202 - LT 28,ZONA II,56
1491,-70.23910902,-17.98834019,MCF/LWAL+DNO/HEX:1/RES,1,220,199.92,5,1,MZA 2203 - LT 6,ZONA II,57
1492,-70.23916267,-17.98826571,MUR/HEX:1,1,220,202.09,5,1,MZA 2203 - LT 7,ZONA II,58
1493,-70.23921716,-17.98818892,MCF/LWAL+DNO/HEX:1/RES,1,220,210.93,5,1,MZA 2203 - LT 8,ZONA II,59
1494,-70.23927477,-17.98811084,MCF/LWAL+DNO/HEX:2/RES,1,220,429.94,10,3,MZA 2203 - LT 9,ZONA II,60
1495,-70.23895253,-17.98823794,MUR/HEX:1,1,220,200.41,5,1,MZA 2203 - LT 15,ZONA II,61
1496,-70.23900605,-17.98816337,MUR/HEX:1,1,220,201.39,5,1,MZA 2203 - LT 16,ZONA II,62
1497,-70.23906134,-17.98808523,MUR/HEX:1,1,220,217.82,5,1,MZA 2203 - LT 17,ZONA II,63
1498,-70.2391186,-17.98800737,MCF/LWAL+DNO/HEX:1/RES,1,220,205.32,5,1,MZA 2203 - LT 18,ZONA II,64
1499,-70.23884008,-17.98871736,MCF/LWAL+DNO/HEX:1/RES,1,220,223.95,5,1,MZA 2204 - LT 1,ZONA II,65
1500,-70.2388962,-17.98863816,MCF/LWAL+DNO/HEX:1/RES,1,220,200.7,5,1,MZA 2204 - LT 2,ZONA II,66
1501,-70.23894946,-17.98856323,MUR/HEX:1,1,220,200.03,5,1,MZA 2204 - LT 3,ZONA II,67
1502,-70.23900306,-17.98848761,MCF/LWAL+DNO/HEX:1/RES,1,220,202.74,5,1,MZA 2204 - LT 4,ZONA II,68
1503,-70.23868316,-17.9886156,MUR/HEX:2,1,220,447.58,10,3,MZA 2204 - LT 10,ZONA II,69
1504,-70.23873969,-17.98853637,MUR/HEX:1,1,220,202.14,5,1,MZA 2204 - LT 11,ZONA II,70
1505,-70.23879332,-17.98846143,MUR/HEX:1,1,220,201.17,5,1,MZA 2204 - LT 12,ZONA II,71
1506,-70.23884727,-17.98838584,MUR/HEX:1,1,220,205.32,5,1,MZA 2204 - LT 13,ZONA II,72
1507,-70.23882339,-17.98964252,MUR/HEX:2,1,220,439.46,10,3,MZA 2206 - LT 1,ZONA II,73
1508,-70.23874468,-17.989585,MUR/HEX:1,1,220,199.74,5,1,MZA 2206 - LT 2,ZONA II,74
1509,-70.23866891,-17.98953002,MUR/HEX:1,1,220,202.98,5,1,MZA 2206 - LT 3,ZONA II,75
1510,-70.23859436,-17.98947528,MUR/HEX:1,1,220,195.03,5,1,MZA 2206 - LT 4,ZONA II,76
1511,-70.23851917,-17.98942105,MCF/LWAL+DNO/HEX:1/RES,1,220,203.73,5,1,MZA 2206 - LT 5,ZONA II,77
1512,-70.23844366,-17.98936547,MCF/LWAL+DNO/HEX:2/RES,1,220,399.5,9,2,MZA 2206 - LT 6,ZONA II,78
1513,-70.23836879,-17.98931125,MUR/HEX:1,1,220,197.97,5,1,MZA 2206 - LT 7,ZONA II,79
1514,-70.2382938,-17.98925641,MUR/HEX:1,1,220,201.78,5,1,MZA 2206 - LT 8,ZONA II,80
1515,-70.2382144,-17.98919862,MCF/LWAL+DNO/HEX:2/RES,1,220,441.5,10,3,MZA 2206 - LT 9,ZONA II,81
1516,-70.23870836,-17.98978675,MUR/HEX:2,1,220,445.92,10,3,MZA 2206 - LT 10,ZONA II,82
1517,-70.23862947,-17.98972907,MUR/HEX:1,1,220,200.76,5,1,MZA 2206 - LT 11,ZONA II,83
1518,-70.23855343,-17.98967388,MUR/HEX:1,1,220,206.52,5,1,MZA 2206 - LT 12,ZONA II,84
1519,-70.23847897,-17.98961918,MCF/LWAL+DNO/HEX:1/RES,1,220,194.03,4,1,MZA 2206 - LT 13,ZONA II,85
1520,-70.23840358,-17.9895648,MUR/HEX:2,1,220,417.44,10,3,MZA 2206 - LT 14,ZONA II,86
1521,-70.2383279,-17.98950907,MUR/HEX:1,1,220,198.62,5,1,MZA 2206 - LT 15,ZONA II,87
1522,-70.23825331,-17.98945504,MCF/LWAL+DNO/HEX:1/RES,1,220,200.31,5,1,MZA 2206 - LT 16,ZONA II,88
1523,-70.23817834,-17.9894002,MUR/HEX:1,1,220,202.09,5,1,MZA 2206 - LT 17,ZONA II,89
1524,-70.23809924,-17.9893426,MUR/HEX:1,1,220,221.67,5,1,MZA 2206 - LT 18,ZONA II,90
1525,-70.23980133,-17.98820233,MCF/LWAL+DNO/HEX:1/RES,1,220,234.76,5,1,MZA 2210 - LT 1,ZONA II,170
1526,-70.23985822,-17.98812065,MCF/LWAL+DNO/HEX:2/RES,1,220,395.56,9,2,MZA 2210 - LT 2,ZONA II,171
1527,-70.23991142,-17.98804636,MUR/HEX:1,1,220,199.26,5,1,MZA 2210 - LT 3,ZONA II,172

1528,-70.23996447,-17.98797174,MUR/HEX:1,1,220,198.85,5,1,MZA 2210 - LT 4,ZONA II,173
1529,-70.24001751,-17.98789713,MCF/LWAL+DNO/HEX:1/RES,1,220,199.45,5,1,MZA 2210 - LT 5,ZONA II,174
1530,-70.2400711,-17.98782219,MCF/LWAL+DNO/HEX:1/RES,1,220,201.61,5,1,MZA 2210 - LT 6,ZONA II,175
1531,-70.24012455,-17.98774715,MCF/LWAL+DNO/HEX:1/RES,1,220,199.71,5,1,MZA 2210 - LT 7,ZONA II,176
1532,-70.24017795,-17.98767213,MCF/LWAL+DNO/HEX:2/RES,1,220,403.22,9,2,MZA 2210 - LT 8,ZONA II,177
1533,-70.2402314,-17.98759715,MCF/LWAL+DNO/HEX:2/RES,1,220,399.92,9,2,MZA 2210 - LT 9,ZONA II,178
1534,-70.2402846,-17.98752181,MCF/LWAL+DNO/HEX:2/RES,1,220,405.14,9,2,MZA 2210 - LT 10,ZONA II,179
1535,-70.24033861,-17.98744736,MCF/LWAL+DNO/HEX:2/RES,1,220,397.58,9,2,MZA 2210 - LT 11,ZONA II,180
1536,-70.24039127,-17.98737246,MCF/LWAL+DNO/HEX:2/RES,1,220,402.62,9,2,MZA 2210 - LT 12,ZONA II,181
1537,-70.24044446,-17.98729752,MUR/HEX:2,1,220,400.84,9,2,MZA 2210 - LT 13,ZONA II,182
1538,-70.24050362,-17.98721512,MCF/LWAL+DNO/HEX:1/RES,1,220,243.13,6,1,MZA 2210 - LT 14,ZONA II,183
1539,-70.23964318,-17.98810234,MCF/LWAL+DNO/HEX:2/RES,1,220,451.86,10,3,MZA 2210 - LT 15,ZONA II,184
1540,-70.23969865,-17.98802248,MCF/LWAL+DNO/HEX:1/RES,1,220,203.9,5,1,MZA 2210 - LT 16,ZONA II,185
1541,-70.23975219,-17.98794765,MUR/HEX:1,1,220,202.42,5,1,MZA 2210 - LT 17,ZONA II,186
1542,-70.23980537,-17.98787282,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,202.89,5,1,MZA 2210 - LT 18,ZONA II,187
1543,-70.23985881,-17.98779761,MCF/LWAL+DNO/HEX:1/RES,1,220,204.37,5,1,MZA 2210 - LT 19,ZONA II,188
1544,-70.23991267,-17.98772226,MCF/LWAL+DNO/HEX:1/RES,1,220,204.24,5,1,MZA 2210 - LT 20,ZONA II,189
1545,-70.23996611,-17.9876472,MCF/LWAL+DNO/HEX:1/RES,1,220,202.17,5,1,MZA 2210 - LT 21,ZONA II,190
1546,-70.24001955,-17.98757207,MUR/HEX:1,1,220,204.34,5,1,MZA 2210 - LT 22,ZONA II,191
1547,-70.24007305,-17.98749699,MCF/LWAL+DNO/HEX:1/RES,1,220,202.02,5,1,MZA 2210 - LT 23,ZONA II,192
1548,-70.2401269,-17.9874207,MUR/HEX:1,1,220,209.55,5,1,MZA 2210 - LT 24,ZONA II,193
1549,-70.24018087,-17.98734629,MUR/HEX:1,1,220,195.19,5,1,MZA 2210 - LT 25,ZONA II,194
1550,-70.24023307,-17.98727197,MUR/HEX:1,1,220,204.85,5,1,MZA 2210 - LT 26,ZONA II,195
1551,-70.24028705,-17.98719589,MUR/HEX:1,1,220,205.8,5,1,MZA 2210 - LT 27,ZONA II,196
1552,-70.24034658,-17.98711291,MCF/LWAL+DNO/HEX:1/RES,1,220,243.55,6,1,MZA 2210 - LT 28,ZONA II,197
1553,-70.23951304,-17.98860339,MUR/HEX:1,1,220,196.66,5,1,MZA 2211 - LT 6,ZONA II,198
1554,-70.2395673,-17.9885287,MUR/HEX:2,1,220,397.12,9,2,MZA 2211 - LT 7,ZONA II,199
1555,-70.2396212,-17.98845377,MCF/LWAL+DNO/HEX:2/RES,1,220,398.86,9,2,MZA 2211 - LT 8,ZONA II,200
1556,-70.23967781,-17.98837527,MUR/HEX:2,1,220,437.6,10,3,MZA 2211 - LT 9,ZONA II,201
1557,-70.23935844,-17.98850208,MUR/HEX:1,1,220,205.67,5,1,MZA 2211 - LT 15,ZONA II,202
1558,-70.23941246,-17.9884265,MCF/LWAL+DNO/HEX:2/RES,1,220,404.44,9,2,MZA 2211 - LT 16,ZONA II,203
1559,-70.23946561,-17.98835155,MUR/HEX:1,1,220,202.27,5,1,MZA 2211 - LT 17,ZONA II,204
1560,-70.23952117,-17.98827304,MCF/LWAL+DNO/HEX:1/RES,1,220,222.27,5,1,MZA 2211 - LT 18,ZONA II,205
1561,-70.23924629,-17.98898175,MUR/HEX:1,1,220,221.5,1,MZA 2212 - LT 1,ZONA II,206
1562,-70.23930185,-17.98890289,MCF/LWAL+DNO/HEX:1/RES,1,220,200.43,5,1,MZA 2212 - LT 2,ZONA II,207
1563,-70.23935602,-17.98882646,MCF/LWAL+DNO/HEX:3/RES,1,220,626.07,14,4,MZA 2212 - LT 3,ZONA II,208
1564,-70.23940976,-17.98874952,MUR/HEX:1,1,220,201.06,5,1,MZA 2212 - LT 4,ZONA II,209
1565,-70.23908951,-17.98887992,MCF/LWAL+DNO/HEX:1/RES,1,220,222.28,5,1,MZA 2212 - LT 10,ZONA II,210
1566,-70.23914535,-17.988801,MUR/HEX:2,1,220,402.84,9,2,MZA 2212 - LT 11,ZONA II,211
1567,-70.23919936,-17.98872512,MCF/LWAL+DNO/HEX:3/RES,1,220,618,14,4,MZA 2212 - LT 12,ZONA II,212
1568,-70.23925315,-17.98864846,MUR/HEX:2,1,220,406.22,9,2,MZA 2212 - LT 13,ZONA II,213
1569,-70.24105315,-17.98727836,MCF/LWAL+DNO/HEX:2/RES,1,220,408.9,9,2,MZA 2213 - LT 1,ZONA II,214
1570,-70.24110656,-17.98720304,MUR/HEX:2,1,220,403.68,9,2,MZA 2213 - LT 2,ZONA II,215
1571,-70.24115959,-17.987128,MUR/HEX:1,1,220,202.28,5,1,MZA 2213 - LT 3,ZONA II,216
1572,-70.24121268,-17.98705319,MUR/HEX:1,1,220,200.91,5,1,MZA 2213 - LT 4,ZONA II,217
1573,-70.24126578,-17.98697843,MUR/HEX:1,1,220,201.94,5,1,MZA 2213 - LT 5,ZONA II,218
1574,-70.24131889,-17.98690361,MCF/LWAL+DNO/HEX:1/RES,1,220,200.95,5,1,MZA 2213 - LT 6,ZONA II,219
1575,-70.24137211,-17.98682862,MCF/LWAL+DNO/HEX:1/RES,1,220,202.61,5,1,MZA 2213 - LT 7,ZONA II,220
1576,-70.24142541,-17.98675352,MCF/LWAL+DNO/HEX:1/RES,1,220,201.43,5,1,MZA 2213 - LT 8,ZONA II,221
1577,-70.24147814,-17.98667902,MUR/HEX:1,1,220,198.63,5,1,MZA 2213 - LT 9,ZONA II,222
1578,-70.24153044,-17.98660486,MUR/HEX:1,1,220,199.04,5,1,MZA 2213 - LT 10,ZONA II,223
1579,-70.2415834,-17.98653053,MUR/HEX:1,1,220,200.65,5,1,MZA 2213 - LT 11,ZONA II,224
1580,-70.24163655,-17.98645588,MUR/HEX:1,1,220,202.59,5,1,MZA 2213 - LT 12,ZONA II,225
1581,-70.24169062,-17.9863797,MCF/LWAL+DNO/HEX:2/RES,1,220,407.96,9,2,MZA 2213 - LT 13,ZONA II,226
1582,-70.24174403,-17.98630451,MUR/HEX:1,1,220,199.32,5,1,MZA 2213 - LT 14,ZONA II,227
1583,-70.24089612,-17.98717615,MUR/HEX:2,1,220,405.64,9,2,MZA 2213 - LT 15,ZONA II,228
1584,-70.2409495,-17.987101,MUR/HEX:1,1,220,200.33,5,1,MZA 2213 - LT 16,ZONA II,229
1585,-70.24100276,-17.98702578,MUR/HEX:1,1,220,202.61,5,1,MZA 2213 - LT 17,ZONA II,230
1586,-70.24105625,-17.98695055,MCF/LWAL+DNO/HEX:1/RES,1,220,200.79,5,1,MZA 2213 - LT 18,ZONA II,231
1587,-70.24110956,-17.98687564,MCF/LWAL+DNO/HEX:1/RES,1,220,200.9,5,1,MZA 2213 - LT 19,ZONA II,232
1588,-70.24116268,-17.98680094,MCF/LWAL+DNO/HEX:2/RES,1,220,398.78,9,2,MZA 2213 - LT 20,ZONA II,233
1589,-70.24121577,-17.98672628,MCF/LWAL+DNO/HEX:3/RES,1,220,601.71,14,4,MZA 2213 - LT 21,ZONA II,234
1590,-70.24126883,-17.98665162,MCF/LWAL+DNO/HEX:2/RES,1,220,398.32,9,2,MZA 2213 - LT 22,ZONA II,235
1591,-70.2413214,-17.98657752,MUR/HEX:1,1,220,197.18,5,1,MZA 2213 - LT 23,ZONA II,236
1592,-70.24137403,-17.98650303,MUR/HEX:1,1,220,200.61,5,1,MZA 2213 - LT 24,ZONA II,237
1593,-70.24142737,-17.98642831,MCF/LWAL+DNO/HEX:2/RES,1,220,399.22,9,2,MZA 2213 - LT 25,ZONA II,238
1594,-70.24148083,-17.98635277,MUR/HEX:1,1,220,203.72,5,1,MZA 2213 - LT 26,ZONA II,239
1595,-70.24153484,-17.98627741,MUR/HEX:2,1,220,400.28,9,2,MZA 2213 - LT 27,ZONA II,240
1596,-70.24156101,-17.98620373,MUR/HEX:1,1,220,194.54,4,1,MZA 2213 - LT 28,ZONA II,241
1597,-70.24088058,-17.98920795,MUR/HEX:1,1,220,202.24,5,1,MZA 2217 - LT 1,ZONA II,242
1598,-70.24080143,-17.98915593,MUR/HEX:2,1,220,408.82,9,2,MZA 2217 - LT 2,ZONA II,243

1599,-70.24072291,-17.98910529,MUR/HEX:2,1,220,392.72,9,2,MZA 2217 - LT 3,ZONA II,244
1600,-70.24064558,-17.98905487,MCF/LWAL+DNO/HEX:2/RES,1,220,398.96,9,2,MZA 2217 - LT 4,ZONA II,245
1601,-70.24056704,-17.98900338,MCF/LWAL+DNO/HEX:2/RES,1,220,406.1,9,2,MZA 2217 - LT 5,ZONA II,246
1602,-70.24048825,-17.98895224,MUR/HEX:1,1,220,199.22,5,1,MZA 2217 - LT 6,ZONA II,247
1603,-70.24041033,-17.98890147,MUR/HEX:1,1,220,198.9,5,1,MZA 2217 - LT 7,ZONA II,248
1604,-70.24033274,-17.98885134,MUR/HEX:1,1,220,196.26,5,1,MZA 2217 - LT 8,ZONA II,249
1605,-70.2402554,-17.98880068,MUR/HEX:1,1,220,199.14,5,1,MZA 2217 - LT 9,ZONA II,250
1606,-70.24017719,-17.98874972,MUR/HEX:1,1,220,199.8,5,1,MZA 2217 - LT 10,ZONA II,251
1607,-70.24009846,-17.98869826,MUR/HEX:1,1,220,201.96,5,1,MZA 2217 - LT 11,ZONA II,252
1608,-70.24001992,-17.98864745,MUR/HEX:1,1,220,197.3,5,1,MZA 2217 - LT 12,ZONA II,253
1609,-70.23994217,-17.98859655,MCF/LWAL+DNO/HEX:2/RES,1,220,398.48,9,2,MZA 2217 - LT 13,ZONA II,254
1610,-70.23986279,-17.98854514,MCF/LWAL+DNO/HEX:3/RES,1,220,611.88,14,4,MZA 2217 - LT 14,ZONA II,255
1611,-70.24077383,-17.98935754,MCF/LWAL+DNO/HEX:1/RES,1,220,205.55,5,1,MZA 2217 - LT 15,ZONA II,256
1612,-70.24069482,-17.98930555,MUR/HEX:1,1,220,202.4,5,1,MZA 2217 - LT 16,ZONA II,257
1613,-70.24061646,-17.98925497,MUR/HEX:1,1,220,199.75,5,1,MZA 2217 - LT 17,ZONA II,258
1614,-70.2405384,-17.98920402,MUR/HEX:2,1,220,404.62,9,2,MZA 2217 - LT 18,ZONA II,259
1615,-70.24046003,-17.98915259,MUR/HEX:1,1,220,202.11,5,1,MZA 2217 - LT 19,ZONA II,260
1616,-70.24038181,-17.98910178,MCF/LWAL+DNO/HEX:2/RES,1,220,400.4,9,2,MZA 2217 - LT 20,ZONA II,261
1617,-70.2403042,-17.98905115,MCF/LWAL+DNO/HEX:2/RES,1,220,399.16,9,2,MZA 2217 - LT 21,ZONA II,262
1618,-70.24022616,-17.98900068,MCF/LWAL+DNO/HEX:2/RES,1,220,402.64,9,2,MZA 2217 - LT 22,ZONA II,263
1619,-70.24014819,-17.98894956,MCF/LWAL+DNO/HEX:2/RES,1,220,402.9,2,MZA 2217 - LT 23,ZONA II,264
1620,-70.2400701,-17.98889862,MCF/LWAL+DNO/HEX:2/RES,1,220,402.72,9,2,MZA 2217 - LT 24,ZONA II,265
1621,-70.23999201,-17.98884752,MUR/HEX:1,1,220,201.4,5,1,MZA 2217 - LT 25,ZONA II,266
1622,-70.23991382,-17.9887969,MCF/LWAL+DNO/HEX:1/RES,1,220,200.55,5,1,MZA 2217 - LT 26,ZONA II,267
1623,-70.23983629,-17.98874608,MCF/LWAL+DNO/HEX:1/RES,1,220,199.61,5,1,MZA 2217 - LT 27,ZONA II,268
1624,-70.23975714,-17.98869477,MUR/HEX:2,1,220,415.02,10,3,MZA 2217 - LT 28,ZONA II,269
1625,-70.24060383,-17.98959691,MUR/HEX:1,1,220,199.55,5,1,MZA 2218 - LT 1,ZONA II,270
1626,-70.24052602,-17.98954607,MUR/HEX:2,1,220,403.84,9,2,MZA 2218 - LT 2,ZONA II,271
1627,-70.24044771,-17.98949528,MUR/HEX:1,1,220,201.04,5,1,MZA 2218 - LT 3,ZONA II,272
1628,-70.2403695,-17.98944406,MCF/LWAL+DNO/HEX:3/RES,1,220,607.59,14,4,MZA 2218 - LT 4,ZONA II,273
1629,-70.24029122,-17.9893932,MUR/HEX:1,1,220,200.21,5,1,MZA 2218 - LT 5,ZONA II,274
1630,-70.24021326,-17.98934229,MCF/LWAL+DNO/HEX:2/RES,1,220,402.92,9,2,MZA 2218 - LT 6,ZONA II,275
1631,-70.24013543,-17.98929173,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,198.7,5,1,MZA 2218 - LT 7,ZONA II,276
1632,-70.24005763,-17.98924084,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,202.01,5,1,MZA 2218 - LT 8,ZONA II,277
1633,-70.23997916,-17.98918992,MCF/LWAL+DNO/HEX:2/RES,1,220,402.06,9,2,MZA 2218 - LT 9,ZONA II,278
1634,-70.23990084,-17.98913868,MCF/LWAL+DNO/HEX:2/RES,1,220,404.28,9,2,MZA 2218 - LT 10,ZONA II,279
1635,-70.23982196,-17.98908736,MUR/HEX:1,1,220,203.06,5,1,MZA 2218 - LT 11,ZONA II,280
1636,-70.23974344,-17.98903625,MUR/HEX:1,1,220,200.23,5,1,MZA 2218 - LT 12,ZONA II,281
1637,-70.23966546,-17.98898546,MCF/LWAL+DNO/HEX:1/RES,1,220,200.2,5,1,MZA 2218 - LT 13,ZONA II,282
1638,-70.23958666,-17.98893443,MUR/HEX:1,1,220,203.6,5,1,MZA 2218 - LT 14,ZONA II,283
1639,-70.24049694,-17.98974747,MUR/HEX:2,1,220,402.08,9,2,MZA 2218 - LT 15,ZONA II,284
1640,-70.24041905,-17.98969651,MCF/LWAL+DNO/HEX:2/RES,1,220,406.66,9,2,MZA 2218 - LT 16,ZONA II,285
1641,-70.24034051,-17.98964549,MCF/LWAL+DNO/HEX:2/RES,1,220,406.66,9,2,MZA 2218 - LT 17,ZONA II,286
1642,-70.24026215,-17.98959411,MUR/HEX:1,1,220,201.92,5,1,MZA 2218 - LT 18,ZONA II,287
1643,-70.24018401,-17.98954327,MUR/HEX:1,1,220,201.12,5,1,MZA 2218 - LT 19,ZONA II,288
1644,-70.24010615,-17.98949236,MCF/LWAL+DNO/HEX:1/RES,1,220,201.5,1,MZA 2218 - LT 20,ZONA II,289
1645,-70.24002838,-17.98944177,MCF/LWAL+DNO/HEX:2/RES,1,220,399.74,9,2,MZA 2218 - LT 21,ZONA II,290
1646,-70.23995076,-17.98939093,MUR/HEX:1,1,220,200.94,5,1,MZA 2218 - LT 22,ZONA II,291
1647,-70.23987249,-17.98934007,MCF/LWAL+DNO/HEX:1/RES,1,220,202.16,5,1,MZA 2218 - LT 23,ZONA II,292
1648,-70.2397944,-17.98928891,MUR/HEX:1,1,220,200.92,5,1,MZA 2218 - LT 24,ZONA II,293
1649,-70.23971607,-17.98923788,MUR/HEX:2,1,220,405.06,9,2,MZA 2218 - LT 25,ZONA II,294
1650,-70.23963788,-17.98918691,MCF/LWAL+DNO/HEX:1/RES,1,220,200.2,5,1,MZA 2218 - LT 26,ZONA II,295
1651,-70.23956012,-17.98913619,MUR/HEX:1,1,220,200.27,5,1,MZA 2218 - LT 27,ZONA II,296
1652,-70.23948084,-17.98908478,MCF/LWAL+DNO/HEX:1/RES,1,220,207.12,5,1,MZA 2218 - LT 28,ZONA II,297
1653,-70.23995719,-17.99046612,MUR/HEX:2,1,220,523.9,12,3,MZA 2220 - LT 1,ZONA II,298
1654,-70.23987132,-17.9904028,MCF/LWAL+DNO/HEX:2/RES,1,220,404.08,9,2,MZA 2220 - LT 2,ZONA II,299
1655,-70.23978357,-17.99034894,MCF/LWAL+DNO/HEX:1/RES,1,220,268.47,6,1,MZA 2220 - LT 3,ZONA II,300
1656,-70.23969664,-17.99027819,MCF/LWAL+DNO/HEX:1/RES,1,220,206.2,5,1,MZA 2220 - LT 4,ZONA II,301
1657,-70.23961963,-17.9902207,MUR/HEX:1,1,220,196.97,5,1,MZA 2220 - LT 5,ZONA II,302
1658,-70.23954543,-17.99016631,MUR/HEX:1,1,220,201.75,5,1,MZA 2220 - LT 6,ZONA II,303
1659,-70.23947043,-17.99011198,MUR/HEX:1,1,220,199.17,5,1,MZA 2220 - LT 7,ZONA II,304
1660,-70.23939567,-17.99005775,MUR/HEX:2,1,220,400.5,9,2,MZA 2220 - LT 8,ZONA II,305
1661,-70.2393208,-17.99000343,MUR/HEX:1,1,220,198.85,5,1,MZA 2220 - LT 9,ZONA II,306
1662,-70.23924619,-17.98994909,MCF/LWAL+DNO/HEX:2/RES,1,220,399.64,9,2,MZA 2220 - LT 10,ZONA II,307
1663,-70.2391702,-17.98989446,MUR/HEX:1,1,220,204.05,5,1,MZA 2220 - LT 11,ZONA II,308
1664,-70.23909433,-17.98983895,MCF/LWAL+DNO/HEX:2/RES,1,220,402.76,9,2,MZA 2220 - LT 12,ZONA II,309
1665,-70.23900382,-17.98977331,MUR/HEX:1,1,220,280.31,6,1,MZA 2220 - LT 13,ZONA II,310
1666,-70.23984674,-17.99061406,MCF/LWAL+DNO/HEX:3/RES,1,220,803.73,19,6,MZA 2220 - LT 14,ZONA II,311
1667,-70.23975897,-17.99054904,MUR/HEX:1,1,220,200.27,5,1,MZA 2220 - LT 15,ZONA II,312
1668,-70.23967076,-17.99048487,MCF/LWAL+DNO/HEX:2/RES,1,220,535.06,12,3,MZA 2220 - LT 16,ZONA II,313
1669,-70.23958264,-17.99042115,MCF/LWAL+DNO/HEX:2/RES,1,220,398.06,9,2,MZA 2220 - LT 17,ZONA II,314

1670,-70.23950821,-17.99036646,MUR/HEX:1,1,220,197.65,5,1,MZA 2220 - LT 18,ZONA II,315
1671,-70.23943324,-17.99031262,MUR/HEX:2,1,220,397.5,9,2,MZA 2220 - LT 19,ZONA II,316
1672,-70.23935827,-17.99025827,MCF/LWAL+DNO/HEX:1/RES,1,220,199.24,5,1,MZA 2220 - LT 20,ZONA II,317
1673,-70.23928262,-17.99020329,MCF/LWAL+DNO/HEX:1/RES,1,220,202.97,5,1,MZA 2220 - LT 21,ZONA II,318
1674,-70.2392071,-17.99014829,MUR/HEX:1,1,220,199.08,5,1,MZA 2220 - LT 22,ZONA II,319
1675,-70.23913228,-17.99009408,MUR/HEX:1,1,220,198.69,5,1,MZA 2220 - LT 23,ZONA II,320
1676,-70.2390575,-17.99003999,MUR/HEX:1,1,220,198.8,5,1,MZA 2220 - LT 24,ZONA II,321
1677,-70.23898229,-17.98998513,MCF/LWAL+DNO/HEX:1/RES,1,220,202.51,5,1,MZA 2220 - LT 25,ZONA II,322
1678,-70.23889216,-17.98991818,MUR/HEX:1,1,220,282.03,7,2,MZA 2220 - LT 26,ZONA II,323
1679,-70.24144864,-17.98753575,MUR/HEX:1,1,220,197.14,5,1,MZA 2221 - LT 1,ZONA II,324
1680,-70.241499,-17.98745938,MUR/HEX:1,1,220,202.71,5,1,MZA 2221 - LT 2,ZONA II,325
1681,-70.24155257,-17.98738407,MUR/HEX:1,1,220,199.89,5,1,MZA 2221 - LT 3,ZONA II,326
1682,-70.24160614,-17.98730819,MCF/LWAL+DNO/HEX:2/RES,1,220,403.22,9,2,MZA 2221 - LT 4,ZONA II,327
1683,-70.24165967,-17.98723279,MUR/HEX:1,1,220,200.33,5,1,MZA 2221 - LT 5,ZONA II,328
1684,-70.24171288,-17.98715766,MUR/HEX:1,1,220,200.32,5,1,MZA 2221 - LT 6,ZONA II,329
1685,-70.24176586,-17.98708286,MCF/LWAL+DNO/HEX:2/RES,1,220,398.08,9,2,MZA 2221 - LT 7,ZONA II,330
1686,-70.24181831,-17.98700891,MUR/HEX:1,1,220,196.33,5,1,MZA 2221 - LT 8,ZONA II,331
1687,-70.24187122,-17.98693458,MUR/HEX:1,1,220,202.03,5,1,MZA 2221 - LT 9,ZONA II,332
1688,-70.24192443,-17.98685936,MUR/HEX:2,1,220,401.4,9,2,MZA 2221 - LT 10,ZONA II,333
1689,-70.24197782,-17.98678432,MUR/HEX:1,1,220,202.27,5,1,MZA 2221 - LT 11,ZONA II,334
1690,-70.242031,-17.98670941,MCF/LWAL+DNO/HEX:2/RES,1,220,400.3,9,2,MZA 2221 - LT 12,ZONA II,335
1691,-70.24208384,-17.9866345,MCF/LWAL+DNO/HEX:1/RES,1,220,201.91,5,1,MZA 2221 - LT 13,ZONA II,336
1692,-70.24213675,-17.98656426,MUR/HEX:1,1,220,202.05,5,1,MZA 2221 - LT 14,ZONA II,337
1693,-70.2412898,-17.987432,MCF/LWAL+DNO/HEX:2/RES,1,220,408.48,9,2,MZA 2221 - LT 15,ZONA II,338
1694,-70.2413437,-17.98735646,MUR/HEX:1,1,220,203.08,5,1,MZA 2221 - LT 16,ZONA II,339
1695,-70.24139671,-17.98728095,MUR/HEX:1,1,220,202.76,5,1,MZA 2221 - LT 17,ZONA II,340
1696,-70.24144992,-17.98720561,MUR/HEX:1,1,220,203.65,5,1,MZA 2221 - LT 18,ZONA II,341
1697,-70.24150291,-17.98713305,MCF/LWAL+DNO/HEX:2/RES,1,220,404.2,9,2,MZA 2221 - LT 19,ZONA II,342
1698,-70.24155564,-17.98705557,MUR/HEX:2,1,220,406.24,9,2,MZA 2221 - LT 20,ZONA II,343
1699,-70.24160839,-17.98698062,MUR/HEX:1,1,220,202.98,5,1,MZA 2221 - LT 21,ZONA II,344
1700,-70.24166075,-17.98690631,MUR/HEX:1,1,220,200.53,5,1,MZA 2221 - LT 22,ZONA II,345
1701,-70.24171337,-17.98683192,MUR/HEX:1,1,220,204.58,5,1,MZA 2221 - LT 23,ZONA II,346
1702,-70.24176625,-17.98675668,MUR/HEX:1,1,220,205.1,5,1,MZA 2221 - LT 24,ZONA II,347
1703,-70.24181932,-17.98668164,MCF/LWAL+DNO/HEX:1/RES,1,220,205.07,5,1,MZA 2221 - LT 25,ZONA II,348
1704,-70.24187191,-17.98660709,MUR/HEX:1,1,220,202.78,5,1,MZA 2221 - LT 26,ZONA II,349
1705,-70.24192453,-17.98653201,MUR/HEX:1,1,220,207.9,5,1,MZA 2221 - LT 27,ZONA II,350
1706,-70.24197785,-17.98645659,MUR/HEX:1,1,220,206.5,5,1,MZA 2221 - LT 28,ZONA II,351
1707,-70.24183698,-17.98778726,MUR/HEX:1,1,220,201.31,5,1,MZA 2222 - LT 1,ZONA II,352
1708,-70.24189011,-17.98771186,MUR/HEX:1,1,220,205.05,5,1,MZA 2222 - LT 2,ZONA II,353
1709,-70.24194316,-17.98763723,MUR/HEX:1,1,220,197.65,5,1,MZA 2222 - LT 3,ZONA II,354
1710,-70.24199573,-17.98756264,MUR/HEX:1,1,220,203.14,5,1,MZA 2222 - LT 4,ZONA II,355
1711,-70.24204847,-17.98748769,MUR/HEX:1,1,220,198.72,5,1,MZA 2222 - LT 5,ZONA II,356
1712,-70.24210071,-17.98741359,MUR/HEX:1,1,220,198.24,5,1,MZA 2222 - LT 6,ZONA II,357
1713,-70.24215415,-17.98733833,MUR/HEX:1,1,220,205.18,5,1,MZA 2222 - LT 7,ZONA II,358
1714,-70.24220741,-17.98726278,MCF/LWAL+DNO/HEX:2/RES,1,220,396.52,9,2,MZA 2222 - LT 8,ZONA II,359
1715,-70.24226015,-17.98718804,MCF/LWAL+DNO/HEX:2/RES,1,220,400.64,9,2,MZA 2222 - LT 9,ZONA II,360
1716,-70.24231329,-17.98711265,MUR/HEX:1,1,220,200.97,5,1,MZA 2222 - LT 10,ZONA II,361
1717,-70.24236531,-17.98703857,MUR/HEX:1,1,220,192.25,4,1,MZA 2222 - LT 11,ZONA II,362
1718,-70.24241743,-17.9869648,MUR/HEX:1,1,220,199.49,5,1,MZA 2222 - LT 12,ZONA II,363
1719,-70.24247103,-17.9868894,MCF/LWAL+DNO/HEX:2/RES,1,220,402.06,9,2,MZA 2222 - LT 13,ZONA II,364
1720,-70.24252469,-17.98681279,MUR/HEX:1,1,220,203.36,5,1,MZA 2222 - LT 14,ZONA II,365
1721,-70.24167973,-17.98768571,MUR/HEX:1,1,220,200.55,5,1,MZA 2222 - LT 15,ZONA II,366
1722,-70.24173346,-17.98760958,MUR/HEX:1,1,220,205.71,5,1,MZA 2222 - LT 16,ZONA II,367
1723,-70.2417867,-17.98753479,MUR/HEX:1,1,220,194.82,4,1,MZA 2222 - LT 17,ZONA II,368
1724,-70.24183903,-17.98746063,MCF/LWAL+DNO/HEX:2/RES,1,220,403.18,9,2,MZA 2222 - LT 18,ZONA II,369
1725,-70.24189185,-17.98738568,MCF/LWAL+DNO/HEX:2/RES,1,220,398.48,9,2,MZA 2222 - LT 19,ZONA II,370
1726,-70.24194446,-17.98731116,MUR/HEX:1,1,220,199.86,5,1,MZA 2222 - LT 20,ZONA II,371
1727,-70.24199789,-17.98723604,MUR/HEX:1,1,220,203.81,5,1,MZA 2222 - LT 21,ZONA II,372
1728,-70.24205078,-17.98716112,MUR/HEX:1,1,220,198.15,5,1,MZA 2222 - LT 22,ZONA II,373
1729,-70.24210325,-17.98708686,MUR/HEX:1,1,220,200.74,5,1,MZA 2222 - LT 23,ZONA II,374
1730,-70.24215623,-17.98701182,MCF/LWAL+DNO/HEX:2/RES,1,220,405.18,9,2,MZA 2222 - LT 24,ZONA II,375
1731,-70.24220853,-17.98693744,MUR/HEX:1,1,220,197.04,5,1,MZA 2222 - LT 25,ZONA II,376
1732,-70.24226124,-17.98686294,MCF/LWAL+DNO/HEX:2/RES,1,220,408.8,9,2,MZA 2222 - LT 26,ZONA II,377
1733,-70.24231482,-17.98678771,MCF/LWAL+DNO/HEX:2/RES,1,220,404.26,9,2,MZA 2222 - LT 27,ZONA II,378
1734,-70.24236845,-17.98671123,MUR/HEX:1,1,220,209.57,5,1,MZA 2222 - LT 28,ZONA II,379
1735,-70.24115654,-17.98881798,MUR/HEX:2,1,220,414.38,10,3,MZA 2223 - LT 1,ZONA II,380
1736,-70.24107752,-17.98876741,MUR/HEX:1,1,220,201.73,5,1,MZA 2223 - LT 2,ZONA II,381
1737,-70.24099939,-17.98871721,MUR/HEX:2,1,220,404.74,9,2,MZA 2223 - LT 3,ZONA II,382
1738,-70.24092476,-17.98866927,MCF/LWAL+DNO/HEX:2/RES,1,220,365.88,8,2,MZA 2223 - LT 4,ZONA II,383
1739,-70.24104944,-17.98896916,MUR/HEX:1,1,220,203.59,5,1,MZA 2223 - LT 5,ZONA II,384
1740,-70.24097072,-17.98891844,MCF/LWAL+DNO/HEX:2/RES,1,220,400.06,9,2,MZA 2223 - LT 6,ZONA II,385

1741,-70.24089262,-17.98886792,MUR/HEX:1,1,220,200.33,5,1,MZA 2223 - LT 7,ZONA II,386
1742,-70.24081815,-17.98881976,MUR/HEX:1,1,220,180.88,4,1,MZA 2223 - LT 8,ZONA II,387
1743,-70.24224068,-17.98804997,MCF/LWAL+DNO/HEX:2/RES,1,220,391.12,9,2,MZA 2224 - LT 1,ZONA II,388
1744,-70.24229351,-17.98797553,MUR/HEX:1,1,220,199.48,5,1,MZA 2224 - LT 2,ZONA II,389
1745,-70.24234656,-17.98790052,MUR/HEX:1,1,220,198.94,5,1,MZA 2224 - LT 3,ZONA II,390
1746,-70.24239949,-17.98782567,MUR/HEX:1,1,220,199.33,5,1,MZA 2224 - LT 4,ZONA II,391
1747,-70.24245241,-17.98775073,MCF/LWAL+DNO/HEX:1/RES,1,220,200.05,5,1,MZA 2224 - LT 5,ZONA II,392
1748,-70.24250543,-17.98767579,MUR/HEX:1,1,220,200.35,5,1,MZA 2224 - LT 6,ZONA II,393
1749,-70.24255815,-17.98760129,MUR/HEX:2,1,220,396.96,9,2,MZA 2224 - LT 7,ZONA II,394
1750,-70.24261092,-17.98752668,MUR/HEX:1,1,220,201.64,5,1,MZA 2224 - LT 8,ZONA II,395
1751,-70.24267123,-17.98745297,MUR/HEX:1,1,220,203.52,5,1,MZA 2224 - LT 9,ZONA II,396
1752,-70.24271772,-17.98737577,MUR/HEX:1,1,220,203.15,5,1,MZA 2224 - LT 10,ZONA II,397
1753,-70.24277068,-17.98730048,MUR/HEX:2,1,220,404.46,9,2,MZA 2224 - LT 11,ZONA II,398
1754,-70.24282362,-17.98722574,MUR/HEX:1,1,220,201.91,5,1,MZA 2224 - LT 12,ZONA II,399
1755,-70.24287681,-17.98715086,MUR/HEX:2,1,220,408.12,9,2,MZA 2224 - LT 13,ZONA II,400
1756,-70.24292994,-17.98707533,MCF/LWAL+DNO/HEX:3/RES,1,220,614.94,14,4,MZA 2224 - LT 14,ZONA II,401
1757,-70.24208562,-17.98794851,MCF/LWAL+DNO/HEX:2/RES,1,220,401.92,9,2,MZA 2224 - LT 15,ZONA II,402
1758,-70.24213792,-17.98787316,MCF/LWAL+DNO/HEX:1/RES,1,220,202.31,5,1,MZA 2224 - LT 16,ZONA II,403
1759,-70.2421909,-17.98779809,MUR/HEX:1,1,220,201.13,5,1,MZA 2224 - LT 17,ZONA II,404
1760,-70.24224376,-17.98772321,MCF/LWAL+DNO/HEX:3/RES,1,220,602.73,14,4,MZA 2224 - LT 18,ZONA II,405
1761,-70.24229671,-17.98764809,MUR/HEX:1,1,220,201.77,5,1,MZA 2224 - LT 19,ZONA II,406
1762,-70.24234982,-17.98757287,MCF/LWAL+DNO/HEX:2/RES,1,220,402.48,9,2,MZA 2224 - LT 20,ZONA II,407
1763,-70.24240255,-17.98749824,MCF/LWAL+DNO/HEX:1/RES,1,220,198.27,5,1,MZA 2224 - LT 21,ZONA II,408
1764,-70.24245524,-17.9874236,MUR/HEX:1,1,220,200.76,5,1,MZA 2224 - LT 22,ZONA II,409
1765,-70.24250838,-17.9873485,MUR/HEX:1,1,220,200.59,5,1,MZA 2224 - LT 23,ZONA II,410
1766,-70.24256137,-17.98727336,MUR/HEX:1,1,220,200.13,5,1,MZA 2224 - LT 24,ZONA II,411
1767,-70.24261439,-17.98719785,MUR/HEX:1,1,220,201.58,5,1,MZA 2224 - LT 25,ZONA II,412
1768,-70.24266766,-17.98712251,MUR/HEX:1,1,220,199.71,5,1,MZA 2224 - LT 26,ZONA II,413
1769,-70.24272071,-17.98704768,MCF/LWAL+DNO/HEX:1/RES,1,220,198.73,5,1,MZA 2224 - LT 27,ZONA II,414
1770,-70.24277377,-17.9869721,MCF/LWAL+DNO/HEX:2/RES,1,220,404.02,9,2,MZA 2224 - LT 28,ZONA II,415
1771,-70.24139458,-17.9892369,MCF/LWAL+DNO/HEX:1/RES,1,220,237.85,5,1,MZA 2225 - LT 1,ZONA II,416
1772,-70.24145326,-17.98915486,MCF/LWAL+DNO/HEX:1/RES,1,220,200.89,5,1,MZA 2225 - LT 2,ZONA II,417
1773,-70.24150652,-17.98907983,MUR/HEX:2,1,220,399.02,9,2,MZA 2225 - LT 3,ZONA II,418
1774,-70.24155969,-17.98900504,MUR/HEX:1,1,220,200.5,1,MZA 2225 - LT 4,ZONA II,419
1775,-70.24161318,-17.98893006,MUR/HEX:2,1,220,402.32,9,2,MZA 2225 - LT 5,ZONA II,420
1776,-70.24166637,-17.98885501,MUR/HEX:2,1,220,399.68,9,2,MZA 2225 - LT 6,ZONA II,421
1777,-70.24171936,-17.98878041,MUR/HEX:1,1,220,199.21,5,1,MZA 2225 - LT 7,ZONA II,422
1778,-70.24177237,-17.98870584,MUR/HEX:1,1,220,200.03,5,1,MZA 2225 - LT 8,ZONA II,423
1779,-70.24182552,-17.98863116,MCF/LWAL+DNO/HEX:1/RES,1,220,200.18,5,1,MZA 2225 - LT 9,ZONA II,424
1780,-70.24187878,-17.98855626,MCF/LWAL+DNO/HEX:2/RES,1,220,402.6,9,2,MZA 2225 - LT 10,ZONA II,425
1781,-70.24193167,-17.98848171,MCF/LWAL+DNO/HEX:2/RES,1,220,396.48,9,2,MZA 2225 - LT 11,ZONA II,426
1782,-70.24198471,-17.98840726,MUR/HEX:1,1,220,201.52,5,1,MZA 2225 - LT 12,ZONA II,427
1783,-70.24203797,-17.98833236,MCF/LWAL+DNO/HEX:1/RES,1,220,200.51,5,1,MZA 2225 - LT 13,ZONA II,428
1784,-70.24209724,-17.98824935,MUR/HEX:1,1,220,245.91,6,1,MZA 2225 - LT 14,ZONA II,429
1785,-70.24123835,-17.98913527,MCF/LWAL+DNO/HEX:2/RES,1,220,485.42,11,3,MZA 2225 - LT 15,ZONA II,430
1786,-70.24129726,-17.9890528,MCF/LWAL+DNO/HEX:2/RES,1,220,402.66,9,2,MZA 2225 - LT 16,ZONA II,431
1787,-70.24135035,-17.98897793,MUR/HEX:1,1,220,200.81,5,1,MZA 2225 - LT 17,ZONA II,432
1788,-70.24140349,-17.98890311,MCF/LWAL+DNO/HEX:2/RES,1,220,402.44,9,2,MZA 2225 - LT 18,ZONA II,433
1789,-70.2414567,-17.98882845,MCF/LWAL+DNO/HEX:2/RES,1,220,400.68,9,2,MZA 2225 - LT 19,ZONA II,434
1790,-70.24150961,-17.98875371,MCF/LWAL+DNO/HEX:1/RES,1,220,200.74,5,1,MZA 2225 - LT 20,ZONA II,435
1791,-70.24156263,-17.988679,MUR/HEX:2,1,220,400.92,9,2,MZA 2225 - LT 21,ZONA II,436
1792,-70.24161575,-17.98860423,MUR/HEX:1,1,220,201.16,5,1,MZA 2225 - LT 22,ZONA II,437
1793,-70.24166893,-17.98852942,MCF/LWAL+DNO/HEX:2/RES,1,220,401.34,9,2,MZA 2225 - LT 23,ZONA II,438
1794,-70.24172215,-17.9884545,MUR/HEX:1,1,220,201.65,5,1,MZA 2225 - LT 24,ZONA II,439
1795,-70.24177516,-17.98837972,MUR/HEX:1,1,220,199.57,5,1,MZA 2225 - LT 25,ZONA II,440
1796,-70.24182831,-17.98830504,MCF/LWAL+DNO/HEX:2/RES,1,220,403.2,9,2,MZA 2225 - LT 26,ZONA II,441
1797,-70.24188153,-17.98823012,MCF/LWAL+DNO/HEX:2/RES,1,220,401.16,9,2,MZA 2225 - LT 27,ZONA II,442
1798,-70.24194033,-17.98814769,MUR/HEX:2,1,220,484.9,11,3,MZA 2225 - LT 28,ZONA II,443
1799,-70.24168729,-17.98973288,MUR/HEX:2,1,220,442.5,10,3,MZA 2226 - LT 1,ZONA II,444
1800,-70.241605,-17.98967911,MCF/LWAL+DNO/HEX:2/RES,1,220,404.72,9,2,MZA 2226 - LT 2,ZONA II,445
1801,-70.24152614,-17.98962767,MUR/HEX:2,1,220,407.64,9,2,MZA 2226 - LT 3,ZONA II,446
1802,-70.24144728,-17.98957653,MCF/LWAL+DNO/HEX:1/RES,1,220,202.5,1,MZA 2226 - LT 4,ZONA II,447
1803,-70.24136986,-17.98952671,MUR/HEX:1,1,220,195.84,5,1,MZA 2226 - LT 5,ZONA II,448
1804,-70.24129303,-17.98947626,MUR/HEX:1,1,220,201.89,5,1,MZA 2226 - LT 6,ZONA II,449
1805,-70.24121466,-17.98942513,MUR/HEX:1,1,220,203.34,5,1,MZA 2226 - LT 7,ZONA II,450
1806,-70.24113625,-17.98937497,MUR/HEX:1,1,220,199.93,5,1,MZA 2226 - LT 8,ZONA II,451
1807,-70.24105458,-17.98932047,MUR/HEX:1,1,220,226.36,5,1,MZA 2226 - LT 9,ZONA II,452
1808,-70.24157984,-17.98988366,MUR/HEX:1,1,220,225.86,5,1,MZA 2226 - LT 10,ZONA II,453
1809,-70.24149749,-17.98982969,MUR/HEX:1,1,220,203.28,5,1,MZA 2226 - LT 11,ZONA II,454
1810,-70.24141938,-17.98977859,MUR/HEX:1,1,220,202.57,5,1,MZA 2226 - LT 12,ZONA II,455
1811,-70.24134117,-17.98972775,MUR/HEX:1,1,220,202.11,5,1,MZA 2226 - LT 13,ZONA II,456

1812,-70.24126287,-17.9896772,MUR/HEX:1,1,220,201.2,5,1,MZA 2226 - LT 14,ZONA II,457
1813,-70.24118496,-17.98962592,MUR/HEX:1,1,220,201.71,5,1,MZA 2226 - LT 15,ZONA II,458
1814,-70.24110676,-17.98957476,MCF/LWAL+DNO/HEX:3/RES,1,220,603.03,14,4,MZA 2226 - LT 16,ZONA II,459
1815,-70.24102707,-17.98952357,MCF/LWAL+DNO/HEX:2/RES,1,220,412.12,10,3,MZA 2226 - LT 17,ZONA II,460
1816,-70.24094529,-17.98946889,MCF/LWAL+DNO/HEX:2/RES,1,220,432.3,10,3,MZA 2226 - LT 18,ZONA II,461
1817,-70.24141108,-17.99012077,MUR/HEX:1,1,220,219.95,5,1,MZA 2227 - LT 1,ZONA II,462
1818,-70.24132888,-17.9900673,MUR/HEX:1,1,220,200.14,5,1,MZA 2227 - LT 2,ZONA II,463
1819,-70.24125636,-17.99002528,MUR/HEX:1,1,220,201.03,5,1,MZA 2227 - LT 3,ZONA II,464
1820,-70.24117281,-17.98996654,MUR/HEX:1,1,220,194.37,4,1,MZA 2227 - LT 4,ZONA II,465
1821,-70.24109564,-17.98991577,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,202.26,5,1,MZA 2227 - LT 5,ZONA II,466
1822,-70.24101702,-17.98986481,MUR/HEX:1,1,220,200.21,5,1,MZA 2227 - LT 6,ZONA II,467
1823,-70.24093908,-17.98981418,MCF/LWAL+DNO/HEX:2/RES,1,220,398.7,9,2,MZA 2227 - LT 7,ZONA II,468
1824,-70.24086122,-17.98976356,MCF/LWAL+DNO/HEX:2/RES,1,220,400.48,9,2,MZA 2227 - LT 8,ZONA II,469
1825,-70.24077816,-17.98970972,MCF/LWAL+DNO/HEX:1/RES,1,220,225.86,5,1,MZA 2227 - LT 9,ZONA II,470
1826,-70.24130473,-17.99027062,MCF/LWAL+DNO/HEX:1/RES,1,220,221.79,5,1,MZA 2227 - LT 10,ZONA II,471
1827,-70.24122272,-17.99021739,MCF/LWAL+DNO/HEX:1/RES,1,220,200.97,5,1,MZA 2227 - LT 11,ZONA II,472
1828,-70.2411447,-17.99016677,MUR/HEX:1,1,220,201.28,5,1,MZA 2227 - LT 12,ZONA II,473
1829,-70.24106622,-17.99011656,MUR/HEX:1,1,220,201.71,5,1,MZA 2227 - LT 13,ZONA II,474
1830,-70.24098815,-17.99006531,MCF/LWAL+DNO/HEX:1/RES,1,220,202.53,5,1,MZA 2227 - LT 14,ZONA II,475
1831,-70.24090973,-17.99001461,MCF/LWAL+DNO/HEX:1/RES,1,220,201.71,5,1,MZA 2227 - LT 15,ZONA II,476
1832,-70.24083174,-17.98996406,MUR/HEX:1,1,220,200.76,5,1,MZA 2227 - LT 16,ZONA II,477
1833,-70.24075391,-17.98991357,MUR/HEX:1,1,220,201.07,5,1,MZA 2227 - LT 17,ZONA II,478
1834,-70.24067073,-17.98985977,MCF/LWAL+DNO/HEX:1/RES,1,220,228.14,5,1,MZA 2227 - LT 18,ZONA II,479
1835,-70.24074751,-17.99104183,MUR/HEX:1,1,220,257.04,6,1,MZA 2229 - LT 1,ZONA II,480
1836,-70.24066335,-17.99097778,MCF/LWAL+DNO/HEX:2/RES,1,220,397.92,9,2,MZA 2229 - LT 2,ZONA II,481
1837,-70.24058853,-17.99092336,MUR/HEX:1,1,220,200.28,5,1,MZA 2229 - LT 3,ZONA II,482
1838,-70.24051328,-17.99086876,MCF/LWAL+DNO/HEX:1/RES,1,220,201.41,5,1,MZA 2229 - LT 4,ZONA II,483
1839,-70.24043957,-17.99081373,MCF/LWAL+DNO/HEX:2/RES,1,220,392.82,9,2,MZA 2229 - LT 5,ZONA II,484
1840,-70.24036491,-17.99076087,MCF/LWAL+DNO/HEX:2/RES,1,220,398.62,9,2,MZA 2229 - LT 6,ZONA II,485
1841,-70.24029099,-17.99070701,MUR/HEX:1,1,220,197.04,5,1,MZA 2229 - LT 7,ZONA II,486
1842,-70.24021659,-17.99065302,MUR/HEX:2,1,220,403.5,9,2,MZA 2229 - LT 8,ZONA II,487
1843,-70.24014064,-17.99059706,MCF/LWAL+DNO/HEX:3/RES,1,220,623.91,14,4,MZA 2229 - LT 9,ZONA II,488
1844,-70.2406375,-17.99118762,MCF/LWAL+DNO/HEX:2/RES,1,220,577.06,13,4,MZA 2229 - LT 10,ZONA II,489
1845,-70.24054651,-17.99112137,MCF/LWAL+DNO/HEX:2/RES,1,220,402.16,9,2,MZA 2229 - LT 11,ZONA II,490
1846,-70.24047169,-17.99106697,MUR/HEX:1,1,220,200.88,5,1,MZA 2229 - LT 12,ZONA II,491
1847,-70.24039686,-17.99101258,MCF/LWAL+DNO/HEX:2/RES,1,220,401.38,9,2,MZA 2229 - LT 13,ZONA II,492
1848,-70.24032243,-17.9909603,MUR/HEX:1,1,220,193.7,4,1,MZA 2229 - LT 14,ZONA II,493
1849,-70.24024949,-17.99090549,MUR/HEX:2,1,220,403.24,9,2,MZA 2229 - LT 15,ZONA II,494
1850,-70.24017449,-17.99085139,MCF/LWAL+DNO/HEX:2/RES,1,220,397.22,9,2,MZA 2229 - LT 16,ZONA II,495
1851,-70.24010067,-17.99079705,MUR/HEX:1,1,220,197.9,5,1,MZA 2229 - LT 17,ZONA II,496
1852,-70.24002813,-17.99074325,MCF/LWAL+DNO/HEX:1/RES,1,220,192.33,4,1,MZA 2229 - LT 18,ZONA II,497
1853,-70.24264786,-17.98831227,MCF/LWAL+DNO/HEX:2/RES,1,220,399.6,9,2,MZA 2231 - LT 1,ZONA II,520
1854,-70.24270146,-17.98823721,MCF/LWAL+DNO/HEX:2/RES,1,220,400.26,9,2,MZA 2231 - LT 2,ZONA II,521
1855,-70.24275455,-17.98816252,MCF/LWAL+DNO/HEX:2/RES,1,220,394.86,9,2,MZA 2231 - LT 3,ZONA II,522
1856,-70.24281242,-17.98809032,MCF/LWAL+DNO/HEX:2/RES,1,220,397.56,9,2,MZA 2231 - LT 4,ZONA II,523
1857,-70.24286092,-17.9880127,MUR/HEX:1,1,220,202.84,5,1,MZA 2231 - LT 5,ZONA II,524
1858,-70.24291446,-17.9879373,MUR/HEX:1,1,220,198.97,5,1,MZA 2231 - LT 6,ZONA II,525
1859,-70.24296751,-17.98786309,MUR/HEX:1,1,220,197.6,5,1,MZA 2231 - LT 7,ZONA II,526
1860,-70.24302007,-17.98778884,MCF/LWAL+DNO/HEX:2/RES,1,220,396.26,9,2,MZA 2231 - LT 8,ZONA II,527
1861,-70.24307283,-17.98771459,MUR/HEX:1,1,220,198.28,5,1,MZA 2231 - LT 9,ZONA II,528
1862,-70.24312495,-17.98764108,MUR/HEX:1,1,220,194.13,4,1,MZA 2231 - LT 10,ZONA II,529
1863,-70.24317772,-17.98756754,MUR/HEX:1,1,220,200.09,5,1,MZA 2231 - LT 11,ZONA II,530
1864,-70.24323103,-17.98749231,MCF/LWAL+DNO/HEX:1/RES,1,220,201.84,5,1,MZA 2231 - LT 12,ZONA II,531
1865,-70.24328508,-17.98741673,MCF/LWAL+DNO/HEX:1/RES,1,220,203.32,5,1,MZA 2231 - LT 13,ZONA II,532
1866,-70.24333845,-17.98734088,MUR/HEX:2,1,220,402.86,9,2,MZA 2231 - LT 14,ZONA II,533
1867,-70.24249167,-17.98821124,MCF/LWAL+DNO/HEX:1/RES,1,220,202.74,5,1,MZA 2231 - LT 15,ZONA II,534
1868,-70.24254502,-17.98813609,MCF/LWAL+DNO/HEX:1/RES,1,220,200.99,5,1,MZA 2231 - LT 16,ZONA II,535
1869,-70.24259759,-17.9880617,MCF/LWAL+DNO/HEX:2/RES,1,220,397.84,9,2,MZA 2231 - LT 17,ZONA II,536
1870,-70.24265004,-17.98798744,MUR/HEX:1,1,220,201.12,5,1,MZA 2231 - LT 18,ZONA II,537
1871,-70.24270336,-17.98791184,MUR/HEX:1,1,220,206.84,5,1,MZA 2231 - LT 19,ZONA II,538
1872,-70.24275698,-17.98783589,MCF/LWAL+DNO/HEX:3/RES,1,220,612.06,14,4,MZA 2231 - LT 20,ZONA II,539
1873,-70.24280984,-17.98776155,MCF/LWAL+DNO/HEX:1/RES,1,220,199.9,5,1,MZA 2231 - LT 21,ZONA II,540
1874,-70.24286211,-17.98768725,MUR/HEX:1,1,220,203.34,5,1,MZA 2231 - LT 22,ZONA II,541
1875,-70.24291499,-17.98761239,MCF/LWAL+DNO/HEX:2/RES,1,220,408.64,9,2,MZA 2231 - LT 23,ZONA II,542
1876,-70.2429675,-17.9875379,MUR/HEX:1,1,220,201.94,5,1,MZA 2231 - LT 24,ZONA II,543
1877,-70.2430202,-17.98746404,MCF/LWAL+DNO/HEX:2/RES,1,220,406.64,9,2,MZA 2231 - LT 25,ZONA II,544
1878,-70.24307304,-17.98738903,MUR/HEX:1,1,220,207.44,5,1,MZA 2231 - LT 26,ZONA II,545
1879,-70.24312646,-17.98731394,MUR/HEX:1,1,220,205.9,5,1,MZA 2231 - LT 27,ZONA II,546
1880,-70.24317952,-17.98723802,MUR/HEX:1,1,220,210.58,5,1,MZA 2231 - LT 28,ZONA II,547
1881,-70.24180057,-17.98950182,MUR/HEX:1,1,220,240.3,6,1,MZA 2232 - LT 1,ZONA II,548
1882,-70.24185826,-17.98941958,MUR/HEX:1,1,220,199.49,5,1,MZA 2232 - LT 2,ZONA II,549

1883,-70.24191134,-17.98934478,MUR/HEX:1,1,220,201.71,5,1,MZA 2232 - LT 3,ZONA II,550
1884,-70.24196534,-17.98926975,MUR/HEX:3,1,220,607.11,14,4,MZA 2232 - LT 4,ZONA II,551
1885,-70.2420196,-17.98919379,MCF/LWAL+DNO/HEX:2/RES,1,220,411.12,9,2,MZA 2232 - LT 5,ZONA II,552
1886,-70.24207316,-17.98911779,MCF/LWAL+DNO/HEX:1/RES,1,220,200.68,5,1,MZA 2232 - LT 6,ZONA II,553
1887,-70.24212657,-17.98904291,MUR/HEX:2,1,220,401.68,9,2,MZA 2232 - LT 7,ZONA II,554
1888,-70.24217881,-17.98896891,MCF/LWAL+DNO/HEX:1/RES,1,220,194.57,4,1,MZA 2232 - LT 8,ZONA II,555
1889,-70.24223135,-17.98889543,MUR/HEX:1,1,220,199.41,5,1,MZA 2232 - LT 9,ZONA II,556
1890,-70.2422845,-17.98882046,MCF/LWAL+DNO/HEX:2/RES,1,220,402.62,9,2,MZA 2232 - LT 10,ZONA II,557
1891,-70.24233798,-17.98874563,MCF/LWAL+DNO/HEX:1/RES,1,220,199.51,5,1,MZA 2232 - LT 11,ZONA II,558
1892,-70.24239125,-17.98867087,MUR/HEX:1,1,220,200.38,5,1,MZA 2232 - LT 12,ZONA II,559
1893,-70.24244433,-17.98859612,MUR/HEX:3,1,220,596.37,14,4,MZA 2232 - LT 13,ZONA II,560
1894,-70.242503,-17.98851382,MUR/HEX:2,1,220,482.14,11,3,MZA 2232 - LT 14,ZONA II,561
1895,-70.24164288,-17.98940099,MCF/LWAL+DNO/HEX:3/RES,1,220,702.42,16,5,MZA 2232 - LT 15,ZONA II,562
1896,-70.24170014,-17.98931941,MCF/LWAL+DNO/HEX:2/RES,1,220,406.24,9,2,MZA 2232 - LT 16,ZONA II,563
1897,-70.24175428,-17.98924321,MUR/HEX:1,1,220,206.79,5,1,MZA 2232 - LT 17,ZONA II,564
1898,-70.24180865,-17.98916774,MUR/HEX:1,1,220,201.5,1,MZA 2232 - LT 18,ZONA II,565
1899,-70.2418621,-17.98909301,MUR/HEX:1,1,220,201.83,5,1,MZA 2232 - LT 19,ZONA II,566
1900,-70.24191524,-17.98901767,MUR/HEX:1,1,220,202.49,5,1,MZA 2232 - LT 20,ZONA II,567
1901,-70.24196875,-17.98894273,MUR/HEX:2,1,220,402.44,9,2,MZA 2232 - LT 21,ZONA II,568
1902,-70.24202146,-17.98886816,MCF/LWAL+DNO/HEX:2/RES,1,220,398.42,9,2,MZA 2232 - LT 22,ZONA II,569
1903,-70.24207453,-17.98879383,MCF/LWAL+DNO/HEX:2/RES,1,220,402.9,9,2,MZA 2232 - LT 23,ZONA II,570
1904,-70.24212838,-17.98871814,MCF/LWAL+DNO/HEX:2/RES,1,220,410.9,9,2,MZA 2232 - LT 24,ZONA II,571
1905,-70.24218235,-17.9886427,MCF/LWAL+DNO/HEX:2/RES,1,220,402.26,9,2,MZA 2232 - LT 25,ZONA II,572
1906,-70.24223565,-17.98856798,MUR/HEX:1,1,220,201.17,5,1,MZA 2232 - LT 26,ZONA II,573
1907,-70.24228877,-17.98849326,MUR/HEX:1,1,220,200.65,5,1,MZA 2232 - LT 27,ZONA II,574
1908,-70.24234703,-17.9884108,MCF/LWAL+DNO/HEX:2/RES,1,220,483.78,11,3,MZA 2232 - LT 28,ZONA II,575
1909,-70.24356663,-17.98758732,MCF/LWAL+DNO/HEX:2/RES,1,220,445.36,10,3,MZA 2233 - LT 1,ZONA II,576
1910,-70.24350881,-17.98766487,MCF/LWAL+DNO/HEX:1/RES,1,220,199.95,5,1,MZA 2233 - LT 2,ZONA II,577
1911,-70.24345521,-17.98773941,MCF/LWAL+DNO/HEX:1/RES,1,220,201.97,5,1,MZA 2233 - LT 3,ZONA II,578
1912,-70.24340201,-17.98781414,MCF/LWAL+DNO/HEX:2/RES,1,220,399.42,9,2,MZA 2233 - LT 4,ZONA II,579
1913,-70.24334821,-17.98788916,MCF/LWAL+DNO/HEX:1/RES,1,220,204.49,5,1,MZA 2233 - LT 5,ZONA II,580
1914,-70.24329459,-17.98796492,MCF/LWAL+DNO/HEX:2/RES,1,220,402.98,9,2,MZA 2233 - LT 6,ZONA II,581
1915,-70.24324074,-17.98803984,MUR/HEX:1,1,220,201.97,5,1,MZA 2233 - LT 7,ZONA II,582
1916,-70.24318739,-17.98811475,MCF/LWAL+DNO/HEX:1/RES,1,220,201.99,5,1,MZA 2233 - LT 8,ZONA II,583
1917,-70.24313412,-17.9881897,MCF/LWAL+DNO/HEX:1/RES,1,220,200.73,5,1,MZA 2233 - LT 9,ZONA II,584
1918,-70.24308092,-17.98826409,MUR/HEX:1,1,220,201.97,5,1,MZA 2233 - LT 10,ZONA II,585
1919,-70.24302707,-17.9883388,MCF/LWAL+DNO/HEX:2/RES,1,220,396.94,9,2,MZA 2233 - LT 11,ZONA II,586
1920,-70.24297298,-17.98841516,MCF/LWAL+DNO/HEX:2/RES,1,220,409.56,9,2,MZA 2233 - LT 12,ZONA II,587
1921,-70.24291918,-17.98849064,MCF/LWAL+DNO/HEX:2/RES,1,220,409.5,9,2,MZA 2233 - LT 13,ZONA II,588
1922,-70.24307641,-17.98859394,MUR/HEX:1,1,220,201.49,5,1,MZA 2233 - LT 14,ZONA II,589
1923,-70.2431313,-17.9885187,MCF/LWAL+DNO/HEX:2/RES,1,220,410.8,9,2,MZA 2233 - LT 15,ZONA II,590
1924,-70.24318511,-17.98844347,MCF/LWAL+DNO/HEX:1/RES,1,220,209.54,5,1,MZA 2233 - LT 16,ZONA II,591
1925,-70.24323843,-17.98836909,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,206.37,5,1,MZA 2233 - LT 17,ZONA II,592
1926,-70.24329194,-17.98829382,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,205.5,1,MZA 2233 - LT 18,ZONA II,593
1927,-70.24334532,-17.98821825,MUR/HEX:1,1,220,209.04,5,1,MZA 2233 - LT 19,ZONA II,594
1928,-70.24339823,-17.98814347,MCF/LWAL+DNO/HEX:2/RES,1,220,409.28,9,2,MZA 2233 - LT 20,ZONA II,595
1929,-70.24345201,-17.98806823,MCF/LWAL+DNO/HEX:3/RES,1,220,611.49,14,4,MZA 2233 - LT 21,ZONA II,596
1930,-70.24350539,-17.98799232,MUR/HEX:1,1,220,207.32,5,1,MZA 2233 - LT 22,ZONA II,597
1931,-70.24355864,-17.98791762,MUR/HEX:1,1,220,204.22,5,1,MZA 2233 - LT 23,ZONA II,598
1932,-70.24361143,-17.98784302,MCF/LWAL+DNO/HEX:2/RES,1,220,403.14,9,2,MZA 2233 - LT 24,ZONA II,599
1933,-70.24366493,-17.98776816,MUR/HEX:2,1,220,406.02,9,2,MZA 2233 - LT 25,ZONA II,600
1934,-70.24372844,-17.9876351,MCF/LWAL+DNO/HEX:2/RES,1,220,764.18,5,MZA 2233 - LT 26,ZONA II,601
1935,-70.2427813,-17.98868653,MCF/LWAL+DNO/HEX:2/RES,1,220,410.2,9,2,MZA 2234 - LT 1,ZONA II,603
1936,-70.24272754,-17.98876195,MCF/LWAL+DNO/HEX:2/RES,1,220,407.08,9,2,MZA 2234 - LT 2,ZONA II,604
1937,-70.24267402,-17.98883648,MCF/LWAL+DNO/HEX:1/RES,1,220,202.73,5,1,MZA 2234 - LT 3,ZONA II,605
1938,-70.24262047,-17.98891123,MCF/LWAL+DNO/HEX:1/RES,1,220,206.47,5,1,MZA 2234 - LT 4,ZONA II,606
1939,-70.24256722,-17.98898614,MUR/HEX:1,1,220,205.87,5,1,MZA 2234 - LT 5,ZONA II,607
1940,-70.24251415,-17.9890617,MCF/LWAL+DNO/HEX:1/RES,1,220,204.6,5,1,MZA 2234 - LT 6,ZONA II,608
1941,-70.24246067,-17.98913716,MCF/LWAL+DNO/HEX:2/RES,1,220,411.96,10,3,MZA 2234 - LT 7,ZONA II,609
1942,-70.24240724,-17.98921195,MCF/LWAL+DNO/HEX:2/RES,1,220,406.7,9,2,MZA 2234 - LT 8,ZONA II,610
1943,-70.24235341,-17.9892867,MUR/HEX:1,1,220,208.44,5,1,MZA 2234 - LT 9,ZONA II,611
1944,-70.24230055,-17.98936208,MCF/LWAL+DNO/HEX:2/RES,1,220,406.9,2,MZA 2234 - LT 10,ZONA II,612
1945,-70.24224945,-17.98943405,MUR/HEX:1,1,220,191.42,4,1,MZA 2234 - LT 11,ZONA II,613
1946,-70.24220091,-17.98950268,MUR/HEX:1,1,220,185.08,4,1,MZA 2234 - LT 12,ZONA II,614
1947,-70.24215332,-17.98957015,MUR/HEX:1,1,220,184.82,4,1,MZA 2234 - LT 13,ZONA II,615
1948,-70.24210363,-17.9896384,MUR/HEX:1,1,220,192.91,4,1,MZA 2234 - LT 14,ZONA II,616
1949,-70.24206128,-17.98970222,MCF/LWAL+DNO/HEX:1/RES,1,220,150.25,3,0,MZA 2234 - LT 15,ZONA II,617
1950,-70.24222049,-17.98980446,MCF/LWAL+DNO/HEX:3/RES,1,220,483.15,11,3,MZA 2234 - LT 16,ZONA II,618
1951,-70.24226341,-17.98974014,MCF/LWAL+DNO/HEX:1/RES,1,220,178.95,4,1,MZA 2234 - LT 17,ZONA II,619
1952,-70.24231215,-17.98967323,MCF/LWAL+DNO/HEX:2/RES,1,220,368.08,8,2,MZA 2234 - LT 18,ZONA II,620
1953,-70.24236021,-17.98960505,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,182.24,4,1,MZA 2234 - LT 19,ZONA II,621

1954,-70.24246003,-17.9894643,MUR/HEX:1,1,220,187.58,4,1,MZA 2234 - LT 20,ZONA II,622
1955,-70.24240898,-17.98953628,MUR/HEX:1,1,220,200.4,5,1,MZA 2234 - LT 21,ZONA II,623
1956,-70.2425118,-17.98938958,MCF/LWAL+DNO/HEX:1/RES,1,220,197.92,5,1,MZA 2234 - LT 22,ZONA II,624
1957,-70.24256471,-17.98931556,MUR/HEX:1,1,220,199.1,5,1,MZA 2234 - LT 23,ZONA II,625
1958,-70.24261762,-17.98924071,MUR/HEX:1,1,220,201.23,5,1,MZA 2234 - LT 24,ZONA II,626
1959,-70.24267084,-17.98916571,MUR/HEX:1,1,220,200.09,5,1,MZA 2234 - LT 25,ZONA II,627
1960,-70.24272451,-17.98909074,MCF/LWAL+DNO/HEX:1/RES,1,220,203.15,5,1,MZA 2234 - LT 26,ZONA II,628
1961,-70.24277845,-17.98901503,MUR/HEX:1,1,220,204.37,5,1,MZA 2234 - LT 27,ZONA II,629
1962,-70.24283203,-17.98893982,MUR/HEX:1,1,220,201.74,5,1,MZA 2234 - LT 28,ZONA II,630
1963,-70.24288554,-17.98886461,MUR/HEX:1,1,220,206.25,5,1,MZA 2234 - LT 29,ZONA II,631
1964,-70.24296024,-17.98880073,MUR/HEX:1,1,220,145.95,3,0,MZA 2234 - LT 30A,ZONA II,632
1965,-70.24288009,-17.9887497,MUR/HEX:2,1,220,104.04,2,0,MZA 2234 - LT 30B,ZONA II,633
1966,-70.2425651,-17.99031458,MUR/HEX:1,1,220,167.55,4,1,MZA 2235 - LT 1,ZONA II,634
1967,-70.24249889,-17.99027201,MUR/HEX:1,1,220,174.82,4,1,MZA 2235 - LT 2,ZONA II,635
1968,-70.24242928,-17.99022594,MCF/LWAL+DNO/HEX:2/RES,1,220,376.56,9,2,MZA 2235 - LT 3,ZONA II,636
1969,-70.24235366,-17.99017709,MUR/HEX:2,1,220,405.78,9,2,MZA 2235 - LT 4,ZONA II,637
1970,-70.24227553,-17.99012525,MCF/LWAL+DNO/HEX:1/RES,1,220,204.54,5,1,MZA 2235 - LT 5,ZONA II,638
1971,-70.24219661,-17.99007443,MCF/LWAL+DNO/HEX:2/RES,1,220,405.8,9,2,MZA 2235 - LT 6,ZONA II,639
1972,-70.24211869,-17.99002332,MCF/LWAL+DNO/HEX:2/RES,1,220,402.92,9,2,MZA 2235 - LT 7,ZONA II,640
1973,-70.24204024,-17.98997231,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,204.33,5,1,MZA 2235 - LT 8,ZONA II,641
1974,-70.24196192,-17.98992105,MUR/HEX:1,1,220,201.38,5,1,MZA 2235 - LT 9,ZONA II,642
1975,-70.2418838,-17.98986992,MUR/HEX:1,1,220,203.09,5,1,MZA 2235 - LT 10,ZONA II,643
1976,-70.24245883,-17.99046618,MCF/LWAL+DNO/HEX:1/RES,1,220,164.2,4,1,MZA 2235 - LT 11,ZONA II,644
1977,-70.24239224,-17.9904234,MCF/LWAL+DNO/HEX:2/RES,1,220,356.36,8,2,MZA 2235 - LT 12,ZONA II,645
1978,-70.24232217,-17.99037691,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,185.48,4,1,MZA 2235 - LT 13,ZONA II,646
1979,-70.24224624,-17.9903277,MUR/HEX:1,1,220,205.43,5,1,MZA 2235 - LT 14,ZONA II,647
1980,-70.24216848,-17.99027597,MCF/LWAL+DNO/HEX:2/RES,1,220,395.84,9,2,MZA 2235 - LT 15,ZONA II,648
1981,-70.24209024,-17.99022544,MCF/LWAL+DNO/HEX:2/RES,1,220,407.6,9,2,MZA 2235 - LT 16,ZONA II,649
1982,-70.24201204,-17.99017401,MCF/LWAL+DNO/HEX:1/RES,1,220,199.71,5,1,MZA 2235 - LT 17,ZONA II,650
1983,-70.24193723,-17.9901227,MCF/LWAL+DNO/HEX:2/RES,1,220,409.38,9,2,MZA 2235 - LT 18,ZONA II,651
1984,-70.24185474,-17.9900711,MUR/HEX:1,1,220,200.25,5,1,MZA 2235 - LT 19,ZONA II,652
1985,-70.24177687,-17.99001998,MCF/LWAL+DNO/HEX:2/RES,1,220,400.8,9,2,MZA 2235 - LT 20,ZONA II,653
1986,-70.24155001,-17.99065836,MUR/HEX:1,1,220,206.05,5,1,MZA 2236 - LT 1,ZONA II,654
1987,-70.24162779,-17.99071268,MCF/LWAL+DNO/HEX:2/RES,1,220,414.7,10,3,MZA 2236 - LT 2,ZONA II,655
1988,-70.24166971,-17.99057271,MCF/LWAL+DNO/HEX:2/RES,1,220,408.28,9,2,MZA 2236 - LT 3,ZONA II,656
1989,-70.24172308,-17.99049771,MCF/LWAL+DNO/HEX:2/RES,1,220,412.46,10,3,MZA 2236 - LT 4,ZONA II,657
1990,-70.24177697,-17.99042227,MCF/LWAL+DNO/HEX:1/RES,1,220,207.52,5,1,MZA 2236 - LT 5,ZONA II,658
1991,-70.2418311,-17.99034649,MUR/HEX:1,1,220,208.61,5,1,MZA 2236 - LT 6,ZONA II,659
1992,-70.24167388,-17.99024136,MCF/LWAL+DNO/HEX:1/RES,1,220,203.4,5,1,MZA 2236 - LT 7,ZONA II,660
1993,-70.24162004,-17.99031672,MCF/LWAL+DNO/HEX:1/RES,1,220,203.37,5,1,MZA 2236 - LT 8,ZONA II,661
1994,-70.24156632,-17.99039192,MCF/LWAL+DNO/HEX:1/RES,1,220,203.04,5,1,MZA 2236 - LT 9,ZONA II,662
1995,-70.24151328,-17.99046646,MUR/HEX:1,1,220,199.84,5,1,MZA 2236 - LT 10,ZONA II,663
1996,-70.24147142,-17.99060501,MUR/HEX:1,1,220,206.79,5,1,MZA 2236 - LT 11,ZONA II,664
1997,-70.24139377,-17.99055167,MCF/LWAL+DNO/HEX:2/RES,1,220,403.5,9,2,MZA 2236 - LT 12,ZONA II,665
1998,-70.24144659,-17.99118965,MCF/LWAL+DNO/HEX:1/RES,1,220,234.82,5,1,MZA 2237 - LT 1,ZONA II,666
1999,-70.24136479,-17.99113091,MUR/HEX:1,1,220,201.61,5,1,MZA 2237 - LT 2,ZONA II,667
2000,-70.24129183,-17.99108092,MCF/LWAL+DNO/HEX:2/RES,1,220,413.34,10,3,MZA 2237 - LT 3,ZONA II,668
2001,-70.24121369,-17.99102054,MCF/LWAL+DNO/HEX:1/RES,1,220,197.52,5,1,MZA 2237 - LT 4,ZONA II,669
2002,-70.24112694,-17.99095727,MCF/LWAL+DNO/HEX:1/RES,1,220,269.51,6,1,MZA 2237 - LT 5,ZONA II,670
2003,-70.24156185,-17.9910437,MUR/HEX:1,1,220,242.4,6,1,MZA 2237 - LT 6,ZONA II,671
2004,-70.24147944,-17.99098382,MCF/LWAL+DNO/HEX:1/RES,1,220,206.36,5,1,MZA 2237 - LT 7,ZONA II,672
2005,-70.24140333,-17.99092994,MUR/HEX:1,1,220,199.66,5,1,MZA 2237 - LT 8,ZONA II,673
2006,-70.24132729,-17.99087621,MUR/HEX:1,1,220,201.39,5,1,MZA 2237 - LT 9,ZONA II,674
2007,-70.24123688,-17.9908094,MCF/LWAL+DNO/HEX:1/RES,1,220,277.36,6,1,MZA 2237 - LT 10,ZONA II,675
2008,-70.24115212,-17.99156073,MCF/LWAL+DNO/HEX:1/RES,1,220,231.31,5,1,MZA 2238 - LT 1,ZONA II,676
2009,-70.24107141,-17.99150291,MCF/LWAL+DNO/HEX:2/RES,1,220,402.58,9,2,MZA 2238 - LT 2,ZONA II,677
2010,-70.24099652,-17.99144968,MUR/HEX:1,1,220,197.86,5,1,MZA 2238 - LT 3,ZONA II,678
2011,-70.24092326,-17.99139533,MCF/LWAL+DNO/HEX:1/RES,1,220,197.76,5,1,MZA 2238 - LT 4,ZONA II,679
2012,-70.24084349,-17.99133556,MCF/LWAL+DNO/HEX:1/RES,1,220,233.39,5,1,MZA 2238 - LT 5,ZONA II,680
2013,-70.24126672,-17.99141806,MCF/LWAL+DNO/HEX:2/RES,1,220,446.82,10,3,MZA 2238 - LT 6,ZONA II,681
2014,-70.24118814,-17.99136,MCF/LWAL+DNO/HEX:1/RES,1,220,191.1,4,1,MZA 2238 - LT 7,ZONA II,682
2015,-70.24111462,-17.9913064,MCF/LWAL+DNO/HEX:2/RES,1,220,392.3,9,2,MZA 2238 - LT 8,ZONA II,683
2016,-70.24103958,-17.99125274,MUR/HEX:1,1,220,197.82,5,1,MZA 2238 - LT 9,ZONA II,684
2017,-70.24094707,-17.99119113,MUR/HEX:1,1,220,251.79,6,1,MZA 2238 - LT 10,ZONA II,685
2018,-70.24402693,-17.98783113,MCF/LWAL+DNO/HEX:2/RES,1,220,423.96,10,3,MZA 2240 - LT 1,ZONA II,690
2019,-70.24397182,-17.9879037,MUR/HEX:1,1,220,184.93,4,1,MZA 2240 - LT 2,ZONA II,691
2020,-70.24392229,-17.9879722,MCF/LWAL+DNO/HEX:2/RES,1,220,370.44,9,2,MZA 2240 - LT 3,ZONA II,692
2021,-70.24388664,-17.98804677,MUR/HEX:1,1,220,178.68,4,1,MZA 2240 - LT 4,ZONA II,693
2022,-70.24382731,-17.98810778,MUR/HEX:1,1,220,182.68,4,1,MZA 2240 - LT 5,ZONA II,694
2023,-70.24377592,-17.98817994,MUR/HEX:2,1,220,410.48,9,2,MZA 2240 - LT 6,ZONA II,695
2024,-70.24372305,-17.98825631,MCF/LWAL+DNO/HEX:2/RES,1,220,403.42,9,2,MZA 2240 - LT 7,ZONA II,696

2025,-70.24366939,-17.98833212,MUR/HEX:1,1,220,204.97,5,1,MZA 2240 - LT 8,ZONA II,697
2026,-70.24361581,-17.98840743,MUR/HEX:1,1,220,199.67,5,1,MZA 2240 - LT 9,ZONA II,698
2027,-70.24356309,-17.98848226,MCF/LWAL+DNO/HEX:2/RES,1,220,403.52,9,2,MZA 2240 - LT 10,ZONA II,699
2028,-70.24350971,-17.98855735,MCF/LWAL+DNO/HEX:2/RES,1,220,404.28,9,2,MZA 2240 - LT 11,ZONA II,700
2029,-70.24345698,-17.98863259,MUR/HEX:1,1,220,200.12,5,1,MZA 2240 - LT 12,ZONA II,701
2030,-70.24340359,-17.98870796,MCF/LWAL+DNO/HEX:2/RES,1,220,408.22,9,2,MZA 2240 - LT 13,ZONA II,702
2031,-70.24335299,-17.98877993,MUR/HEX:1,1,220,181.03,4,1,MZA 2240 - LT 14,ZONA II,703
2032,-70.24351013,-17.98888269,MCF/LWAL+DNO/HEX:2/RES,1,220,368.22,8,2,MZA 2240 - LT 15,ZONA II,704
2033,-70.24356105,-17.9888105,MUR/HEX:1,1,220,205.97,5,1,MZA 2240 - LT 16,ZONA II,705
2034,-70.24361422,-17.98873514,MCF/LWAL+DNO/HEX:2/RES,1,220,405.1,9,2,MZA 2240 - LT 17,ZONA II,706
2035,-70.243667,-17.9886602,MUR/HEX:2,1,220,403.3,9,2,MZA 2240 - LT 18,ZONA II,707
2036,-70.24372018,-17.98858538,MCF/LWAL+DNO/HEX:1/RES,1,220,204.3,5,1,MZA 2240 - LT 19,ZONA II,708
2037,-70.24377322,-17.98851034,MCF/LWAL+DNO/HEX:3/RES,1,220,607.17,14,4,MZA 2240 - LT 20,ZONA II,709
2038,-70.24381865,-17.9884338,MCF/LWAL+DNO/HEX:3/RES,1,220,623.55,14,4,MZA 2240 - LT 21,ZONA II,710
2039,-70.24388017,-17.98835836,MCF/LWAL+DNO/HEX:1/RES,1,220,205.17,5,1,MZA 2240 - LT 22,ZONA II,711
2040,-70.24393387,-17.98828293,MCF/LWAL+DNO/HEX:2/RES,1,220,410.56,9,2,MZA 2240 - LT 23,ZONA II,712
2041,-70.24398425,-17.98821121,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,183.54,4,1,MZA 2240 - LT 24,ZONA II,713
2042,-70.24403161,-17.9881445,MUR/HEX:1,1,220,179.56,4,1,MZA 2240 - LT 25,ZONA II,714
2043,-70.24408007,-17.98807729,MUR/HEX:1,1,220,188.3,4,1,MZA 2240 - LT 26,ZONA II,715
2044,-70.24412885,-17.98800733,MUR/HEX:1,1,220,190.64,4,1,MZA 2240 - LT 27,ZONA II,716
2045,-70.24418971,-17.98792582,MUR/HEX:1,1,220,260.37,6,1,MZA 2240 - LT 28,ZONA II,717
2046,-70.24229515,-17.9918015,MCF/LWAL+DNO/HEX:1/RES,1,220,202.07,5,1,MZA 2242 - LT 1,ZONA II,718
2047,-70.24221927,-17.99174708,MCF/LWAL+DNO/HEX:1/RES,1,220,202.19,5,1,MZA 2242 - LT 2,ZONA II,719
2048,-70.24214347,-17.9916927,MUR/HEX:1,1,220,199.18,5,1,MZA 2242 - LT 3,ZONA II,720
2049,-70.24206832,-17.9916388,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,196.25,5,1,MZA 2242 - LT 4,ZONA II,721
2050,-70.241993,-17.99158509,MUR/HEX:1,1,220,196.68,5,1,MZA 2242 - LT 5,ZONA II,722
2051,-70.24191734,-17.99153091,MUR/HEX:1,1,220,196.1,5,1,MZA 2242 - LT 6,ZONA II,723
2052,-70.24184133,-17.99147645,MUR/HEX:1,1,220,196.02,5,1,MZA 2242 - LT 7,ZONA II,724
2053,-70.24176549,-17.9914221,MCF/LWAL+DNO/HEX:1/RES,1,220,192.73,4,1,MZA 2242 - LT 8,ZONA II,725
2054,-70.24169046,-17.99136834,MCF/LWAL+DNO/HEX:1/RES,1,220,189.35,4,1,MZA 2242 - LT 9,ZONA II,726
2055,-70.2416142,-17.99131416,MCF/LWAL+DNO/HEX:2/RES,1,220,390.48,9,2,MZA 2242 - LT 10,ZONA II,727
2056,-70.24241016,-17.99165615,MUR/HEX:1,1,220,200.54,5,1,MZA 2242 - LT 11,ZONA II,728
2057,-70.24233434,-17.99160212,MCF/LWAL+DNO/HEX:1/RES,1,220,203.57,5,1,MZA 2242 - LT 12,ZONA II,729
2058,-70.2422582,-17.99154783,MUR/HEX:1,1,220,203.67,5,1,MZA 2242 - LT 13,ZONA II,730
2059,-70.24218228,-17.99149372,MCF/LWAL+DNO/HEX:2/RES,1,220,407.3,9,2,MZA 2242 - LT 14,ZONA II,731
2060,-70.24210643,-17.99143999,MUR/HEX:1,1,220,203.69,5,1,MZA 2242 - LT 15,ZONA II,732
2061,-70.24203068,-17.99138608,MCF/LWAL+DNO/HEX:2/RES,1,220,410.22,9,2,MZA 2242 - LT 16,ZONA II,733
2062,-70.24195448,-17.99133184,MCF/LWAL+DNO/HEX:1/RES,1,220,207.46,5,1,MZA 2242 - LT 17,ZONA II,734
2063,-70.24187829,-17.99127758,MCF/LWAL+DNO/HEX:2/RES,1,220,412.98,10,3,MZA 2242 - LT 18,ZONA II,735
2064,-70.2418027,-17.99122374,MCF/LWAL+DNO/HEX:2/RES,1,220,410.94,9,2,MZA 2242 - LT 19,ZONA II,736
2065,-70.24172667,-17.99117016,MCF/LWAL+DNO/HEX:1/RES,1,220,208.67,5,1,MZA 2242 - LT 20,ZONA II,737
2066,-70.24199736,-17.99217544,MUR/HEX:1,1,220,201.83,5,1,MZA 2243 - LT 1,ZONA II,738
2067,-70.24192245,-17.99212097,MUR/HEX:1,1,220,200.68,5,1,MZA 2243 - LT 2,ZONA II,739
2068,-70.24184666,-17.99206632,MCF/LWAL+DNO/HEX:2/RES,1,220,410.6,9,2,MZA 2243 - LT 3,ZONA II,740
2069,-70.24177127,-17.99201131,MUR/HEX:1,1,220,200.2,5,1,MZA 2243 - LT 4,ZONA II,741
2070,-70.24169655,-17.99195716,MCF/LWAL+DNO/HEX:2/RES,1,220,401.44,9,2,MZA 2243 - LT 5,ZONA II,742
2071,-70.24162163,-17.99190282,MUR/HEX:2,1,220,402.62,9,2,MZA 2243 - LT 6,ZONA II,743
2072,-70.24154621,-17.99184821,MCF/LWAL+DNO/HEX:2/RES,1,220,406.18,9,2,MZA 2243 - LT 7,ZONA II,744
2073,-70.24147084,-17.9917934,MCF/LWAL+DNO/HEX:1/RES,1,220,201.68,5,1,MZA 2243 - LT 8,ZONA II,745
2074,-70.24139521,-17.99173867,MCF/LWAL+DNO/HEX:1/RES,1,220,203.69,5,1,MZA 2243 - LT 9,ZONA II,746
2075,-70.24131976,-17.9916838,MUR/HEX:1,1,220,201.42,5,1,MZA 2243 - LT 10,ZONA II,747
2076,-70.24211207,-17.99203113,MUR/HEX:1,1,220,199.29,5,1,MZA 2243 - LT 11,ZONA II,748
2077,-70.24203685,-17.99197641,MUR/HEX:1,1,220,199.5,5,1,MZA 2243 - LT 12,ZONA II,749
2078,-70.24196119,-17.99192183,MCF/LWAL+DNO/HEX:2/RES,1,220,401.9,2,MZA 2243 - LT 13,ZONA II,750
2079,-70.24188602,-17.99186696,MUR/HEX:1,1,220,198.76,5,1,MZA 2243 - LT 14,ZONA II,751
2080,-70.24181103,-17.99181259,MUR/HEX:1,1,220,198.7,5,1,MZA 2243 - LT 15,ZONA II,752
2081,-70.241736,-17.99175815,MCF/LWAL+DNO/HEX:3/RES,1,220,597.54,14,4,MZA 2243 - LT 16,ZONA II,753
2082,-70.24166075,-17.99170364,MUR/HEX:1,1,220,199.77,5,1,MZA 2243 - LT 17,ZONA II,754
2083,-70.24158554,-17.99164892,MUR/HEX:1,1,220,199.73,5,1,MZA 2243 - LT 18,ZONA II,755
2084,-70.24151011,-17.9915943,MCF/LWAL+DNO/HEX:1/RES,1,220,200.35,5,1,MZA 2243 - LT 19,ZONA II,756
2085,-70.24143483,-17.99153964,MCF/LWAL+DNO/HEX:1/RES,1,220,199.67,5,1,MZA 2243 - LT 20,ZONA II,757
2086,-70.24449513,-17.9880718,MUR/HEX:1,1,220,203.33,5,1,MZA 2244 - LT 1,ZONA II,758
2087,-70.24444812,-17.98815438,MUR/HEX:1,1,220,195.91,5,1,MZA 2244 - LT 2,ZONA II,759
2088,-70.24438747,-17.98821981,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,204.01,5,1,MZA 2244 - LT 3,ZONA II,760
2089,-70.24433376,-17.98829523,MUR/HEX:2,1,220,403.7,9,2,MZA 2244 - LT 4,ZONA II,761
2090,-70.24427806,-17.98837318,MUR/HEX:1,1,220,218.82,5,1,MZA 2244 - LT 5,ZONA II,762
2091,-70.24422008,-17.98845492,MUR/HEX:1,1,220,222,5,1,MZA 2244 - LT 6,ZONA II,763
2092,-70.24416431,-17.98853344,MUR/HEX:2,1,220,404.86,9,2,MZA 2244 - LT 7,ZONA II,764
2093,-70.24411033,-17.98860896,MUR/HEX:1,1,220,207.33,5,1,MZA 2244 - LT 8,ZONA II,765
2094,-70.24405648,-17.98868517,MUR/HEX:2,1,220,410.8,9,2,MZA 2244 - LT 9,ZONA II,766
2095,-70.24400283,-17.98876016,MCF/LWAL+DNO/HEX:2/RES,1,220,405.9,9,2,MZA 2244 - LT 10,ZONA II,767

2096,-70.24395017,-17.98883511,MUR/HEX:1,1,220,203.55,5,1,MZA 2244 - LT 11,ZONA II,768
2097,-70.24389705,-17.98890949,MUR/HEX:1,1,220,202.61,5,1,MZA 2244 - LT 12,ZONA II,769
2098,-70.2438436,-17.9889844,MUR/HEX:1,1,220,207.03,5,1,MZA 2244 - LT 13,ZONA II,770
2099,-70.24378989,-17.98905995,MUR/HEX:1,1,220,206.36,5,1,MZA 2244 - LT 14,ZONA II,771
2100,-70.24394859,-17.98916396,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,204.08,5,1,MZA 2244 - LT 15,ZONA II,772
2101,-70.24400196,-17.98908845,MUR/HEX:1,1,220,204.87,5,1,MZA 2244 - LT 16,ZONA II,773
2102,-70.24405532,-17.98901321,MCF/LWAL+DNO/HEX:1/RES,1,220,202.63,5,1,MZA 2244 - LT 17,ZONA II,774
2103,-70.24410895,-17.98893766,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,206.2,5,1,MZA 2244 - LT 18,ZONA II,775
2104,-70.24416159,-17.98886229,MUR/HEX:1,1,220,199.16,5,1,MZA 2244 - LT 19,ZONA II,776
2105,-70.24421482,-17.98878745,MUR/HEX:1,1,220,205.25,5,1,MZA 2244 - LT 20,ZONA II,777
2106,-70.24426826,-17.98871137,MUR/HEX:1,1,220,203.76,5,1,MZA 2244 - LT 21,ZONA II,778
2107,-70.24432175,-17.98863608,MUR/HEX:1,1,220,202.04,5,1,MZA 2244 - LT 22,ZONA II,779
2108,-70.24437736,-17.98855732,MUR/HEX:1,1,220,221.16,5,1,MZA 2244 - LT 23,ZONA II,780
2109,-70.2444349,-17.98847571,MUR/HEX:1,1,220,216.63,5,1,MZA 2244 - LT 24,ZONA II,781
2110,-70.24449037,-17.98839761,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,202.85,5,1,MZA 2244 - LT 25,ZONA II,782
2111,-70.24454439,-17.98832129,MUR/HEX:2,1,220,412.26,10,3,MZA 2244 - LT 26,ZONA II,783
2112,-70.24459946,-17.98824448,MUR/HEX:1,1,220,206.65,5,1,MZA 2244 - LT 27,ZONA II,784
2113,-70.24465839,-17.98816296,MUR/HEX:1,1,220,231.65,5,1,MZA 2244 - LT 28,ZONA II,785
2114,-70.24365037,-17.98925999,MCF/LWAL+DNO/HEX:1/RES,1,220,227.58,5,1,MZA 2245 - LT 1,ZONA II,786
2115,-70.24359316,-17.98934023,MUR/HEX:1,1,220,200.68,5,1,MZA 2245 - LT 2,ZONA II,787
2116,-70.24353878,-17.98941536,MCF/LWAL+DNO/HEX:1/RES,1,220,203.3,5,1,MZA 2245 - LT 3,ZONA II,788
2117,-70.24348304,-17.98949493,MCF/LWAL+DNO/HEX:2/RES,1,220,440.84,10,3,MZA 2245 - LT 4,ZONA II,789
2118,-70.24342439,-17.98957765,MUR/HEX:1,1,220,222.06,5,1,MZA 2245 - LT 5,ZONA II,790
2119,-70.24336524,-17.98966034,MCF/LWAL+DNO/HEX:2/RES,1,220,443.42,10,3,MZA 2245 - LT 6,ZONA II,791
2120,-70.24330935,-17.98973979,MCF/LWAL+DNO/HEX:2/RES,1,220,405.64,9,2,MZA 2245 - LT 7,ZONA II,792
2121,-70.24325668,-17.98981466,MCF/LWAL+DNO/HEX:1/RES,1,220,197.43,5,1,MZA 2245 - LT 8,ZONA II,793
2122,-70.24320294,-17.98988872,MCF/LWAL+DNO/HEX:2/RES,1,220,405.12,9,2,MZA 2245 - LT 9,ZONA II,794
2123,-70.24314973,-17.98996419,MCF/LWAL+DNO/HEX:2/RES,1,220,403.36,9,2,MZA 2245 - LT 10,ZONA II,795
2124,-70.2430992,-17.99003981,MUR/HEX:2,1,220,401.54,9,2,MZA 2245 - LT 11,ZONA II,796
2125,-70.24304305,-17.99011376,MUR/HEX:1,1,220,201.42,5,1,MZA 2245 - LT 12,ZONA II,797
2126,-70.24299024,-17.9901888,MUR/HEX:2,1,220,402.06,9,2,MZA 2245 - LT 13,ZONA II,798
2127,-70.24293757,-17.99026418,MUR/HEX:1,1,220,202.66,5,1,MZA 2245 - LT 14,ZONA II,799
2128,-70.24309732,-17.99036638,MUR/HEX:1,1,220,216.64,5,1,MZA 2245 - LT 15,ZONA II,800
2129,-70.24314967,-17.99028947,MUR/HEX:1,1,220,199.07,5,1,MZA 2245 - LT 16,ZONA II,801
2130,-70.24320277,-17.99021642,MUR/HEX:1,1,220,204.04,5,1,MZA 2245 - LT 17,ZONA II,802
2131,-70.24325535,-17.99014147,MUR/HEX:1,1,220,204.39,5,1,MZA 2245 - LT 18,ZONA II,803
2132,-70.24330818,-17.99006671,MUR/HEX:1,1,220,203.73,5,1,MZA 2245 - LT 19,ZONA II,804
2133,-70.24336128,-17.98999212,MUR/HEX:1,1,220,204.09,5,1,MZA 2245 - LT 20,ZONA II,805
2134,-70.24341438,-17.98991712,MUR/HEX:1,1,220,204.95,5,1,MZA 2245 - LT 21,ZONA II,806
2135,-70.24346761,-17.98984152,MUR/HEX:1,1,220,206.32,5,1,MZA 2245 - LT 22,ZONA II,807
2136,-70.24352311,-17.98976288,MUR/HEX:1,1,220,221.43,5,1,MZA 2245 - LT 23,ZONA II,808
2137,-70.24358149,-17.9896808,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,225.82,5,1,MZA 2245 - LT 24,ZONA II,809
2138,-70.24364064,-17.98959786,MUR/HEX:1,1,220,226.14,5,1,MZA 2245 - LT 25,ZONA II,810
2139,-70.24369456,-17.98951939,MUR/HEX:1,1,220,196.5,1,MZA 2245 - LT 26,ZONA II,811
2140,-70.24374999,-17.98944432,MUR/HEX:1,1,220,217.16,5,1,MZA 2245 - LT 27,ZONA II,812
2141,-70.24380685,-17.98936235,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,224.48,5,1,MZA 2245 - LT 28,ZONA II,813
2142,-70.24577003,-17.98879675,MUR/HEX:1,1,220,253.91,6,1,MZA 2247 - LT 1,ZONA II,814
2143,-70.24568457,-17.98874658,MUR/HEX:2,1,220,528.24,12,3,MZA 2247 - LT 2,ZONA II,815
2144,-70.24559672,-17.98869428,MUR/HEX:1,1,220,247.02,6,1,MZA 2247 - LT 3,ZONA II,816
2145,-70.24550799,-17.98864395,MUR/HEX:1,1,220,235.09,5,1,MZA 2247 - LT 4,ZONA II,817
2146,-70.24541945,-17.9885924,MCF/LWAL+DNO/HEX:1/RES,1,220,222.35,5,1,MZA 2247 - LT 5,ZONA II,818
2147,-70.24532423,-17.98853864,MUR/HEX:2,1,220,469.02,11,3,MZA 2247 - LT 6,ZONA II,819
2148,-70.24521461,-17.98847454,MUR/HEX:2,1,220,514.9,12,3,MZA 2247 - LT 7,ZONA II,820
2149,-70.24508518,-17.98839956,MUR/HEX:1,1,220,267.58,6,1,MZA 2247 - LT 8,ZONA II,821
2150,-70.2449431,-17.98831746,MCF/LWAL+DNO/HEX:2/RES,1,220,483.08,11,3,MZA 2247 - LT 9,ZONA II,822
2151,-70.24483006,-17.98842582,MCF/LWAL+DNO/HEX:2/RES,1,220,481.36,11,3,MZA 2247 - LT 10,ZONA II,823
2152,-70.24491416,-17.98848382,MCF/LWAL+DNO/HEX:1/RES,1,220,202.07,5,1,MZA 2247 - LT 11,ZONA II,824
2153,-70.24499665,-17.98853789,MCF/LWAL+DNO/HEX:1/RES,1,220,224.92,5,1,MZA 2247 - LT 12,ZONA II,825
2154,-70.24507745,-17.98858874,MUR/HEX:2,1,220,375.46,9,2,MZA 2247 - LT 13,ZONA II,826
2155,-70.24514951,-17.98863849,MCF/LWAL+DNO/HEX:1/RES,1,220,192.91,4,1,MZA 2247 - LT 14,ZONA II,827
2156,-70.24522514,-17.98868799,MCF/LWAL+DNO/HEX:1/RES,1,220,199.11,5,1,MZA 2247 - LT 15,ZONA II,828
2157,-70.24530681,-17.98874105,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,223.53,5,1,MZA 2247 - LT 16,ZONA II,829
2158,-70.24539332,-17.98879771,MUR/HEX:2,1,220,451.46,10,3,MZA 2247 - LT 17,ZONA II,830
2159,-70.24547938,-17.98885459,MUR/HEX:1,1,220,222.87,5,1,MZA 2247 - LT 18,ZONA II,831
2160,-70.24556615,-17.98891008,MCF/LWAL+DNO/HEX:1/RES,1,220,225.07,5,1,MZA 2247 - LT 19,ZONA II,832
2161,-70.24564942,-17.98896505,MCF/LWAL+DNO/HEX:1/RES,1,220,209.52,5,1,MZA 2247 - LT 20,ZONA II,833
2162,-70.24547866,-17.98920665,MCF/LWAL+DNO/HEX:1/RES,1,220,207.08,5,1,MZA 2248 - LT 1,ZONA II,834
2163,-70.24539438,-17.9891519,MCF/LWAL+DNO/HEX:1/RES,1,220,222.99,5,1,MZA 2248 - LT 2,ZONA II,835
2164,-70.24530736,-17.98909477,MCF/LWAL+DNO/HEX:1/RES,1,220,223.5,5,1,MZA 2248 - LT 3,ZONA II,836
2165,-70.2452188,-17.98903706,MCF/LWAL+DNO/HEX:1/RES,1,220,228.64,5,1,MZA 2248 - LT 4,ZONA II,837
2166,-70.24513602,-17.98898233,MUR/HEX:2,1,220,401.78,9,2,MZA 2248 - LT 5,ZONA II,838

2167,-70.24505384,-17.98892863,MCF/LWAL+DNO/HEX:1/RES,1,220,222.95,5,1,MZA 2248 - LT 6,ZONA II,839
2168,-70.24497153,-17.98887492,MCF/LWAL+DNO/HEX:1/RES,1,220,202.24,5,1,MZA 2248 - LT 7,ZONA II,840
2169,-70.24489328,-17.98882352,MUR/HEX:1,1,220,203.66,5,1,MZA 2248 - LT 8,ZONA II,841
2170,-70.24481522,-17.98877288,MCF/LWAL+DNO/HEX:2/RES,1,220,401.02,9,2,MZA 2248 - LT 9,ZONA II,842
2171,-70.24473774,-17.9887216,MCF/LWAL+DNO/HEX:2/RES,1,220,407.92,9,2,MZA 2248 - LT 10,ZONA II,843
2172,-70.2446553,-17.98866765,MCF/LWAL+DNO/HEX:2/RES,1,220,451.48,10,3,MZA 2248 - LT 11,ZONA II,844
2173,-70.24454864,-17.98881867,MCF/LWAL+DNO/HEX:3/RES,1,220,661.14,15,4,MZA 2248 - LT 12,ZONA II,845
2174,-70.24463064,-17.98887242,MUR/HEX:3,1,220,601.89,14,4,MZA 2248 - LT 13,ZONA II,846
2175,-70.24470882,-17.98892351,MCF/LWAL+DNO/HEX:1/RES,1,220,200.85,5,1,MZA 2248 - LT 14,ZONA II,847
2176,-70.24478715,-17.9889746,MCF/LWAL+DNO/HEX:1/RES,1,220,201.58,5,1,MZA 2248 - LT 15,ZONA II,848
2177,-70.24486569,-17.98902619,MCF/LWAL+DNO/HEX:1/RES,1,220,203.31,5,1,MZA 2248 - LT 16,ZONA II,849
2178,-70.24494638,-17.98907855,MCF/LWAL+DNO/HEX:1/RES,1,220,211.58,5,1,MZA 2248 - LT 17,ZONA II,850
2179,-70.24502803,-17.98913181,MCF/LWAL+DNO/HEX:1/RES,1,220,209.31,5,1,MZA 2248 - LT 18,ZONA II,851
2180,-70.24511277,-17.98918723,MUR/HEX:2,1,220,456.92,11,3,MZA 2248 - LT 19,ZONA II,852
2181,-70.24520065,-17.98924486,MCF/LWAL+DNO/HEX:2/RES,1,220,452.94,10,3,MZA 2248 - LT 20,ZONA II,853
2182,-70.24528804,-17.98930146,MCF/LWAL+DNO/HEX:2/RES,1,220,449.46,10,3,MZA 2248 - LT 21,ZONA II,854
2183,-70.24537191,-17.9893572,MUR/HEX:2,1,220,637.08,15,4,MZA 2248 - LT 22,ZONA II,855
2184,-70.24518692,-17.98961535,MCF/LWAL+DNO/HEX:1/RES,1,220,273.56,6,1,MZA 2249 - LT 1,ZONA II,856
2185,-70.24510043,-17.9895729,MUR/HEX:1,1,220,270.37,6,1,MZA 2249 - LT 2,ZONA II,857
2186,-70.2450166,-17.98950319,MUR/HEX:1,1,220,274.32,6,1,MZA 2249 - LT 3,ZONA II,858
2187,-70.24492819,-17.9894462,MUR/HEX:1,1,220,287.63,7,2,MZA 2249 - LT 4,ZONA II,859
2188,-70.24484361,-17.98939065,MCF/LWAL+DNO/HEX:1/RES,1,220,253.59,6,1,MZA 2249 - LT 5,ZONA II,860
2189,-70.24476233,-17.9893377,MCF/LWAL+DNO/HEX:2/RES,1,220,531.3,12,3,MZA 2249 - LT 6,ZONA II,861
2190,-70.24468154,-17.98928587,MUR/HEX:1,1,220,248.38,6,1,MZA 2249 - LT 7,ZONA II,862
2191,-70.24460388,-17.98923403,MUR/HEX:1,1,220,252.31,6,1,MZA 2249 - LT 8,ZONA II,863
2192,-70.24452607,-17.98918824,MCF/LWAL+DNO/HEX:1/RES,1,220,255.01,6,1,MZA 2249 - LT 9,ZONA II,864
2193,-70.24444485,-17.98913086,MCF/LWAL+DNO/HEX:1/RES,1,220,255.02,6,1,MZA 2249 - LT 10,ZONA II,865
2194,-70.24436275,-17.98907674,MUR/HEX:2,1,220,546.86,13,4,MZA 2249 - LT 11,ZONA II,866
2195,-70.24422942,-17.98926516,MCF/LWAL+DNO/HEX:1/RES,1,220,275.19,6,1,MZA 2249 - LT 12,ZONA II,867
2196,-70.24431195,-17.98931806,MUR/HEX:1,1,220,254.98,6,1,MZA 2249 - LT 13,ZONA II,868
2197,-70.24439121,-17.98936979,MUR/HEX:1,1,220,257.06,6,1,MZA 2249 - LT 14,ZONA II,869
2198,-70.24446975,-17.98942118,MCF/LWAL+DNO/HEX:2/RES,1,220,501.54,12,3,MZA 2249 - LT 15,ZONA II,870
2199,-70.24454793,-17.98947246,MUR/HEX:1,1,220,255.19,6,1,MZA 2249 - LT 16,ZONA II,871
2200,-70.24462896,-17.98952536,MUR/HEX:1,1,220,268.43,6,1,MZA 2249 - LT 17,ZONA II,872
2201,-70.24479528,-17.98963342,MUR/HEX:1,1,220,290.5,7,2,MZA 2249 - LT 19,ZONA II,874
2202,-70.24488256,-17.98969038,MCF/LWAL+DNO/HEX:2/RES,1,220,547.13,4,MZA 2249 - LT 20,ZONA II,875
2203,-70.24496789,-17.98974608,MUR/HEX:1,1,220,277.92,6,1,MZA 2249 - LT 21,ZONA II,876
2204,-70.24505422,-17.98980228,MCF/LWAL+DNO/HEX:2/RES,1,220,559.13,4,MZA 2249 - LT 22,ZONA II,877
2205,-70.24410594,-17.98955744,MUR/HEX:1,1,220,296.95,7,2,MZA 2250 - LT 1,ZONA II,878
2206,-70.24404567,-17.98964321,MCF/LWAL+DNO/HEX:1/RES,1,220,273.97,6,1,MZA 2250 - LT 2,ZONA II,879
2207,-70.24398918,-17.98972256,MUR/HEX:1,1,220,256.58,6,1,MZA 2250 - LT 3,ZONA II,880
2208,-70.24393445,-17.98980272,MCF/LWAL+DNO/HEX:2/RES,1,220,545.13,4,MZA 2250 - LT 4,ZONA II,881
2209,-70.24387487,-17.98988042,MUR/HEX:1,1,220,260.13,6,1,MZA 2250 - LT 5,ZONA II,882
2210,-70.24382208,-17.98996093,MCF/LWAL+DNO/HEX:1/RES,1,220,265.28,6,1,MZA 2250 - LT 6,ZONA II,883
2211,-70.24376717,-17.99003717,MUR/HEX:1,1,220,246.91,6,1,MZA 2250 - LT 7,ZONA II,884
2212,-70.24371366,-17.99011275,MUR/HEX:1,1,220,253.17,6,1,MZA 2250 - LT 8,ZONA II,885
2213,-70.24366057,-17.99018764,MUR/HEX:1,1,220,252.99,6,1,MZA 2250 - LT 9,ZONA II,886
2214,-70.24360822,-17.99026251,MUR/HEX:1,1,220,245.89,6,1,MZA 2250 - LT 10,ZONA II,887
2215,-70.24355541,-17.99033668,MUR/HEX:1,1,220,251.27,6,1,MZA 2250 - LT 11,ZONA II,888
2216,-70.243503,-17.99041111,MUR/HEX:1,1,220,246.03,6,1,MZA 2250 - LT 12,ZONA II,889
2217,-70.24345062,-17.99048501,MUR/HEX:1,1,220,248.92,6,1,MZA 2250 - LT 13,ZONA II,890
2218,-70.24339767,-17.99055997,MUR/HEX:1,1,220,252.75,6,1,MZA 2250 - LT 14,ZONA II,891
2219,-70.24339127,-17.99068624,MCF/LWAL+DNO/HEX:1/RES,1,220,247.17,6,1,MZA 2250 - LT 15,ZONA II,892
2220,-70.24364419,-17.99061152,MCF/LWAL+DNO/HEX:2/RES,1,220,487.58,11,3,MZA 2250 - LT 16,ZONA II,893
2221,-70.24369672,-17.99053759,MCF/LWAL+DNO/HEX:2/RES,1,220,486.36,11,3,MZA 2250 - LT 17,ZONA II,894
2222,-70.24374968,-17.99046333,MCF/LWAL+DNO/HEX:1/RES,1,220,246.79,6,1,MZA 2250 - LT 18,ZONA II,895
2223,-70.24380251,-17.99038855,MUR/HEX:1,1,220,246.27,6,1,MZA 2250 - LT 19,ZONA II,896
2224,-70.24385517,-17.99031346,MUR/HEX:2,1,220,496.22,11,3,MZA 2250 - LT 20,ZONA II,897
2225,-70.24390863,-17.99023817,MUR/HEX:1,1,220,250.13,6,1,MZA 2250 - LT 21,ZONA II,898
2226,-70.2439618,-17.99016331,MUR/HEX:1,1,220,245.95,6,1,MZA 2250 - LT 22,ZONA II,899
2227,-70.24401828,-17.99008496,MUR/HEX:1,1,220,276.38,6,1,MZA 2250 - LT 23,ZONA II,900
2228,-70.24406897,-17.99000717,MCF/LWAL+DNO/HEX:2/RES,1,220,453.96,10,3,MZA 2250 - LT 24,ZONA II,901
2229,-70.24345068,-17.99264075,MCF/LWAL+DNO/HEX:1/RES,1,220,271.86,6,1,MZA 2251 - LT 1,ZONA II,903
2230,-70.2433638,-17.99257613,MCF/LWAL+DNO/HEX:1/RES,1,220,200.26,5,1,MZA 2251 - LT 2,ZONA II,904
2231,-70.24328821,-17.99252147,MCF/LWAL+DNO/HEX:2/RES,1,220,398.06,9,2,MZA 2251 - LT 3,ZONA II,905
2232,-70.24321665,-17.99247184,MCF/LWAL+DNO/HEX:2/RES,1,220,406.24,9,2,MZA 2251 - LT 4,ZONA II,906
2233,-70.24313688,-17.99241178,MCF/LWAL+DNO/HEX:3/RES,1,220,589.11,14,4,MZA 2251 - LT 5,ZONA II,907
2234,-70.24306204,-17.99235722,MCF/LWAL+DNO/HEX:1/RES,1,220,201.61,5,1,MZA 2251 - LT 6,ZONA II,908
2235,-70.2429899,-17.99230405,MUR/HEX:1,1,220,199.87,5,1,MZA 2251 - LT 7,ZONA II,909
2236,-70.24291109,-17.9922477,MUR/HEX:1,1,220,201.49,5,1,MZA 2251 - LT 8,ZONA II,910
2237,-70.24283599,-17.9921935,MUR/HEX:1,1,220,197.88,5,1,MZA 2251 - LT 9,ZONA II,911

2238,-70.24276118,-17.99213932,MCF/LWAL+DNO/HEX:2/RES,1,220,401.94,9,2,MZA 2251 - LT 10,ZONA II,912
2239,-70.24268584,-17.99208498,MCF/LWAL+DNO/HEX:1/RES,1,220,200.54,5,1,MZA 2251 - LT 11,ZONA II,913
2240,-70.24261028,-17.99202992,MUR/HEX:1,1,220,204.2,5,1,MZA 2251 - LT 12,ZONA II,914
2241,-70.2425348,-17.991975,MCF/LWAL+DNO/HEX:1/RES,1,220,200.34,5,1,MZA 2251 - LT 13,ZONA II,915
2242,-70.24245207,-17.99191508,MUR/HEX:1,1,220,242.92,6,1,MZA 2251 - LT 14,ZONA II,916
2243,-70.24256753,-17.99176955,MUR/HEX:1,1,220,245.07,6,1,MZA 2251 - LT 15,ZONA II,917
2244,-70.24265052,-17.99183033,MUR/HEX:1,1,220,202.25,5,1,MZA 2251 - LT 16,ZONA II,918
2245,-70.24272602,-17.99188588,MCF/LWAL+DNO/HEX:2/RES,1,220,407.14,9,2,MZA 2251 - LT 17,ZONA II,919
2246,-70.24280071,-17.99194091,MUR/HEX:1,1,220,196.46,5,1,MZA 2251 - LT 18,ZONA II,920
2247,-70.2428752,-17.99199523,MUR/HEX:1,1,220,199.33,5,1,MZA 2251 - LT 19,ZONA II,921
2248,-70.24294987,-17.99204991,MCF/LWAL+DNO/HEX:1/RES,1,220,196.43,5,1,MZA 2251 - LT 20,ZONA II,922
2249,-70.24302545,-17.99210509,MCF/LWAL+DNO/HEX:2/RES,1,220,404.06,9,2,MZA 2251 - LT 21,ZONA II,923
2250,-70.24310081,-17.99216076,MCF/LWAL+DNO/HEX:1/RES,1,220,195.36,5,1,MZA 2251 - LT 22,ZONA II,924
2251,-70.24317655,-17.99221594,MUR/HEX:1,1,220,200.25,5,1,MZA 2251 - LT 23,ZONA II,925
2252,-70.24325155,-17.99227121,MUR/HEX:1,1,220,191.55,4,1,MZA 2251 - LT 24,ZONA II,926
2253,-70.24332664,-17.99232621,MCF/LWAL+DNO/HEX:1/RES,1,220,198.13,5,1,MZA 2251 - LT 25,ZONA II,927
2254,-70.24340234,-17.99238174,MCF/LWAL+DNO/HEX:2/RES,1,220,386.6,9,2,MZA 2251 - LT 26,ZONA II,928
2255,-70.24347795,-17.99243703,MCF/LWAL+DNO/HEX:2/RES,1,220,390.94,9,2,MZA 2251 - LT 27,ZONA II,929
2256,-70.24356741,-17.99250271,MCF/LWAL+DNO/HEX:2/RES,1,220,526.1,12,3,MZA 2251 - LT 28,ZONA II,930
2257,-70.24365246,-17.99256527,MUR/HEX:2,1,220,342.16,8,2,MZA 2251 - LT 29,ZONA II,931
2258,-70.24371973,-17.99261386,MCF/LWAL+DNO/HEX:2/RES,1,220,336.8,8,2,MZA 2251 - LT 30,ZONA II,932
2259,-70.24379123,-17.99265331,MCF/LWAL+DNO/HEX:2/RES,1,220,277.66,6,1,MZA 2251 - LT 31,ZONA II,933
2260,-70.24386288,-17.99270408,MUR/HEX:1,1,220,171.74,4,1,MZA 2251 - LT 32,ZONA II,934
2261,-70.2437289,-17.99277495,MUR/HEX:1,1,220,216.5,5,1,MZA 2251 - LT 33,ZONA II,935
2262,-70.24361381,-17.99273869,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,141.94,3,0,MZA 2251 - LT 34,ZONA II,936
2263,-70.24353976,-17.99270086,MCF/LWAL+DNO/HEX:1/RES,1,220,174.23,4,1,MZA 2251 - LT 35,ZONA II,937
2264,-70.24217894,-17.99230247,MCF/LWAL+DNO/HEX:2/RES,1,220,678.42,16,5,MZA 2252 - LT 1,ZONA II,938
2265,-70.242318,-17.99239434,MCF/LWAL+DNO/HEX:2/RES,1,220,608.6,14,4,MZA 2252 - LT 2,ZONA II,939
2266,-70.24248111,-17.99249374,MUR/HEX:1,1,220,335.89,8,2,MZA 2252 - LT 3,ZONA II,940
2267,-70.24226161,-17.9921414,MUR/HEX:1,1,220,204.07,5,1,MZA 2252 - LT 4,ZONA II,941
2268,-70.24233712,-17.99219625,MCF/LWAL+DNO/HEX:1/RES,1,220,201.38,5,1,MZA 2252 - LT 5,ZONA II,942
2269,-70.24241238,-17.99225053,MCF/LWAL+DNO/HEX:2/RES,1,220,402.48,9,2,MZA 2252 - LT 6,ZONA II,943
2270,-70.24249075,-17.99230777,MCF/LWAL+DNO/HEX:2/RES,1,220,439.06,10,3,MZA 2252 - LT 7,ZONA II,944
2271,-70.24256593,-17.99236258,MCF/LWAL+DNO/HEX:2/RES,1,220,366.74,8,2,MZA 2252 - LT 8,ZONA II,945
2272,-70.24263818,-17.99241501,MCF/LWAL+DNO/HEX:1/RES,1,220,202.82,5,1,MZA 2252 - LT 9,ZONA II,946
2273,-70.24268967,-17.99250416,MUR/HEX:1,1,220,309.33,7,2,MZA 2252 - LT 10,ZONA II,947
2274,-70.24278321,-17.9925489,MUR/HEX:1,1,220,282.51,7,2,MZA 2252 - LT 11,ZONA II,948
2275,-70.2428734,-17.99259506,MCF/LWAL+DNO/HEX:2/RES,1,220,442.66,10,3,MZA 2252 - LT 12,ZONA II,949
2276,-70.24299947,-17.99265953,MUR/HEX:1,1,220,344.33,8,2,MZA 2252 - LT 13,ZONA II,950
2277,-70.24316337,-17.99273342,MUR/HEX:2,1,220,312.22,7,2,MZA 2252 - LT 14,ZONA II,951
2278,-70.24483918,-17.9911688,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,239.06,6,1,MZA 2254 - LT 1,ZONA II,952
2279,-70.24476995,-17.99110589,MUR/HEX:1,1,220,247.23,6,1,MZA 2254 - LT 2,ZONA II,953
2280,-70.24469054,-17.99105527,MCF/LWAL+DNO/HEX:2/RES,1,220,488.1,11,3,MZA 2254 - LT 3,ZONA II,954
2281,-70.24461111,-17.99100443,MCF/LWAL+DNO/HEX:3/RES,1,220,728.16,17,5,MZA 2254 - LT 4,ZONA II,955
2282,-70.24452977,-17.99095278,MCF/LWAL+DNO/HEX:1/RES,1,220,254.26,6,1,MZA 2254 - LT 5,ZONA II,956
2283,-70.24444459,-17.99089769,MUR/HEX:2,1,220,533.62,12,3,MZA 2254 - LT 6,ZONA II,957
2284,-70.24435931,-17.9908431,MCF/LWAL+DNO/HEX:2/RES,1,220,501.62,12,3,MZA 2254 - LT 7,ZONA II,958
2285,-70.24427388,-17.99078894,MCF/LWAL+DNO/HEX:1/RES,1,220,263.75,6,1,MZA 2254 - LT 8,ZONA II,959
2286,-70.24418708,-17.9907335,MCF/LWAL+DNO/HEX:2/RES,1,220,515.56,12,3,MZA 2254 - LT 9,ZONA II,960
2287,-70.24410212,-17.99067973,MUR/HEX:1,1,220,248.97,6,1,MZA 2254 - LT 10,ZONA II,961
2288,-70.24401804,-17.99062644,MCF/LWAL+DNO/HEX:2/RES,1,220,500.68,12,3,MZA 2254 - LT 11,ZONA II,962
2289,-70.24389008,-17.99080666,MUR/HEX:2,1,220,530.94,12,3,MZA 2254 - LT 12,ZONA II,963
2290,-70.24397872,-17.99086092,MUR/HEX:2,1,220,558.9,13,4,MZA 2254 - LT 13,ZONA II,964
2291,-70.24406308,-17.99091817,MUR/HEX:1,1,220,259.62,6,1,MZA 2254 - LT 14,ZONA II,965
2292,-70.2441486,-17.99097152,MUR/HEX:3,1,220,819.48,19,6,MZA 2254 - LT 15,ZONA II,966
2293,-70.24423327,-17.99102803,MCF/LWAL+DNO/HEX:2/RES,1,220,532.42,12,3,MZA 2254 - LT 16,ZONA II,967
2294,-70.24431959,-17.99108152,MCF/LWAL+DNO/HEX:3/RES,1,220,799.14,18,5,MZA 2254 - LT 17,ZONA II,968
2295,-70.24440153,-17.99113431,MCF/LWAL+DNO/HEX:2/RES,1,220,513.82,12,3,MZA 2254 - LT 18,ZONA II,969
2296,-70.24448069,-17.99118645,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,247.31,6,1,MZA 2254 - LT 19,ZONA II,970
2297,-70.24455939,-17.99123779,MUR/HEX:1,1,220,253.14,6,1,MZA 2254 - LT 20,ZONA II,971
2298,-70.24471837,-17.9913409,MCF/LWAL+DNO/HEX:3/RES,1,220,740.94,17,5,MZA 2254 - LT 22,ZONA II,973
2299,-70.24379367,-17.99105941,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,251.85,6,1,MZA 2255 - LT 1,ZONA II,974
2300,-70.24374073,-17.99113411,MUR/HEX:2,1,220,502.8,12,3,MZA 2255 - LT 2,ZONA II,975
2301,-70.2436891,-17.99120937,MUR/HEX:2,1,220,506.96,12,3,MZA 2255 - LT 3,ZONA II,976
2302,-70.24363735,-17.99128136,MUR/HEX:2,1,220,478.44,11,3,MZA 2255 - LT 4,ZONA II,977
2303,-70.24358992,-17.99135068,MUR/HEX:1,1,220,230.55,5,1,MZA 2255 - LT 5,ZONA II,978
2304,-70.24354153,-17.99141878,MUR/HEX:1,1,220,238.78,6,1,MZA 2255 - LT 6,ZONA II,979
2305,-70.24350494,-17.9914975,MUR/HEX:2,1,220,473.42,11,3,MZA 2255 - LT 7,ZONA II,980
2306,-70.24367532,-17.99168283,MCF/LWAL+DNO/HEX:2/RES,1,220,391.84,9,2,MZA 2255 - LT 8,ZONA II,981
2307,-70.24370178,-17.99161571,MUR/HEX:2,1,220,396.16,9,2,MZA 2255 - LT 9,ZONA II,982
2308,-70.24374018,-17.99154663,CR/LFINF+DNO/HEX:4/RES,1,220,910.56,21,6,MZA 2255 - LT 10,ZONA II,983

2309,-70.24378833,-17.9914781,MUR/HEX:2,1,220,454.98,11,3,MZA 2255 - LT 11,ZONA II,984
2310,-70.24383528,-17.99140901,MUR/HEX:1,1,220,227.56,5,1,MZA 2255 - LT 12,ZONA II,985
2311,-70.24388496,-17.99133717,MCF/LWAL+DNO/HEX:2/RES,1,220,497.92,11,3,MZA 2255 - LT 13,ZONA II,986
2312,-70.24393802,-17.99126271,MCF/LWAL+DNO/HEX:2/RES,1,220,501.44,12,3,MZA 2255 - LT 14,ZONA II,987
2313,-70.24399002,-17.99118686,MCF/LWAL+DNO/HEX:2/RES,1,220,506.24,12,3,MZA 2255 - LT 15,ZONA II,988
2314,-70.24609602,-17.9888584,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,253.7,6,1,MZA 2256 - LT 1,ZONA II,989
2315,-70.24603599,-17.98896122,MUR/HEX:2,1,220,534.68,12,3,MZA 2256 - LT 2,ZONA II,990
2316,-70.24597869,-17.98904144,MUR/HEX:1,1,220,265.07,6,1,MZA 2256 - LT 3,ZONA II,991
2317,-70.24592445,-17.98911773,MUR/HEX:1,1,220,250.98,6,1,MZA 2256 - LT 4,ZONA II,992
2318,-70.24587074,-17.98919262,MUR/HEX:1,1,220,253.24,6,1,MZA 2256 - LT 5,ZONA II,993
2319,-70.24581742,-17.98926774,MUR/HEX:2,1,220,503.76,12,3,MZA 2256 - LT 6,ZONA II,994
2320,-70.245764,-17.98934191,MUR/HEX:2,1,220,500.14,12,3,MZA 2256 - LT 7,ZONA II,995
2321,-70.24571071,-17.98941656,MUR/HEX:6,1,220,1018.88,24,7,MZA 2256 - LT 8,ZONA II,996
2322,-70.2456602,-17.98948981,MUR/HEX:3,1,220,708.51,16,5,MZA 2256 - LT 9,ZONA II,997
2323,-70.24560705,-17.98956155,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,256.65,6,1,MZA 2256 - LT 10,ZONA II,998
2324,-70.24580092,-17.98969267,MUR/HEX:1,1,220,251.11,6,1,MZA 2256 - LT 11,ZONA II,999
2325,-70.24585544,-17.9896184,MUR/HEX:1,1,220,249.58,6,1,MZA 2256 - LT 12,ZONA II,1000
2326,-70.24590763,-17.98954266,MUR/HEX:2,1,220,501.56,12,3,MZA 2256 - LT 13,ZONA II,1001
2327,-70.24596054,-17.98946817,MUR/HEX:2,1,220,492.26,11,3,MZA 2256 - LT 14,ZONA II,1002
2328,-70.24601397,-17.98939359,MUR/HEX:1,1,220,252.72,6,1,MZA 2256 - LT 15,ZONA II,1003
2329,-70.24606737,-17.98931798,MUR/HEX:1,1,220,250.79,6,1,MZA 2256 - LT 16,ZONA II,1004
2330,-70.24612098,-17.98924286,MUR/HEX:1,1,220,251.11,6,1,MZA 2256 - LT 17,ZONA II,1005
2331,-70.24617409,-17.98916666,MUR/HEX:1,1,220,254.29,6,1,MZA 2256 - LT 18,ZONA II,1006
2332,-70.24622995,-17.98908916,MUR/HEX:1,1,220,265.24,6,1,MZA 2256 - LT 19,ZONA II,1007
2333,-70.24629559,-17.98900382,MCF/LWAL+DNO/HEX:3/RES,1,220,954.63,22,7,MZA 2256 - LT 20,ZONA II,1008
2334,-70.24548751,-17.98972936,MCF/LWAL+DNO/HEX:1/RES,1,220,258.97,6,1,MZA 2257 - LT 1,ZONA II,1009
2335,-70.24543343,-17.98980516,MCF/LWAL+DNO/HEX:1/RES,1,220,252.73,6,1,MZA 2257 - LT 2,ZONA II,1010
2336,-70.24538076,-17.98987959,MUR/HEX:1,1,220,249.42,6,1,MZA 2257 - LT 3,ZONA II,1011
2337,-70.24532743,-17.98995529,MCF/LWAL+DUC/HEX:1/RES,1,220,260.06,6,1,MZA 2257 - LT 4,ZONA II,1012
2338,-70.24527364,-17.99003069,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,249.58,6,1,MZA 2257 - LT 5,ZONA II,1013
2339,-70.24522132,-17.99010548,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,252.71,6,1,MZA 2257 - LT 6,ZONA II,1014
2340,-70.24516735,-17.99018053,MUR/HEX:2,1,220,511.9,12,3,MZA 2257 - LT 7,ZONA II,1015
2341,-70.24511419,-17.99025695,MCF/LWAL+DNO/HEX:2/RES,1,220,512.98,12,3,MZA 2257 - LT 8,ZONA II,1016
2342,-70.24505759,-17.99033571,MUR/HEX:1,1,220,276.94,6,1,MZA 2257 - LT 9,ZONA II,1017
2343,-70.24499973,-17.9904189,MUR/HEX:1,1,220,279.79,6,1,MZA 2257 - LT 10,ZONA II,1018
2344,-70.24494109,-17.99050084,MUR/HEX:1,1,220,273.81,6,1,MZA 2257 - LT 11,ZONA II,1019
2345,-70.24488261,-17.9905831,MUR/HEX:1,1,220,281.4,6,1,MZA 2257 - LT 12,ZONA II,1020
2346,-70.24482351,-17.99066583,MCF/LWAL+DNO/HEX:2/RES,1,220,559.08,13,4,MZA 2257 - LT 13,ZONA II,1021
2347,-70.24476448,-17.99074848,MUR/HEX:2,1,220,566.56,13,4,MZA 2257 - LT 14,ZONA II,1022
2348,-70.24496265,-17.99087653,MCF/LWAL+DUC/HEX:2/RES,1,220,563.74,13,4,MZA 2257 - LT 15,ZONA II,1023
2349,-70.24502181,-17.99079363,MUR/HEX:2,1,220,556.88,13,4,MZA 2257 - LT 16,ZONA II,1024
2350,-70.24508082,-17.99071115,MCF/LWAL+DNO/HEX:2/RES,1,220,564.68,13,4,MZA 2257 - LT 17,ZONA II,1025
2351,-70.24513834,-17.99062911,MCF/LWAL+DNO/HEX:1/RES,1,220,272.82,6,1,MZA 2257 - LT 18,ZONA II,1026
2352,-70.24519728,-17.99054634,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,287.23,7,2,MZA 2257 - LT 19,ZONA II,1027
2353,-70.24525541,-17.99046315,MCF/LWAL+DNO/HEX:2/RES,1,220,545.36,13,4,MZA 2257 - LT 20,ZONA II,1028
2354,-70.24531246,-17.99038469,MUR/HEX:1,1,220,263.16,6,1,MZA 2257 - LT 21,ZONA II,1029
2355,-70.24536584,-17.99030852,MUR/HEX:1,1,220,253.54,6,1,MZA 2257 - LT 22,ZONA II,1030
2356,-70.24541949,-17.99023342,MCF/LWAL+DNO/HEX:2/RES,1,220,516.96,12,3,MZA 2257 - LT 23,ZONA II,1031
2357,-70.24547191,-17.99015856,MUR/HEX:1,1,220,248.15,6,1,MZA 2257 - LT 24,ZONA II,1032
2358,-70.24552552,-17.99008367,MUR/HEX:1,1,220,263.26,6,1,MZA 2257 - LT 25,ZONA II,1033
2359,-70.24557886,-17.99000792,MUR/HEX:2,1,220,502.14,12,3,MZA 2257 - LT 26,ZONA II,1034
2360,-70.24563131,-17.98993364,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,253.17,6,1,MZA 2257 - LT 27,ZONA II,1035
2361,-70.24568516,-17.98985814,MUR/HEX:2,1,220,523.06,12,3,MZA 2257 - LT 28,ZONA II,1036
2362,-70.24430395,-17.99139194,MCF/LWAL+DNO/HEX:1/RES,1,220,266.57,6,1,MZA 2258 - LT 1,ZONA II,1037
2363,-70.24418577,-17.99154369,MCF/LWAL+DNO/HEX:2/RES,1,220,518.72,12,3,MZA 2258 - LT 3,ZONA II,1039
2364,-70.24414425,-17.99162016,MUR/HEX:1,1,220,261.26,6,1,MZA 2258 - LT 4,ZONA II,1040
2365,-70.24409103,-17.9916959,MCF/LWAL+DNO/HEX:2/RES,1,220,521.76,12,3,MZA 2258 - LT 5,ZONA II,1041
2366,-70.24403859,-17.99177173,MCF/LWAL+DNO/HEX:2/RES,1,220,517.22,12,3,MZA 2258 - LT 6,ZONA II,1042
2367,-70.24398273,-17.99184936,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,279.1,6,1,MZA 2258 - LT 7,ZONA II,1043
2368,-70.24392953,-17.99194613,MCF/LWAL+DNO/HEX:2/RES,1,220,665.36,15,4,MZA 2258 - LT 8,ZONA II,1044
2369,-70.24408717,-17.99213497,MCF/LWAL+DNO/HEX:2/RES,1,220,506.52,12,3,MZA 2258 - LT 9,ZONA II,1045
2370,-70.2441297,-17.99205218,MCF/LWAL+DNO/HEX:1/RES,1,220,241.51,6,1,MZA 2258 - LT 10,ZONA II,1046
2371,-70.24418185,-17.99197665,MCF/LWAL+DNO/HEX:1/RES,1,220,257.65,6,1,MZA 2258 - LT 11,ZONA II,1047
2372,-70.24423682,-17.99190049,MUR/HEX:2,1,220,506.8,12,3,MZA 2258 - LT 12,ZONA II,1048
2373,-70.24429006,-17.99182504,MUR/HEX:2,1,220,500.1,12,3,MZA 2258 - LT 13,ZONA II,1049
2374,-70.24434291,-17.99174961,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,252.82,6,1,MZA 2258 - LT 14,ZONA II,1050
2375,-70.24439626,-17.99167415,MUR/HEX:1,1,220,252.23,6,1,MZA 2258 - LT 15,ZONA II,1051
2376,-70.24444949,-17.99159821,MUR/HEX:1,1,220,255.38,6,1,MZA 2258 - LT 16,ZONA II,1052
2377,-70.24450362,-17.99152162,MCF/LWAL+DNO/HEX:1/RES,1,220,258.56,6,1,MZA 2258 - LT 17,ZONA II,1053
2378,-70.24934857,-17.99148529,MCF/LWAL+DNO/HEX:2/RES,1,220,580.74,13,4,MZA 3302 - LT 1,ZONA III,1
2379,-70.24924332,-17.99146634,MCF/LWAL+DNO/HEX:2/RES,1,220,358.02,8,2,MZA 3302 - LT 2,ZONA III,2

2380,-70.2491679,-17.99146475,MUR/HEX:1,1,220,175.79,4,1,MZA 3302 - LT 3,ZONA III,3
2381,-70.24909288,-17.99146415,MCF/LWAL+DNO/HEX:1/RES,1,220,176.56,4,1,MZA 3302 - LT 4,ZONA III,4
2382,-70.24901747,-17.99146294,MUR/HEX:1,1,220,177.06,4,1,MZA 3302 - LT 5,ZONA III,5
2383,-70.24894238,-17.99146163,MUR/HEX:1,1,220,174.42,4,1,MZA 3302 - LT 6,ZONA III,6
2384,-70.2488673,-17.99146082,MCF/LWAL+DNO/HEX:2/RES,1,220,352.98,8,2,MZA 3302 - LT 7,ZONA III,7
2385,-70.24879172,-17.99145996,MCF/LWAL+DNO/HEX:2/RES,1,220,352.4,8,2,MZA 3302 - LT 8,ZONA III,8
2386,-70.24871599,-17.99145856,MUR/HEX:1,1,220,176.53,4,1,MZA 3302 - LT 9,ZONA III,9
2387,-70.24864016,-17.99145791,MUR/HEX:1,1,220,176.16,4,1,MZA 3302 - LT 10,ZONA III,10
2388,-70.24856446,-17.99145655,MUR/HEX:1,1,220,175.27,4,1,MZA 3302 - LT 11,ZONA III,11
2389,-70.24848932,-17.99145547,MUR/HEX:2,1,220,346.04,8,2,MZA 3302 - LT 12,ZONA III,12
2390,-70.24841433,-17.99145456,MUR/HEX:1,1,220,174.4,1,MZA 3302 - LT 13,ZONA III,13
2391,-70.24833885,-17.99145331,MCF/LWAL+DNO/HEX:2/RES,1,220,349.36,8,2,MZA 3302 - LT 14,ZONA III,14
2392,-70.24826328,-17.99145234,MUR/HEX:1,1,220,173.88,4,1,MZA 3302 - LT 15,ZONA III,15
2393,-70.24818758,-17.99145133,MCF/LWAL+DNO/HEX:2/RES,1,220,349.32,8,2,MZA 3302 - LT 16,ZONA III,16
2394,-70.24811195,-17.99145005,MUR/HEX:1,1,220,173.01,4,1,MZA 3302 - LT 17,ZONA III,17
2395,-70.24803586,-17.99144886,MCF/LWAL+DNO/HEX:3/RES,1,220,528.48,12,3,MZA 3302 - LT 18,ZONA III,18
2396,-70.2480345,-17.99125626,MUR/HEX:1,1,220,173.1,4,1,MZA 3302 - LT 19,ZONA III,19
2397,-70.24811234,-17.99125765,MUR/HEX:1,1,220,167.91,4,1,MZA 3302 - LT 20,ZONA III,20
2398,-70.24818801,-17.9912591,MUR/HEX:1,1,220,166.41,4,1,MZA 3302 - LT 21,ZONA III,21
2399,-70.24826341,-17.9912603,MUR/HEX:2,1,220,330.84,8,2,MZA 3302 - LT 22,ZONA III,22
2400,-70.24833906,-17.99126147,MCF/LWAL+DNO/HEX:2/RES,1,220,332.48,8,2,MZA 3302 - LT 23,ZONA III,23
2401,-70.24841441,-17.99126289,MCF/LWAL+DNO/HEX:2/RES,1,220,325.82,8,2,MZA 3302 - LT 24,ZONA III,24
2402,-70.24848919,-17.991264,MCF/LWAL+DNO/HEX:1/RES,1,220,162.48,4,1,MZA 3302 - LT 25,ZONA III,25
2403,-70.24856441,-17.99126527,MUR/HEX:1,1,220,163.58,4,1,MZA 3302 - LT 26,ZONA III,26
2404,-70.2486395,-17.99126677,MCF/LWAL+DNO/HEX:1/RES,1,220,160.7,4,1,MZA 3302 - LT 27,ZONA III,27
2405,-70.24871501,-17.99126766,MCF/LWAL+DNO/HEX:2/RES,1,220,328.3,8,2,MZA 3302 - LT 28,ZONA III,28
2406,-70.24879063,-17.99126919,MCF/LWAL+DNO/HEX:2/RES,1,220,319.84,7,2,MZA 3302 - LT 29,ZONA III,29
2407,-70.24886587,-17.99127027,MUR/HEX:1,1,220,161.22,4,1,MZA 3302 - LT 30,ZONA III,30
2408,-70.24894157,-17.99127133,MUR/HEX:1,1,220,160.7,4,1,MZA 3302 - LT 31,ZONA III,31
2409,-70.24901728,-17.99127279,MCF/LWAL+DNO/HEX:2/RES,1,220,319.88,7,2,MZA 3302 - LT 32,ZONA III,32
2410,-70.24909246,-17.99127416,MUR/HEX:2,1,220,314.5,7,2,MZA 3302 - LT 33,ZONA III,33
2411,-70.24920123,-17.99129751,MUR/HEX:1,1,220,253.96,6,1,MZA 3302 - LT 34,ZONA III,34
2412,-70.24677089,-17.99143343,MCF/LWAL+DNO/HEX:2/RES,1,220,445.4,10,3,MZA 3304 - LT 1,ZONA III,35
2413,-70.2466868,-17.99143216,MUR/HEX:1,1,220,184.81,4,1,MZA 3304 - LT 2,ZONA III,36
2414,-70.24660984,-17.99143113,MCF/LWAL+DNO/HEX:2/RES,1,220,374.1,9,2,MZA 3304 - LT 3,ZONA III,37
2415,-70.24653347,-17.99143017,MCF/LWAL+DNO/HEX:2/RES,1,220,361.96,8,2,MZA 3304 - LT 4,ZONA III,38
2416,-70.24645863,-17.9914296,MCF/LWAL+DNO/HEX:2/RES,1,220,357.4,8,2,MZA 3304 - LT 5,ZONA III,39
2417,-70.24638432,-17.99142906,MCF/LWAL+DNO/HEX:2/RES,1,220,354.88,8,2,MZA 3304 - LT 6,ZONA III,40
2418,-70.2463094,-17.99142738,MUR/HEX:1,1,220,180.91,4,1,MZA 3304 - LT 7,ZONA III,41
2419,-70.24623371,-17.99142589,MCF/LWAL+DNO/HEX:2/RES,1,220,360.18,8,2,MZA 3304 - LT 8,ZONA III,42
2420,-70.24615752,-17.99142512,MUR/HEX:1,1,220,182.19,4,1,MZA 3304 - LT 9,ZONA III,43
2421,-70.24608137,-17.99142491,MCF/LWAL+DNO/HEX:2/RES,1,220,357.8,8,2,MZA 3304 - LT 10,ZONA III,44
2422,-70.24600616,-17.99142431,MCF/LWAL+DNO/HEX:1/RES,1,220,176.75,4,1,MZA 3304 - LT 11,ZONA III,45
2423,-70.24593263,-17.9914231,MUR/HEX:3,1,220,510.51,12,3,MZA 3304 - LT 12,ZONA III,46
2424,-70.24585935,-17.99141976,MUR/HEX:1,1,220,174.61,4,1,MZA 3304 - LT 13,ZONA III,47
2425,-70.24572715,-17.99138276,MCF/LWAL+DNO/HEX:2/RES,1,220,622.06,14,4,MZA 3304 - LT 14,ZONA III,48
2426,-70.24542162,-17.9911862,MUR/HEX:1,1,220,230.86,5,1,MZA 3304 - LT 15,ZONA III,49
2427,-70.24554438,-17.99122316,MCF/LWAL+DNO/HEX:1/RES,1,220,176.5,4,1,MZA 3304 - LT 16,ZONA III,50
2428,-70.2456274,-17.99122692,MCF/LWAL+DNO/HEX:2/RES,1,220,365.62,8,2,MZA 3304 - LT 17,ZONA III,51
2429,-70.24571182,-17.99122786,MUR/HEX:3,1,220,548.4,13,4,MZA 3304 - LT 18,ZONA III,52
2430,-70.24579688,-17.99122913,MCF/LWAL+DNO/HEX:2/RES,1,220,368.96,9,2,MZA 3304 - LT 19,ZONA III,53
2431,-70.24587768,-17.99123061,MUR/HEX:1,1,220,163.32,4,1,MZA 3304 - LT 20,ZONA III,54
2432,-70.24595336,-17.99123106,MUR/HEX:1,1,220,161.32,4,1,MZA 3304 - LT 21,ZONA III,55
2433,-70.24602878,-17.99123207,MUR/HEX:1,1,220,161.35,4,1,MZA 3304 - LT 22,ZONA III,56
2434,-70.24610421,-17.9912329,MUR/HEX:1,1,220,160.38,4,1,MZA 3304 - LT 23,ZONA III,57
2435,-70.24617928,-17.99123382,MCF/LWAL+DNO/HEX:2/RES,1,220,317.78,7,2,MZA 3304 - LT 24,ZONA III,58
2436,-70.24625469,-17.99123501,MCF/LWAL+DNO/HEX:1/RES,1,220,160.94,4,1,MZA 3304 - LT 25,ZONA III,59
2437,-70.24633024,-17.99123556,MUR/HEX:2,1,220,316.94,7,2,MZA 3304 - LT 26,ZONA III,60
2438,-70.24640554,-17.99123667,MCF/LWAL+DNO/HEX:1/RES,1,220,158.99,4,1,MZA 3304 - LT 27,ZONA III,61
2439,-70.24648119,-17.99123751,MCF/LWAL+DNO/HEX:2/RES,1,220,317.88,7,2,MZA 3304 - LT 28,ZONA III,62
2440,-70.24655694,-17.99123861,MUR/HEX:2,1,220,317.02,7,2,MZA 3304 - LT 29,ZONA III,63
2441,-70.24663248,-17.99123934,MCF/LWAL+DNO/HEX:2/RES,1,220,314.16,7,2,MZA 3304 - LT 30,ZONA III,64
2442,-70.24670778,-17.99123885,MCF/LWAL+DNO/HEX:2/RES,1,220,313.22,7,2,MZA 3304 - LT 31,ZONA III,65
2443,-70.24678347,-17.99124161,MUR/HEX:1,1,220,157.73,4,1,MZA 3304 - LT 32,ZONA III,66
2444,-70.24543376,-17.99146802,MCF/LWAL+DNO/HEX:3/RES,1,220,665.46,15,4,MZA 3305 - LT 1,ZONA III,67
2445,-70.24530821,-17.99143403,MUR/HEX:2,1,220,403.38,9,2,MZA 3305 - LT 2,ZONA III,68
2446,-70.24521604,-17.99140973,MCF/LWAL+DNO/HEX:3/RES,1,220,786.3,18,5,MZA 3305 - LT 3,ZONA III,69
2447,-70.24515919,-17.99133364,MCF/LWAL+DNO/HEX:2/RES,1,220,399.8,9,2,MZA 3305 - LT 4,ZONA III,70
2448,-70.24507903,-17.99128505,MCF/LWAL+DNO/HEX:3/RES,1,220,626.16,14,4,MZA 3305 - LT 5,ZONA III,71
2449,-70.24495685,-17.99147376,MCF/LWAL+DNO/HEX:2/RES,1,220,246.46,6,1,MZA 3305 - LT 6A,ZONA III,72
2450,-70.24498957,-17.99140012,MCF/LWAL+DNO/HEX:3/RES,1,220,463.11,11,3,MZA 3305 - LT 6B,ZONA III,73

2451,-70.24506719,-17.99145322,MCF/LWAL+DNO/HEX:1/RES,1,220,55.25,1,0,MZA 3305 - LT 6C,ZONA III,74
2452,-70.24967849,-17.99200609,MUR/HEX:1,1,220,223.03,5,1,MZA 3306 - LT 1,ZONA III,75
2453,-70.24958018,-17.99182527,MUR/HEX:1,1,220,193.18,4,1,MZA 3306 - LT 2,ZONA III,76
2454,-70.24948256,-17.99180588,MUR/HEX:1,1,220,199.07,5,1,MZA 3306 - LT 3,ZONA III,77
2455,-70.24938838,-17.99180438,MCF/LWAL+DNO/HEX:1/RES,1,220,200.27,5,1,MZA 3306 - LT 4,ZONA III,78
2456,-70.24929379,-17.99180291,MCF/LWAL+DNO/HEX:1/RES,1,220,201.11,5,1,MZA 3306 - LT 5,ZONA III,79
2457,-70.24919968,-17.99180124,MCF/LWAL+DNO/HEX:1/RES,1,220,198.56,5,1,MZA 3306 - LT 6,ZONA III,80
2458,-70.2491057,-17.99179966,MCF/LWAL+DNO/HEX:2/RES,1,220,401.64,9,2,MZA 3306 - LT 7,ZONA III,81
2459,-70.24910354,-17.99198091,MCF/LWAL+DNO/HEX:2/RES,1,220,400.94,9,2,MZA 3306 - LT 8,ZONA III,82
2460,-70.2491975,-17.99198248,MUR/HEX:2,1,220,397.16,9,2,MZA 3306 - LT 9,ZONA III,83
2461,-70.24929194,-17.99198416,MUR/HEX:1,1,220,202.83,5,1,MZA 3306 - LT 10,ZONA III,84
2462,-70.24938686,-17.99198564,MUR/HEX:1,1,220,200.88,5,1,MZA 3306 - LT 11,ZONA III,85
2463,-70.2494808,-17.99198713,MCF/LWAL+DNO/HEX:2/RES,1,220,397.96,9,2,MZA 3306 - LT 12,ZONA III,86
2464,-70.24957462,-17.99198884,MCF/LWAL+DNO/HEX:1/RES,1,220,200.65,5,1,MZA 3306 - LT 13,ZONA III,87
2465,-70.24889544,-17.99197798,MUR/HEX:2,1,220,403.16,9,2,MZA 3307 - LT 1,ZONA III,88
2466,-70.24889822,-17.991979651,MUR/HEX:1,1,220,203.54,5,1,MZA 3307 - LT 2,ZONA III,89
2467,-70.24880268,-17.99179485,MCF/LWAL+DNO/HEX:2/RES,1,220,408.86,9,2,MZA 3307 - LT 3,ZONA III,90
2468,-70.24870757,-17.99179351,MUR/HEX:1,1,220,201.4,5,1,MZA 3307 - LT 4,ZONA III,91
2469,-70.24861314,-17.99179201,MCF/LWAL+DNO/HEX:2/RES,1,220,402.54,9,2,MZA 3307 - LT 5,ZONA III,92
2470,-70.24851665,-17.99179264,MCF/LWAL+DNO/HEX:1/RES,1,220,204.16,5,1,MZA 3307 - LT 6,ZONA III,93
2471,-70.24842378,-17.99178903,MCF/LWAL+DNO/HEX:1/RES,1,220,197.18,5,1,MZA 3307 - LT 7,ZONA III,94
2472,-70.24832978,-17.99178738,MCF/LWAL+DNO/HEX:2/RES,1,220,405.8,9,2,MZA 3307 - LT 8,ZONA III,95
2473,-70.24823441,-17.99178602,MUR/HEX:1,1,220,202.78,5,1,MZA 3307 - LT 9,ZONA III,96
2474,-70.24813934,-17.99178462,MCF/LWAL+DNO/HEX:2/RES,1,220,402.78,9,2,MZA 3307 - LT 10,ZONA III,97
2475,-70.24804448,-17.99178295,MCF/LWAL+DNO/HEX:2/RES,1,220,403.2,9,2,MZA 3307 - LT 11,ZONA III,98
2476,-70.24804311,-17.99196396,MCF/LWAL+DNO/HEX:1/RES,1,220,200.46,5,1,MZA 3307 - LT 12,ZONA III,99
2477,-70.24813815,-17.99196569,MCF/LWAL+DNO/HEX:2/RES,1,220,404.66,9,2,MZA 3307 - LT 13,ZONA III,100
2478,-70.24823358,-17.99196714,MCF/LWAL+DNO/HEX:2/RES,1,220,404.18,9,2,MZA 3307 - LT 14,ZONA III,101
2479,-70.24832848,-17.99196855,MUR/HEX:1,1,220,200.06,5,1,MZA 3307 - LT 15,ZONA III,102
2480,-70.24842196,-17.99197023,MCF/LWAL+DNO/HEX:2/RES,1,220,392.98,9,2,MZA 3307 - LT 16,ZONA III,103
2481,-70.24851635,-17.99197178,MCF/LWAL+DNO/HEX:2/RES,1,220,406.1,9,2,MZA 3307 - LT 17,ZONA III,104
2482,-70.24861148,-17.99197334,MCF/LWAL+DNO/HEX:2/RES,1,220,400.08,9,2,MZA 3307 - LT 18,ZONA III,105
2483,-70.24870591,-17.99197489,MUR/HEX:1,1,220,200.03,5,1,MZA 3307 - LT 19,ZONA III,106
2484,-70.24880049,-17.99197627,MUR/HEX:2,1,220,401.36,9,2,MZA 3307 - LT 20,ZONA III,107
2485,-70.24783546,-17.99196311,MCF/LWAL+DNO/HEX:2/RES,1,220,413.82,10,3,MZA 3308 - LT 1,ZONA III,108
2486,-70.24783732,-17.99178094,MCF/LWAL+DNO/HEX:1/RES,1,220,216.73,5,1,MZA 3308 - LT 2,ZONA III,109
2487,-70.24774022,-17.99178019,MUR/HEX:1,1,220,203.84,5,1,MZA 3308 - LT 3,ZONA III,110
2488,-70.24764598,-17.9917789,MUR/HEX:2,1,220,408.2,9,2,MZA 3308 - LT 4,ZONA III,111
2489,-70.24755184,-17.99177761,MUR/HEX:1,1,220,202.32,5,1,MZA 3308 - LT 5,ZONA III,112
2490,-70.24745765,-17.99177613,MUR/HEX:1,1,220,203.32,5,1,MZA 3308 - LT 6,ZONA III,113
2491,-70.2473622,-17.99177456,MUR/HEX:1,1,220,206.68,5,1,MZA 3308 - LT 7,ZONA III,114
2492,-70.24726665,-17.99177319,MCF/LWAL+DNO/HEX:2/RES,1,220,405.32,9,2,MZA 3308 - LT 8,ZONA III,115
2493,-70.24717284,-17.99177196,MUR/HEX:1,1,220,198.23,5,1,MZA 3308 - LT 9,ZONA III,116
2494,-70.24707937,-17.99177049,MUR/HEX:1,1,220,200.18,5,1,MZA 3308 - LT 10,ZONA III,117
2495,-70.24698425,-17.99176906,MUR/HEX:2,1,220,408.44,9,2,MZA 3308 - LT 11,ZONA III,118
2496,-70.24698306,-17.99195016,MUR/HEX:2,1,220,408.98,9,2,MZA 3308 - LT 12,ZONA III,119
2497,-70.24707839,-17.99195172,MCF/LWAL+DNO/HEX:2/RES,1,220,399.66,9,2,MZA 3308 - LT 13,ZONA III,120
2498,-70.24717234,-17.99195331,MUR/HEX:1,1,220,198.1,5,1,MZA 3308 - LT 14,ZONA III,121
2499,-70.24726633,-17.99195466,MCF/LWAL+DNO/HEX:2/RES,1,220,398.98,9,2,MZA 3308 - LT 15,ZONA III,122
2500,-70.24736135,-17.99195614,MUR/HEX:1,1,220,201.93,5,1,MZA 3308 - LT 16,ZONA III,123
2501,-70.24745657,-17.99195783,MCF/LWAL+DNO/HEX:1/RES,1,220,199.81,5,1,MZA 3308 - LT 17,ZONA III,124
2502,-70.24755124,-17.99195943,MCF/LWAL+DNO/HEX:2/RES,1,220,398.12,9,2,MZA 3308 - LT 18,ZONA III,125
2503,-70.24764573,-17.99196085,MCF/LWAL+DNO/HEX:2/RES,1,220,397.1,9,2,MZA 3308 - LT 19,ZONA III,126
2504,-70.24773962,-17.99196225,MCF/LWAL+DNO/HEX:1/RES,1,220,196.05,5,1,MZA 3308 - LT 20,ZONA III,127
2505,-70.24677897,-17.99194795,MUR/HEX:2,1,220,385.86,9,2,MZA 3309 - LT 1,ZONA III,128
2506,-70.24677883,-17.99176593,MCF/LWAL+DNO/HEX:1/RES,1,220,212.95,5,1,MZA 3309 - LT 2,ZONA III,129
2507,-70.24668264,-17.99176442,MCF/LWAL+DNO/HEX:2/RES,1,220,398.24,9,2,MZA 3309 - LT 3,ZONA III,130
2508,-70.2465891,-17.99176285,MCF/LWAL+DNO/HEX:2/RES,1,220,402.38,9,2,MZA 3309 - LT 4,ZONA III,131
2509,-70.24649468,-17.9917613,MUR/HEX:1,1,220,202.47,5,1,MZA 3309 - LT 5,ZONA III,132
2510,-70.2463997,-17.99175986,MCF/LWAL+DNO/HEX:3/RES,1,220,609.09,14,4,MZA 3309 - LT 6,ZONA III,133
2511,-70.24630614,-17.99175855,MUR/HEX:1,1,220,196.28,5,1,MZA 3309 - LT 7,ZONA III,134
2512,-70.24621273,-17.99175698,MUR/HEX:1,1,220,201.91,5,1,MZA 3309 - LT 8,ZONA III,135
2513,-70.24611812,-17.99175546,MCF/LWAL+DNO/HEX:2/RES,1,220,401.88,9,2,MZA 3309 - LT 9,ZONA III,136
2514,-70.24602311,-17.9917539,MUR/HEX:1,1,220,203.25,5,1,MZA 3309 - LT 10,ZONA III,137
2515,-70.24592789,-17.99175248,MCF/LWAL+DNO/HEX:2/RES,1,220,402.78,9,2,MZA 3309 - LT 11,ZONA III,138
2516,-70.24592639,-17.99193355,MUR/HEX:1,1,220,200.82,5,1,MZA 3309 - LT 12,ZONA III,139
2517,-70.24602132,-17.99193508,MUR/HEX:1,1,220,201.74,5,1,MZA 3309 - LT 13,ZONA III,140
2518,-70.24611609,-17.99193673,MCF/LWAL+DNO/HEX:3/RES,1,220,600.78,14,4,MZA 3309 - LT 14,ZONA III,141
2519,-70.24621083,-17.99193836,MUR/HEX:1,1,220,201.6,5,1,MZA 3309 - LT 15,ZONA III,142
2520,-70.24630483,-17.99194004,MUR/HEX:1,1,220,197.24,5,1,MZA 3309 - LT 16,ZONA III,143
2521,-70.24639865,-17.99194138,MUR/HEX:1,1,220,200.85,5,1,MZA 3309 - LT 17,ZONA III,144

2522,-70.24649326,-17.99194303,MCF/LWAL+DNO/HEX:3/RES,1,220,602.1,14,4,MZA 3309 - LT 18,ZONA III,145
2523,-70.24658767,-17.99194464,MCF/LWAL+DNO/HEX:2/RES,1,220,400.3,9,2,MZA 3309 - LT 19,ZONA III,146
2524,-70.2466818,-17.99194633,MUR/HEX:1,1,220,199.43,5,1,MZA 3309 - LT 20,ZONA III,147
2525,-70.24571597,-17.99193318,MCF/LWAL+DNO/HEX:2/RES,1,220,397.12,9,2,MZA 3310 - LT 1,ZONA III,148
2526,-70.24571719,-17.99175128,MCF/LWAL+DNO/HEX:2/RES,1,220,398.56,9,2,MZA 3310 - LT 2,ZONA III,149
2527,-70.24562334,-17.99174972,MCF/LWAL+DNO/HEX:2/RES,1,220,402.14,9,2,MZA 3310 - LT 3,ZONA III,150
2528,-70.24552903,-17.99174844,MCF/LWAL+DNO/HEX:1/RES,1,220,200.89,5,1,MZA 3310 - LT 4,ZONA III,151
2529,-70.24543484,-17.99174694,MCF/LWAL+DNO/HEX:1/RES,1,220,200.21,5,1,MZA 3310 - LT 5,ZONA III,152
2530,-70.24534024,-17.99174539,MUR/HEX:1,1,220,202.3,5,1,MZA 3310 - LT 6,ZONA III,153
2531,-70.24524545,-17.99174417,MUR/HEX:1,1,220,200.67,5,1,MZA 3310 - LT 7,ZONA III,154
2532,-70.2451506,-17.99174255,MCF/LWAL+DNO/HEX:2/RES,1,220,404.38,9,2,MZA 3310 - LT 8,ZONA III,155
2533,-70.24505608,-17.99174156,MCF/LWAL+DNO/HEX:3/RES,1,220,596.37,14,4,MZA 3310 - LT 9,ZONA III,156
2534,-70.24496251,-17.99173974,MCF/LWAL+DNO/HEX:1/RES,1,220,198.5,1,MZA 3310 - LT 10,ZONA III,157
2535,-70.24486887,-17.99173843,MUR/HEX:1,1,220,198.66,5,1,MZA 3310 - LT 11,ZONA III,158
2536,-70.24477486,-17.99173681,MUR/HEX:2,1,220,398.46,9,2,MZA 3310 - LT 12,ZONA III,159
2537,-70.24467224,-17.99173575,MUR/HEX:1,1,220,207.78,5,1,MZA 3310 - LT 13,ZONA III,160
2538,-70.24457945,-17.99191694,MCF/LWAL+DNO/HEX:1/RES,1,220,214.4,5,1,MZA 3310 - LT 14,ZONA III,161
2539,-70.24467879,-17.99191628,MCF/LWAL+DNO/HEX:1/RES,1,220,198.98,5,1,MZA 3310 - LT 15,ZONA III,162
2540,-70.24477263,-17.99191744,MCF/LWAL+DNO/HEX:2/RES,1,220,397.12,9,2,MZA 3310 - LT 16,ZONA III,163
2541,-70.24486676,-17.99191917,MCF/LWAL+DNO/HEX:2/RES,1,220,400.76,9,2,MZA 3310 - LT 17,ZONA III,164
2542,-70.24496077,-17.9919206,MUR/HEX:1,1,220,198.17,5,1,MZA 3310 - LT 18,ZONA III,165
2543,-70.24505405,-17.99192202,MUR/HEX:2,1,220,394.96,9,2,MZA 3310 - LT 19,ZONA III,166
2544,-70.24514811,-17.99192362,MUR/HEX:1,1,220,201.6,5,1,MZA 3310 - LT 20,ZONA III,167
2545,-70.24524329,-17.99192536,MCF/LWAL+DNO/HEX:2/RES,1,220,404.7,9,2,MZA 3310 - LT 21,ZONA III,168
2546,-70.24533829,-17.9919267,MUR/HEX:1,1,220,200.99,5,1,MZA 3310 - LT 22,ZONA III,169
2547,-70.24543277,-17.99192836,MCF/LWAL+DNO/HEX:2/RES,1,220,400.62,9,2,MZA 3310 - LT 23,ZONA III,170
2548,-70.24552743,-17.99192998,MCF/LWAL+DNO/HEX:2/RES,1,220,403.78,9,2,MZA 3310 - LT 24,ZONA III,171
2549,-70.24562197,-17.99193138,MCF/LWAL+DNO/HEX:2/RES,1,220,399.9,9,2,MZA 3310 - LT 25,ZONA III,172
2550,-70.24995603,-17.99247817,MUR/HEX:1,1,220,219.69,5,1,MZA 3311 - LT 1,ZONA III,173
2551,-70.2498579,-17.99229893,MUR/HEX:1,1,220,188.23,4,1,MZA 3311 - LT 2,ZONA III,174
2552,-70.24976078,-17.99227909,MCF/LWAL+DNO/HEX:2/RES,1,220,402.72,9,2,MZA 3311 - LT 3,ZONA III,175
2553,-70.24966661,-17.99227787,MUR/HEX:1,1,220,198.56,5,1,MZA 3311 - LT 4,ZONA III,176
2554,-70.24957243,-17.99227662,MCF/LWAL+DNO/HEX:1/RES,1,220,201.81,5,1,MZA 3311 - LT 5,ZONA III,177
2555,-70.24947777,-17.99227545,MCF/LWAL+DNO/HEX:1/RES,1,220,201.04,5,1,MZA 3311 - LT 6,ZONA III,178
2556,-70.24938342,-17.99227418,MUR/HEX:1,1,220,200.93,5,1,MZA 3311 - LT 7,ZONA III,179
2557,-70.24928842,-17.99227297,MUR/HEX:1,1,220,204.23,5,1,MZA 3311 - LT 8,ZONA III,180
2558,-70.24919377,-17.99227188,MUR/HEX:2,1,220,399.62,9,2,MZA 3311 - LT 9,ZONA III,181
2559,-70.24909937,-17.99227053,MUR/HEX:2,1,220,407.32,9,2,MZA 3311 - LT 10,ZONA III,182
2560,-70.24909653,-17.99245169,MUR/HEX:1,1,220,200.37,5,1,MZA 3311 - LT 11,ZONA III,183
2561,-70.24919111,-17.992453,MUR/HEX:1,1,220,198.61,5,1,MZA 3311 - LT 12,ZONA III,184
2562,-70.24928593,-17.99245405,MUR/HEX:2,1,220,403.16,9,2,MZA 3311 - LT 13,ZONA III,185
2563,-70.24938066,-17.99245522,MCF/LWAL+DNO/HEX:2/RES,1,220,397.02,9,2,MZA 3311 - LT 14,ZONA III,186
2564,-70.24947487,-17.99245644,MCF/LWAL+DNO/HEX:1/RES,1,220,199.58,5,1,MZA 3311 - LT 15,ZONA III,187
2565,-70.24956938,-17.99245756,MUR/HEX:1,1,220,200.02,5,1,MZA 3311 - LT 16,ZONA III,188
2566,-70.24966337,-17.99245878,MCF/LWAL+DNO/HEX:2/RES,1,220,395.34,9,2,MZA 3311 - LT 17,ZONA III,189
2567,-70.24975753,-17.99245996,MUR/HEX:1,1,220,200.92,5,1,MZA 3311 - LT 18,ZONA III,190
2568,-70.24985232,-17.99246137,MCF/LWAL+DNO/HEX:1/RES,1,220,200.62,5,1,MZA 3311 - LT 19,ZONA III,191
2569,-70.24888912,-17.99244742,MUR/HEX:1,1,220,203.42,5,1,MZA 3312 - LT 1,ZONA III,192
2570,-70.24889143,-17.99226486,MUR/HEX:1,1,220,203.56,5,1,MZA 3312 - LT 2,ZONA III,193
2571,-70.24879672,-17.99226364,MCF/LWAL+DNO/HEX:1/RES,1,220,202.33,5,1,MZA 3312 - LT 3,ZONA III,194
2572,-70.24870233,-17.99226245,MCF/LWAL+DNO/HEX:1/RES,1,220,202.15,5,1,MZA 3312 - LT 4,ZONA III,195
2573,-70.24860781,-17.99226137,MUR/HEX:1,1,220,202.76,5,1,MZA 3312 - LT 5,ZONA III,196
2574,-70.24851199,-17.99226178,MCF/LWAL+DNO/HEX:2/RES,1,220,404.36,9,2,MZA 3312 - LT 6,ZONA III,197
2575,-70.24841859,-17.99225888,MUR/HEX:1,1,220,203.29,5,1,MZA 3312 - LT 7,ZONA III,198
2576,-70.2483239,-17.99225776,MUR/HEX:1,1,220,202.13,5,1,MZA 3312 - LT 8,ZONA III,199
2577,-70.24822929,-17.99225654,MUR/HEX:2,1,220,405.7,9,2,MZA 3312 - LT 9,ZONA III,200
2578,-70.24813454,-17.99225542,MUR/HEX:1,1,220,202.69,5,1,MZA 3312 - LT 10,ZONA III,201
2579,-70.24803951,-17.99225435,MUR/HEX:2,1,220,407.88,9,2,MZA 3312 - LT 11,ZONA III,202
2580,-70.2480368,-17.992436,MUR/HEX:2,1,220,407.52,9,2,MZA 3312 - LT 12,ZONA III,203
2581,-70.24813231,-17.99243718,MUR/HEX:2,1,220,402.24,9,2,MZA 3312 - LT 13,ZONA III,204
2582,-70.24822701,-17.9924384,MCF/LWAL+DNO/HEX:2/RES,1,220,401.36,9,2,MZA 3312 - LT 14,ZONA III,205
2583,-70.2483215,-17.99243971,MUR/HEX:1,1,220,200.6,5,1,MZA 3312 - LT 15,ZONA III,206
2584,-70.24841601,-17.99244094,MCF/LWAL+DNO/HEX:2/RES,1,220,402.32,9,2,MZA 3312 - LT 16,ZONA III,207
2585,-70.2485105,-17.99244226,MCF/LWAL+DNO/HEX:2/RES,1,220,401.74,9,2,MZA 3312 - LT 17,ZONA III,208
2586,-70.24860526,-17.99244362,MCF/LWAL+DNO/HEX:3/RES,1,220,607.98,14,4,MZA 3312 - LT 18,ZONA III,209
2587,-70.24869996,-17.99244481,MCF/LWAL+DNO/HEX:2/RES,1,220,401.9,9,2,MZA 3312 - LT 19,ZONA III,210
2588,-70.24879429,-17.9924461,MUR/HEX:1,1,220,201.52,5,1,MZA 3312 - LT 20,ZONA III,211
2589,-70.24782935,-17.99243166,MUR/HEX:2,1,220,401.8,9,2,MZA 3313 - LT 1,ZONA III,212
2590,-70.24783213,-17.99225034,MUR/HEX:2,1,220,403.46,9,2,MZA 3313 - LT 2,ZONA III,213
2591,-70.24773729,-17.99224924,MUR/HEX:1,1,220,201.64,5,1,MZA 3313 - LT 3,ZONA III,214
2592,-70.24764287,-17.99224776,MUR/HEX:2,1,220,400.52,9,2,MZA 3313 - LT 4,ZONA III,215

2593,-70.24754844,-17.99224657,MUR/HEX:1,1,220,201.9,5,1,MZA 3313 - LT 5,ZONA III,216
2594,-70.24745381,-17.99224536,MUR/HEX:1,1,220,201.39,5,1,MZA 3313 - LT 6,ZONA III,217
2595,-70.24735918,-17.99224405,MUR/HEX:1,1,220,202.17,5,1,MZA 3313 - LT 7,ZONA III,218
2596,-70.24726463,-17.99224264,MUR/HEX:1,1,220,201.29,5,1,MZA 3313 - LT 8,ZONA III,219
2597,-70.24717071,-17.99224177,MUR/HEX:1,1,220,199.77,5,1,MZA 3313 - LT 9,ZONA III,220
2598,-70.24707632,-17.99224013,MCF/LWAL+DUC/HEX:1/RES,1,220,203.57,5,1,MZA 3313 - LT 10,ZONA III,221
2599,-70.24698118,-17.99223924,MUR/HEX:2,1,220,406.4,9,2,MZA 3313 - LT 11,ZONA III,222
2600,-70.24697952,-17.99242162,MCF/LWAL+DNO/HEX:1/RES,1,220,205.5,5,1,MZA 3313 - LT 12,ZONA III,223
2601,-70.24707466,-17.99242239,MCF/LWAL+DNO/HEX:2/RES,1,220,401.66,9,2,MZA 3313 - LT 13,ZONA III,224
2602,-70.24716906,-17.99242391,MUR/HEX:1,1,220,202.1,5,1,MZA 3313 - LT 14,ZONA III,225
2603,-70.24726303,-17.99243013,MCF/LWAL+DNO/HEX:1/RES,1,220,198.57,5,1,MZA 3313 - LT 15,ZONA III,226
2604,-70.24735683,-17.99242596,MCF/LWAL+DNO/HEX:2/RES,1,220,402.92,9,2,MZA 3313 - LT 16,ZONA III,227
2605,-70.24745138,-17.99242715,MCF/LWAL+DNO/HEX:2/RES,1,220,402.68,9,2,MZA 3313 - LT 17,ZONA III,228
2606,-70.24754592,-17.99242741,MCF/LWAL+DNO/HEX:2/RES,1,220,402.42,9,2,MZA 3313 - LT 18,ZONA III,229
2607,-70.24763989,-17.9924293,MUR/HEX:1,1,220,198.57,5,1,MZA 3313 - LT 19,ZONA III,230
2608,-70.24773431,-17.99243067,MUR/HEX:2,1,220,405.94,9,2,MZA 3313 - LT 20,ZONA III,231
2609,-70.246769,-17.99241885,MUR/HEX:1,1,220,201.62,5,1,MZA 3314 - LT 1,ZONA III,232
2610,-70.24677241,-17.99223709,MUR/HEX:1,1,220,202.73,5,1,MZA 3314 - LT 2,ZONA III,233
2611,-70.24667742,-17.99223525,MUR/HEX:1,1,220,204.24,5,1,MZA 3314 - LT 3,ZONA III,234
2612,-70.24658242,-17.99223396,MUR/HEX:1,1,220,202.88,5,1,MZA 3314 - LT 4,ZONA III,235
2613,-70.24648903,-17.99223263,MUR/HEX:1,1,220,197.46,5,1,MZA 3314 - LT 5,ZONA III,236
2614,-70.24639572,-17.9922307,MUR/HEX:1,1,220,202.76,5,1,MZA 3314 - LT 6,ZONA III,237
2615,-70.24630147,-17.99222926,MUR/HEX:1,1,220,201.58,5,1,MZA 3314 - LT 7,ZONA III,238
2616,-70.24620811,-17.9922278,MUR/HEX:1,1,220,199.12,5,1,MZA 3314 - LT 8,ZONA III,239
2617,-70.24611427,-17.99222633,MUR/HEX:1,1,220,203.75,5,1,MZA 3314 - LT 9,ZONA III,240
2618,-70.24601943,-17.99222449,MUR/HEX:1,1,220,203.63,5,1,MZA 3314 - LT 10,ZONA III,241
2619,-70.24592364,-17.99222271,MUR/HEX:1,1,220,207.95,5,1,MZA 3314 - LT 11,ZONA III,242
2620,-70.24592024,-17.99240566,MCF/LWAL+DNO/HEX:2/RES,1,220,405.28,9,2,MZA 3314 - LT 12,ZONA III,243
2621,-70.24601524,-17.99240774,MCF/LWAL+DNO/HEX:1/RES,1,220,203.87,5,1,MZA 3314 - LT 13,ZONA III,244
2622,-70.24611017,-17.99240857,MUR/HEX:1,1,220,201.76,5,1,MZA 3314 - LT 14,ZONA III,245
2623,-70.24620402,-17.99241035,MCF/LWAL+DNO/HEX:2/RES,1,220,397.84,9,2,MZA 3314 - LT 15,ZONA III,246
2624,-70.24629763,-17.99241168,MCF/LWAL+DNO/HEX:1/RES,1,220,200.21,5,1,MZA 3314 - LT 16,ZONA III,247
2625,-70.24639152,-17.99241298,MCF/LWAL+DNO/HEX:2/RES,1,220,399.48,9,2,MZA 3314 - LT 17,ZONA III,248
2626,-70.24648531,-17.99241477,MCF/LWAL+DNO/HEX:1/RES,1,220,199.36,5,1,MZA 3314 - LT 18,ZONA III,249
2627,-70.24657976,-17.992416,MCF/LWAL+DNO/HEX:1/RES,1,220,202.06,5,1,MZA 3314 - LT 19,ZONA III,250
2628,-70.24667438,-17.99241715,MUR/HEX:2,1,220,399.28,9,2,MZA 3314 - LT 20,ZONA III,251
2629,-70.24571364,-17.9924052,MCF/LWAL+DNO/HEX:2/RES,1,220,402.66,9,2,MZA 3315 - LT 1,ZONA III,252
2630,-70.24571725,-17.99222352,MCF/LWAL+DNO/HEX:2/RES,1,220,405.3,9,2,MZA 3315 - LT 2,ZONA III,253
2631,-70.24562011,-17.99222055,MCF/LWAL+DNO/HEX:2/RES,1,220,408.04,9,2,MZA 3315 - LT 3,ZONA III,254
2632,-70.24552443,-17.992219,MCF/LWAL+DNO/HEX:2/RES,1,220,413.96,10,3,MZA 3315 - LT 4,ZONA III,255
2633,-70.24542916,-17.99221715,MUR/HEX:1,1,220,201.43,5,1,MZA 3315 - LT 5,ZONA III,256
2634,-70.24533479,-17.99221572,MUR/HEX:1,1,220,202.28,5,1,MZA 3315 - LT 6,ZONA III,257
2635,-70.24524,-17.99221397,MUR/HEX:2,1,220,404.92,9,2,MZA 3315 - LT 7,ZONA III,258
2636,-70.24514437,-17.99221238,MUR/HEX:1,1,220,204.99,5,1,MZA 3315 - LT 8,ZONA III,259
2637,-70.24504942,-17.99221078,MUR/HEX:1,1,220,198.8,5,1,MZA 3315 - LT 9,ZONA III,260
2638,-70.24495549,-17.99220903,MUR/HEX:1,1,220,199.8,5,1,MZA 3315 - LT 10,ZONA III,261
2639,-70.24486115,-17.99220751,MUR/HEX:1,1,220,199.75,5,1,MZA 3315 - LT 11,ZONA III,262
2640,-70.24474751,-17.99219036,MUR/HEX:1,1,220,258.53,6,1,MZA 3315 - LT 12,ZONA III,263
2641,-70.24485506,-17.99236891,MCF/LWAL+DNO/HEX:1/RES,1,220,197.43,5,1,MZA 3315 - LT 13,ZONA III,264
2642,-70.24496013,-17.99239343,MCF/LWAL+DNO/HEX:2/RES,1,220,411.34,9,2,MZA 3315 - LT 14,ZONA III,265
2643,-70.24504814,-17.99239484,MCF/LWAL+DNO/HEX:2/RES,1,220,410.98,9,2,MZA 3315 - LT 15,ZONA III,266
2644,-70.24514322,-17.99239628,MUR/HEX:1,1,220,210.16,5,1,MZA 3315 - LT 16,ZONA III,267
2645,-70.24523868,-17.99239772,MCF/LWAL+DNO/HEX:1/RES,1,220,205.68,5,1,MZA 3315 - LT 17,ZONA III,268
2646,-70.24533356,-17.99239826,MCF/LWAL+DNO/HEX:3/RES,1,220,618.24,14,4,MZA 3315 - LT 18,ZONA III,269
2647,-70.24542779,-17.99239969,MUR/HEX:1,1,220,201.52,5,1,MZA 3315 - LT 19,ZONA III,270
2648,-70.24552303,-17.9924023,MCF/LWAL+DNO/HEX:1/RES,1,220,208.83,5,1,MZA 3315 - LT 20,ZONA III,271
2649,-70.24561902,-17.99240168,MUR/HEX:1,1,220,203.33,5,1,MZA 3315 - LT 21,ZONA III,272
2650,-70.24578484,-17.99407401,MCF/LWAL+DNO/HEX:1/RES,1,220,105.29,2,0,MZA 3316 - LT 1A,ZONA III,273
2651,-70.24573701,-17.99399636,MCF/LWAL+DNO/HEX:3/RES,1,220,94.98,2,0,MZA 3316 - LT 1B,ZONA III,274
2652,-70.2457093,-17.99406929,MCF/LWAL+DNO/HEX:3/RES,1,220,234.54,5,1,MZA 3316 - LT 1C,ZONA III,275
2653,-70.2456508,-17.9940833,MCF/LWAL+DNO/HEX:3/RES,1,220,164.76,4,1,MZA 3316 - LT 1D,ZONA III,276
2654,-70.24565032,-17.99398121,MUR/HEX:1,1,220,203.45,5,1,MZA 3316 - LT 2,ZONA III,277
2655,-70.24559913,-17.9939092,MUR/HEX:3,1,220,592.92,14,4,MZA 3316 - LT 3,ZONA III,278
2656,-70.24554605,-17.99383211,MCF/LWAL+DNO/HEX:1/RES,1,220,202.29,5,1,MZA 3316 - LT 4,ZONA III,279
2657,-70.24549478,-17.99375565,MCF/LWAL+DNO/HEX:2/RES,1,220,403.32,9,2,MZA 3316 - LT 5,ZONA III,280
2658,-70.2454428,-17.99368038,MCF/LWAL+DNO/HEX:2/RES,1,220,401.3,9,2,MZA 3316 - LT 6,ZONA III,281
2659,-70.24539091,-17.99360403,MCF/LWAL+DNO/HEX:1/RES,1,220,205.13,5,1,MZA 3316 - LT 7,ZONA III,282
2660,-70.24533872,-17.99352947,MCF/LWAL+DNO/HEX:3/RES,1,220,585.96,14,4,MZA 3316 - LT 8,ZONA III,283
2661,-70.24528772,-17.99345541,MCF/LWAL+DNO/HEX:2/RES,1,220,400.26,9,2,MZA 3316 - LT 9,ZONA III,284
2662,-70.24523549,-17.99337988,MUR/HEX:1,1,220,203,5,1,MZA 3316 - LT 10,ZONA III,285
2663,-70.24516623,-17.99331394,MCF/LWAL+DNO/HEX:2/RES,1,220,407.6,9,2,MZA 3316 - LT 11,ZONA III,286

2664,-70.24511447,-17.99324111,MCF/LWAL+DNO/HEX:1/RES,1,220,244.29,6,1,MZA 3316 - LT 12,ZONA III,287
2665,-70.24501566,-17.99308589,MUR/HEX:1,1,220,231.92,5,1,MZA 3316 - LT 14,ZONA III,289
2666,-70.24495984,-17.99301498,MUR/HEX:1,1,220,229.88,5,1,MZA 3316 - LT 15,ZONA III,290
2667,-70.24490386,-17.9929436,MUR/HEX:1,1,220,119.36,3,0,MZA 3316 - LT 16,ZONA III,291
2668,-70.24484453,-17.99298783,MUR/HEX:1,1,220,119.14,3,0,MZA 3316 - LT 16B,ZONA III,292
2669,-70.24487259,-17.99285225,MUR/HEX:2,1,220,512.34,12,3,MZA 3316 - LT 17,ZONA III,293
2670,-70.24482002,-17.99277753,MUR/HEX:2,1,220,394.8,9,2,MZA 3316 - LT 18,ZONA III,294
2671,-70.24476708,-17.99270302,MCF/LWAL+DNO/HEX:2/RES,1,220,402.8,9,2,MZA 3316 - LT 19,ZONA III,295
2672,-70.24471469,-17.99262817,MUR/HEX:1,1,220,201.75,5,1,MZA 3316 - LT 20,ZONA III,296
2673,-70.2446616,-17.99255361,MUR/HEX:1,1,220,205.12,5,1,MZA 3316 - LT 21,ZONA III,297
2674,-70.24460859,-17.99247923,MCF/LWAL+DNO/HEX:2/RES,1,220,413.64,10,3,MZA 3316 - LT 22,ZONA III,298
2675,-70.24455269,-17.99240444,MUR/HEX:1,1,220,208.29,5,1,MZA 3316 - LT 23,ZONA III,299
2676,-70.24450588,-17.99232466,MCF/LWAL+DNO/HEX:1/RES,1,220,220.5,1,MZA 3316 - LT 24,ZONA III,300
2677,-70.24444175,-17.99222939,MCF/LWAL+DNO/HEX:2/RES,1,220,203.46,5,1,MZA 3316 - LT 25,ZONA III,301
2678,-70.24446768,-17.99226753,MCF/LWAL+DNO/HEX:2/RES,1,220,203.46,5,1,MZA 3316 - LT 25B,ZONA III,302
2679,-70.24442683,-17.99212328,MUR/HEX:1,1,220,100.96,2,0,MZA 3316 - LT 26,ZONA III,303
2680,-70.24435937,-17.99219286,MCF/LWAL+DNO/HEX:3/RES,1,220,302.94,7,2,MZA 3316 - LT 27,ZONA III,304
2681,-70.24433711,-17.99232748,MCF/LWAL+DNO/HEX:2/RES,1,220,311.84,7,2,MZA 3316 - LT 28,ZONA III,305
2682,-70.24427849,-17.99237141,MCF/LWAL+DNO/HEX:3/RES,1,220,377.82,9,2,MZA 3316 - LT 29,ZONA III,306
2683,-70.24441889,-17.99248512,MUR/HEX:1,1,220,235.83,5,1,MZA 3316 - LT 30,ZONA III,307
2684,-70.2445077,-17.99259677,MUR/HEX:1,1,220,153.57,4,1,MZA 3316 - LT 31,ZONA III,308
2685,-70.24460678,-17.99272086,MUR/HEX:1,1,220,188.66,4,1,MZA 3316 - LT 32,ZONA III,309
2686,-70.24472752,-17.99287099,MCF/LWAL+DNO/HEX:2/RES,1,220,391.14,9,2,MZA 3316 - LT 33,ZONA III,310
2687,-70.24515099,-17.99353741,MCF/LWAL+DNO/HEX:2/RES,1,220,349.96,8,2,MZA 3316 - LT 34A,ZONA III,311
2688,-70.24511175,-17.99343375,MCF/LWAL+DNO/HEX:2/RES,1,220,381.18,9,2,MZA 3316 - LT 34B,ZONA III,312
2689,-70.24513157,-17.9934881,MUR/HEX:2,1,220,564.02,13,4,MZA 3316 - LT 34,ZONA III,313
2690,-70.24518418,-17.99363532,MCF/LWAL+DNO/HEX:2/RES,1,220,567.8,13,4,MZA 3316 - LT 35,ZONA III,314
2691,-70.24522062,-17.99373362,MUR/HEX:2,1,220,624.36,14,4,MZA 3316 - LT 36,ZONA III,315
2692,-70.24524973,-17.99381494,MCF/LWAL+DNO/HEX:2/RES,1,220,585.48,14,4,MZA 3316 - LT 37,ZONA III,316
2693,-70.24514703,-17.99391636,MCF/LWAL+DNO/HEX:3/RES,1,220,633.66,15,4,MZA 3316 - LT 38,ZONA III,317
2694,-70.24511945,-17.99405233,MCF/LWAL+DNO/HEX:2/RES,1,220,219.94,5,1,MZA 3316 - LT 39,ZONA III,318
2695,-70.2451855,-17.99405265,MCF/LWAL+DNO/HEX:3/RES,1,220,306.81,7,2,MZA 3316 - LT 39B,ZONA III,319
2696,-70.24526254,-17.99398497,MCF/LWAL+DNO/HEX:3/RES,1,220,893.67,21,6,MZA 3316 - LT 40,ZONA III,320
2697,-70.24536465,-17.99397488,MCF/LWAL+DNO/HEX:3/RES,1,220,996.24,23,7,MZA 3316 - LT 41,ZONA III,321
2698,-70.24543937,-17.99408643,MCF/LWAL+DNO/HEX:3/RES,1,220,852.66,20,6,MZA 3316 - LT 42C,ZONA III,322
2699,-70.24547813,-17.99400847,MCF/LWAL+DNO/HEX:3/RES,1,220,161.37,4,1,MZA 3316 - LT 42B,ZONA III,323
2700,-70.24557635,-17.99407246,MCF/LWAL+DNO/HEX:3/RES,1,220,168.24,4,1,MZA 3316 - LT 42D,ZONA III,324
2701,-70.25029737,-17.99312213,MCF/LWAL+DNO/HEX:3/RES,1,220,600.63,14,4,MZA 3317 - LT 1,ZONA III,325
2702,-70.25024948,-17.99304425,MUR/HEX:1,1,220,202.67,5,1,MZA 3317 - LT 2,ZONA III,326
2703,-70.25020111,-17.99296558,MUR/HEX:1,1,220,203.11,5,1,MZA 3317 - LT 3,ZONA III,327
2704,-70.25015304,-17.99288636,MCF/LWAL+DNO/HEX:2/RES,1,220,406.08,9,2,MZA 3317 - LT 4,ZONA III,328
2705,-70.25008188,-17.99279358,MUR/HEX:1,1,220,288.18,7,2,MZA 3317 - LT 5,ZONA III,329
2706,-70.25003573,-17.99326919,MUR/HEX:3,1,220,602.25,14,4,MZA 3318 - LT 1,ZONA III,330
2707,-70.24998753,-17.99319077,MCF/LWAL+DNO/HEX:1/RES,1,220,202.5,1,MZA 3318 - LT 2,ZONA III,331
2708,-70.24993926,-17.99311224,MCF/LWAL+DNO/HEX:1/RES,1,220,201.25,5,1,MZA 3318 - LT 3,ZONA III,332
2709,-70.24989067,-17.9930335,MCF/LWAL+DNO/HEX:2/RES,1,220,407.9,2,MZA 3318 - LT 4,ZONA III,333
2710,-70.24984233,-17.99295508,MUR/HEX:2,1,220,399.9,2,MZA 3318 - LT 5,ZONA III,334
2711,-70.24979425,-17.99287748,MCF/LWAL+DNO/HEX:2/RES,1,220,399.68,9,2,MZA 3318 - LT 6,ZONA III,335
2712,-70.24972322,-17.99278699,MUR/HEX:1,1,220,281.39,6,1,MZA 3318 - LT 7,ZONA III,336
2713,-70.24950804,-17.99279372,MUR/HEX:1,1,220,324.37,7,2,MZA 3318 - LT 8,ZONA III,337
2714,-70.24958257,-17.9928921,MUR/HEX:1,1,220,203.19,5,1,MZA 3318 - LT 9,ZONA III,338
2715,-70.24963079,-17.99297034,MCF/LWAL+DNO/HEX:1/RES,1,220,204.14,5,1,MZA 3318 - LT 10,ZONA III,339
2716,-70.249679,-17.99304805,MUR/HEX:2,1,220,401.92,9,2,MZA 3318 - LT 11,ZONA III,340
2717,-70.24972714,-17.99312606,MCF/LWAL+DNO/HEX:2/RES,1,220,409.8,9,2,MZA 3318 - LT 12,ZONA III,341
2718,-70.24977547,-17.99320429,MCF/LWAL+DNO/HEX:2/RES,1,220,404.04,9,2,MZA 3318 - LT 13,ZONA III,342
2719,-70.2498236,-17.9932825,MCF/LWAL+DNO/HEX:3/RES,1,220,612.54,14,4,MZA 3318 - LT 14,ZONA III,343
2720,-70.24987203,-17.99336119,MCF/LWAL+DNO/HEX:2/RES,1,220,408.64,9,2,MZA 3318 - LT 15,ZONA III,344
2721,-70.24943319,-17.99302784,MCF/LWAL+DNO/HEX:2/RES,1,220,239.54,6,1,MZA 3319 - LT 1,ZONA III,345
2722,-70.24928008,-17.99282723,MUR/HEX:1,1,220,286.51,7,2,MZA 3319 - LT 2,ZONA III,346
2723,-70.2491619,-17.99281412,MUR/HEX:1,1,220,203.52,5,1,MZA 3319 - LT 3,ZONA III,347
2724,-70.24906678,-17.9928136,MUR/HEX:1,1,220,205.49,5,1,MZA 3319 - LT 4,ZONA III,348
2725,-70.24899515,-17.99281313,MUR/HEX:1,1,220,103.85,2,0,MZA 3319 - LT 5A,ZONA III,349
2726,-70.24894716,-17.99281277,MUR/HEX:1,1,220,103.85,2,0,MZA 3319 - LT 5,ZONA III,350
2727,-70.24887575,-17.99281246,MUR/HEX:1,1,220,205.74,5,1,MZA 3319 - LT 6,ZONA III,351
2728,-70.24878108,-17.99281193,MCF/LWAL+DNO/HEX:1/RES,1,220,206.59,5,1,MZA 3319 - LT 7,ZONA III,352
2729,-70.24868606,-17.99281148,MCF/LWAL+DNO/HEX:2/RES,1,220,418.04,10,3,MZA 3319 - LT 8,ZONA III,353
2730,-70.24859136,-17.99281116,MCF/LWAL+DNO/HEX:1/RES,1,220,206.89,5,1,MZA 3319 - LT 9,ZONA III,354
2731,-70.24852382,-17.9928116,MCF/LWAL+DNO/HEX:2/RES,1,220,408.88,9,2,MZA 3319 - LT 10,ZONA III,355
2732,-70.24847349,-17.99281033,MCF/LWAL+DNO/HEX:2/RES,1,220,408.88,9,2,MZA 3319 - LT 10A,ZONA III,356
2733,-70.24840273,-17.99280999,MUR/HEX:1,1,220,209.05,5,1,MZA 3319 - LT 11,ZONA III,357
2734,-70.24830889,-17.99280938,MUR/HEX:1,1,220,208.32,5,1,MZA 3319 - LT 12,ZONA III,358

2735,-70.24819885,-17.99279232,MUR/HEX:1,1,220,261.16,6,1,MZA 3319 - LT 13,ZONA III,359
2736,-70.24830719,-17.993023,MCF/LWAL+DNO/HEX:2/RES,1,220,165.54,4,1,MZA 3319 - LT 14-1,ZONA III,360
2737,-70.24829639,-17.99294338,MUR/HEX:1,1,220,115.69,3,0,MZA 3319 - LT 14-2,ZONA III,361
2738,-70.2484006,-17.99299491,MCF/LWAL+DNO/HEX:2/RES,1,220,400.52,9,2,MZA 3319 - LT 15,ZONA III,362
2739,-70.24849528,-17.9929951,MUR/HEX:1,1,220,200.49,5,1,MZA 3319 - LT 16,ZONA III,363
2740,-70.24859025,-17.9929955,MCF/LWAL+DNO/HEX:2/RES,1,220,403.8,9,2,MZA 3319 - LT 17,ZONA III,364
2741,-70.24868556,-17.99299554,MUR/HEX:1,1,220,202.41,5,1,MZA 3319 - LT 18,ZONA III,365
2742,-70.24878035,-17.9929957,MUR/HEX:1,1,220,200.11,5,1,MZA 3319 - LT 19,ZONA III,366
2743,-70.24887456,-17.99299593,MCF/LWAL+DNO/HEX:2/RES,1,220,400.8,9,2,MZA 3319 - LT 20,ZONA III,367
2744,-70.24896932,-17.99299612,MUR/HEX:1,1,220,202.83,5,1,MZA 3319 - LT 21,ZONA III,368
2745,-70.24906464,-17.99299647,MCF/LWAL+DNO/HEX:2/RES,1,220,406.6,9,2,MZA 3319 - LT 22,ZONA III,369
2746,-70.24915974,-17.99299669,MUR/HEX:1,1,220,202.28,5,1,MZA 3319 - LT 23,ZONA III,370
2747,-70.24925436,-17.99299694,MCF/LWAL+DNO/HEX:2/RES,1,220,403.44,9,2,MZA 3319 - LT 24,ZONA III,371
2748,-70.24934897,-17.99299705,MCF/LWAL+DNO/HEX:2/RES,1,220,405.38,9,2,MZA 3319 - LT 25,ZONA III,372
2749,-70.24784408,-17.99367861,MUR/HEX:1,1,220,149.94,3,0,MZA 3321 - LT 1,ZONA III,373
2750,-70.24779698,-17.99360806,MUR/HEX:1,1,220,200.63,5,1,MZA 3321 - LT 2,ZONA III,374
2751,-70.24776225,-17.9935239,MUR/HEX:1,1,220,200.78,5,1,MZA 3321 - LT 3,ZONA III,375
2752,-70.24772771,-17.9934405,MCF/LWAL+DNO/HEX:2/RES,1,220,394.48,9,2,MZA 3321 - LT 4,ZONA III,376
2753,-70.24769349,-17.99335672,MUR/HEX:1,1,220,201.85,5,1,MZA 3321 - LT 5,ZONA III,377
2754,-70.24765839,-17.99327202,MUR/HEX:2,1,220,404.88,9,2,MZA 3321 - LT 6,ZONA III,378
2755,-70.24762353,-17.99318604,MUR/HEX:2,1,220,413.6,10,3,MZA 3321 - LT 7,ZONA III,379
2756,-70.2475879,-17.99310134,MUR/HEX:1,1,220,198.33,5,1,MZA 3321 - LT 8,ZONA III,380
2757,-70.24755362,-17.99301739,MUR/HEX:2,1,220,403.32,9,2,MZA 3321 - LT 9,ZONA III,381
2758,-70.24751895,-17.99293323,MUR/HEX:1,1,220,199.77,5,1,MZA 3321 - LT 10,ZONA III,382
2759,-70.24748425,-17.99284912,MCF/LWAL+DNO/HEX:2/RES,1,220,403.02,9,2,MZA 3321 - LT 11,ZONA III,383
2760,-70.24743533,-17.99276167,MCF/LWAL+DNO/HEX:2/RES,1,220,450.62,10,3,MZA 3321 - LT 12,ZONA III,384
2761,-70.24722313,-17.99275172,MUR/HEX:1,1,220,200.7,5,1,MZA 3321 - LT 13,ZONA III,385
2762,-70.24727188,-17.99283285,MUR/HEX:1,1,220,205.53,5,1,MZA 3321 - LT 14,ZONA III,386
2763,-70.24730715,-17.99291721,MUR/HEX:1,1,220,204.59,5,1,MZA 3321 - LT 15,ZONA III,387
2764,-70.24734204,-17.99300108,MCF/LWAL+DNO/HEX:1/RES,1,220,201.79,5,1,MZA 3321 - LT 16,ZONA III,388
2765,-70.24737686,-17.99308492,MCF/LWAL+DNO/HEX:1/RES,1,220,203.24,5,1,MZA 3321 - LT 17,ZONA III,389
2766,-70.24741162,-17.99316934,MCF/LWAL+DNO/HEX:1/RES,1,220,202.99,5,1,MZA 3321 - LT 18,ZONA III,390
2767,-70.24744729,-17.9932534,MCF/LWAL+DNO/HEX:2/RES,1,220,404.18,9,2,MZA 3321 - LT 19,ZONA III,391
2768,-70.247482,-17.99333836,MCF/LWAL+DNO/HEX:1/RES,1,220,204.09,5,1,MZA 3321 - LT 20,ZONA III,392
2769,-70.24751735,-17.99342299,MUR/HEX:2,1,220,401.14,9,2,MZA 3321 - LT 21,ZONA III,393
2770,-70.24755192,-17.99350693,MUR/HEX:1,1,220,198.93,5,1,MZA 3321 - LT 22,ZONA III,394
2771,-70.24758694,-17.99359079,MUR/HEX:1,1,220,199.84,5,1,MZA 3321 - LT 23,ZONA III,395
2772,-70.24763406,-17.99367068,MUR/HEX:1,1,220,189.63,4,1,MZA 3321 - LT 24,ZONA III,396
2773,-70.24706458,-17.99297642,MUR/HEX:1,1,220,240.62,6,1,MZA 3322 - LT 1,ZONA III,397
2774,-70.24702065,-17.99280606,MUR/HEX:2,1,220,387.84,9,2,MZA 3322 - LT 2,ZONA III,398
2775,-70.24692546,-17.99279109,MUR/HEX:2,1,220,401.06,9,2,MZA 3322 - LT 3,ZONA III,399
2776,-70.24683118,-17.9927891,MCF/LWAL+DNO/HEX:2/RES,1,220,409.2,9,2,MZA 3322 - LT 4,ZONA III,400
2777,-70.24673688,-17.9927876,MCF/LWAL+DNO/HEX:2/RES,1,220,408.94,9,2,MZA 3322 - LT 5,ZONA III,401
2778,-70.2466429,-17.99278566,MCF/LWAL+DNO/HEX:2/RES,1,220,414.44,10,3,MZA 3322 - LT 6,ZONA III,402
2779,-70.24654901,-17.99278387,MUR/HEX:2,1,220,415.98,10,3,MZA 3322 - LT 7,ZONA III,403
2780,-70.24645847,-17.99276462,MCF/LWAL+DNO/HEX:2/RES,1,220,363.64,8,2,MZA 3322 - LT 8,ZONA III,404
2781,-70.24656048,-17.99296145,MCF/LWAL+DNO/HEX:1/RES,1,220,274.93,6,1,MZA 3322 - LT 9,ZONA III,405
2782,-70.2466736,-17.99297115,MUR/HEX:1,1,220,202.06,5,1,MZA 3322 - LT 10,ZONA III,406
2783,-70.24674467,-17.9929728,MCF/LWAL+DNO/HEX:3/RES,1,220,302.73,7,2,MZA 3322 - LT 11A,ZONA III,407
2784,-70.24678599,-17.99297222,MUR/HEX:1,1,220,100.92,2,0,MZA 3322 - LT 11B,ZONA III,408
2785,-70.24686236,-17.99297324,MCF/LWAL+DNO/HEX:2/RES,1,220,406.88,9,2,MZA 3322 - LT 12,ZONA III,409
2786,-70.24695904,-17.99297385,MCF/LWAL+DNO/HEX:2/RES,1,220,422.26,10,3,MZA 3322 - LT 13,ZONA III,410
2787,-70.24657974,-17.99367296,MUR/HEX:1,1,220,210.33,5,1,MZA 3323 - LT 1,ZONA III,411
2788,-70.24653547,-17.99359453,MCF/LWAL+DNO/HEX:2/RES,1,220,408.1,9,2,MZA 3323 - LT 2,ZONA III,412
2789,-70.24649605,-17.99350632,MCF/LWAL+DNO/HEX:2/RES,1,220,410.5,9,2,MZA 3323 - LT 3,ZONA III,413
2790,-70.24646084,-17.99342142,MUR/HEX:1,1,220,207.16,5,1,MZA 3323 - LT 4,ZONA III,414
2791,-70.24642542,-17.99333677,MUR/HEX:1,1,220,203.81,5,1,MZA 3323 - LT 5,ZONA III,415
2792,-70.2463816,-17.99323105,MUR/HEX:1,1,220,102.41,2,0,MZA 3323 - LT 6A,ZONA III,416
2793,-70.24639925,-17.99327343,MCF/LWAL+DNO/HEX:2/RES,1,220,205.3,5,1,MZA 3323 - LT 6B,ZONA III,417
2794,-70.24635688,-17.99316664,MUR/HEX:1,1,220,202.39,5,1,MZA 3323 - LT 7,ZONA III,418
2795,-70.24632072,-17.99308407,MCF/LWAL+DNO/HEX:2/RES,1,220,403.82,9,2,MZA 3323 - LT 8,ZONA III,419
2796,-70.24628569,-17.99299996,MUR/HEX:1,1,220,203.19,5,1,MZA 3323 - LT 9,ZONA III,420
2797,-70.24625029,-17.99291535,MCF/LWAL+DNO/HEX:2/RES,1,220,407.7,9,2,MZA 3323 - LT 10,ZONA III,421
2798,-70.24621555,-17.99283103,MUR/HEX:1,1,220,200.14,5,1,MZA 3323 - LT 11,ZONA III,422
2799,-70.2461651,-17.99273907,MUR/HEX:1,1,220,249.66,6,1,MZA 3323 - LT 12,ZONA III,423
2800,-70.24595378,-17.99272946,MUR/HEX:1,1,220,228.16,5,1,MZA 3323 - LT 13,ZONA III,424
2801,-70.24599548,-17.99279557,MCF/LWAL+DNO/HEX:2/RES,1,220,207.5,1,MZA 3323 - LT 14A,ZONA III,425
2802,-70.24601336,-17.99283829,MUR/HEX:2,1,220,206.4,5,1,MZA 3323 - LT 14B,ZONA III,426
2803,-70.24603963,-17.99290101,MCF/LWAL+DNO/HEX:2/RES,1,220,399.12,9,2,MZA 3323 - LT 15,ZONA III,427
2804,-70.24607458,-17.99298537,MCF/LWAL+DNO/HEX:2/RES,1,220,411.48,9,2,MZA 3323 - LT 16,ZONA III,428
2805,-70.24611025,-17.99307016,MUR/HEX:1,1,220,201.01,5,1,MZA 3323 - LT 17,ZONA III,429

2806,-70.24614522,-17.99315364,MUR/HEX:1,1,220,197.71,5,1,MZA 3323 - LT 18,ZONA III,430
2807,-70.24617992,-17.993237,MCF/LWAL+DNO/HEX:2/RES,1,220,397.1,9,2,MZA 3323 - LT 19,ZONA III,431
2808,-70.24621509,-17.99332323,MUR/HEX:1,1,220,200.51,5,1,MZA 3323 - LT 20,ZONA III,432
2809,-70.2462504,-17.99340742,MCF/LWAL+DNO/HEX:1/RES,1,220,199.63,5,1,MZA 3323 - LT 21,ZONA III,433
2810,-70.246286,-17.9934907,MCF/LWAL+DNO/HEX:2/RES,1,220,397.74,9,2,MZA 3323 - LT 22,ZONA III,434
2811,-70.24632123,-17.99357519,MCF/LWAL+DNO/HEX:1/RES,1,220,196.8,5,1,MZA 3323 - LT 23,ZONA III,435
2812,-70.24637011,-17.99366557,MUR/HEX:2,1,220,466.86,11,3,MZA 3323 - LT 24,ZONA III,436
2813,-70.24597856,-17.99356291,MUR/HEX:2,1,220,411.56,10,3,MZA 3324 - LT 1,ZONA III,437
2814,-70.245925,-17.99348718,MUR/HEX:2,1,220,405.26,9,2,MZA 3324 - LT 2,ZONA III,438
2815,-70.24587181,-17.99341207,MUR/HEX:1,1,220,203.24,5,1,MZA 3324 - LT 3,ZONA III,439
2816,-70.24581759,-17.99333818,MUR/HEX:1,1,220,203.29,5,1,MZA 3324 - LT 4,ZONA III,440
2817,-70.24576604,-17.99326117,MCF/LWAL+DNO/HEX:3/RES,1,220,614.46,14,4,MZA 3324 - LT 5,ZONA III,441
2818,-70.24571282,-17.99318606,MCF/LWAL+DNO/HEX:2/RES,1,220,405.98,9,2,MZA 3324 - LT 6,ZONA III,442
2819,-70.24566025,-17.99311123,MCF/LWAL+DNO/HEX:2/RES,1,220,405.58,9,2,MZA 3324 - LT 7,ZONA III,443
2820,-70.24560919,-17.99303848,MCF/LWAL+DNO/HEX:3/RES,1,220,614.43,14,4,MZA 3324 - LT 8,ZONA III,444
2821,-70.24555483,-17.99296173,MCF/LWAL+DNO/HEX:1/RES,1,220,201.12,5,1,MZA 3324 - LT 9,ZONA III,445
2822,-70.24550215,-17.99288637,MCF/LWAL+DNO/HEX:1/RES,1,220,208.78,5,1,MZA 3324 - LT 10,ZONA III,446
2823,-70.24544818,-17.99280936,MCF/LWAL+DNO/HEX:2/RES,1,220,422.08,10,3,MZA 3324 - LT 11,ZONA III,447
2824,-70.24536647,-17.99272398,MUR/HEX:1,1,220,282.51,7,2,MZA 3324 - LT 12,ZONA III,448
2825,-70.24522538,-17.99271756,MUR/HEX:2,1,220,186.4,1,MZA 3324 - LT 13D,ZONA III,449
2826,-70.24516823,-17.9927312,MCF/LWAL+DNO/HEX:1/RES,1,220,93.39,2,0,MZA 3324 - LT 13C,ZONA III,450
2827,-70.24507404,-17.99270545,MUR/HEX:2,1,220,176.98,4,1,MZA 3324 - LT 13B,ZONA III,451
2828,-70.24513554,-17.99278943,MUR/HEX:1,1,220,87.74,2,0,MZA 3324 - LT 13A,ZONA III,452
2829,-70.24523854,-17.99283902,MUR/HEX:2,1,220,401.26,9,2,MZA 3324 - LT 14,ZONA III,453
2830,-70.24529032,-17.99291428,MUR/HEX:1,1,220,197.88,5,1,MZA 3324 - LT 15,ZONA III,454
2831,-70.24534315,-17.99298877,MUR/HEX:2,1,220,404.76,9,2,MZA 3324 - LT 16,ZONA III,455
2832,-70.24539519,-17.99306382,MUR/HEX:1,1,220,200.28,5,1,MZA 3324 - LT 17,ZONA III,456
2833,-70.24544777,-17.99313942,MCF/LWAL+DNO/HEX:2/RES,1,220,415.64,10,3,MZA 3324 - LT 18,ZONA III,457
2834,-70.24550089,-17.99321498,MUR/HEX:1,1,220,203.57,5,1,MZA 3324 - LT 19,ZONA III,458
2835,-70.24555324,-17.99329012,MCF/LWAL+DNO/HEX:3/RES,1,220,619.77,14,4,MZA 3324 - LT 20,ZONA III,459
2836,-70.24560601,-17.9933652,MCF/LWAL+DNO/HEX:2/RES,1,220,413.02,10,3,MZA 3324 - LT 21,ZONA III,460
2837,-70.24565834,-17.99344031,MCF/LWAL+DNO/HEX:2/RES,1,220,415.62,10,3,MZA 3324 - LT 22,ZONA III,461
2838,-70.24571109,-17.99351638,MCF/LWAL+DNO/HEX:1/RES,1,220,213.34,5,1,MZA 3324 - LT 23,ZONA III,462
2839,-70.24575678,-17.99357448,MUR/HEX:1,1,220,105.54,2,0,MZA 3324 - LT 24A,ZONA III,463
2840,-70.24577976,-17.99360677,MCF/LWAL+DNO/HEX:2/RES,1,220,211.08,5,1,MZA 3324 - LT 24B,ZONA III,464
2841,-70.24581746,-17.99366789,MCF/LWAL+DNO/HEX:2/RES,1,220,426.28,10,3,MZA 3324 - LT 25,ZONA III,465
2842,-70.25092663,-17.99412055,MCF/LWAL+DNO/HEX:2/RES,1,220,412.32,10,3,MZA 3325 - LT 1,ZONA III,466
2843,-70.25085874,-17.99404638,MCF/LWAL+DNO/HEX:3/RES,1,220,598.23,14,4,MZA 3325 - LT 2,ZONA III,467
2844,-70.25081169,-17.99396893,MUR/HEX:1,1,220,198.83,5,1,MZA 3325 - LT 3,ZONA III,468
2845,-70.25076416,-17.99389084,MCF/LWAL+DNO/HEX:2/RES,1,220,405.5,9,2,MZA 3325 - LT 4,ZONA III,469
2846,-70.25071625,-17.99381258,MUR/HEX:1,1,220,200.16,5,1,MZA 3325 - LT 5,ZONA III,470
2847,-70.25066886,-17.99373441,MUR/HEX:1,1,220,201.07,5,1,MZA 3325 - LT 6,ZONA III,471
2848,-70.25062134,-17.99365619,MCF/LWAL+DNO/HEX:2/RES,1,220,400.96,9,2,MZA 3325 - LT 7,ZONA III,472
2849,-70.2505734,-17.99357833,MCF/LWAL+DNO/HEX:2/RES,1,220,400.8,9,2,MZA 3325 - LT 8,ZONA III,473
2850,-70.25052632,-17.99349947,MCF/LWAL+DNO/HEX:2/RES,1,220,404.62,9,2,MZA 3325 - LT 9,ZONA III,474
2851,-70.25047819,-17.99342041,MUR/HEX:1,1,220,203.22,5,1,MZA 3325 - LT 10,ZONA III,475
2852,-70.25043017,-17.99334194,MCF/LWAL+DNO/HEX:3/RES,1,220,598.89,14,4,MZA 3325 - LT 11,ZONA III,476
2853,-70.25034212,-17.9932874,MCF/LWAL+DNO/HEX:3/RES,1,220,298.5,7,2,MZA 3325 - LT 12 B,ZONA III,477
2854,-70.2505071,-17.99403519,MCF/LWAL+DNO/HEX:2/RES,1,220,402.9,2,MZA 3326 - LT 2,ZONA III,479
2855,-70.25045883,-17.99395667,MUR/HEX:1,1,220,203.26,5,1,MZA 3326 - LT 3,ZONA III,480
2856,-70.25041029,-17.99387837,MCF/LWAL+DNO/HEX:2/RES,1,220,401.5,9,2,MZA 3326 - LT 4,ZONA III,481
2857,-70.25036249,-17.99380082,MCF/LWAL+DNO/HEX:1/RES,1,220,198.75,5,1,MZA 3326 - LT 5,ZONA III,482
2858,-70.25031465,-17.9937234,MUR/HEX:1,1,220,200.38,5,1,MZA 3326 - LT 6,ZONA III,483
2859,-70.25027446,-17.99365821,MCF/LWAL+DNO/HEX:1/RES,1,220,101.76,2,0,MZA 3326 - LT 7A,ZONA III,484
2860,-70.250258,-17.99363124,MCF/LWAL+DNO/HEX:1/RES,1,220,101.75,2,0,MZA 3326 - LT 7,ZONA III,485
2861,-70.25021828,-17.99356688,MUR/HEX:1,1,220,198.75,5,1,MZA 3326 - LT 8,ZONA III,486
2862,-70.25017037,-17.993489,MCF/LWAL+DNO/HEX:2/RES,1,220,404.5,9,2,MZA 3326 - LT 9,ZONA III,487
2863,-70.25012201,-17.99341079,MUR/HEX:1,1,220,201.5,1,MZA 3326 - LT 10,ZONA III,488
2864,-70.24995883,-17.99350224,MUR/HEX:2,1,220,403.9,2,MZA 3326 - LT 11,ZONA III,489
2865,-70.25000724,-17.99358055,MCF/LWAL+DNO/HEX:2/RES,1,220,402.5,9,2,MZA 3326 - LT 12,ZONA III,490
2866,-70.25005515,-17.99365842,MUR/HEX:1,1,220,198.75,5,1,MZA 3326 - LT 13,ZONA III,491
2867,-70.25010327,-17.99373611,MCF/LWAL+DNO/HEX:2/RES,1,220,402.9,2,MZA 3326 - LT 14,ZONA III,492
2868,-70.25015131,-17.9938146,MCF/LWAL+DNO/HEX:2/RES,1,220,403.28,9,2,MZA 3326 - LT 15,ZONA III,493
2869,-70.25019942,-17.99389247,MUR/HEX:1,1,220,198.75,5,1,MZA 3326 - LT 16,ZONA III,494
2870,-70.25024734,-17.99397021,MCF/LWAL+DNO/HEX:2/RES,1,220,401.5,9,2,MZA 3326 - LT 17,ZONA III,495
2871,-70.25029565,-17.99404812,MCF/LWAL+DNO/HEX:1/RES,1,220,200.25,5,1,MZA 3326 - LT 18,ZONA III,496
2872,-70.25036258,-17.99411344,MUR/HEX:2,1,220,325.6,8,2,MZA 3326 - LT 19,ZONA III,497
2873,-70.24942019,-17.99352525,MUR/HEX:1,1,220,202.93,5,1,MZA 3327 - LT 1,ZONA III,498
2874,-70.24942183,-17.99334366,MUR/HEX:1,1,220,202.99,5,1,MZA 3327 - LT 2,ZONA III,499
2875,-70.24932674,-17.99334326,MCF/LWAL+DNO/HEX:2/RES,1,220,403.88,9,2,MZA 3327 - LT 3,ZONA III,500
2876,-70.24923135,-17.9933425,MCF/LWAL+DNO/HEX:1/RES,1,220,204.7,5,1,MZA 3327 - LT 4,ZONA III,501

2877,-70.24913578,-17.99334204,MCF/LWAL+DNO/HEX:2/RES,1,220,406.22,9,2,MZA 3327 - LT 5,ZONA III,502
2878,-70.24904081,-17.99334157,MUR/HEX:1,1,220,202.55,5,1,MZA 3327 - LT 6,ZONA III,503
2879,-70.24894589,-17.99334105,MCF/LWAL+DNO/HEX:2/RES,1,220,406.62,9,2,MZA 3327 - LT 7,ZONA III,504
2880,-70.24885103,-17.99334066,MCF/LWAL+DNO/HEX:3/RES,1,220,608.13,14,4,MZA 3327 - LT 8,ZONA III,505
2881,-70.24875653,-17.99334004,MCF/LWAL+DNO/HEX:2/RES,1,220,404.38,9,2,MZA 3327 - LT 9,ZONA III,506
2882,-70.24866254,-17.99333906,MUR/HEX:1,1,220,200.88,5,1,MZA 3327 - LT 10,ZONA III,507
2883,-70.24854006,-17.99332705,MUR/HEX:1,1,220,308.9,7,2,MZA 3327 - LT 11,ZONA III,508
2884,-70.24864235,-17.99350729,MCF/LWAL+DNO/HEX:2/RES,1,220,522.28,12,3,MZA 3327 - LT 12,ZONA III,509
2885,-70.24875564,-17.99352138,MUR/HEX:1,1,220,198.3,5,1,MZA 3327 - LT 13,ZONA III,510
2886,-70.24885028,-17.99352204,MUR/HEX:1,1,220,200.72,5,1,MZA 3327 - LT 14,ZONA III,511
2887,-70.24894524,-17.99352246,MUR/HEX:1,1,220,200.21,5,1,MZA 3327 - LT 15,ZONA III,512
2888,-70.2490399,-17.99352302,MUR/HEX:1,1,220,200.03,5,1,MZA 3327 - LT 16,ZONA III,513
2889,-70.24913451,-17.99352352,MUR/HEX:1,1,220,200.57,5,1,MZA 3327 - LT 17,ZONA III,514
2890,-70.24922942,-17.99352401,MUR/HEX:1,1,220,201.86,5,1,MZA 3327 - LT 18,ZONA III,515
2891,-70.24932474,-17.99352481,MCF/LWAL+DNO/HEX:2/RES,1,220,405.8,9,2,MZA 3327 - LT 19,ZONA III,516
2892,-70.2500536,-17.9940694,MUR/HEX:1,1,220,261.17,6,1,MZA 3328 - LT 1,ZONA III,517
2893,-70.24994181,-17.99388483,MCF/LWAL+DNO/HEX:2/RES,1,220,478.11,3,MZA 3328 - LT 2,ZONA III,518
2894,-70.24982683,-17.99387644,MUR/HEX:1,1,220,225.54,5,1,MZA 3328 - LT 3,ZONA III,519
2895,-70.2497252,-17.99387184,MCF/LWAL+DNO/HEX:2/RES,1,220,401.42,9,2,MZA 3328 - LT 4,ZONA III,520
2896,-70.24965365,-17.99387291,MCF/LWAL+DNO/HEX:2/RES,1,220,198.04,5,1,MZA 3328 - LT 5,ZONA III,521
2897,-70.24960806,-17.99387103,MCF/LWAL+DNO/HEX:2/RES,1,220,198.04,5,1,MZA 3328 - LT 5A,ZONA III,522
2898,-70.24953543,-17.99387166,MCF/LWAL+DNO/HEX:1/RES,1,220,203.57,5,1,MZA 3328 - LT 6,ZONA III,523
2899,-70.24944005,-17.99387055,MUR/HEX:1,1,220,200,5,1,MZA 3328 - LT 7,ZONA III,524
2900,-70.24934507,-17.99387012,MCF/LWAL+DNO/HEX:2/RES,1,220,405.44,9,2,MZA 3328 - LT 8,ZONA III,525
2901,-70.24925021,-17.99386956,MCF/LWAL+DNO/HEX:2/RES,1,220,400.68,9,2,MZA 3328 - LT 9,ZONA III,526
2902,-70.24915636,-17.99386927,MCF/LWAL+DNO/HEX:3/RES,1,220,597.75,14,4,MZA 3328 - LT 10,ZONA III,527
2903,-70.24906147,-17.99386784,MCF/LWAL+DNO/HEX:2/RES,1,220,411.4,9,2,MZA 3328 - LT 11,ZONA III,528
2904,-70.24896443,-17.99386833,MUR/HEX:1,1,220,209.2,5,1,MZA 3328 - LT 12,ZONA III,529
2905,-70.2488521,-17.99385255,MUR/HEX:1,1,220,253.51,6,1,MZA 3328 - LT 13,ZONA III,530
2906,-70.24897042,-17.99403704,MCF/LWAL+DNO/HEX:2/RES,1,220,556.2,13,4,MZA 3328 - LT 14,ZONA III,531
2907,-70.24908669,-17.9940508,MCF/LWAL+DNO/HEX:2/RES,1,220,400.76,9,2,MZA 3328 - LT 15,ZONA III,532
2908,-70.24918208,-17.99405064,MCF/LWAL+DNO/HEX:1/RES,1,220,206.65,5,1,MZA 3328 - LT 16,ZONA III,533
2909,-70.24927793,-17.99405198,MCF/LWAL+DNO/HEX:1/RES,1,220,202.84,5,1,MZA 3328 - LT 17,ZONA III,534
2910,-70.24937296,-17.99405189,MCF/LWAL+DNO/HEX:2/RES,1,220,407.14,9,2,MZA 3328 - LT 18,ZONA III,535
2911,-70.24946787,-17.99405248,MCF/LWAL+DNO/HEX:2/RES,1,220,405.54,9,2,MZA 3328 - LT 19,ZONA III,536
2912,-70.24956207,-17.99405261,MCF/LWAL+DNO/HEX:3/RES,1,220,602.91,14,4,MZA 3328 - LT 20,ZONA III,537
2913,-70.24965662,-17.99405358,MCF/LWAL+DNO/HEX:3/RES,1,220,614.19,14,4,MZA 3328 - LT 21,ZONA III,538
2914,-70.24973013,-17.99405333,MCF/LWAL+DNO/HEX:3/RES,1,220,318.09,7,2,MZA 3328 - LT 22B,ZONA III,539
2915,-70.24977885,-17.99405291,MCF/LWAL+DNO/HEX:3/RES,1,220,318.09,7,2,MZA 3328 - LT 22A,ZONA III,540
2916,-70.2498488,-17.99405416,MCF/LWAL+DNO/HEX:2/RES,1,220,394.1,9,2,MZA 3328 - LT 23,ZONA III,541
2917,-70.24991804,-17.99405458,MCF/LWAL+DNO/HEX:3/RES,1,220,302.82,7,2,MZA 3328 - LT 24A,ZONA III,542
2918,-70.24996491,-17.99405476,MUR/HEX:1,1,220,100.89,2,0,MZA 3328 - LT 24B,ZONA III,543
2919,-70.24803927,-17.99405151,MUR/HEX:1,1,220,190.59,4,1,MZA 3329 - LT 1,ZONA III,544
2920,-70.24794121,-17.99386517,MUR/HEX:1,1,220,275.15,6,1,MZA 3329 - LT 2,ZONA III,545
2921,-70.2478275,-17.99385595,MUR/HEX:1,1,220,199.2,5,1,MZA 3329 - LT 3,ZONA III,546
2922,-70.24773301,-17.99385593,MUR/HEX:1,1,220,202.21,5,1,MZA 3329 - LT 4,ZONA III,547
2923,-70.24763852,-17.99385555,MUR/HEX:1,1,220,199.95,5,1,MZA 3329 - LT 5,ZONA III,548
2924,-70.24754396,-17.99385544,MUR/HEX:1,1,220,203.23,5,1,MZA 3329 - LT 6,ZONA III,549
2925,-70.24744854,-17.9938548,MUR/HEX:1,1,220,204.33,5,1,MZA 3329 - LT 7,ZONA III,550
2926,-70.24757023,-17.99403885,MCF/LWAL+DNO/HEX:2/RES,1,220,410.58,9,2,MZA 3329 - LT 9,ZONA III,552
2927,-70.24766396,-17.99403852,MCF/LWAL+DNO/HEX:2/RES,1,220,399.48,9,2,MZA 3329 - LT 10,ZONA III,553
2928,-70.24775789,-17.99403905,MCF/LWAL+DNO/HEX:2/RES,1,220,412.06,10,3,MZA 3329 - LT 11,ZONA III,554
2929,-70.24782886,-17.99403915,MCF/LWAL+DNO/HEX:2/RES,1,220,201.1,5,1,MZA 3329 - LT 12C,ZONA III,555
2930,-70.24787454,-17.9939928,MCF/LWAL+DNO/HEX:2/RES,1,220,100.04,2,0,MZA 3329 - LT 12A,ZONA III,556
2931,-70.24787633,-17.99408494,MCF/LWAL+DNO/HEX:2/RES,1,220,101.16,2,0,MZA 3329 - LT 12B,ZONA III,557
2932,-70.24794553,-17.99403887,MCF/LWAL+DNO/HEX:2/RES,1,220,404.24,9,2,MZA 3329 - LT 13,ZONA III,558
2933,-70.24728547,-17.99409283,MCF/LWAL+DNO/HEX:1/RES,1,220,162.28,4,1,MZA 3330 - LT 1,ZONA III,559
2934,-70.24725358,-17.9940338,MUR/HEX:1,1,220,98.22,2,0,MZA 3330 - LT 2A,ZONA III,560
2935,-70.24723988,-17.99399964,MUR/HEX:2,1,220,196.42,5,1,MZA 3330 - LT 2,ZONA III,561
2936,-70.24720484,-17.9939347,MUR/HEX:1,1,220,198.12,5,1,MZA 3330 - LT 3,ZONA III,562
2937,-70.2471701,-17.99385083,MUR/HEX:1,1,220,197.96,5,1,MZA 3330 - LT 4,ZONA III,563
2938,-70.24713518,-17.99376625,MUR/HEX:2,1,220,405.78,9,2,MZA 3330 - LT 5,ZONA III,564
2939,-70.24710039,-17.99368109,MUR/HEX:1,1,220,201.8,5,1,MZA 3330 - LT 6,ZONA III,565
2940,-70.24706537,-17.99359664,MUR/HEX:1,1,220,201.93,5,1,MZA 3330 - LT 7,ZONA III,566
2941,-70.24703051,-17.99351227,MCF/LWAL+DNO/HEX:1/RES,1,220,202.91,5,1,MZA 3330 - LT 8,ZONA III,567
2942,-70.24698401,-17.99339704,MCF/LWAL+DNO/HEX:2/RES,1,220,143.92,3,0,MZA 3330 - LT 9A,ZONA III,568
2943,-70.24701342,-17.99344085,MCF/LWAL+DNO/HEX:2/RES,1,220,278.78,6,1,MZA 3330 - LT 9B,ZONA III,569
2944,-70.24695999,-17.99334195,MUR/HEX:1,1,220,196.82,5,1,MZA 3330 - LT 10,ZONA III,570
2945,-70.24692583,-17.99325884,MUR/HEX:1,1,220,206.51,5,1,MZA 3330 - LT 11,ZONA III,571
2946,-70.246876,-17.99316465,MUR/HEX:1,1,220,261.16,6,1,MZA 3330 - LT 12,ZONA III,572
2947,-70.2466647,-17.99315614,MCF/LWAL+DNO/HEX:2/RES,1,220,435.7,10,3,MZA 3330 - LT 13,ZONA III,573

2948,-70.24671234,-17.99324202,MCF/LWAL+DUC/HEX:2/RES,1,220,405.86,9,2,MZA 3330 - LT 14,ZONA III,574
2949,-70.24674794,-17.99332749,MCF/LWAL+DNO/HEX:1/RES,1,220,207.69,5,1,MZA 3330 - LT 15,ZONA III,575
2950,-70.24678311,-17.9934123,MUR/HEX:2,1,220,399.9,9,2,MZA 3330 - LT 16,ZONA III,576
2951,-70.24681879,-17.99349541,MCF/LWAL+DNO/HEX:3/RES,1,220,605.97,14,4,MZA 3330 - LT 17,ZONA III,577
2952,-70.24685314,-17.99357999,MCF/LWAL+DNO/HEX:2/RES,1,220,408.52,9,2,MZA 3330 - LT 18,ZONA III,578
2953,-70.24688833,-17.99366444,MCF/LWAL+DNO/HEX:2/RES,1,220,406.52,9,2,MZA 3330 - LT 19,ZONA III,579
2954,-70.24692336,-17.99374817,MCF/LWAL+DNO/HEX:2/RES,1,220,402.86,9,2,MZA 3330 - LT 20,ZONA III,580
2955,-70.24695823,-17.9938328,MCF/LWAL+DNO/HEX:2/RES,1,220,414.44,10,3,MZA 3330 - LT 21,ZONA III,581
2956,-70.24699348,-17.99391744,MCF/LWAL+DNO/HEX:2/RES,1,220,404.98,9,2,MZA 3330 - LT 22,ZONA III,582
2957,-70.2470283,-17.99400075,MCF/LWAL+DNO/HEX:2/RES,1,220,402.82,9,2,MZA 3330 - LT 23,ZONA III,583
2958,-70.24707601,-17.99408359,MUR/HEX:1,1,220,210.37,5,1,MZA 3330 - LT 24,ZONA III,584
2959,-70.24674282,-17.99403776,MUR/HEX:1,1,220,126.47,3,0,MZA 3331 - LT 1A,ZONA III,585
2960,-70.24679263,-17.99403741,MCF/LWAL+DNO/HEX:2/RES,1,220,78.72,2,0,MZA 3331 - LT 1B,ZONA III,586
2961,-70.2468269,-17.99409756,MUR/HEX:1,1,220,24.92,1,0,MZA 3331 - LT 1AB,ZONA III,587
2962,-70.24668941,-17.99386184,MUR/HEX:1,1,220,231.18,5,1,MZA 3331 - LT 2,ZONA III,588
2963,-70.24658378,-17.99385242,MUR/HEX:1,1,220,198.75,5,1,MZA 3331 - LT 3,ZONA III,589
2964,-70.24648854,-17.99385226,MCF/LWAL+DNO/HEX:2/RES,1,220,395.62,9,2,MZA 3331 - LT 4,ZONA III,590
2965,-70.2463936,-17.99385193,MCF/LWAL+DNO/HEX:2/RES,1,220,397.86,9,2,MZA 3331 - LT 5,ZONA III,591
2966,-70.24629971,-17.99385193,CR/LFINF+DNO/HEX:4/RES,1,220,779.36,18,5,MZA 3331 - LT 6,ZONA III,592
2967,-70.24620564,-17.99385164,MUR/HEX:1,1,220,201.05,5,1,MZA 3331 - LT 7,ZONA III,593
2968,-70.24611011,-17.99385108,MUR/HEX:1,1,220,202.37,5,1,MZA 3331 - LT 8,ZONA III,594
2969,-70.24601557,-17.99385196,MCF/LWAL+DNO/HEX:1/RES,1,220,197.3,5,1,MZA 3331 - LT 9,ZONA III,595
2970,-70.24591734,-17.99385118,MCF/LWAL+DNO/HEX:2/RES,1,220,424.84,10,3,MZA 3331 - LT 10,ZONA III,596
2971,-70.24599924,-17.99401807,MCF/LWAL+DNO/HEX:2/RES,1,220,546.3,13,4,MZA 3331 - LT 11,ZONA III,597
2972,-70.24611592,-17.99403189,MCF/LWAL+DNO/HEX:2/RES,1,220,399.18,9,2,MZA 3331 - LT 12,ZONA III,598
2973,-70.24621087,-17.99403235,CR/LFINF+DUC/HEX:2/RES,1,220,407.52,9,2,MZA 3331 - LT 13,ZONA III,599
2974,-70.24630554,-17.99403255,MUR/HEX:1,1,220,199.38,5,1,MZA 3331 - LT 14,ZONA III,600
2975,-70.24639943,-17.99403244,MUR/HEX:1,1,220,201.45,5,1,MZA 3331 - LT 15,ZONA III,601
2976,-70.2464939,-17.99403267,MCF/LWAL+DNO/HEX:2/RES,1,220,405.52,9,2,MZA 3331 - LT 16,ZONA III,602
2977,-70.24658868,-17.99403272,MCF/LWAL+DNO/HEX:1/RES,1,220,203.77,5,1,MZA 3331 - LT 17,ZONA III,603
2978,-70.24668296,-17.99403318,MCF/LWAL+DNO/HEX:1/RES,1,220,201.52,5,1,MZA 3331 - LT 18,ZONA III,604
2979,-70.25118466,-17.99475161,MCF/LWAL+DNO/HEX:2/RES,1,220,273.04,6,1,MZA 3332 - LT 1,ZONA III,605
2980,-70.25122998,-17.99467267,MUR/HEX:1,1,220,174.2,4,1,MZA 3332 - LT 2,ZONA III,606
2981,-70.251041,-17.9946669,CR/LFINF+DNO/HEX:4/RES,1,220,967.28,22,7,MZA 3332 - LT 3,ZONA III,607
2982,-70.2505146,-17.99486002,MUR/HEX:2,1,220,414.96,10,3,MZA 3333 - LT 1,ZONA III,608
2983,-70.2506348,-17.99468687,MUR/HEX:2,1,220,663.34,15,4,MZA 3333 - LT 2,ZONA III,609
2984,-70.25050247,-17.99470395,MUR/HEX:1,1,220,204.05,5,1,MZA 3333 - LT 3,ZONA III,610
2985,-70.25040687,-17.99470589,MUR/HEX:1,1,220,200.88,5,1,MZA 3333 - LT 4,ZONA III,611
2986,-70.25031249,-17.99470817,MUR/HEX:1,1,220,199.53,5,1,MZA 3333 - LT 5,ZONA III,612
2987,-70.25024081,-17.99470943,MUR/HEX:1,1,220,100.76,2,0,MZA 3333 - LT 6A,ZONA III,613
2988,-70.25019321,-17.99470974,MUR/HEX:1,1,220,100.76,2,0,MZA 3333 - LT 6B,ZONA III,614
2989,-70.25012335,-17.99471239,MUR/HEX:3,1,220,604.95,14,4,MZA 3333 - LT 7,ZONA III,615
2990,-70.25002943,-17.99471483,MUR/HEX:1,1,220,198.61,5,1,MZA 3333 - LT 8,ZONA III,616
2991,-70.24993577,-17.99471666,MUR/HEX:3,1,220,603.33,14,4,MZA 3333 - LT 9,ZONA III,617
2992,-70.24984105,-17.99471796,MUR/HEX:2,1,220,407.48,9,2,MZA 3333 - LT 10,ZONA III,618
2993,-70.24974591,-17.99472098,MUR/HEX:1,1,220,203.52,5,1,MZA 3333 - LT 11,ZONA III,619
2994,-70.24965148,-17.9947232,MUR/HEX:6,1,220,805.24,19,6,MZA 3333 - LT 12,ZONA III,620
2995,-70.24955768,-17.99472514,MUR/HEX:3,1,220,604.23,14,4,MZA 3333 - LT 13,ZONA III,621
2996,-70.24946212,-17.99472756,MUR/HEX:1,1,220,209.52,5,1,MZA 3333 - LT 14,ZONA III,622
2997,-70.24946371,-17.99490222,MUR/HEX:1,1,220,189.87,4,1,MZA 3333 - LT 15,ZONA III,623
2998,-70.24955889,-17.99490048,MUR/HEX:1,1,220,181.62,4,1,MZA 3333 - LT 16,ZONA III,624
2999,-70.24965213,-17.99489914,MUR/HEX:2,1,220,371.3,9,2,MZA 3333 - LT 17,ZONA III,625
3000,-70.24974636,-17.99489756,MUR/HEX:2,1,220,377.78,9,2,MZA 3333 - LT 18,ZONA III,626
3001,-70.24984154,-17.99489616,MUR/HEX:1,1,220,192.83,4,1,MZA 3333 - LT 19,ZONA III,627
3002,-70.24993626,-17.9948945,MUR/HEX:2,1,220,385.66,9,2,MZA 3333 - LT 20,ZONA III,628
3003,-70.2500304,-17.99489326,MUR/HEX:2,1,220,380.94,9,2,MZA 3333 - LT 21,ZONA III,629
3004,-70.2501248,-17.99489146,MUR/HEX:2,1,220,387.66,9,2,MZA 3333 - LT 22,ZONA III,630
3005,-70.25021956,-17.99489008,MUR/HEX:2,1,220,389.9,9,2,MZA 3333 - LT 23,ZONA III,631
3006,-70.25031422,-17.9948885,MUR/HEX:2,1,220,397.42,9,2,MZA 3333 - LT 24,ZONA III,632
3007,-70.25040827,-17.99488685,MUR/HEX:1,1,220,197.91,5,1,MZA 3333 - LT 25,ZONA III,633
3008,-70.24918148,-17.9952435,MUR/HEX:1,1,220,199.56,5,1,MZA 3334 - LT 1,ZONA III,634
3009,-70.24918173,-17.99515187,MUR/HEX:2,1,220,393.32,9,2,MZA 3334 - LT 2,ZONA III,635
3010,-70.24918127,-17.99506033,MUR/HEX:1,1,220,202.84,5,1,MZA 3334 - LT 3,ZONA III,636
3011,-70.24918109,-17.99497054,MUR/HEX:1,1,220,197.53,5,1,MZA 3334 - LT 4,ZONA III,637
3012,-70.24918114,-17.99490306,MUR/HEX:2,1,220,392.84,9,2,MZA 3334 - LT 5A,ZONA III,638
3013,-70.24918112,-17.99485744,MUR/HEX:2,1,220,201.3,5,1,MZA 3334 - LT 5B,ZONA III,639
3014,-70.24918091,-17.9947891,MUR/HEX:2,1,220,402.36,9,2,MZA 3334 - LT 6,ZONA III,640
3015,-70.24918099,-17.99468998,MUR/HEX:3,1,220,713.22,16,5,MZA 3334 - LT 7,ZONA III,641
3016,-70.24899205,-17.99468982,MUR/HEX:2,1,220,469.56,11,3,MZA 3334 - LT 8,ZONA III,642
3017,-70.24899229,-17.99478861,MUR/HEX:2,1,220,403.76,9,2,MZA 3334 - LT 9,ZONA III,643
3018,-70.24899281,-17.99487976,MUR/HEX:1,1,220,200.94,5,1,MZA 3334 - LT 10,ZONA III,644

3019,-70.24899306,-17.99497022,MUR/HEX:2,1,220,397.64,9,2,MZA 3334 - LT 11,ZONA III,645
3020,-70.24899354,-17.99506038,MUR/HEX:1,1,220,199.58,5,1,MZA 3334 - LT 12,ZONA III,646
3021,-70.24899431,-17.99515104,MUR/HEX:2,1,220,401.9,9,2,MZA 3334 - LT 13,ZONA III,647
3022,-70.24899435,-17.9952418,MUR/HEX:1,1,220,200.03,5,1,MZA 3334 - LT 14,ZONA III,648
3023,-70.24869495,-17.99486205,MUR/HEX:2,1,220,427.38,10,3,MZA 3335 - LT 1,ZONA III,649
3024,-70.24869625,-17.99479621,MUR/HEX:1,1,220,102.75,2,0,MZA 3335 - LT 2,ZONA III,650
3025,-70.24869589,-17.99474482,MUR/HEX:1,1,220,102.74,2,0,MZA 3335 - LT 2B,ZONA III,651
3026,-70.24869666,-17.99467946,MUR/HEX:2,1,220,409.74,9,2,MZA 3335 - LT 3,ZONA III,652
3027,-70.24850624,-17.99467721,MUR/HEX:2,1,220,407.62,9,2,MZA 3335 - LT 4,ZONA III,653
3028,-70.2485049,-17.9947687,MUR/HEX:1,1,220,199.43,5,1,MZA 3335 - LT 5,ZONA III,654
3029,-70.2485673,-17.99486061,MUR/HEX:1,1,220,52.33,1,0,MZA 3335 - LT 6,ZONA III,655
3030,-70.24852344,-17.99486052,MUR/HEX:2,1,220,104.64,2,0,MZA 3335 - LT 6A,ZONA III,656
3031,-70.24847845,-17.99486227,MUR/HEX:2,1,220,104.64,2,0,MZA 3335 - LT 6B,ZONA III,657
3032,-70.24844325,-17.99486249,MUR/HEX:6,1,220,209.28,5,1,MZA 3335 - LT 6C,ZONA III,658
3033,-70.24681466,-17.99487601,MUR/HEX:6,1,220,797.96,18,5,MZA 3338 - LT 1,ZONA III,660
3034,-70.24681481,-17.99469498,MUR/HEX:2,1,220,399.7,9,2,MZA 3338 - LT 2,ZONA III,661
3035,-70.24672098,-17.9946943,MUR/HEX:2,1,220,398.64,9,2,MZA 3338 - LT 3A,ZONA III,662
3036,-70.24665096,-17.99469384,MUR/HEX:2,1,220,198.5,1,MZA 3338 - LT 4A,ZONA III,663
3037,-70.24660413,-17.99469339,MUR/HEX:3,1,220,302.25,7,2,MZA 3338 - LT 4B,ZONA III,664
3038,-70.24653383,-17.99469282,MUR/HEX:2,1,220,398.98,9,2,MZA 3338 - LT 5,ZONA III,665
3039,-70.24644041,-17.99469217,MUR/HEX:1,1,220,200.13,5,1,MZA 3338 - LT 6,ZONA III,666
3040,-70.24634606,-17.99469171,MUR/HEX:1,1,220,204.17,5,1,MZA 3338 - LT 7,ZONA III,667
3041,-70.24627311,-17.99469084,MUR/HEX:3,1,220,304.68,7,2,MZA 3338 - LT 8,ZONA III,668
3042,-70.2462276,-17.99469114,MUR/HEX:2,1,220,203.12,5,1,MZA 3338 - LT 8B,ZONA III,669
3043,-70.24615639,-17.99468995,MUR/HEX:2,1,220,409.24,9,2,MZA 3338 - LT 9,ZONA III,670
3044,-70.24615439,-17.99487197,MUR/HEX:1,1,220,199.57,5,1,MZA 3338 - LT 10,ZONA III,671
3045,-70.24624899,-17.99487266,MUR/HEX:1,1,220,200.29,5,1,MZA 3338 - LT 11,ZONA III,672
3046,-70.24634472,-17.99487343,MUR/HEX:1,1,220,204.52,5,1,MZA 3338 - LT 12,ZONA III,673
3047,-70.24643983,-17.99487376,MUR/HEX:1,1,220,197.73,5,1,MZA 3338 - LT 13,ZONA III,674
3048,-70.24653313,-17.99487427,MUR/HEX:1,1,220,196.99,5,1,MZA 3338 - LT 14,ZONA III,675
3049,-70.24662667,-17.99487492,MUR/HEX:1,1,220,198.89,5,1,MZA 3338 - LT 15,ZONA III,676
3050,-70.24672061,-17.99487547,MUR/HEX:2,1,220,397.52,9,2,MZA 3338 - LT 16,ZONA III,677
3051,-70.24591477,-17.99527647,MUR/HEX:2,1,220,417.24,10,3,MZA 3339 - LT 1,ZONA III,678
3052,-70.24591545,-17.99518444,MUR/HEX:1,1,220,200.3,5,1,MZA 3339 - LT 2,ZONA III,679
3053,-70.24591659,-17.99509415,MUR/HEX:2,1,220,398.54,9,2,MZA 3339 - LT 3,ZONA III,680
3054,-70.2459176,-17.99500355,MUR/HEX:3,1,220,600.06,14,4,MZA 3339 - LT 4,ZONA III,681
3055,-70.24591841,-17.99493593,MUR/HEX:2,1,220,195.86,5,1,MZA 3339 - LT 5A,ZONA III,682
3056,-70.24591814,-17.99489622,MUR/HEX:2,1,220,195.86,5,1,MZA 3339 - LT 5B,ZONA III,683
3057,-70.24591976,-17.99484838,MUR/HEX:1,1,220,96.97,2,0,MZA 3339 - LT 6A,ZONA III,684
3058,-70.24591945,-17.99480389,MUR/HEX:1,1,220,96.98,2,0,MZA 3339 - LT 6B,ZONA III,685
3059,-70.24592063,-17.99473409,MUR/HEX:2,1,220,396.48,9,2,MZA 3339 - LT 7,ZONA III,686
3060,-70.24592141,-17.99464228,MUR/HEX:1,1,220,199.74,5,1,MZA 3339 - LT 8,ZONA III,687
3061,-70.24573312,-17.99464052,MUR/HEX:2,1,220,417.16,10,3,MZA 3339 - LT 9,ZONA III,688
3062,-70.24573214,-17.99473204,MUR/HEX:1,1,220,202.88,5,1,MZA 3339 - LT 10,ZONA III,689
3063,-70.24573105,-17.99479986,MUR/HEX:2,1,220,198.18,5,1,MZA 3339 - LT 11,ZONA III,690
3064,-70.24573059,-17.99484328,MUR/HEX:6,1,220,396.32,9,2,MZA 3339 - LT 11A,ZONA III,691
3065,-70.24572932,-17.99491111,MUR/HEX:1,1,220,203.81,5,1,MZA 3339 - LT 12,ZONA III,692
3066,-70.24572844,-17.995002,MUR/HEX:3,1,220,608.1,14,4,MZA 3339 - LT 13,ZONA III,693
3067,-70.24572722,-17.99509246,MUR/HEX:2,1,220,402.3,9,2,MZA 3339 - LT 14,ZONA III,694
3068,-70.24572585,-17.99518317,MUR/HEX:1,1,220,203.16,5,1,MZA 3339 - LT 15,ZONA III,695
3069,-70.24572494,-17.99527518,MUR/HEX:1,1,220,206.2,5,1,MZA 3339 - LT 16,ZONA III,696
3070,-70.25091393,-17.99586142,MUR/HEX:2,1,220,498.78,12,3,MZA 3342 - LT 1,ZONA III,698
3071,-70.25096696,-17.99578779,MCF/LWAL+DNO/HEX:2/RES,1,220,501.32,12,3,MZA 3342 - LT 2,ZONA III,699
3072,-70.25103412,-17.99572289,MCF/LWAL+DNO/HEX:2/RES,1,220,498.78,12,3,MZA 3342 - LT 3,ZONA III,700
3073,-70.25108426,-17.99564619,MCF/LWAL+DNO/HEX:2/RES,1,220,502.16,12,3,MZA 3342 - LT 4,ZONA III,701
3074,-70.25114326,-17.99557542,MCF/LWAL+DNO/HEX:2/RES,1,220,501.46,12,3,MZA 3342 - LT 5,ZONA III,702
3075,-70.25120254,-17.9955035,MCF/LWAL+DNO/HEX:2/RES,1,220,515.34,12,3,MZA 3342 - LT 6,ZONA III,703
3076,-70.25127405,-17.99544019,MCF/LWAL+DNO/HEX:3/RES,1,220,749.46,17,5,MZA 3342 - LT 7,ZONA III,704
3077,-70.25132211,-17.99535965,MCF/LWAL+DNO/HEX:2/RES,1,220,527.96,12,3,MZA 3342 - LT 8,ZONA III,705
3078,-70.2513841,-17.99528567,MCF/LWAL+DNO/HEX:1/RES,1,220,263.52,6,1,MZA 3342 - LT 9,ZONA III,706
3079,-70.25144515,-17.99521206,MUR/HEX:1,1,220,259.85,6,1,MZA 3342 - LT 10,ZONA III,707
3080,-70.25149322,-17.99514654,MCF/LWAL+DNO/HEX:1/RES,1,220,193.19,4,1,MZA 3342 - LT 11,ZONA III,708
3081,-70.25132787,-17.99509146,MCF/LWAL+DNO/HEX:1/RES,1,220,181.98,4,1,MZA 3342 - LT 12,ZONA III,709
3082,-70.2512395,-17.99502976,MCF/LWAL+DNO/HEX:2/RES,1,220,467.58,11,3,MZA 3342 - LT 13,ZONA III,710
3083,-70.25119749,-17.99515777,MUR/HEX:1,1,220,241.26,6,1,MZA 3342 - LT 14,ZONA III,711
3084,-70.25113614,-17.99523161,MUR/HEX:1,1,220,246.57,6,1,MZA 3342 - LT 15,ZONA III,712
3085,-70.25107598,-17.99530458,MUR/HEX:1,1,220,233.11,5,1,MZA 3342 - LT 16,ZONA III,713
3086,-70.25101629,-17.99537686,MUR/HEX:1,1,220,241.29,6,1,MZA 3342 - LT 17,ZONA III,714
3087,-70.2509571,-17.99544912,MUR/HEX:1,1,220,230.64,5,1,MZA 3342 - LT 18,ZONA III,715
3088,-70.25089847,-17.99551999,MCF/LWAL+DNO/HEX:2/RES,1,220,465.68,11,3,MZA 3342 - LT 19,ZONA III,716
3089,-70.25083999,-17.99559109,MUR/HEX:1,1,220,230.24,5,1,MZA 3342 - LT 20,ZONA III,717

3090,-70.25078143,-17.99566198,MCF/LWAL+DNO/HEX:2/RES,1,220,462.38,11,3,MZA 3342 - LT 21,ZONA III,718
3091,-70.2507229,-17.99573304,MCF/LWAL+DNO/HEX:1/RES,1,220,229.93,5,1,MZA 3342 - LT 22,ZONA III,719
3092,-70.25047396,-17.99556464,MUR/HEX:2,1,220,428.26,10,3,MZA 3343 - LT 1,ZONA III,720
3093,-70.2505324,-17.99549388,MUR/HEX:2,1,220,428.02,10,3,MZA 3343 - LT 2,ZONA III,721
3094,-70.25059072,-17.99542281,MUR/HEX:1,1,220,212.66,5,1,MZA 3343 - LT 3,ZONA III,722
3095,-70.25064894,-17.99535238,MUR/HEX:1,1,220,208.86,5,1,MZA 3343 - LT 4,ZONA III,723
3096,-70.25070796,-17.99528123,MUR/HEX:1,1,220,215.13,5,1,MZA 3343 - LT 5,ZONA III,724
3097,-70.25076662,-17.99521005,MUR/HEX:1,1,220,205.6,5,1,MZA 3343 - LT 6,ZONA III,725
3098,-70.25082482,-17.99513965,MUR/HEX:1,1,220,208.61,5,1,MZA 3343 - LT 7,ZONA III,726
3099,-70.25088448,-17.99506607,MUR/HEX:1,1,220,218.82,5,1,MZA 3343 - LT 8,ZONA III,727
3100,-70.25094756,-17.99499037,MUR/HEX:1,1,220,222.52,5,1,MZA 3343 - LT 9,ZONA III,728
3101,-70.25108502,-17.99492494,MUR/HEX:1,1,220,116.03,3,0,MZA 3343 - LT 10,ZONA III,729
3102,-70.25103017,-17.99488682,MUR/HEX:1,1,220,141.93,3,0,MZA 3343 - LT 11,ZONA III,730
3103,-70.25079312,-17.99488528,MUR/HEX:1,1,220,210.99,5,1,MZA 3343 - LT 12,ZONA III,731
3104,-70.25072879,-17.99496155,MUR/HEX:1,1,220,212.83,5,1,MZA 3343 - LT 13,ZONA III,732
3105,-70.25066821,-17.99503509,MUR/HEX:2,1,220,385.3,9,2,MZA 3343 - LT 14,ZONA III,733
3106,-70.2506104,-17.99510409,MUR/HEX:1,1,220,190.36,4,1,MZA 3343 - LT 15,ZONA III,734
3107,-70.25055192,-17.99517407,MUR/HEX:2,1,220,396.02,9,2,MZA 3343 - LT 16,ZONA III,735
3108,-70.25049265,-17.9952446,MUR/HEX:2,1,220,388.92,9,2,MZA 3343 - LT 17,ZONA III,736
3109,-70.25043348,-17.99531524,MUR/HEX:1,1,220,198.41,5,1,MZA 3343 - LT 18,ZONA III,737
3110,-70.25037432,-17.9953863,MUR/HEX:1,1,220,196.21,5,1,MZA 3343 - LT 19,ZONA III,738
3111,-70.25031533,-17.99545679,MUR/HEX:2,1,220,392.4,9,2,MZA 3343 - LT 20,ZONA III,739
3112,-70.25096888,-17.9948449,MUR/HEX:1,1,220,145.53,3,0,MZA 3343 - LT 21,ZONA III,740
3113,-70.25092366,-17.99481398,MUR/HEX:1,1,220,67.07,2,0,MZA 3343 - LT 22,ZONA III,741
3114,-70.2508932,-17.99479314,MUR/HEX:3,1,220,229.41,5,1,MZA 3343 - LT 23,ZONA III,742
3115,-70.25084016,-17.99475687,MUR/HEX:1,1,220,174.03,4,1,MZA 3343 - LT 24,ZONA III,743
3116,-70.25015713,-17.9953151,MUR/HEX:1,1,220,66.87,2,0,MZA 3344 - LT 1,ZONA III,744
3117,-70.25019171,-17.99524166,MUR/HEX:3,1,220,200.61,5,1,MZA 3344 - LT 1A,ZONA III,745
3118,-70.25030339,-17.99511601,MUR/HEX:1,1,220,144.97,3,0,MZA 3344 - LT 2,ZONA III,746
3119,-70.25019683,-17.99513295,MUR/HEX:1,1,220,201.05,5,1,MZA 3344 - LT 3,ZONA III,747
3120,-70.25008118,-17.99513403,MUR/HEX:1,1,220,203.13,5,1,MZA 3344 - LT 4,ZONA III,748
3121,-70.24996152,-17.99513486,MUR/HEX:1,1,220,214.46,5,1,MZA 3344 - LT 5,ZONA III,749
3122,-70.24983933,-17.99513514,MUR/HEX:1,1,220,211.09,5,1,MZA 3344 - LT 6,ZONA III,750
3123,-70.24971505,-17.99513594,MUR/HEX:2,1,220,441.82,10,3,MZA 3344 - LT 7,ZONA III,751
3124,-70.24971515,-17.99528182,MUR/HEX:2,1,220,420.2,10,3,MZA 3344 - LT 8,ZONA III,752
3125,-70.24983868,-17.99528205,MUR/HEX:1,1,220,206.66,5,1,MZA 3344 - LT 9,ZONA III,753
3126,-70.24996092,-17.99528184,MUR/HEX:1,1,220,208.08,5,1,MZA 3344 - LT 10,ZONA III,754
3127,-70.25007884,-17.99528154,MUR/HEX:1,1,220,194.21,4,1,MZA 3344 - LT 11,ZONA III,755
3128,-70.24981354,-17.99568279,MUR/HEX:2,1,220,482.22,11,3,MZA 3346 - LT 1,ZONA III,756
3129,-70.24999058,-17.99547978,MUR/HEX:1,1,220,175.39,4,1,MZA 3346 - LT 2,ZONA III,757
3130,-70.24989013,-17.99551734,MUR/HEX:1,1,220,212.57,5,1,MZA 3346 - LT 3,ZONA III,758
3131,-70.2497958,-17.99551769,MUR/HEX:2,1,220,412.34,10,3,MZA 3346 - LT 4,ZONA III,759
3132,-70.24970187,-17.99551657,MUR/HEX:1,1,220,209.29,5,1,MZA 3346 - LT 5,ZONA III,760
3133,-70.2496071,-17.99551574,MUR/HEX:2,1,220,416.86,10,3,MZA 3346 - LT 6,ZONA III,761
3134,-70.24951246,-17.99551528,MUR/HEX:1,1,220,207.25,5,1,MZA 3346 - LT 7,ZONA III,762
3135,-70.24941804,-17.99551447,MUR/HEX:2,1,220,412.04,10,3,MZA 3346 - LT 8,ZONA III,763
3136,-70.24932366,-17.9955137,MUR/HEX:2,1,220,411.18,9,2,MZA 3346 - LT 9,ZONA III,764
3137,-70.24925335,-17.99551397,MUR/HEX:1,1,220,102.51,2,0,MZA 3346 - LT 10,ZONA III,765
3138,-70.24920766,-17.99551445,MUR/HEX:2,1,220,205.02,5,1,MZA 3346 - LT 10A,ZONA III,766
3139,-70.24913554,-17.99551259,MUR/HEX:2,1,220,400.9,9,2,MZA 3346 - LT 11,ZONA III,767
3140,-70.24904195,-17.99551172,MUR/HEX:1,1,220,203.4,5,1,MZA 3346 - LT 12,ZONA III,768
3141,-70.24894729,-17.99551098,MUR/HEX:1,1,220,203.6,5,1,MZA 3346 - LT 13,ZONA III,769
3142,-70.24894621,-17.9956961,MUR/HEX:1,1,220,207.42,5,1,MZA 3346 - LT 14,ZONA III,770
3143,-70.24901876,-17.99569563,MUR/HEX:1,1,220,103.27,2,0,MZA 3346 - LT 15A,ZONA III,771
3144,-70.24906383,-17.99569534,MUR/HEX:1,1,220,103.26,2,0,MZA 3346 - LT 15B,ZONA III,772
3145,-70.24913493,-17.99569782,MUR/HEX:1,1,220,204.68,5,1,MZA 3346 - LT 16,ZONA III,773
3146,-70.24922887,-17.99569827,MUR/HEX:2,1,220,408.4,9,2,MZA 3346 - LT 17,ZONA III,774
3147,-70.24932285,-17.99569902,MUR/HEX:1,1,220,203.59,5,1,MZA 3346 - LT 18,ZONA III,775
3148,-70.24941701,-17.99569984,MUR/HEX:1,1,220,203.77,5,1,MZA 3346 - LT 19,ZONA III,776
3149,-70.24951184,-17.99570069,MUR/HEX:1,1,220,205.22,5,1,MZA 3346 - LT 20,ZONA III,777
3150,-70.24960655,-17.99570121,MUR/HEX:1,1,220,201.99,5,1,MZA 3346 - LT 21,ZONA III,778
3151,-70.24967506,-17.99570077,MUR/HEX:1,1,220,101.64,2,0,MZA 3346 - LT 22,ZONA III,779
3152,-70.24972541,-17.99570044,MUR/HEX:1,1,220,101.63,2,0,MZA 3346 - LT 22A,ZONA III,780
3153,-70.2486935,-17.99573751,MUR/HEX:1,1,220,202.79,5,1,MZA 3347 - LT 1,ZONA III,781
3154,-70.24869362,-17.99564651,MUR/HEX:1,1,220,196.27,5,1,MZA 3347 - LT 2,ZONA III,782
3155,-70.24869331,-17.9955561,MUR/HEX:1,1,220,202.07,5,1,MZA 3347 - LT 3,ZONA III,783
3156,-70.2486938,-17.99546489,MUR/HEX:2,1,220,403.32,9,2,MZA 3347 - LT 4,ZONA III,784
3157,-70.24869401,-17.9953746,MUR/HEX:2,1,220,399.7,9,2,MZA 3347 - LT 5,ZONA III,785
3158,-70.24869401,-17.99528417,MUR/HEX:1,1,220,204.18,5,1,MZA 3347 - LT 6,ZONA III,786
3159,-70.2487421,-17.99519412,MUR/HEX:2,1,220,198.56,5,1,MZA 3347 - LT 7A,ZONA III,787
3160,-70.24874146,-17.99510526,MUR/HEX:2,1,220,205.54,5,1,MZA 3347 - LT 7B,ZONA III,788

3161,-70.2486442,-17.99515595,MUR/HEX:2,1,220,398.2,9,2,MZA 3347 - LT 8,ZONA III,789
3162,-70.24855428,-17.99514964,MUR/HEX:2,1,220,395.32,9,2,MZA 3347 - LT 9,ZONA III,790
3163,-70.24845551,-17.99514889,MUR/HEX:1,1,220,201.34,5,1,MZA 3347 - LT 10,ZONA III,791
3164,-70.24850313,-17.99526332,MUR/HEX:2,1,220,203.2,5,1,MZA 3347 - LT 11,ZONA III,792
3165,-70.24850239,-17.99531331,MUR/HEX:1,1,220,101.61,2,0,MZA 3347 - LT 11A,ZONA III,793
3166,-70.24850372,-17.9953743,MUR/HEX:1,1,220,198.58,5,1,MZA 3347 - LT 12,ZONA III,794
3167,-70.24850394,-17.99546427,MUR/HEX:6,1,220,1014.25,23,7,MZA 3347 - LT 13,ZONA III,795
3168,-70.2485039,-17.99555667,MUR/HEX:2,1,220,418.78,10,3,MZA 3347 - LT 14,ZONA III,796
3169,-70.24850464,-17.99564827,MUR/HEX:2,1,220,398.6,9,2,MZA 3347 - LT 15,ZONA III,797
3170,-70.24850497,-17.99573937,MUR/HEX:1,1,220,207.17,5,1,MZA 3347 - LT 16,ZONA III,798
3171,-70.24828756,-17.99569459,MUR/HEX:2,1,220,418.44,10,3,MZA 3349 - LT 1,ZONA III,802
3172,-70.24831172,-17.99551181,MUR/HEX:1,1,220,104.7,2,0,MZA 3349 - LT 2,ZONA III,803
3173,-70.24826092,-17.99551214,MUR/HEX:3,1,220,314.1,7,2,MZA 3349 - LT 2A,ZONA III,804
3174,-70.2481916,-17.99551276,MUR/HEX:2,1,220,402.22,9,2,MZA 3349 - LT 3,ZONA III,805
3175,-70.24809727,-17.9955136,MUR/HEX:2,1,220,395.84,9,2,MZA 3349 - LT 4,ZONA III,806
3176,-70.24800281,-17.99551423,MUR/HEX:2,1,220,400.96,9,2,MZA 3349 - LT 5,ZONA III,807
3177,-70.24800279,-17.99569518,MUR/HEX:1,1,220,203.88,5,1,MZA 3349 - LT 6,ZONA III,808
3178,-70.24809763,-17.99569511,MUR/HEX:2,1,220,403.48,9,2,MZA 3349 - LT 7,ZONA III,809
3179,-70.24819188,-17.99569483,MUR/HEX:1,1,220,202.58,5,1,MZA 3349 - LT 8,ZONA III,810
3180,-70.24778019,-17.99573716,MUR/HEX:2,1,220,405.62,9,2,MZA 3350 - LT 1,ZONA III,811
3181,-70.24778413,-17.99564548,MUR/HEX:1,1,220,197.78,5,1,MZA 3350 - LT 2,ZONA III,812
3182,-70.24778489,-17.9955554,MUR/HEX:2,1,220,393.5,9,2,MZA 3350 - LT 3,ZONA III,813
3183,-70.24778546,-17.99546594,MUR/HEX:1,1,220,195.9,5,1,MZA 3350 - LT 4,ZONA III,814
3184,-70.2477862,-17.99537636,MUR/HEX:1,1,220,198.15,5,1,MZA 3350 - LT 5,ZONA III,815
3185,-70.24778682,-17.99528618,MUR/HEX:1,1,220,199.41,5,1,MZA 3350 - LT 6,ZONA III,816
3186,-70.24783396,-17.99515024,MUR/HEX:3,1,220,609.45,14,4,MZA 3350 - LT 7,ZONA III,817
3187,-70.24773951,-17.99515071,MUR/HEX:1,1,220,197.37,5,1,MZA 3350 - LT 8,ZONA III,818
3188,-70.24764597,-17.99515039,MUR/HEX:1,1,220,201.44,5,1,MZA 3350 - LT 9,ZONA III,819
3189,-70.2475532,-17.99515036,MUR/HEX:3,1,220,588.72,14,4,MZA 3350 - LT 10,ZONA III,820
3190,-70.24759935,-17.99528651,MUR/HEX:1,1,220,195.78,5,1,MZA 3350 - LT 11,ZONA III,821
3191,-70.24759859,-17.99537586,MUR/HEX:1,1,220,195.76,5,1,MZA 3350 - LT 12,ZONA III,822
3192,-70.24759771,-17.99546499,MUR/HEX:3,1,220,588.69,14,4,MZA 3350 - LT 13,ZONA III,823
3193,-70.24759698,-17.99555425,MUR/HEX:1,1,220,197.85,5,1,MZA 3350 - LT 14,ZONA III,824
3194,-70.24759606,-17.99564449,MUR/HEX:1,1,220,202.04,5,1,MZA 3350 - LT 15,ZONA III,825
3195,-70.24759564,-17.99573575,MUR/HEX:1,1,220,203.88,5,1,MZA 3350 - LT 16,ZONA III,826
3196,-70.24676265,-17.99573489,MUR/HEX:2,1,220,403.46,9,2,MZA 3352 - LT 1,ZONA III,828
3197,-70.24676335,-17.99564431,MUR/HEX:1,1,220,198.86,5,1,MZA 3352 - LT 2,ZONA III,829
3198,-70.24676414,-17.99555476,MUR/HEX:1,1,220,197.43,5,1,MZA 3352 - LT 3,ZONA III,830
3199,-70.24676474,-17.99546455,MUR/HEX:2,1,220,404.16,9,2,MZA 3352 - LT 4,ZONA III,831
3200,-70.2467654,-17.99537419,MUR/HEX:2,1,220,396.66,9,2,MZA 3352 - LT 5,ZONA III,832
3201,-70.24676602,-17.9952846,MUR/HEX:2,1,220,397.88,9,2,MZA 3352 - LT 6,ZONA III,833
3202,-70.24676665,-17.99519462,MUR/HEX:1,1,220,200.3,5,1,MZA 3352 - LT 7,ZONA III,834
3203,-70.24683557,-17.99510363,MUR/HEX:3,1,220,151.32,3,0,MZA 3352 - LT 8A,ZONA III,835
3204,-70.24678488,-17.99510396,MUR/HEX:1,1,220,50.44,1,0,MZA 3352 - LT 8B,ZONA III,836
3205,-70.24674588,-17.99510421,MUR/HEX:2,1,220,100.9,2,0,MZA 3352 - LT 8C,ZONA III,837
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3207,-70.24657791,-17.99510286,MUR/HEX:2,1,220,403.38,9,2,MZA 3352 - LT 9,ZONA III,839
3208,-70.24657723,-17.99519364,MUR/HEX:1,1,220,201.41,5,1,MZA 3352 - LT 10,ZONA III,840
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3211,-70.24657616,-17.99535226,MUR/HEX:2,1,220,189.44,4,1,MZA 3352 - LT 12A,ZONA III,843
3212,-70.24657559,-17.9954638,MUR/HEX:1,1,220,201.86,5,1,MZA 3352 - LT 13,ZONA III,844
3213,-70.24657509,-17.99555357,MUR/HEX:1,1,220,196.27,5,1,MZA 3352 - LT 14,ZONA III,845
3214,-70.24657407,-17.99566561,MUR/HEX:1,1,220,99.63,2,0,MZA 3352 - LT 15A,ZONA III,846
3215,-70.24657471,-17.99562029,MUR/HEX:1,1,220,99.61,2,0,MZA 3352 - LT 15B,ZONA III,847
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3217,-70.24633956,-17.99568617,MUR/HEX:2,1,220,405.16,9,2,MZA 3354 - LT 1,ZONA III,849
3218,-70.24634267,-17.99550388,MUR/HEX:2,1,220,402.66,9,2,MZA 3354 - LT 2,ZONA III,850
3219,-70.24624862,-17.99550448,MUR/HEX:2,1,220,397.76,9,2,MZA 3354 - LT 3,ZONA III,851
3220,-70.24615443,-17.99550318,MUR/HEX:1,1,220,203.15,5,1,MZA 3354 - LT 4,ZONA III,852
3221,-70.24605855,-17.99550268,MUR/HEX:1,1,220,207.33,5,1,MZA 3354 - LT 5,ZONA III,853
3222,-70.24596286,-17.99550263,MUR/HEX:2,1,220,407.1,9,2,MZA 3354 - LT 6,ZONA III,854
3223,-70.24586812,-17.99550209,MUR/HEX:2,1,220,409.1,9,2,MZA 3354 - LT 7,ZONA III,855
3224,-70.24577272,-17.9955017,MUR/HEX:2,1,220,415.2,10,3,MZA 3354 - LT 8,ZONA III,856
3225,-70.24567662,-17.99550141,MUR/HEX:2,1,220,417.54,10,3,MZA 3354 - LT 9,ZONA III,857
3226,-70.24567781,-17.99573085,MUR/HEX:1,1,220,100.17,2,0,MZA 3354 - LT 10A,ZONA III,858
3227,-70.24567717,-17.99563858,MUR/HEX:2,1,220,200.32,5,1,MZA 3354 - LT 10B,ZONA III,859
3228,-70.24577198,-17.99568408,MUR/HEX:1,1,220,199.7,5,1,MZA 3354 - LT 11,ZONA III,860
3229,-70.2458662,-17.99568445,MUR/HEX:2,1,220,397.16,9,2,MZA 3354 - LT 12,ZONA III,861
3230,-70.24596054,-17.99568497,MUR/HEX:1,1,220,201.44,5,1,MZA 3354 - LT 13,ZONA III,862
3231,-70.24605553,-17.995685,MUR/HEX:1,1,220,202.42,5,1,MZA 3354 - LT 14,ZONA III,863

3232,-70.24615026,-17.99568548,MUR/HEX:2,1,220,403.16,9,2,MZA 3354 - LT 15,ZONA III,864
3233,-70.24624492,-17.99568617,MUR/HEX:1,1,220,203.34,5,1,MZA 3354 - LT 16,ZONA III,865
3234,-70.25019448,-17.99671391,MCF/LWAL+DNO/HEX:1/RES,1,220,247.69,6,1,MZA 3355 - LT 1,ZONA III,866
3235,-70.25025872,-17.99664573,MUR/HEX:1,1,220,247.72,6,1,MZA 3355 - LT 2,ZONA III,867
3236,-70.25031242,-17.99657208,MCF/LWAL+DNO/HEX:2/RES,1,220,486.96,11,3,MZA 3355 - LT 3,ZONA III,868
3237,-70.25037144,-17.99650165,MCF/LWAL+DNO/HEX:2/RES,1,220,497.9,11,3,MZA 3355 - LT 4,ZONA III,869
3238,-70.25043099,-17.9964305,MCF/LWAL+DNO/HEX:2/RES,1,220,497.92,11,3,MZA 3355 - LT 5,ZONA III,870
3239,-70.25049011,-17.99636009,MUR/HEX:1,1,220,245.13,6,1,MZA 3355 - LT 6,ZONA III,871
3240,-70.25054865,-17.99628901,MCF/LWAL+DNO/HEX:1/RES,1,220,250.94,6,1,MZA 3355 - LT 7,ZONA III,872
3241,-70.25060722,-17.99621929,MUR/HEX:1,1,220,239.8,6,1,MZA 3355 - LT 8,ZONA III,873
3242,-70.25066458,-17.99614929,MCF/LWAL+DNO/HEX:2/RES,1,220,498.54,12,3,MZA 3355 - LT 9,ZONA III,874
3243,-70.25072344,-17.9960825,MUR/HEX:1,1,220,230.59,5,1,MZA 3355 - LT 10,ZONA III,875
3244,-70.25078159,-17.99601004,MUR/HEX:1,1,220,273.47,6,1,MZA 3355 - LT 11,ZONA III,876
3245,-70.25059797,-17.99588363,MUR/HEX:1,1,220,232.35,5,1,MZA 3355 - LT 12,ZONA III,877
3246,-70.25053916,-17.99595662,MUR/HEX:1,1,220,236.5,5,1,MZA 3355 - LT 13,ZONA III,878
3247,-70.25047869,-17.99602651,MCF/LWAL+DNO/HEX:1/RES,1,220,222.04,5,1,MZA 3355 - LT 14,ZONA III,879
3248,-70.25042298,-17.99609615,MUR/HEX:1,1,220,219.73,5,1,MZA 3355 - LT 15,ZONA III,880
3249,-70.25036448,-17.99616695,MUR/HEX:1,1,220,232.4,5,1,MZA 3355 - LT 16,ZONA III,881
3250,-70.25030635,-17.99623847,MUR/HEX:1,1,220,219.41,5,1,MZA 3355 - LT 17,ZONA III,882
3251,-70.25024828,-17.99630878,MCF/LWAL+DNO/HEX:2/RES,1,220,450.10,3,MZA 3355 - LT 18,ZONA III,883
3252,-70.25018869,-17.99638125,MCF/LWAL+DNO/HEX:2/RES,1,220,451.1,10,3,MZA 3355 - LT 19,ZONA III,884
3253,-70.25013024,-17.99645202,MCF/LWAL+DNO/HEX:1/RES,1,220,221.68,5,1,MZA 3355 - LT 20,ZONA III,885
3254,-70.25007151,-17.99652366,MCF/LWAL+DNO/HEX:1/RES,1,220,223.03,5,1,MZA 3355 - LT 21,ZONA III,886
3255,-70.25000875,-17.99659545,MCF/LWAL+DNO/HEX:2/RES,1,220,439.92,10,3,MZA 3355 - LT 22,ZONA III,887
3256,-70.24976394,-17.99643495,MUR/HEX:1,1,220,215.54,5,1,MZA 3356 - LT 1,ZONA III,888
3257,-70.24982258,-17.99636418,MUR/HEX:1,1,220,216.27,5,1,MZA 3356 - LT 2,ZONA III,889
3258,-70.24988133,-17.99629219,MUR/HEX:2,1,220,434.56,10,3,MZA 3356 - LT 3,ZONA III,890
3259,-70.24994062,-17.99622091,MUR/HEX:2,1,220,423.26,10,3,MZA 3356 - LT 4,ZONA III,891
3260,-70.24998579,-17.99616869,MUR/HEX:2,1,220,213.18,5,1,MZA 3356 - LT 5-A,ZONA III,892
3261,-70.25001546,-17.99613267,MUR/HEX:1,1,220,106.59,2,0,MZA 3356 - LT 5-B,ZONA III,893
3262,-70.2500582,-17.99607821,MUR/HEX:1,1,220,207.83,5,1,MZA 3356 - LT 6,ZONA III,894
3263,-70.25011703,-17.99600717,MUR/HEX:2,1,220,418.12,10,3,MZA 3356 - LT 7,ZONA III,895
3264,-70.25017616,-17.99593562,MUR/HEX:2,1,220,414.38,10,3,MZA 3356 - LT 8,ZONA III,896
3265,-70.25023547,-17.99586383,MUR/HEX:1,1,220,207.03,5,1,MZA 3356 - LT 9,ZONA III,897
3266,-70.25028115,-17.99580988,MUR/HEX:1,1,220,101.26,2,0,MZA 3356 - LT 10-A,ZONA III,898
3267,-70.25030351,-17.99577867,MUR/HEX:1,1,220,101.26,2,0,MZA 3356 - LT 10-B,ZONA III,899
3268,-70.25035326,-17.99572106,MUR/HEX:1,1,220,201.34,5,1,MZA 3356 - LT 11,ZONA III,900
3269,-70.25019309,-17.99562036,MCF/LWAL+DNO/HEX:2/RES,1,220,446.06,10,3,MZA 3356 - LT 12,ZONA III,901
3270,-70.2501325,-17.99569137,MUR/HEX:2,1,220,380.54,9,2,MZA 3356 - LT 13,ZONA III,902
3271,-70.25007568,-17.99575997,MUR/HEX:1,1,220,205.31,5,1,MZA 3356 - LT 14,ZONA III,903
3272,-70.25001618,-17.99583059,MUR/HEX:2,1,220,409.66,9,2,MZA 3356 - LT 15,ZONA III,904
3273,-70.24995664,-17.99590125,MUR/HEX:1,1,220,206.14,5,1,MZA 3356 - LT 16,ZONA III,905
3274,-70.24989698,-17.99597191,MUR/HEX:2,1,220,411.3,9,2,MZA 3356 - LT 17,ZONA III,906
3275,-70.24983758,-17.99604282,MUR/HEX:2,1,220,413.82,10,3,MZA 3356 - LT 18,ZONA III,907
3276,-70.24977811,-17.99611338,MUR/HEX:3,1,220,615.18,14,4,MZA 3356 - LT 19,ZONA III,908
3277,-70.24972123,-17.99618062,MUR/HEX:2,1,220,377.04,9,2,MZA 3356 - LT 20,ZONA III,909
3278,-70.24967996,-17.99622958,MUR/HEX:2,1,220,198.64,5,1,MZA 3356 - LT 21-A,ZONA III,910
3279,-70.24965503,-17.99625915,MUR/HEX:2,1,220,198.62,5,1,MZA 3356 - LT 21-B,ZONA III,911
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3282,-70.24873655,-17.99598441,MUR/HEX:2,1,220,386.52,9,2,MZA 3358 - LT 2,ZONA III,915
3283,-70.24864247,-17.99598452,MUR/HEX:1,1,220,192.83,4,1,MZA 3358 - LT 3,ZONA III,916
3284,-70.24854658,-17.99598343,MUR/HEX:2,1,220,392.72,9,2,MZA 3358 - LT 4,ZONA III,917
3285,-70.24845193,-17.99598349,MUR/HEX:1,1,220,199.26,5,1,MZA 3358 - LT 5,ZONA III,918
3286,-70.24835685,-17.99598305,MUR/HEX:1,1,220,193.8,4,1,MZA 3358 - LT 6,ZONA III,919
3287,-70.2482635,-17.99598323,MUR/HEX:1,1,220,192.99,4,1,MZA 3358 - LT 7,ZONA III,920
3288,-70.24816986,-17.99598258,MUR/HEX:1,1,220,195.96,5,1,MZA 3358 - LT 8,ZONA III,921
3289,-70.24807591,-17.99598247,MUR/HEX:1,1,220,195.15,5,1,MZA 3358 - LT 9,ZONA III,922
3290,-70.24798154,-17.99598193,MUR/HEX:1,1,220,198.67,5,1,MZA 3358 - LT 10,ZONA III,923
3291,-70.24797776,-17.99615762,MUR/HEX:1,1,220,191.75,4,1,MZA 3358 - LT 11,ZONA III,924
3292,-70.24807226,-17.99615833,MUR/HEX:1,1,220,192.53,4,1,MZA 3358 - LT 12,ZONA III,925
3293,-70.24816644,-17.99615863,MUR/HEX:1,1,220,192.12,4,1,MZA 3358 - LT 13,ZONA III,926
3294,-70.24826077,-17.99615998,MUR/HEX:1,1,220,194.76,4,1,MZA 3358 - LT 14,ZONA III,927
3295,-70.24835438,-17.99615948,MUR/HEX:1,1,220,190.85,4,1,MZA 3358 - LT 15,ZONA III,928
3296,-70.24842451,-17.99615991,MUR/HEX:1,1,220,100.05,2,0,MZA 3358 - LT 16A,ZONA III,929
3297,-70.24847255,-17.9961603,MUR/HEX:1,1,220,99.3,2,0,MZA 3358 - LT 16B,ZONA III,930
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3299,-70.24863973,-17.99616152,MUR/HEX:1,1,220,201.12,5,1,MZA 3358 - LT 18,ZONA III,932
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3302,-70.24777897,-17.99638835,MUR/HEX:1,1,220,201.56,5,1,MZA 3360 - LT 3,ZONA III,935

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3305,-70.24778156,-17.9961175,MUR/HEX:1,1,220,199.51,5,1,MZA 3360 - LT 6,ZONA III,938
3306,-70.24778241,-17.9960275,MUR/HEX:1,1,220,197.42,5,1,MZA 3360 - LT 7,ZONA III,939
3307,-70.24773149,-17.99593887,MUR/HEX:3,1,220,199.05,5,1,MZA 3360 - LT 8,ZONA III,940
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3316,-70.24758958,-17.99647822,MUR/HEX:2,1,220,393.38,9,2,MZA 3360 - LT 15,ZONA III,949
3317,-70.24758934,-17.99654857,MUR/HEX:2,1,220,198.2,5,1,MZA 3360 - LT 16,ZONA III,950
3318,-70.2475887,-17.99658442,MUR/HEX:1,1,220,99.11,2,0,MZA 3360 - LT 16A,ZONA III,951
3319,-70.24722234,-17.99656817,MUR/HEX:2,1,220,221.68,5,1,MZA 3361 - LT 1A,ZONA III,952
3320,-70.24732937,-17.99656866,MUR/HEX:1,1,220,116.28,3,0,MZA 3361 - LT 1B,ZONA III,953
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3322,-70.24727872,-17.99638677,MUR/HEX:1,1,220,226.15,5,1,MZA 3361 - LT 3,ZONA III,955
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3331,-70.24707236,-17.99611381,MUR/HEX:1,1,220,220.93,5,1,MZA 3361 - LT 11,ZONA III,964
3332,-70.24707137,-17.99620454,MUR/HEX:2,1,220,439.76,10,3,MZA 3361 - LT 12,ZONA III,965
3333,-70.24707047,-17.99629494,MUR/HEX:1,1,220,218.6,5,1,MZA 3361 - LT 13,ZONA III,966
3334,-70.24706917,-17.99638591,MUR/HEX:2,1,220,443.88,10,3,MZA 3361 - LT 14,ZONA III,967
3335,-70.24706846,-17.99647692,MUR/HEX:2,1,220,436.08,10,3,MZA 3361 - LT 15,ZONA III,968
3336,-70.24706814,-17.99656751,MUR/HEX:1,1,220,219.2,5,1,MZA 3361 - LT 16,ZONA III,969
3337,-70.24680771,-17.99615818,MUR/HEX:2,1,220,401.32,9,2,MZA 3362 - LT 1,ZONA III,970
3338,-70.24680917,-17.99597658,MUR/HEX:2,1,220,402.56,9,2,MZA 3362 - LT 2,ZONA III,971
3339,-70.24671491,-17.99597596,MUR/HEX:3,1,220,601.59,14,4,MZA 3362 - LT 3,ZONA III,972
3340,-70.24662034,-17.99597531,MUR/HEX:1,1,220,202.24,5,1,MZA 3362 - LT 4,ZONA III,973
3341,-70.24652552,-17.99597477,MUR/HEX:2,1,220,402.42,9,2,MZA 3362 - LT 5,ZONA III,974
3342,-70.24643148,-17.99597418,MUR/HEX:3,1,220,595.71,14,4,MZA 3362 - LT 6,ZONA III,975
3343,-70.24633737,-17.99597357,MUR/HEX:3,1,220,603.51,14,4,MZA 3362 - LT 7,ZONA III,976
3344,-70.24624274,-17.99597306,MUR/HEX:2,1,220,400.8,9,2,MZA 3362 - LT 8,ZONA III,977
3345,-70.24614807,-17.99597247,MUR/HEX:1,1,220,200.97,5,1,MZA 3362 - LT 9,ZONA III,978
3346,-70.24614609,-17.99615416,MUR/HEX:1,1,220,204.3,5,1,MZA 3362 - LT 10,ZONA III,979
3347,-70.24624137,-17.99615473,MUR/HEX:2,1,220,406.16,9,2,MZA 3362 - LT 11,ZONA III,980
3348,-70.24633626,-17.99615523,MUR/HEX:1,1,220,202.26,5,1,MZA 3362 - LT 12,ZONA III,981
3349,-70.2464304,-17.99615583,MUR/HEX:2,1,220,398.92,9,2,MZA 3362 - LT 13,ZONA III,982
3350,-70.24652447,-17.99615641,MUR/HEX:2,1,220,403.14,9,2,MZA 3362 - LT 14,ZONA III,983
3351,-70.2466178,-17.99615694,MUR/HEX:2,1,220,402.7,9,2,MZA 3362 - LT 15,ZONA III,984
3352,-70.24671343,-17.99615757,MUR/HEX:2,1,220,399.98,9,2,MZA 3362 - LT 16,ZONA III,985
3353,-70.2459211,-17.99656358,MUR/HEX:3,1,220,666.51,15,4,MZA 3364 - LT 1,ZONA III,986
3354,-70.24592129,-17.9964709,MUR/HEX:1,1,220,215.47,5,1,MZA 3364 - LT 2,ZONA III,987
3355,-70.24592184,-17.99638029,MUR/HEX:3,1,220,637.32,15,4,MZA 3364 - LT 3,ZONA III,988
3356,-70.24592245,-17.99628979,MUR/HEX:2,1,220,429.78,10,3,MZA 3364 - LT 4,ZONA III,989
3357,-70.24592312,-17.99619945,MUR/HEX:1,1,220,211.68,5,1,MZA 3364 - LT 5,ZONA III,990
3358,-70.2459238,-17.99610875,MUR/HEX:1,1,220,216.6,5,1,MZA 3364 - LT 6,ZONA III,991
3359,-70.24592434,-17.99601806,MUR/HEX:1,1,220,211.62,5,1,MZA 3364 - LT 7,ZONA III,992
3360,-70.24587494,-17.99592648,MUR/HEX:2,1,220,220.86,5,1,MZA 3364 - LT 45139,ZONA III,993
3361,-70.24597567,-17.99592675,MUR/HEX:2,1,220,219.34,5,1,MZA 3364 - LT 45140,ZONA III,994
3362,-70.24573515,-17.99593089,MUR/HEX:2,1,220,426.24,10,3,MZA 3364 - LT 9,ZONA III,995
3363,-70.24572488,-17.99601705,MUR/HEX:2,1,220,414.84,10,3,MZA 3364 - LT 10,ZONA III,996
3364,-70.2457242,-17.99610758,MUR/HEX:2,1,220,423.6,10,3,MZA 3364 - LT 11,ZONA III,997
3365,-70.2457234,-17.99619815,MUR/HEX:2,1,220,416.26,10,3,MZA 3364 - LT 12,ZONA III,998
3366,-70.24572259,-17.99628873,MUR/HEX:1,1,220,212.44,5,1,MZA 3364 - LT 13,ZONA III,999
3367,-70.24572184,-17.99637968,MUR/HEX:1,1,220,210.39,5,1,MZA 3364 - LT 14,ZONA III,1000
3368,-70.24572115,-17.99647062,MUR/HEX:1,1,220,212.93,5,1,MZA 3364 - LT 15,ZONA III,1001
3369,-70.24572083,-17.99656227,MUR/HEX:2,1,220,428.6,10,3,MZA 3364 - LT 16,ZONA III,1002
3370,-70.24954417,-17.99750206,MCF/LWAL+DNO/HEX:2/RES,1,220,511.9,12,3,MZA 3365 - LT 1,ZONA III,1003
3371,-70.24960368,-17.99742947,MUR/HEX:1,1,220,245.73,6,1,MZA 3365 - LT 2,ZONA III,1004
3372,-70.24966184,-17.99735885,MUR/HEX:1,1,220,243.15,6,1,MZA 3365 - LT 3,ZONA III,1005
3373,-70.24971938,-17.9972884,MUR/HEX:1,1,220,243.27,6,1,MZA 3365 - LT 4,ZONA III,1006

3374,-70.24977766,-17.99721792,MUR/HEX:1,1,220,245.52,6,1,MZA 3365 - LT 5,ZONA III,1007
3375,-70.24984697,-17.99714638,MUR/HEX:1,1,220,244.05,6,1,MZA 3365 - LT 6,ZONA III,1008
3376,-70.2498938,-17.99707659,MUR/HEX:1,1,220,244.67,6,1,MZA 3365 - LT 7,ZONA III,1009
3377,-70.24995231,-17.99700559,MUR/HEX:1,1,220,247.43,6,1,MZA 3365 - LT 8,ZONA III,1010
3378,-70.2500108,-17.99693376,MUR/HEX:1,1,220,248.42,6,1,MZA 3365 - LT 9,ZONA III,1011
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3380,-70.24988918,-17.9967455,MCF/LWAL+DNO/HEX:2/RES,1,220,425.04,10,3,MZA 3365 - LT 11,ZONA III,1013
3381,-70.24982988,-17.99681689,MCF/LWAL+DNO/HEX:2/RES,1,220,442.78,10,3,MZA 3365 - LT 12,ZONA III,1014
3382,-70.24977073,-17.99688908,MCF/LWAL+DNO/HEX:2/RES,1,220,432.22,10,3,MZA 3365 - LT 13,ZONA III,1015
3383,-70.2497122,-17.99695987,MCF/LWAL+DNO/HEX:2/RES,1,220,430.14,10,3,MZA 3365 - LT 14,ZONA III,1016
3384,-70.24965368,-17.99703059,MCF/LWAL+DNO/HEX:1/RES,1,220,216.61,5,1,MZA 3365 - LT 15,ZONA III,1017
3385,-70.24959539,-17.99710147,MUR/HEX:1,1,220,215.91,5,1,MZA 3365 - LT 16,ZONA III,1018
3386,-70.24953687,-17.99717207,MCF/LWAL+DNO/HEX:1/RES,1,220,216.91,5,1,MZA 3365 - LT 17,ZONA III,1019
3387,-70.24947908,-17.99724245,MUR/HEX:1,1,220,213.95,5,1,MZA 3365 - LT 18,ZONA III,1020
3388,-70.2494211,-17.99731261,MUR/HEX:1,1,220,217.32,5,1,MZA 3365 - LT 19,ZONA III,1021
3389,-70.24936187,-17.99738455,MUR/HEX:1,1,220,225.11,5,1,MZA 3365 - LT 20,ZONA III,1022
3390,-70.24911249,-17.99722531,MUR/HEX:1,1,220,218.12,5,1,MZA 3366 - LT 1,ZONA III,1023
3391,-70.24917265,-17.99715285,MUR/HEX:2,1,220,456.16,11,3,MZA 3366 - LT 2,ZONA III,1024
3392,-70.24923276,-17.99707924,MUR/HEX:2,1,220,445.08,10,3,MZA 3366 - LT 3,ZONA III,1025
3393,-70.24929192,-17.99700748,MUR/HEX:2,1,220,436.4,10,3,MZA 3366 - LT 4,ZONA III,1026
3394,-70.24935047,-17.99693627,MUR/HEX:1,1,220,218.63,5,1,MZA 3366 - LT 5,ZONA III,1027
3395,-70.24939529,-17.99687467,MUR/HEX:2,1,220,217.52,5,1,MZA 3366 - LT 6-A,ZONA III,1028
3396,-70.24941853,-17.99684483,MUR/HEX:2,1,220,217.5,5,1,MZA 3366 - LT 6-B,ZONA III,1029
3397,-70.24946727,-17.99679417,MUR/HEX:1,1,220,217.88,5,1,MZA 3366 - LT 7,ZONA III,1030
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3399,-70.24958342,-17.99665358,MUR/HEX:1,1,220,215.02,5,1,MZA 3366 - LT 9,ZONA III,1032
3400,-70.24967458,-17.99660326,MUR/HEX:2,1,220,217.48,5,1,MZA 3366 - LT 10-A,ZONA III,1033
3401,-70.2496019,-17.99655824,MUR/HEX:2,1,220,217.48,5,1,MZA 3366 - LT 10-B,ZONA III,1034
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3403,-70.24941594,-17.99654608,MUR/HEX:2,1,220,405.02,9,2,MZA 3366 - LT 12,ZONA III,1036
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3405,-70.24929868,-17.99668687,MUR/HEX:2,1,220,421.6,10,3,MZA 3366 - LT 14,ZONA III,1038
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3407,-70.24918123,-17.99682855,MUR/HEX:1,1,220,211.61,5,1,MZA 3366 - LT 16,ZONA III,1040
3408,-70.24912256,-17.99689932,MUR/HEX:2,1,220,422.7,10,3,MZA 3366 - LT 17,ZONA III,1041
3409,-70.24906323,-17.99697069,MUR/HEX:2,1,220,434.44,10,3,MZA 3366 - LT 18,ZONA III,1042
3410,-70.24900348,-17.99704325,MUR/HEX:1,1,220,218.64,5,1,MZA 3366 - LT 19,ZONA III,1043
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3412,-70.24865348,-17.99706337,MUR/HEX:1,1,220,111.45,3,0,MZA 3367 - LT 1A,ZONA III,1045
3413,-70.24867666,-17.99697739,CR/LFINF+DUC/HEX:1/RES,1,220,209.28,5,1,MZA 3367 - LT 1B,ZONA III,1046
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3415,-70.24868154,-17.99679347,MCF/LWAL+DUC/HEX:2/RES,1,220,398.04,9,2,MZA 3367 - LT 3,ZONA III,1048
3416,-70.2486824,-17.9967033,MUR/HEX:1,1,220,199.46,5,1,MZA 3367 - LT 4,ZONA III,1049
3417,-70.24868366,-17.99661235,MUR/HEX:1,1,220,202.1,5,1,MZA 3367 - LT 5,ZONA III,1050
3418,-70.24868451,-17.99652149,MUR/HEX:1,1,220,198.8,5,1,MZA 3367 - LT 6,ZONA III,1051
3419,-70.24868539,-17.99643128,MUR/HEX:1,1,220,198.84,5,1,MZA 3367 - LT 7,ZONA III,1052
3420,-70.24849648,-17.99643055,MUR/HEX:2,1,220,403.42,9,2,MZA 3367 - LT 8,ZONA III,1053
3421,-70.2484956,-17.9965209,MUR/HEX:1,1,220,200.01,5,1,MZA 3367 - LT 9,ZONA III,1054
3422,-70.24849476,-17.99661122,MUR/HEX:2,1,220,402.48,9,2,MZA 3367 - LT 10,ZONA III,1055
3423,-70.24849351,-17.996702,MUR/HEX:1,1,220,201.72,5,1,MZA 3367 - LT 11,ZONA III,1056
3424,-70.24849265,-17.99679245,MUR/HEX:1,1,220,199.37,5,1,MZA 3367 - LT 12,ZONA III,1057
3425,-70.24849169,-17.99688301,MUR/HEX:1,1,220,201.88,5,1,MZA 3367 - LT 13,ZONA III,1058
3426,-70.24849052,-17.99697401,MUR/HEX:1,1,220,200.92,5,1,MZA 3367 - LT 14,ZONA III,1059
3427,-70.24849067,-17.99704068,MUR/HEX:1,1,220,104.37,2,0,MZA 3367 - LT 15A,ZONA III,1060
3428,-70.24849026,-17.99708179,MUR/HEX:1,1,220,104.36,2,0,MZA 3367 - LT 15B,ZONA III,1061
3429,-70.24851938,-17.99712651,MUR/HEX:1,1,220,129.27,3,0,MZA 3367 - LT 16A,ZONA III,1062
3430,-70.24850774,-17.99717398,MUR/HEX:1,1,220,129.27,3,0,MZA 3367 - LT 16B,ZONA III,1063
3431,-70.24846335,-17.99727754,MUR/HEX:2,1,220,566.02,13,4,MZA 3367 - LT 17,ZONA III,1064
3432,-70.24823761,-17.99751836,MUR/HEX:1,1,220,284.25,7,2,MZA 3368 - LT 1,ZONA III,1065
3433,-70.24825269,-17.99740046,MUR/HEX:1,1,220,193.01,4,1,MZA 3368 - LT 2,ZONA III,1066
3434,-70.24825324,-17.99730991,MUR/HEX:2,1,220,388.52,9,2,MZA 3368 - LT 3,ZONA III,1067
3435,-70.24825955,-17.997217,MUR/HEX:2,1,220,389.92,9,2,MZA 3368 - LT 4,ZONA III,1068
3436,-70.24825457,-17.99712898,MUR/HEX:2,1,220,390.82,9,2,MZA 3368 - LT 5,ZONA III,1069
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3442,-70.24811573,-17.99672228,MUR/HEX:1,1,220,202.69,5,1,MZA 3368 - LT 11,ZONA III,1075
3443,-70.24802134,-17.99672336,MUR/HEX:2,1,220,403.16,9,2,MZA 3368 - LT 12,ZONA III,1076
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3445,-70.24806802,-17.99694916,MUR/HEX:2,1,220,402.24,9,2,MZA 3368 - LT 14,ZONA III,1078
3446,-70.24806758,-17.99703976,MUR/HEX:1,1,220,201.35,5,1,MZA 3368 - LT 15,ZONA III,1079
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3449,-70.24806655,-17.99731117,MUR/HEX:1,1,220,203.22,5,1,MZA 3368 - LT 18,ZONA III,1082
3450,-70.24806628,-17.9974018,MUR/HEX:2,1,220,403.34,9,2,MZA 3368 - LT 19,ZONA III,1083
3451,-70.24807709,-17.99750906,MUR/HEX:1,1,220,267.45,6,1,MZA 3368 - LT 20,ZONA III,1084
3452,-70.24781273,-17.99731754,MCF/LWAL+DUC/HEX:3/RES,1,220,966.22,7,MZA 3369 - LT 1,ZONA III,1085
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3454,-70.24776669,-17.9970403,MUR/HEX:1,1,220,202.46,5,1,MZA 3369 - LT 3,ZONA III,1087
3455,-70.24776675,-17.99695098,MUR/HEX:1,1,220,195.5,5,1,MZA 3369 - LT 4,ZONA III,1088
3456,-70.24776691,-17.99686099,MUR/HEX:1,1,220,206.72,5,1,MZA 3369 - LT 5,ZONA III,1089
3457,-70.24776654,-17.99676964,MUR/HEX:1,1,220,202.96,5,1,MZA 3369 - LT 6,ZONA III,1090
3458,-70.24757872,-17.99676959,MUR/HEX:2,1,220,389.6,9,2,MZA 3369 - LT 7,ZONA III,1091
3459,-70.24757869,-17.99686022,MUR/HEX:1,1,220,197.43,5,1,MZA 3369 - LT 8,ZONA III,1092
3460,-70.24757815,-17.99694953,MUR/HEX:1,1,220,192.05,4,1,MZA 3369 - LT 9,ZONA III,1093
3461,-70.24757771,-17.99703949,MUR/HEX:1,1,220,203.19,5,1,MZA 3369 - LT 10,ZONA III,1094
3462,-70.24757772,-17.99713036,MUR/HEX:1,1,220,199.07,5,1,MZA 3369 - LT 11,ZONA III,1095
3463,-70.24753063,-17.99731021,MUR/HEX:3,1,220,284.43,7,2,MZA 3369 - LT 12A,ZONA III,1096
3464,-70.24753136,-17.99722148,MUR/HEX:1,1,220,104.45,2,0,MZA 3369 - LT 12B,ZONA III,1097
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3466,-70.24771722,-17.99729605,MUR/HEX:3,1,220,791.52,18,5,MZA 3369 - LT 14,ZONA III,1099
3467,-70.24732796,-17.99709281,MUR/HEX:2,1,220,301.58,7,2,MZA 3370 - LT 1A,ZONA III,1100
3468,-70.2473282,-17.99721903,MUR/HEX:3,1,220,485.73,11,3,MZA 3370 - LT 1B,ZONA III,1101
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3471,-70.24727582,-17.99680421,MUR/HEX:1,1,220,223.5,5,1,MZA 3370 - LT 4,ZONA III,1104
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3473,-70.24711039,-17.99671608,MUR/HEX:2,1,220,218.7,5,1,MZA 3370 - LT 6A,ZONA III,1106
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3477,-70.24707181,-17.99696095,MUR/HEX:1,1,220,111.34,3,0,MZA 3370 - LT 9,ZONA III,1110
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3480,-70.24711788,-17.99713346,MUR/HEX:6,1,220,1009.04,23,7,MZA 3370 - LT 11,ZONA III,1113
3481,-70.24722231,-17.99714516,MUR/HEX:1,1,220,286.34,7,2,MZA 3370 - LT 12,ZONA III,1114
3482,-70.24675825,-17.99709141,MUR/HEX:2,1,220,1028.13,19,3,MZA 3371 - LT 1,ZONA III,1115
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3485,-70.24675668,-17.99687811,MUR/HEX:1,1,220,200.25,5,1,MZA 3371 - LT 3,ZONA III,1118
3486,-70.24675723,-17.99678866,MUR/HEX:2,1,220,391.22,9,2,MZA 3371 - LT 4,ZONA III,1119
3487,-70.24675765,-17.99669935,MUR/HEX:2,1,220,398.92,9,2,MZA 3371 - LT 5,ZONA III,1120
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3490,-70.24675835,-17.99651802,MUR/HEX:1,1,220,198.9,5,1,MZA 3371 - LT 7,ZONA III,1123
3491,-70.24679511,-17.99643141,MUR/HEX:1,1,220,100.58,2,0,MZA 3371 - LT 8,ZONA III,1124
3492,-70.24671607,-17.99643092,MUR/HEX:2,1,220,201.14,5,1,MZA 3371 - LT 8A,ZONA III,1125
3493,-70.24657032,-17.9964257,MUR/HEX:2,1,220,401.14,9,2,MZA 3371 - LT 9,ZONA III,1126
3494,-70.24656945,-17.99651642,MUR/HEX:1,1,220,201.88,5,1,MZA 3371 - LT 10,ZONA III,1127
3495,-70.2465692,-17.99662951,MUR/HEX:1,1,220,100.76,2,0,MZA 3371 - LT 11A,ZONA III,1128
3496,-70.24656917,-17.99658436,MUR/HEX:2,1,220,199.4,5,1,MZA 3371 - LT 11B,ZONA III,1129
3497,-70.24656851,-17.99669713,MUR/HEX:1,1,220,199.66,5,1,MZA 3371 - LT 12,ZONA III,1130
3498,-70.24656767,-17.99678684,MUR/HEX:1,1,220,199.17,5,1,MZA 3371 - LT 13,ZONA III,1131
3499,-70.2465673,-17.99687686,MUR/HEX:1,1,220,201.21,5,1,MZA 3371 - LT 14,ZONA III,1132
3500,-70.24656732,-17.9969672,MUR/HEX:1,1,220,200.91,5,1,MZA 3371 - LT 15,ZONA III,1133
3501,-70.24656922,-17.99707686,MUR/HEX:2,1,220,572.94,13,4,MZA 3371 - LT 16,ZONA III,1134
3502,-70.24636709,-17.99702479,MUR/HEX:2,1,220,202.44,5,1,MZA 3372 - LT 1,ZONA III,1135
3503,-70.24636444,-17.99695222,MUR/HEX:3,1,220,303.69,7,2,MZA 3372 - LT 1A,ZONA III,1136
3504,-70.24636674,-17.99683454,MUR/HEX:3,1,220,566.73,13,4,MZA 3372 - LT 2,ZONA III,1137
3505,-70.2462758,-17.99683363,MUR/HEX:1,1,220,207.91,5,1,MZA 3372 - LT 3,ZONA III,1138
3506,-70.24618086,-17.99683306,MUR/HEX:1,1,220,206.84,5,1,MZA 3372 - LT 4,ZONA III,1139
3507,-70.24608639,-17.99683247,MUR/HEX:2,1,220,412.82,10,3,MZA 3372 - LT 5,ZONA III,1140
3508,-70.24599203,-17.99683206,MUR/HEX:3,1,220,620.52,14,4,MZA 3372 - LT 6,ZONA III,1141
3509,-70.24589789,-17.99683138,MUR/HEX:2,1,220,412.06,10,3,MZA 3372 - LT 7,ZONA III,1142
3510,-70.2457937,-17.99683074,MUR/HEX:2,1,220,502.96,12,3,MZA 3372 - LT 8,ZONA III,1143
3511,-70.24567765,-17.99682994,MUR/HEX:2,1,220,517.82,12,3,MZA 3372 - LT 9,ZONA III,1144
3512,-70.24567717,-17.99705669,CR/LFINF+DUC/HEX:4/RES,1,220,664.65,15,4,MZA 3372 - LT 10A,ZONA III,1145
3513,-70.24567734,-17.99696592,CR/LFINF+DUC/HEX:4/RES,1,220,459,11,3,MZA 3372 - LT 10B,ZONA III,1146
3514,-70.2457925,-17.99701557,MUR/HEX:1,1,220,243.54,6,1,MZA 3372 - LT 11,ZONA III,1147
3515,-70.24589644,-17.99701635,MUR/HEX:1,1,220,200.81,5,1,MZA 3372 - LT 12,ZONA III,1148

3516,-70.24599086,-17.99701715,MUR/HEX:1,1,220,204.02,5,1,MZA 3372 - LT 13,ZONA III,1149
3517,-70.24608543,-17.99701769,MUR/HEX:2,1,220,405.9,2,MZA 3372 - LT 14,ZONA III,1150
3518,-70.24615684,-17.99701615,MUR/HEX:3,1,220,306.33,7,2,MZA 3372 - LT 15,ZONA III,1151
3519,-70.24620463,-17.99701662,MUR/HEX:1,1,220,102.12,2,0,MZA 3372 - LT 15A,ZONA III,1152
3520,-70.24627503,-17.99702067,MUR/HEX:1,1,220,209.72,5,1,MZA 3372 - LT 16,ZONA III,1153
3521,-70.24899822,-17.99814578,MCF/LWAL+DNO/HEX:2/RES,1,220,462.11,3,MZA 3373 - LT 1,ZONA III,1154
3522,-70.24905772,-17.99807669,MUR/HEX:1,1,220,249.08,6,1,MZA 3373 - LT 2,ZONA III,1155
3523,-70.24911752,-17.99800615,MCF/LWAL+DNO/HEX:1/RES,1,220,238.4,6,1,MZA 3373 - LT 3,ZONA III,1156
3524,-70.24917543,-17.99793633,MCF/LWAL+DNO/HEX:2/RES,1,220,481.06,11,3,MZA 3373 - LT 4,ZONA III,1157
3525,-70.24923448,-17.99786622,MCF/LWAL+DNO/HEX:1/RES,1,220,243.07,6,1,MZA 3373 - LT 5,ZONA III,1158
3526,-70.24929381,-17.99779606,MUR/HEX:1,1,220,241.66,6,1,MZA 3373 - LT 6,ZONA III,1159
3527,-70.24935339,-17.99772472,MCF/LWAL+DNO/HEX:1/RES,1,220,249.14,6,1,MZA 3373 - LT 7,ZONA III,1160
3528,-70.24941406,-17.99765352,MCF/LWAL+DNO/HEX:2/RES,1,220,488.56,11,3,MZA 3373 - LT 8,ZONA III,1161
3529,-70.24923362,-17.9975367,MCF/LWAL+DNO/HEX:1/RES,1,220,215.54,5,1,MZA 3373 - LT 9,ZONA III,1162
3530,-70.24917406,-17.99760876,MUR/HEX:1,1,220,222.93,5,1,MZA 3373 - LT 10,ZONA III,1163
3531,-70.24911519,-17.99768112,MCF/LWAL+DNO/HEX:2/RES,1,220,418.86,10,3,MZA 3373 - LT 11,ZONA III,1164
3532,-70.24905699,-17.99775197,MCF/LWAL+DNO/HEX:1/RES,1,220,209.9,5,1,MZA 3373 - LT 12,ZONA III,1165
3533,-70.24899877,-17.99782305,MUR/HEX:1,1,220,205.03,5,1,MZA 3373 - LT 13,ZONA III,1166
3534,-70.24894249,-17.99789255,MCF/LWAL+DNO/HEX:2/RES,1,220,387.88,9,2,MZA 3373 - LT 14,ZONA III,1167
3535,-70.24888512,-17.99796222,MCF/LWAL+DNO/HEX:1/RES,1,220,203.08,5,1,MZA 3373 - LT 15,ZONA III,1168
3536,-70.2488265,-17.99803277,MCF/LWAL+DNO/HEX:2/RES,1,220,390.9,2,MZA 3373 - LT 16,ZONA III,1169
3537,-70.24856709,-17.99786987,MUR/HEX:1,1,220,208.62,5,1,MZA 3374 - LT 1,ZONA III,1170
3538,-70.24862599,-17.99781167,MUR/HEX:3,1,220,651.12,15,4,MZA 3374 - LT 2,ZONA III,1171
3539,-70.24869312,-17.99773805,MUR/HEX:1,1,220,214.32,5,1,MZA 3374 - LT 3,ZONA III,1172
3540,-70.24892108,-17.99745121,MUR/HEX:1,1,220,212.79,5,1,MZA 3374 - LT 6,ZONA III,1175
3541,-70.24898249,-17.99737864,MUR/HEX:1,1,220,229.24,5,1,MZA 3374 - LT 7,ZONA III,1176
3542,-70.24881354,-17.99727088,MUR/HEX:1,1,220,244.13,6,1,MZA 3374 - LT 8,ZONA III,1177
3543,-70.2487501,-17.99734409,MUR/HEX:2,1,220,488.26,11,3,MZA 3374 - LT 9,ZONA III,1178
3544,-70.24869289,-17.99741203,MUR/HEX:2,1,220,416.92,10,3,MZA 3374 - LT 10,ZONA III,1179
3545,-70.24863533,-17.99747985,MUR/HEX:1,1,220,103.45,2,0,MZA 3374 - LT 11,ZONA III,1180
3546,-70.24861484,-17.99744257,MUR/HEX:1,1,220,103.45,2,0,MZA 3374 - LT 11-A,ZONA III,1181
3547,-70.2485772,-17.9975073,MUR/HEX:2,1,220,440.52,10,3,MZA 3374 - LT 12,ZONA III,1182
3548,-70.24851647,-17.99762112,MUR/HEX:1,1,220,212.84,5,1,MZA 3374 - LT 13,ZONA III,1183
3549,-70.24845732,-17.99769108,MUR/HEX:3,1,220,642.81,15,4,MZA 3374 - LT 14,ZONA III,1184
3550,-70.24835438,-17.99773476,MUR/HEX:2,1,220,213.54,5,1,MZA 3374 - LT 15-A,ZONA III,1185
3551,-70.24843049,-17.99778266,MUR/HEX:1,1,220,106.76,2,0,MZA 3374 - LT 15-B,ZONA III,1186
3552,-70.24904738,-17.98649232,MUR/HEX:1,1,220,113.02,3,0,MZA 4381 - LT 1,ZONA IV,1
3553,-70.24908258,-17.98643851,MUR/HEX:1,1,220,113.68,3,0,MZA 4381 - LT 2,ZONA IV,2
3554,-70.24912013,-17.9863836,MUR/HEX:1,1,220,119.58,3,0,MZA 4381 - LT 3,ZONA IV,3
3555,-70.24920227,-17.98628652,MUR/HEX:1,1,220,252.58,6,1,MZA 4381 - LT 4,ZONA IV,4
3556,-70.2492366,-17.98661245,MUR/HEX:1,1,220,124.23,3,0,MZA 4382 - LT 1,ZONA IV,5
3557,-70.2493665,-17.98668658,MUR/HEX:1,1,220,126.33,3,0,MZA 4382 - LT 2,ZONA IV,6
3558,-70.24940512,-17.98662879,MUR/HEX:1,1,220,119.33,3,0,MZA 4382 - LT 3,ZONA IV,7
3559,-70.24944084,-17.9865734,MUR/HEX:1,1,220,112.58,3,0,MZA 4382 - LT 4,ZONA IV,8
3560,-70.24947525,-17.98651751,MUR/HEX:1,1,220,118.16,3,0,MZA 4382 - LT 5,ZONA IV,9
3561,-70.24951059,-17.98646135,MUR/HEX:1,1,220,115.43,3,0,MZA 4382 - LT 6,ZONA IV,10
3562,-70.24954522,-17.98640108,MUR/HEX:1,1,220,128.96,3,0,MZA 4382 - LT 7,ZONA IV,11
3563,-70.24941998,-17.98631996,MUR/HEX:1,1,220,153.24,4,1,MZA 4382 - LT 8,ZONA IV,12
3564,-70.24938073,-17.986386,MUR/HEX:1,1,220,115.39,3,0,MZA 4382 - LT 9,ZONA IV,13
3565,-70.2493459,-17.98644289,MUR/HEX:1,1,220,117.92,3,0,MZA 4382 - LT 10,ZONA IV,14
3566,-70.25114851,-17.98669115,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 1,ZONA IV,15
3567,-70.25108874,-17.98664693,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 2,ZONA IV,16
3568,-70.25102897,-17.98660271,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 3,ZONA IV,17
3569,-70.25096921,-17.98655849,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 4,ZONA IV,18
3570,-70.25090944,-17.98651427,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 5,ZONA IV,19
3571,-70.25084967,-17.98647005,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 6,ZONA IV,20
3572,-70.25078991,-17.98642583,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 7,ZONA IV,21
3573,-70.25073014,-17.98638161,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 8,ZONA IV,22
3574,-70.25067038,-17.98637379,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 9,ZONA IV,23
3575,-70.25061061,-17.98629317,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 10,ZONA IV,24
3576,-70.25055084,-17.98624895,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 11,ZONA IV,25
3577,-70.25049108,-17.98620473,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 12,ZONA IV,26
3578,-70.25043131,-17.98616051,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 13,ZONA IV,27
3579,-70.25037154,-17.98611629,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 14,ZONA IV,28
3580,-70.25031178,-17.98607207,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 15,ZONA IV,29
3581,-70.25025201,-17.98602785,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 16,ZONA IV,30
3582,-70.25019225,-17.98598363,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 17,ZONA IV,31
3583,-70.25013248,-17.98593941,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 18,ZONA IV,32
3584,-70.25007271,-17.98589519,MUR/HEX:1,1,220,128,3,0,MZA 4383 - LT 19,ZONA IV,33
3585,-70.24982268,-17.98637971,MUR/HEX:2,1,220,265.14,6,1,MZA 4384 - LT 1,ZONA IV,34
3586,-70.24994666,-17.98646323,MUR/HEX:2,1,220,301.66,7,2,MZA 4384 - LT 2,ZONA IV,35

3587,-70.24998439,-17.98639823,MUR/HEX:1,1,220,112.44,3,0,MZA 4384 - LT 3,ZONA IV,36
3588,-70.25001968,-17.98634381,MUR/HEX:1,1,220,111.58,3,0,MZA 4384 - LT 4,ZONA IV,37
3589,-70.25005265,-17.98628992,MUR/HEX:1,1,220,111.32,3,0,MZA 4384 - LT 5,ZONA IV,38
3590,-70.25008337,-17.98623545,MUR/HEX:2,1,220,227.04,5,1,MZA 4384 - LT 6,ZONA IV,39
3591,-70.25011553,-17.98617602,MUR/HEX:2,1,220,245.7,6,1,MZA 4384 - LT 7,ZONA IV,40
3592,-70.24999267,-17.98609098,MUR/HEX:1,1,220,148.05,3,0,MZA 4384 - LT 8,ZONA IV,41
3593,-70.24995616,-17.98615544,MUR/HEX:1,1,220,111.46,3,0,MZA 4384 - LT 9,ZONA IV,42
3594,-70.24992344,-17.98620958,MUR/HEX:1,1,220,110.59,3,0,MZA 4384 - LT 10,ZONA IV,43
3595,-70.24989051,-17.98626385,MUR/HEX:1,1,220,112.18,3,0,MZA 4384 - LT 11,ZONA IV,44
3596,-70.24985736,-17.98631879,MUR/HEX:1,1,220,112.96,3,0,MZA 4384 - LT 12,ZONA IV,45
3597,-70.24956146,-17.98679777,MUR/HEX:1,1,220,114.98,3,0,MZA 4385 - LT 1,ZONA IV,46
3598,-70.24969115,-17.98687186,MUR/HEX:1,1,220,115.31,3,0,MZA 4385 - LT 2,ZONA IV,47
3599,-70.24972629,-17.98681589,MUR/HEX:1,1,220,115.36,3,0,MZA 4385 - LT 3,ZONA IV,48
3600,-70.24976184,-17.98675946,MUR/HEX:1,1,220,117.99,3,0,MZA 4385 - LT 4,ZONA IV,49
3601,-70.24979756,-17.98670284,MUR/HEX:1,1,220,116.93,3,0,MZA 4385 - LT 5,ZONA IV,50
3602,-70.24984148,-17.98663048,MUR/HEX:1,1,220,179.44,4,1,MZA 4385 - LT 6,ZONA IV,51
3603,-70.24971558,-17.98655113,MUR/HEX:1,1,220,203.91,5,1,MZA 4385 - LT 7,ZONA IV,52
3604,-70.24966756,-17.98662914,MUR/HEX:1,1,220,115.99,3,0,MZA 4385 - LT 8,ZONA IV,53
3605,-70.24963193,-17.98668552,MUR/HEX:1,1,220,117.48,3,0,MZA 4385 - LT 9,ZONA IV,54
3606,-70.24959615,-17.9867417,MUR/HEX:1,1,220,116.28,3,0,MZA 4385 - LT 10,ZONA IV,55
3607,-70.25012705,-17.98659868,MUR/HEX:1,1,220,110.13,3,0,MZA 4386 - LT 1,ZONA IV,56
3608,-70.25025374,-17.98668349,MUR/HEX:1,1,220,113.31,3,0,MZA 4386 - LT 2,ZONA IV,57
3609,-70.25028651,-17.98662622,MUR/HEX:1,1,220,120.65,3,0,MZA 4386 - LT 3,ZONA IV,58
3610,-70.25031914,-17.9865692,MUR/HEX:1,1,220,111.35,3,0,MZA 4386 - LT 4,ZONA IV,59
3611,-70.2503504,-17.98651339,MUR/HEX:1,1,220,112.69,3,0,MZA 4386 - LT 5,ZONA IV,60
3612,-70.25038213,-17.98645742,MUR/HEX:1,1,220,110.73,3,0,MZA 4386 - LT 6,ZONA IV,61
3613,-70.25041213,-17.98639954,MUR/HEX:1,1,220,112.72,3,0,MZA 4386 - LT 7,ZONA IV,62
3614,-70.25029234,-17.98631647,MUR/HEX:1,1,220,134.52,3,0,MZA 4386 - LT 8,ZONA IV,63
3615,-70.25025739,-17.98637901,MUR/HEX:1,1,220,110.22,3,0,MZA 4386 - LT 9,ZONA IV,64
3616,-70.25022448,-17.98643424,MUR/HEX:1,1,220,112.31,3,0,MZA 4386 - LT 10,ZONA IV,65
3617,-70.25019223,-17.98648836,MUR/HEX:1,1,220,108.08,2,0,MZA 4386 - LT 11,ZONA IV,66
3618,-70.25015967,-17.98654359,MUR/HEX:1,1,220,118.04,3,0,MZA 4386 - LT 12,ZONA IV,67
3619,-70.24988433,-17.98698431,MUR/HEX:1,1,220,116.74,3,0,MZA 4387 - LT 1,ZONA IV,68
3620,-70.25001406,-17.98705951,MUR/HEX:1,1,220,118.4,3,0,MZA 4387 - LT 2,ZONA IV,69
3621,-70.2500495,-17.98700281,MUR/HEX:1,1,220,118.17,3,0,MZA 4387 - LT 3,ZONA IV,70
3622,-70.25008439,-17.98694648,MUR/HEX:1,1,220,116.41,3,0,MZA 4387 - LT 4,ZONA IV,71
3623,-70.25011958,-17.98689073,MUR/HEX:1,1,220,116.87,3,0,MZA 4387 - LT 5,ZONA IV,72
3624,-70.2501549,-17.98682957,MUR/HEX:1,1,220,132,3,0,MZA 4387 - LT 6,ZONA IV,73
3625,-70.25003144,-17.98674884,MUR/HEX:1,1,220,150.51,3,0,MZA 4387 - LT 7,ZONA IV,74
3626,-70.24999072,-17.98681372,MCF/LWAL+DNO/HEX:2/RES,1,220,232.68,5,1,MZA 4387 - LT 8,ZONA IV,75
3627,-70.24995544,-17.98687082,MCF/LWAL+DNO/HEX:2/RES,1,220,233.5,5,1,MZA 4387 - LT 9,ZONA IV,76
3628,-70.24992009,-17.98692782,MCF/LWAL+DNO/HEX:2/RES,1,220,231.68,5,1,MZA 4387 - LT 10,ZONA IV,77
3629,-70.25031422,-17.98721715,MUR/HEX:1,1,220,112.79,3,0,MZA 4389 - LT 1,ZONA IV,78
3630,-70.25045087,-17.98728065,MUR/HEX:1,1,220,112.08,3,0,MZA 4389 - LT 2,ZONA IV,79
3631,-70.25048056,-17.98722239,MUR/HEX:1,1,220,116.66,3,0,MZA 4389 - LT 3,ZONA IV,80
3632,-70.25051097,-17.98716273,MUR/HEX:1,1,220,114.81,3,0,MZA 4389 - LT 4,ZONA IV,81
3633,-70.25054024,-17.98710122,MCF/LWAL+DNO/HEX:2/RES,1,220,236.84,5,1,MZA 4389 - LT 5,ZONA IV,82
3634,-70.25056985,-17.98703963,MCF/LWAL+DNO/HEX:2/RES,1,220,234.72,5,1,MZA 4389 - LT 6,ZONA IV,83
3635,-70.25043349,-17.98697911,MUR/HEX:1,1,220,118.85,3,0,MZA 4389 - LT 7,ZONA IV,84
3636,-70.25040473,-17.98704109,MUR/HEX:1,1,220,123.15,3,0,MZA 4389 - LT 8,ZONA IV,85
3637,-70.25037463,-17.98710174,MCF/LWAL+DNO/HEX:2/RES,1,220,237.86,5,1,MZA 4389 - LT 9,ZONA IV,86
3638,-70.25034431,-17.98716003,MUR/HEX:1,1,220,113.97,3,0,MZA 4389 - LT 10,ZONA IV,87
3639,-70.25072736,-17.98692471,MUR/HEX:1,1,220,114.38,3,0,MZA 4390 - LT 1,ZONA IV,88
3640,-70.25085628,-17.98698605,MUR/HEX:1,1,220,114.32,3,0,MZA 4390 - LT 2,ZONA IV,89
3641,-70.25088773,-17.98692534,MUR/HEX:1,1,220,114.25,3,0,MZA 4390 - LT 3,ZONA IV,90
3642,-70.25091904,-17.98686466,MUR/HEX:1,1,220,114.05,3,0,MZA 4390 - LT 4,ZONA IV,91
3643,-70.25095003,-17.98679622,MUR/HEX:1,1,220,136.14,3,0,MZA 4390 - LT 5,ZONA IV,92
3644,-70.25082752,-17.98672448,MUR/HEX:1,1,220,179.84,4,1,MZA 4390 - LT 6,ZONA IV,93
3645,-70.25078982,-17.9868039,MUR/HEX:1,1,220,113.58,3,0,MZA 4390 - LT 7,ZONA IV,94
3646,-70.2507587,-17.98686423,MUR/HEX:1,1,220,113.48,3,0,MZA 4390 - LT 8,ZONA IV,95
3647,-70.25065457,-17.98737393,MUR/HEX:1,1,220,113.35,3,0,MZA 4391 - LT 1,ZONA IV,96
3648,-70.25079126,-17.98743733,MUR/HEX:1,1,220,115.85,3,0,MZA 4391 - LT 2,ZONA IV,97
3649,-70.25082033,-17.98737765,MUR/HEX:1,1,220,119.3,3,0,MZA 4391 - LT 3,ZONA IV,98
3650,-70.25085003,-17.98731914,MUR/HEX:1,1,220,112.83,3,0,MZA 4391 - LT 4,ZONA IV,99
3651,-70.25087888,-17.98726181,MUR/HEX:1,1,220,111.85,3,0,MZA 4391 - LT 5,ZONA IV,100
3652,-70.25090715,-17.98720368,MUR/HEX:1,1,220,113.88,3,0,MZA 4391 - LT 6,ZONA IV,101
3653,-70.2507731,-17.98714054,MCF/LWAL+DNO/HEX:2/RES,1,220,234.26,5,1,MZA 4391 - LT 7,ZONA IV,102
3654,-70.250743,-17.98719934,MCF/LWAL+DNO/HEX:2/RES,1,220,227.12,5,1,MZA 4391 - LT 8,ZONA IV,103
3655,-70.25071372,-17.98725631,MUR/HEX:1,1,220,111.81,3,0,MZA 4391 - LT 9,ZONA IV,104
3656,-70.25068371,-17.98731479,MUR/HEX:1,1,220,118.17,3,0,MZA 4391 - LT 10,ZONA IV,105
3657,-70.25103434,-17.98702574,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 1,ZONA IV,106

3658,-70.25109395,-17.98705309,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 2,ZONA IV,107
3659,-70.25115356,-17.98708043,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 3,ZONA IV,108
3660,-70.25121317,-17.98710777,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 4,ZONA IV,109
3661,-70.25127278,-17.98713512,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 5,ZONA IV,110
3662,-70.25133239,-17.98716246,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 6,ZONA IV,111
3663,-70.251392,-17.9871898,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 7,ZONA IV,112
3664,-70.25145161,-17.98721714,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 8,ZONA IV,113
3665,-70.25151122,-17.98724449,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 9,ZONA IV,114
3666,-70.25157083,-17.98727183,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 10,ZONA IV,115
3667,-70.25163044,-17.98729917,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 11,ZONA IV,116
3668,-70.25169005,-17.98732651,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 12,ZONA IV,117
3669,-70.25174966,-17.98735386,MUR/HEX:1,1,220,112,3,0,MZA 4393 - LT 13,ZONA IV,118
3670,-70.25099513,-17.98753031,MUR/HEX:1,1,220,119.48,3,0,MZA 4394 - LT 1,ZONA IV,119
3671,-70.25113157,-17.98759487,MUR/HEX:1,1,220,113.92,3,0,MZA 4394 - LT 2,ZONA IV,120
3672,-70.25116127,-17.98753646,MCF/LWAL+DNO/HEX:2/RES,1,220,230.88,5,1,MZA 4394 - LT 3,ZONA IV,121
3673,-70.25119076,-17.98747716,MCF/LWAL+DNO/HEX:2/RES,1,220,233.42,5,1,MZA 4394 - LT 4,ZONA IV,122
3674,-70.25122007,-17.98741822,MCF/LWAL+DNO/HEX:2/RES,1,220,228.42,5,1,MZA 4394 - LT 5,ZONA IV,123
3675,-70.25124957,-17.98735912,MUR/HEX:1,1,220,117.76,3,0,MZA 4394 - LT 6,ZONA IV,124
3676,-70.25111425,-17.98729485,MUR/HEX:1,1,220,120.69,3,0,MZA 4394 - LT 7,ZONA IV,125
3677,-70.25108387,-17.98735481,MUR/HEX:1,1,220,116.13,3,0,MZA 4394 - LT 8,ZONA IV,126
3678,-70.25105442,-17.98741378,MUR/HEX:1,1,220,116.79,3,0,MZA 4394 - LT 9,ZONA IV,127
3679,-70.25102505,-17.98747183,MUR/HEX:1,1,220,113.68,3,0,MZA 4394 - LT 10,ZONA IV,128
3680,-70.2513328,-17.98768787,MUR/HEX:1,1,220,113.56,3,0,MZA 4395 - LT 1,ZONA IV,129
3681,-70.2514667,-17.98774992,MCF/LWAL+DNO/HEX:1/RES,1,220,111.1,3,0,MZA 4395 - LT 2,ZONA IV,130
3682,-70.25149713,-17.98769269,MCF/LWAL+DNO/HEX:1/RES,1,220,113.26,3,0,MZA 4395 - LT 3,ZONA IV,131
3683,-70.25152833,-17.98763452,MCF/LWAL+DNO/HEX:1/RES,1,220,117.07,3,0,MZA 4395 - LT 4,ZONA IV,132
3684,-70.25155879,-17.98757513,MUR/HEX:1,1,220,117.49,3,0,MZA 4395 - LT 5,ZONA IV,133
3685,-70.25158935,-17.9875158,MUR/HEX:1,1,220,116.78,3,0,MZA 4395 - LT 6,ZONA IV,134
3686,-70.25145492,-17.98745124,MUR/HEX:1,1,220,118.21,3,0,MZA 4395 - LT 7,ZONA IV,135
3687,-70.25142394,-17.98751152,MUR/HEX:1,1,220,118.03,3,0,MZA 4395 - LT 8,ZONA IV,136
3688,-70.25139339,-17.98757128,MUR/HEX:1,1,220,114.79,3,0,MZA 4395 - LT 9,ZONA IV,137
3689,-70.25136315,-17.9876298,MUR/HEX:1,1,220,113.17,3,0,MZA 4395 - LT 10,ZONA IV,138
3690,-70.25167463,-17.98784594,MUR/HEX:1,1,220,118.95,3,0,MZA 4397 - LT 1,ZONA IV,139
3691,-70.2518112,-17.98790857,MUR/HEX:1,1,220,119.83,3,0,MZA 4397 - LT 2,ZONA IV,140
3692,-70.25184066,-17.98784795,MUR/HEX:1,1,220,118.13,3,0,MZA 4397 - LT 3,ZONA IV,141
3693,-70.25187031,-17.98778815,MUR/HEX:1,1,220,117.49,3,0,MZA 4397 - LT 4,ZONA IV,142
3694,-70.25190009,-17.9877288,MUR/HEX:1,1,220,116.39,3,0,MZA 4397 - LT 5,ZONA IV,143
3695,-70.25192891,-17.98766985,MUR/HEX:1,1,220,114.24,3,0,MZA 4397 - LT 6,ZONA IV,144
3696,-70.25179467,-17.98760299,MUR/HEX:1,1,220,123.25,3,0,MZA 4397 - LT 7,ZONA IV,145
3697,-70.25176477,-17.98766416,MUR/HEX:1,1,220,116.08,3,0,MZA 4397 - LT 8,ZONA IV,146
3698,-70.25173421,-17.98772384,MUR/HEX:1,1,220,120.03,3,0,MZA 4397 - LT 9,ZONA IV,147
3699,-70.25170347,-17.98778467,MUR/HEX:1,1,220,120.42,3,0,MZA 4397 - LT 10,ZONA IV,148
3700,-70.25201754,-17.98799696,MUR/HEX:1,1,220,112.02,3,0,MZA 4398 - LT 1,ZONA IV,149
3701,-70.25215462,-17.98805798,MUR/HEX:1,1,220,112.13,3,0,MZA 4398 - LT 2,ZONA IV,150
3702,-70.25218345,-17.98800079,MUR/HEX:1,1,220,113.17,3,0,MZA 4398 - LT 3,ZONA IV,151
3703,-70.25221366,-17.98794209,MUR/HEX:1,1,220,119.75,3,0,MZA 4398 - LT 4,ZONA IV,152
3704,-70.25224283,-17.98788328,MUR/HEX:1,1,220,113.04,3,0,MZA 4398 - LT 5,ZONA IV,153
3705,-70.25227099,-17.98782604,MUR/HEX:1,1,220,112.35,3,0,MZA 4398 - LT 6,ZONA IV,154
3706,-70.25213306,-17.98776639,MUR/HEX:1,1,220,112.06,3,0,MZA 4398 - LT 7,ZONA IV,155
3707,-70.25210447,-17.98782344,MUR/HEX:1,1,220,112.05,3,0,MZA 4398 - LT 8,ZONA IV,156
3708,-70.25207555,-17.9878817,MUR/HEX:1,1,220,116.38,3,0,MZA 4398 - LT 9,ZONA IV,157
3709,-70.25204622,-17.98793986,MUR/HEX:1,1,220,112.33,3,0,MZA 4398 - LT 10,ZONA IV,158
3710,-70.25235201,-17.98815746,MUR/HEX:1,1,220,123.6,3,0,MZA 4399 - LT 1,ZONA IV,159
3711,-70.25248607,-17.98822211,MUR/HEX:1,1,220,122.13,3,0,MZA 4399 - LT 2,ZONA IV,160
3712,-70.25251741,-17.98815932,MUR/HEX:1,1,220,122.13,3,0,MZA 4399 - LT 3,ZONA IV,161
3713,-70.25254846,-17.98809773,MUR/HEX:1,1,220,117.93,3,0,MZA 4399 - LT 4,ZONA IV,162
3714,-70.25257758,-17.98803875,MUR/HEX:1,1,220,111.03,3,0,MZA 4399 - LT 5,ZONA IV,163
3715,-70.25260607,-17.98798167,MUR/HEX:1,1,220,111.03,3,0,MZA 4399 - LT 6,ZONA IV,164
3716,-70.25247142,-17.98791888,MUR/HEX:1,1,220,111.03,3,0,MZA 4399 - LT 7,ZONA IV,165
3717,-70.25244293,-17.98797596,MUR/HEX:1,1,220,111.03,3,0,MZA 4399 - LT 8,ZONA IV,166
3718,-70.25241251,-17.98803512,MUR/HEX:1,1,220,120.37,3,0,MZA 4399 - LT 9,ZONA IV,167
3719,-70.25238426,-17.9880967,MUR/HEX:1,1,220,115.6,3,0,MZA 4399 - LT 10,ZONA IV,168
3720,-70.24821982,-17.98709754,MUR/HEX:2,1,220,284.38,7,2,MZA 4401 - LT 1,ZONA IV,169
3721,-70.24825495,-17.98716287,MUR/HEX:2,1,220,285.3,7,2,MZA 4401 - LT 2,ZONA IV,170
3722,-70.24829056,-17.98722724,MUR/HEX:1,1,220,73.1,2,0,MZA 4401 - LT 3,ZONA IV,171
3723,-70.24832792,-17.98729017,MUR/HEX:2,1,220,286.68,7,2,MZA 4401 - LT 4,ZONA IV,172
3724,-70.24836274,-17.98735386,MUR/HEX:3,1,220,432.96,10,3,MZA 4401 - LT 5,ZONA IV,173
3725,-70.24839718,-17.98741817,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,145.44,3,0,MZA 4401 - LT 6,ZONA IV,174
3726,-70.24846329,-17.98730264,MUR/HEX:1,1,220,138.13,3,0,MZA 4401 - LT 7,ZONA IV,175
3727,-70.248513,-17.98727729,CR/LFINF+DUC/HEX:4/RES,1,220,589.92,14,4,MZA 4401 - LT 8,ZONA IV,176
3728,-70.24856283,-17.98725176,MUR/HEX:1,1,220,141.08,3,0,MZA 4401 - LT 9,ZONA IV,177

3729,-70.24861423,-17.98722549,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,147.45,3,0,MZA 4401 - LT 10,ZONA IV,178
3730,-70.2485049,-17.98703731,MUR/HEX:2,1,220,293.06,7,2,MZA 4401 - LT 11,ZONA IV,179
3731,-70.24845154,-17.98706292,MUR/HEX:1,1,220,141.49,3,0,MZA 4401 - LT 12,ZONA IV,180
3732,-70.24840252,-17.98708781,MUR/HEX:1,1,220,146.89,3,0,MZA 4401 - LT 13,ZONA IV,181
3733,-70.24835355,-17.98711218,MUR/HEX:1,1,220,137.05,3,0,MZA 4401 - LT 14,ZONA IV,182
3734,-70.24756366,-17.98743674,MUR/HEX:1,1,220,140.7,3,0,MZA 4402 - LT 1,ZONA IV,183
3735,-70.24759672,-17.98749758,CR/LFINF+DUC/HEX:3/RES,1,220,431.04,10,3,MZA 4402 - LT 2,ZONA IV,184
3736,-70.24763492,-17.98756013,MUR/HEX:1,1,220,150.07,3,0,MZA 4402 - LT 3,ZONA IV,185
3737,-70.24767116,-17.98762395,MUR/HEX:1,1,220,143.02,3,0,MZA 4402 - LT 4,ZONA IV,186
3738,-70.24770864,-17.98768708,MUR/HEX:1,1,220,147.18,3,0,MZA 4402 - LT 5,ZONA IV,187
3739,-70.24774632,-17.98774986,MUR/HEX:1,1,220,146.76,3,0,MZA 4402 - LT 6,ZONA IV,188
3740,-70.24780847,-17.98763609,MCF/LWAL+DNO/HEX:2/RES,1,220,285.7,2,MZA 4402 - LT 7,ZONA IV,189
3741,-70.24785673,-17.98761129,MUR/HEX:1,1,220,142.19,3,0,MZA 4402 - LT 8,ZONA IV,190
3742,-70.24790558,-17.98758633,MUR/HEX:1,1,220,147.33,3,0,MZA 4402 - LT 9,ZONA IV,191
3743,-70.24795495,-17.98756101,MUR/HEX:1,1,220,149.65,3,0,MZA 4402 - LT 10,ZONA IV,192
3744,-70.24800445,-17.98753555,MUR/HEX:1,1,220,144.64,3,0,MZA 4402 - LT 11,ZONA IV,193
3745,-70.24805405,-17.98751032,MUR/HEX:2,1,220,280.24,6,1,MZA 4402 - LT 12,ZONA IV,194
3746,-70.24810323,-17.98748475,MUR/HEX:1,1,220,142.82,3,0,MZA 4402 - LT 13,ZONA IV,195
3747,-70.24815518,-17.98745785,MUR/HEX:1,1,220,140.62,3,0,MZA 4402 - LT 14,ZONA IV,196
3748,-70.24799854,-17.98729342,MUR/HEX:1,1,220,144.55,3,0,MZA 4402 - LT 15,ZONA IV,197
3749,-70.2479463,-17.98731466,MUR/HEX:2,1,220,282.3,7,2,MZA 4402 - LT 16,ZONA IV,198
3750,-70.24789871,-17.98734445,MUR/HEX:2,1,220,288.44,7,2,MZA 4402 - LT 17,ZONA IV,199
3751,-70.2478472,-17.98736648,MUR/HEX:2,1,220,299.22,7,2,MZA 4402 - LT 18,ZONA IV,200
3752,-70.24779763,-17.98739291,MUR/HEX:2,1,220,292.38,7,2,MZA 4402 - LT 19,ZONA IV,201
3753,-70.2477477,-17.98741806,MUR/HEX:2,1,220,285.62,7,2,MZA 4402 - LT 20,ZONA IV,202
3754,-70.247702,-17.98744987,MUR/HEX:2,1,220,280.24,6,1,MZA 4402 - LT 21,ZONA IV,203
3755,-70.24807674,-17.98731829,MUR/HEX:2,1,220,225.38,5,1,MZA 4402 - LT 22,ZONA IV,204
3756,-70.24970911,-17.98765241,MUR/HEX:1,1,220,114.64,3,0,MZA 4403 - LT 1,ZONA IV,205
3757,-70.24966073,-17.98759824,MUR/HEX:1,1,220,120.48,3,0,MZA 4403 - LT 2,ZONA IV,206
3758,-70.24961059,-17.98754407,MCF/LWAL+DNO/HEX:1/RES,1,220,121.39,3,0,MZA 4403 - LT 3,ZONA IV,207
3759,-70.24956078,-17.98749026,MUR/HEX:1,1,220,123.29,3,0,MZA 4403 - LT 4,ZONA IV,208
3760,-70.24950982,-17.98743717,MUR/HEX:1,1,220,123.29,3,0,MZA 4403 - LT 5,ZONA IV,209
3761,-70.24945936,-17.9873837,MUR/HEX:1,1,220,124.54,3,0,MZA 4403 - LT 6,ZONA IV,210
3762,-70.24940982,-17.98732959,MUR/HEX:1,1,220,126.33,3,0,MZA 4403 - LT 7,ZONA IV,211
3763,-70.24935905,-17.98727667,MUR/HEX:1,1,220,126.74,3,0,MZA 4403 - LT 8,ZONA IV,212
3764,-70.24930828,-17.98722365,MUR/HEX:1,1,220,126.73,3,0,MZA 4403 - LT 9,ZONA IV,213
3765,-70.24925665,-17.98717075,MUR/HEX:2,1,220,253.52,6,1,MZA 4403 - LT 10,ZONA IV,214
3766,-70.2492048,-17.98711703,MUR/HEX:2,1,220,256.62,6,1,MZA 4403 - LT 11,ZONA IV,215
3767,-70.24915399,-17.98706287,MUR/HEX:1,1,220,126.5,3,0,MZA 4403 - LT 12,ZONA IV,216
3768,-70.24910373,-17.98700919,MUR/HEX:2,1,220,255.1,6,1,MZA 4403 - LT 13,ZONA IV,217
3769,-70.24905292,-17.98695568,MUR/HEX:1,1,220,128.46,3,0,MZA 4403 - LT 14,ZONA IV,218
3770,-70.24900241,-17.9869027,MUR/HEX:2,1,220,253.6,1,MZA 4403 - LT 15,ZONA IV,219
3771,-70.24960839,-17.98774116,MUR/HEX:1,1,220,120.18,3,0,MZA 4403 - LT 16,ZONA IV,220
3772,-70.24955559,-17.98768753,MUR/HEX:2,1,220,238.98,6,1,MZA 4403 - LT 17,ZONA IV,221
3773,-70.24950529,-17.98763541,MUR/HEX:1,1,220,113.19,3,0,MZA 4403 - LT 18,ZONA IV,222
3774,-70.2494554,-17.98758361,MUR/HEX:1,1,220,118.53,3,0,MZA 4403 - LT 19,ZONA IV,223
3775,-70.24940435,-17.98753087,MUR/HEX:1,1,220,119.3,3,0,MZA 4403 - LT 20,ZONA IV,224
3776,-70.24935484,-17.9874769,MUR/HEX:1,1,220,117.93,3,0,MZA 4403 - LT 21,ZONA IV,225
3777,-70.24930508,-17.98742237,MUR/HEX:2,1,220,224.54,5,1,MZA 4403 - LT 22,ZONA IV,226
3778,-70.24925366,-17.98737016,MUR/HEX:2,1,220,232.44,5,1,MZA 4403 - LT 23,ZONA IV,227
3779,-70.24920183,-17.9873179,MUR/HEX:2,1,220,235.58,5,1,MZA 4403 - LT 24,ZONA IV,228
3780,-70.24914978,-17.98726519,MUR/HEX:1,1,220,121.95,3,0,MZA 4403 - LT 25,ZONA IV,229
3781,-70.24909682,-17.98721122,MCF/LWAL+DNO/HEX:1/RES,1,220,126.9,3,0,MZA 4403 - LT 26,ZONA IV,230
3782,-70.24904481,-17.98715676,MUR/HEX:2,1,220,245.9,6,1,MZA 4403 - LT 27,ZONA IV,231
3783,-70.24899431,-17.9871029,MUR/HEX:1,1,220,120.27,3,0,MZA 4403 - LT 28,ZONA IV,232
3784,-70.24894373,-17.98704936,MCF/LWAL+DNO/HEX:1/RES,1,220,120.24,3,0,MZA 4403 - LT 29,ZONA IV,233
3785,-70.24889376,-17.98699624,MUR/HEX:1,1,220,116.84,3,0,MZA 4403 - LT 30,ZONA IV,234
3786,-70.24846534,-17.98754387,MUR/HEX:1,1,220,141.65,3,0,MZA 4404 - LT 1,ZONA IV,235
3787,-70.24850135,-17.98760927,MUR/HEX:1,1,220,142.89,3,0,MZA 4404 - LT 2,ZONA IV,236
3788,-70.24853731,-17.98767407,MUR/HEX:1,1,220,141.74,3,0,MZA 4404 - LT 3,ZONA IV,237
3789,-70.24857105,-17.98773763,MUR/HEX:1,1,220,150.91,3,0,MZA 4404 - LT 4,ZONA IV,238
3790,-70.24860586,-17.98780032,MUR/HEX:1,1,220,138.53,3,0,MZA 4404 - LT 5,ZONA IV,239
3791,-70.24864193,-17.98786403,MUR/HEX:2,1,220,291.86,7,2,MZA 4404 - LT 6,ZONA IV,240
3792,-70.24870588,-17.98775107,MUR/HEX:1,1,220,138.49,3,0,MZA 4404 - LT 7,ZONA IV,241
3793,-70.24875462,-17.98772491,CR/LFINF+DUC/HEX:2/RES,1,220,293.9,7,2,MZA 4404 - LT 8,ZONA IV,242
3794,-70.24880334,-17.98769818,MUR/HEX:1,1,220,140.77,3,0,MZA 4404 - LT 9,ZONA IV,243
3795,-70.24885489,-17.98767002,MUR/HEX:1,1,220,146.2,3,0,MZA 4404 - LT 10,ZONA IV,244
3796,-70.24890464,-17.98764339,MUR/HEX:1,1,220,141.83,3,0,MZA 4404 - LT 11,ZONA IV,245
3797,-70.24896241,-17.98762085,MUR/HEX:1,1,220,144.38,3,0,MZA 4404 - LT 12,ZONA IV,246
3798,-70.24880464,-17.98745512,MUR/HEX:1,1,220,139.41,3,0,MZA 4404 - LT 13,ZONA IV,247
3799,-70.2487511,-17.98748157,MUR/HEX:1,1,220,146.18,3,0,MZA 4404 - LT 14,ZONA IV,248

3800,-70.24870072,-17.98750755,MUR/HEX:1,1,220,139.34,3,0,MZA 4404 - LT 15,ZONA IV,249
3801,-70.24865101,-17.98753266,CR/LFINF+DUC/HEX:1/RES,1,220,146.22,3,0,MZA 4404 - LT 16,ZONA IV,250
3802,-70.24860133,-17.98755801,MUR/HEX:2,1,220,273.38,6,1,MZA 4404 - LT 17,ZONA IV,251
3803,-70.24871341,-17.98799114,MUR/HEX:1,1,220,136.86,3,0,MZA 4405 - LT 1,ZONA IV,252
3804,-70.24874831,-17.98805586,MUR/HEX:1,1,220,143.52,3,0,MZA 4405 - LT 2,ZONA IV,253
3805,-70.24878255,-17.98811791,MUR/HEX:1,1,220,144.4,3,0,MZA 4405 - LT 3,ZONA IV,254
3806,-70.24881969,-17.98818152,MUR/HEX:1,1,220,140.96,3,0,MZA 4405 - LT 4,ZONA IV,255
3807,-70.2488557,-17.988248,MUR/HEX:1,1,220,132.21,3,0,MZA 4405 - LT 5,ZONA IV,256
3808,-70.24889046,-17.98831132,MCF/LWAL+DUC/HEX:2/RES,1,220,300.38,7,2,MZA 4405 - LT 6,ZONA IV,257
3809,-70.24895477,-17.98819507,MUR/HEX:1,1,220,139.13,3,0,MZA 4405 - LT 7,ZONA IV,258
3810,-70.24900464,-17.98817002,MUR/HEX:1,1,220,143.4,3,0,MZA 4405 - LT 8,ZONA IV,259
3811,-70.24905474,-17.98814526,MUR/HEX:1,1,220,138.95,3,0,MZA 4405 - LT 9,ZONA IV,260
3812,-70.24910486,-17.98812022,MCF/LWAL+DNO/HEX:1/RES,1,220,146.15,3,0,MZA 4405 - LT 10,ZONA IV,261
3813,-70.24915499,-17.98809492,MUR/HEX:1,1,220,142.6,3,0,MZA 4405 - LT 11,ZONA IV,262
3814,-70.24920518,-17.98806999,MUR/HEX:1,1,220,136.99,3,0,MZA 4405 - LT 12,ZONA IV,263
3815,-70.24925584,-17.98804499,MCF/LWAL+DUC/HEX:1/RES,1,220,146.25,3,0,MZA 4405 - LT 13,ZONA IV,264
3816,-70.24930753,-17.98801826,MUR/HEX:1,1,220,138.32,3,0,MZA 4405 - LT 14,ZONA IV,265
3817,-70.2491417,-17.98785541,MUR/HEX:1,1,220,144.71,3,0,MZA 4405 - LT 15,ZONA IV,266
3818,-70.24909621,-17.98787858,MUR/HEX:1,1,220,141.88,3,0,MZA 4405 - LT 16,ZONA IV,267
3819,-70.2490458,-17.98790399,MUR/HEX:1,1,220,143.74,3,0,MZA 4405 - LT 17,ZONA IV,268
3820,-70.24899656,-17.98792885,MUR/HEX:1,1,220,147.48,3,0,MZA 4405 - LT 18,ZONA IV,269
3821,-70.24894695,-17.98795412,MUR/HEX:1,1,220,137.71,3,0,MZA 4405 - LT 19,ZONA IV,270
3822,-70.24889757,-17.98797913,MUR/HEX:2,1,220,284.36,7,2,MZA 4405 - LT 20,ZONA IV,271
3823,-70.24884732,-17.98800375,MUR/HEX:1,1,220,140.01,3,0,MZA 4405 - LT 21,ZONA IV,272
3824,-70.2491997,-17.98785418,MUR/HEX:2,1,220,166.9,4,1,MZA 4405 - LT 22,ZONA IV,273
3825,-70.2483036,-17.9879606,MUR/HEX:1,1,220,139.75,3,0,MZA 4406 - LT 1,ZONA IV,274
3826,-70.24835346,-17.98793353,MUR/HEX:2,1,220,284.56,7,2,MZA 4406 - LT 2,ZONA IV,275
3827,-70.24840186,-17.98790497,MUR/HEX:2,1,220,283.82,7,2,MZA 4406 - LT 3,ZONA IV,276
3828,-70.24829597,-17.98771355,MUR/HEX:1,1,220,149.58,3,0,MZA 4406 - LT 4,ZONA IV,277
3829,-70.24824352,-17.98774186,MUR/HEX:1,1,220,149.45,3,0,MZA 4406 - LT 5,ZONA IV,278
3830,-70.24819821,-17.98777102,MUR/HEX:1,1,220,148.46,3,0,MZA 4406 - LT 6,ZONA IV,279
3831,-70.24805631,-17.98832268,MUR/HEX:1,1,220,140.39,3,0,MZA 4407 - LT 1,ZONA IV,280
3832,-70.24809083,-17.98838515,MUR/HEX:1,1,220,144.89,3,0,MZA 4407 - LT 2,ZONA IV,281
3833,-70.24812817,-17.98844872,MUR/HEX:1,1,220,144.71,3,0,MZA 4407 - LT 3,ZONA IV,282
3834,-70.24816351,-17.98851332,MUR/HEX:1,1,220,146.63,3,0,MZA 4407 - LT 4,ZONA IV,283
3835,-70.24819953,-17.98857665,MUR/HEX:2,1,220,271.24,6,1,MZA 4407 - LT 5,ZONA IV,284
3836,-70.24823645,-17.98864042,MUR/HEX:1,1,220,146.73,3,0,MZA 4407 - LT 6,ZONA IV,285
3837,-70.24830052,-17.98852556,MUR/HEX:2,1,220,284.62,7,2,MZA 4407 - LT 7,ZONA IV,286
3838,-70.24835113,-17.98850105,MUR/HEX:1,1,220,141.22,3,0,MZA 4407 - LT 8,ZONA IV,287
3839,-70.2484013,-17.98847605,MUR/HEX:2,1,220,291.12,7,2,MZA 4407 - LT 9,ZONA IV,288
3840,-70.24845119,-17.98845038,MUR/HEX:1,1,220,147.22,3,0,MZA 4407 - LT 10,ZONA IV,289
3841,-70.24850032,-17.98842538,MUR/HEX:1,1,220,143.54,3,0,MZA 4407 - LT 11,ZONA IV,290
3842,-70.24855101,-17.98839984,MUR/HEX:2,1,220,280.6,1,MZA 4407 - LT 12,ZONA IV,291
3843,-70.24860151,-17.9883741,MUR/HEX:1,1,220,142.05,3,0,MZA 4407 - LT 13,ZONA IV,292
3844,-70.24865388,-17.98835086,MUR/HEX:2,1,220,278.56,6,1,MZA 4407 - LT 14,ZONA IV,293
3845,-70.24854126,-17.98816123,MUR/HEX:2,1,220,280.28,6,1,MZA 4407 - LT 15,ZONA IV,294
3846,-70.24848987,-17.98818553,MUR/HEX:1,1,220,143.58,3,0,MZA 4407 - LT 16,ZONA IV,295
3847,-70.24843992,-17.98821087,MUR/HEX:2,1,220,280.6,1,MZA 4407 - LT 17,ZONA IV,296
3848,-70.24839008,-17.98823624,MUR/HEX:1,1,220,143.49,3,0,MZA 4407 - LT 18,ZONA IV,297
3849,-70.24834086,-17.98826083,CR/LFINF+DUC/HEX:2/RES,1,220,297.38,7,2,MZA 4407 - LT 19,ZONA IV,298
3850,-70.24829109,-17.98828598,MUR/HEX:1,1,220,145.4,3,0,MZA 4407 - LT 20,ZONA IV,299
3851,-70.24824137,-17.98831132,MCF/LWAL+DNO/HEX:1/RES,1,220,141.64,3,0,MZA 4407 - LT 21,ZONA IV,300
3852,-70.24820441,-17.98832826,MCF/LWAL+DNO/HEX:1/RES,1,220,70.52,2,0,MZA 4407 - LT 22,ZONA IV,301
3853,-70.24817912,-17.98833893,MUR/HEX:1,1,220,70.51,2,0,MZA 4407 - LT 22B,ZONA IV,302
3854,-70.2479916,-17.98877329,MUR/HEX:1,1,220,176.01,4,1,MZA 4410 - LT 1,ZONA IV,303
3855,-70.24795452,-17.98870805,MUR/HEX:1,1,220,170.57,4,1,MZA 4410 - LT 2,ZONA IV,304
3856,-70.24791604,-17.98864471,CR/LFINF+DUC/HEX:2/RES,1,220,332.66,8,2,MZA 4410 - LT 3,ZONA IV,305
3857,-70.24787891,-17.98858053,MUR/HEX:1,1,220,145.64,3,0,MZA 4410 - LT 4,ZONA IV,306
3858,-70.24784369,-17.98851458,MUR/HEX:1,1,220,160.71,4,1,MZA 4410 - LT 5,ZONA IV,307
3859,-70.24780493,-17.98844989,MUR/HEX:1,1,220,147.01,3,0,MZA 4410 - LT 6,ZONA IV,308
3860,-70.2478739,-17.98886506,MUR/HEX:2,1,220,252.9,6,1,MZA 4410 - LT 1,ZONA IV,309
3861,-70.24783103,-17.98881068,MUR/HEX:1,1,220,137.72,3,0,MZA 4410 - LT 2,ZONA IV,310
3862,-70.2477848,-17.98875852,MUR/HEX:2,1,220,258.5,6,1,MZA 4410 - LT 3,ZONA IV,311
3863,-70.24774246,-17.98870391,MUR/HEX:2,1,220,264.66,6,1,MZA 4410 - LT 4,ZONA IV,312
3864,-70.24769756,-17.98865265,MUR/HEX:1,1,220,124.2,3,0,MZA 4410 - LT 5,ZONA IV,313
3865,-70.24763499,-17.98862984,MUR/HEX:1,1,220,151.02,3,0,MZA 4410 - LT 6,ZONA IV,314
3866,-70.24758171,-17.98859089,MUR/HEX:1,1,220,153.88,4,1,MZA 4410 - LT 7,ZONA IV,315
3867,-70.24768583,-17.98849894,MUR/HEX:1,1,220,150.47,3,0,MZA 4410 - LT 8,ZONA IV,316
3868,-70.24706461,-17.98901558,MUR/HEX:1,1,220,187.99,4,1,MZA 4411 - LT 1,ZONA IV,317
3869,-70.24700252,-17.98897302,MUR/HEX:2,1,220,365.04,8,2,MZA 4411 - LT 2,ZONA IV,318
3870,-70.2469414,-17.9889311,MUR/HEX:1,1,220,181.64,4,1,MZA 4411 - LT 3,ZONA IV,319

3871,-70.24687973,-17.98888974,MUR/HEX:1,1,220,182.48,4,1,MZA 4411 - LT 4,ZONA IV,320
3872,-70.24679538,-17.98888547,MUR/HEX:2,1,220,179.28,4,1,MZA 4411 - LT 5,ZONA IV,321
3873,-70.24684122,-17.98882207,MUR/HEX:1,1,220,89.63,2,0,MZA 4411 - LT 5A,ZONA IV,322
3874,-70.24694764,-17.988765,MUR/HEX:1,1,220,158.91,4,1,MZA 4411 - LT 6,ZONA IV,323
3875,-70.2469904,-17.98870564,MUR/HEX:2,1,220,315.98,7,2,MZA 4411 - LT 7,ZONA IV,324
3876,-70.24703296,-17.98864652,MUR/HEX:3,1,220,470.82,11,3,MZA 4411 - LT 8,ZONA IV,325
3877,-70.24707556,-17.98858702,MUR/HEX:2,1,220,317.72,7,2,MZA 4411 - LT 9,ZONA IV,326
3878,-70.24711859,-17.98852732,MUR/HEX:1,1,220,158.06,4,1,MZA 4411 - LT 10,ZONA IV,327
3879,-70.24716123,-17.98846744,MUR/HEX:1,1,220,158.01,4,1,MZA 4411 - LT 11,ZONA IV,328
3880,-70.24720466,-17.98840711,MUR/HEX:1,1,220,160.89,4,1,MZA 4411 - LT 12,ZONA IV,329
3881,-70.24724829,-17.9883465,MUR/HEX:1,1,220,158.86,4,1,MZA 4411 - LT 13,ZONA IV,330
3882,-70.24729318,-17.98828285,MUR/HEX:1,1,220,173.96,4,1,MZA 4411 - LT 14,ZONA IV,331
3883,-70.24744171,-17.98838962,MUR/HEX:2,1,220,330.38,8,2,MZA 4411 - LT 15,ZONA IV,332
3884,-70.24739881,-17.98845117,MUR/HEX:3,1,220,474.72,11,3,MZA 4411 - LT 16,ZONA IV,333
3885,-70.24735605,-17.98851111,MUR/HEX:1,1,220,159.72,4,1,MZA 4411 - LT 17,ZONA IV,334
3886,-70.24731361,-17.98857058,MUR/HEX:2,1,220,312.46,7,2,MZA 4411 - LT 18,ZONA IV,335
3887,-70.24727157,-17.98863018,MUR/HEX:2,1,220,319.36,7,2,MZA 4411 - LT 19,ZONA IV,336
3888,-70.2472288,-17.98869005,MUR/HEX:1,1,220,159.42,4,1,MZA 4411 - LT 20,ZONA IV,337
3889,-70.2471864,-17.98874982,MUR/HEX:2,1,220,317.8,7,2,MZA 4411 - LT 21,ZONA IV,338
3890,-70.2471439,-17.98880938,MUR/HEX:1,1,220,159.38,4,1,MZA 4411 - LT 22,ZONA IV,339
3891,-70.2471006,-17.98886896,MUR/HEX:1,1,220,159.49,4,1,MZA 4411 - LT 23,ZONA IV,340
3892,-70.24749965,-17.98833916,MUR/HEX:1,1,220,127.05,3,0,MZA 4411 - LT 24,ZONA IV,341
3893,-70.247545,-17.98827654,MUR/HEX:1,1,220,140.61,3,0,MZA 4411 - LT 25,ZONA IV,342
3894,-70.24743648,-17.98823839,MUR/HEX:1,1,220,138.75,3,0,MZA 4411 - LT 26,ZONA IV,343
3895,-70.24737172,-17.98814074,MUR/HEX:2,1,220,310.36,7,2,MZA 4411 - LT 27,ZONA IV,344
3896,-70.24732413,-17.98820899,MUR/HEX:2,1,220,249.12,6,1,MZA 4411 - LT 28,ZONA IV,345
3897,-70.24762781,-17.98900611,MUR/HEX:1,1,220,96.84,2,0,MZA 4412 - LT 1,ZONA IV,346
3898,-70.24757516,-17.98896064,MUR/HEX:1,1,220,141.12,3,0,MZA 4412 - LT 2,ZONA IV,347
3899,-70.24752292,-17.98891507,MUR/HEX:1,1,220,140.59,3,0,MZA 4412 - LT 3,ZONA IV,348
3900,-70.24747057,-17.98886977,MUR/HEX:1,1,220,174.84,4,1,MZA 4412 - LT 4,ZONA IV,349
3901,-70.24742294,-17.98882149,MUR/HEX:2,1,220,358.88,8,2,MZA 4412 - LT 5,ZONA IV,350
3902,-70.24738708,-17.98895086,MUR/HEX:2,1,220,303.4,7,2,MZA 4412 - LT 6,ZONA IV,351
3903,-70.24733712,-17.9890078,MUR/HEX:2,1,220,290.86,7,2,MZA 4412 - LT 7,ZONA IV,352
3904,-70.24728633,-17.98906795,MUR/HEX:1,1,220,115.09,3,0,MZA 4412 - LT 8,ZONA IV,353
3905,-70.24719338,-17.98913905,MUR/HEX:1,1,220,124.72,3,0,MZA 4412 - LT 9,ZONA IV,354
3906,-70.2472461,-17.9891887,MUR/HEX:1,1,220,125.89,3,0,MZA 4412 - LT 10,ZONA IV,355
3907,-70.24730082,-17.98923568,MUR/HEX:1,1,220,128.71,3,0,MZA 4412 - LT 11,ZONA IV,356
3908,-70.24735565,-17.9892824,MUR/HEX:1,1,220,130.24,3,0,MZA 4412 - LT 12,ZONA IV,357
3909,-70.24740039,-17.98916936,MUR/HEX:2,1,220,254.5,6,1,MZA 4412 - LT 13,ZONA IV,358
3910,-70.24745516,-17.98911306,MUR/HEX:1,1,220,134.99,3,0,MZA 4412 - LT 14,ZONA IV,359
3911,-70.24751081,-17.98905793,MUR/HEX:2,1,220,282.2,7,2,MZA 4412 - LT 15,ZONA IV,360
3912,-70.25008547,-17.98777729,MUR/HEX:1,1,220,116.06,3,0,MZA 4413 - LT 1,ZONA IV,361
3913,-70.25014748,-17.98773716,MUR/HEX:1,1,220,120.71,3,0,MZA 4413 - LT 2,ZONA IV,362
3914,-70.25021031,-17.98769536,MUR/HEX:1,1,220,126.26,3,0,MZA 4413 - LT 3,ZONA IV,363
3915,-70.25027274,-17.9876528,MUR/HEX:1,1,220,125.26,3,0,MZA 4413 - LT 4,ZONA IV,364
3916,-70.2503396,-17.98760832,MUR/HEX:1,1,220,147.16,3,0,MZA 4413 - LT 5,ZONA IV,365
3917,-70.25019669,-17.98753664,MUR/HEX:1,1,220,154.82,4,1,MZA 4413 - LT 6,ZONA IV,366
3918,-70.25012557,-17.98758386,MUR/HEX:2,1,220,244.02,6,1,MZA 4413 - LT 7,ZONA IV,367
3919,-70.25006361,-17.98762638,MUR/HEX:1,1,220,122.58,3,0,MZA 4413 - LT 8,ZONA IV,368
3920,-70.25000294,-17.98766883,MUR/HEX:2,1,220,236.32,5,1,MZA 4413 - LT 9,ZONA IV,369
3921,-70.24989871,-17.98748971,MUR/HEX:1,1,220,119.15,3,0,MZA 4413 - LT 10,ZONA IV,370
3922,-70.24984845,-17.98743841,MUR/HEX:1,1,220,127.5,3,0,MZA 4413 - LT 11,ZONA IV,371
3923,-70.24979815,-17.98738407,MUR/HEX:1,1,220,126.48,3,0,MZA 4413 - LT 12,ZONA IV,372
3924,-70.24977004,-17.98731076,MUR/HEX:1,1,220,179.6,4,1,MZA 4413 - LT 13,ZONA IV,373
3925,-70.24973098,-17.98723415,MUR/HEX:1,1,220,81.38,2,0,MZA 4413 - LT 14,ZONA IV,374
3926,-70.24968149,-17.98727789,MUR/HEX:1,1,220,81.38,2,0,MZA 4413 - LT 14B,ZONA IV,375
3927,-70.24964142,-17.98721577,MUR/HEX:1,1,220,40.69,1,0,MZA 4413 - LT 15,ZONA IV,376
3928,-70.24954153,-17.98714033,MUR/HEX:1,1,220,40.69,1,0,MZA 4413 - LT 15B,ZONA IV,377
3929,-70.24993386,-17.98736847,MUR/HEX:2,1,220,384.72,9,2,MZA 4413 - LT 16,ZONA IV,378
3930,-70.25028241,-17.98806326,MUR/HEX:2,1,220,240.78,6,1,MZA 4414 - LT 1,ZONA IV,379
3931,-70.25034532,-17.98802344,MUR/HEX:1,1,220,120.21,3,0,MZA 4414 - LT 2,ZONA IV,380
3932,-70.25040772,-17.98798437,MUR/HEX:2,1,220,242.98,6,1,MZA 4414 - LT 3,ZONA IV,381
3933,-70.25047155,-17.98794328,MUR/HEX:1,1,220,130.61,3,0,MZA 4414 - LT 4,ZONA IV,382
3934,-70.2505387,-17.98789981,MUR/HEX:1,1,220,135.68,3,0,MZA 4414 - LT 5,ZONA IV,383
3935,-70.25060626,-17.98785516,MUR/HEX:1,1,220,133.62,3,0,MZA 4414 - LT 6,ZONA IV,384
3936,-70.25067195,-17.98780911,MUR/HEX:1,1,220,132.42,3,0,MZA 4414 - LT 7,ZONA IV,385
3937,-70.25052081,-17.9877446,MUR/HEX:1,1,220,121.73,3,0,MZA 4414 - LT 8,ZONA IV,386
3938,-70.2504573,-17.98778658,MUR/HEX:1,1,220,123.34,3,0,MZA 4414 - LT 9,ZONA IV,387
3939,-70.25039272,-17.98782803,MUR/HEX:1,1,220,122.36,3,0,MZA 4414 - LT 10,ZONA IV,388
3940,-70.25033108,-17.98786886,MUR/HEX:1,1,220,114.32,3,0,MZA 4414 - LT 11,ZONA IV,389
3941,-70.25026949,-17.98790809,MUR/HEX:1,1,220,118.88,3,0,MZA 4414 - LT 12,ZONA IV,390

3942,-70.25020734,-17.98794836,MUR/HEX:1,1,220,120.77,3,0,MZA 4414 - LT 13,ZONA IV,391
3943,-70.25010392,-17.98818251,MUR/HEX:1,1,220,118.38,3,0,MZA 4415 - LT 1,ZONA IV,392
3944,-70.2500649,-17.98812097,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,120.19,3,0,MZA 4415 - LT 2,ZONA IV,393
3945,-70.25002508,-17.98806011,MUR/HEX:1,1,220,118.89,3,0,MZA 4415 - LT 3,ZONA IV,394
3946,-70.24998518,-17.98799867,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,121.31,3,0,MZA 4415 - LT 4,ZONA IV,395
3947,-70.24994477,-17.98793661,MUR/HEX:1,1,220,121.03,3,0,MZA 4415 - LT 5,ZONA IV,396
3948,-70.2499041,-17.98787329,MUR/HEX:1,1,220,124.59,3,0,MZA 4415 - LT 6,ZONA IV,397
3949,-70.24990026,-17.98778609,MUR/HEX:1,1,220,38.09,1,0,MZA 4415 - LT 7,ZONA IV,398
3950,-70.24972859,-17.98789303,MUR/HEX:1,1,220,92.81,2,0,MZA 4415 - LT 8,ZONA IV,399
3951,-70.2497832,-17.98794763,MUR/HEX:2,1,220,259.28,6,1,MZA 4415 - LT 9,ZONA IV,400
3952,-70.24982468,-17.98801026,MUR/HEX:2,1,220,242.76,6,1,MZA 4415 - LT 10,ZONA IV,401
3953,-70.24986476,-17.98807074,MUR/HEX:1,1,220,119.01,3,0,MZA 4415 - LT 11,ZONA IV,402
3954,-70.24990481,-17.98813165,MUR/HEX:1,1,220,120.58,3,0,MZA 4415 - LT 12,ZONA IV,403
3955,-70.24994494,-17.98819292,MUR/HEX:1,1,220,119.07,3,0,MZA 4415 - LT 13,ZONA IV,404
3956,-70.24998465,-17.98825407,MUR/HEX:1,1,220,118.78,3,0,MZA 4415 - LT 14,ZONA IV,405
3957,-70.24961523,-17.98857837,MUR/HEX:1,1,220,129.33,3,0,MZA 4416 - LT 1,ZONA IV,406
3958,-70.24968514,-17.9885487,MUR/HEX:2,1,220,257.7,6,1,MZA 4416 - LT 2,ZONA IV,407
3959,-70.24960294,-17.9884246,MCF/LWAL+DNO/HEX:2/RES,1,220,259.1,6,1,MZA 4416 - LT 3,ZONA IV,408
3960,-70.24953224,-17.98845491,MUR/HEX:2,1,220,272.66,6,1,MZA 4416 - LT 4,ZONA IV,409
3961,-70.24946253,-17.98848624,MUR/HEX:1,1,220,127.85,3,0,MZA 4416 - LT 5,ZONA IV,410
3962,-70.24939359,-17.98851618,MUR/HEX:1,1,220,130.55,3,0,MZA 4416 - LT 6,ZONA IV,411
3963,-70.24932442,-17.98854635,MUR/HEX:1,1,220,128.17,3,0,MZA 4416 - LT 7,ZONA IV,412
3964,-70.24925548,-17.98857671,MUR/HEX:1,1,220,129.45,3,0,MZA 4416 - LT 8,ZONA IV,413
3965,-70.24918646,-17.98860686,MUR/HEX:1,1,220,127.18,3,0,MZA 4416 - LT 9,ZONA IV,414
3966,-70.2491177,-17.9886369,MUR/HEX:1,1,220,127.7,3,0,MZA 4416 - LT 10,ZONA IV,415
3967,-70.24920086,-17.98875857,MUR/HEX:1,1,220,126.38,3,0,MZA 4416 - LT 11,ZONA IV,416
3968,-70.2492692,-17.98872899,MUR/HEX:1,1,220,126.36,3,0,MZA 4416 - LT 12,ZONA IV,417
3969,-70.24933827,-17.98869911,MUR/HEX:2,1,220,258.34,6,1,MZA 4416 - LT 13,ZONA IV,418
3970,-70.24940712,-17.98866908,MUR/HEX:2,1,220,252.24,6,1,MZA 4416 - LT 14,ZONA IV,419
3971,-70.24947617,-17.98863926,MUR/HEX:1,1,220,129.49,3,0,MZA 4416 - LT 15,ZONA IV,420
3972,-70.24954601,-17.98860919,MUR/HEX:1,1,220,128.97,3,0,MZA 4416 - LT 16,ZONA IV,421
3973,-70.24892824,-17.98869838,MUR/HEX:1,1,220,130.53,3,0,MZA 4417 - LT 1,ZONA IV,422
3974,-70.2488599,-17.98873059,MUR/HEX:1,1,220,124.98,3,0,MZA 4417 - LT 2,ZONA IV,423
3975,-70.2487932,-17.98876165,MUR/HEX:1,1,220,123.39,3,0,MZA 4417 - LT 3,ZONA IV,424
3976,-70.24872607,-17.98879308,MUR/HEX:1,1,220,126.6,3,0,MZA 4417 - LT 4,ZONA IV,425
3977,-70.2488071,-17.98891476,MUR/HEX:1,1,220,128.52,3,0,MZA 4417 - LT 5,ZONA IV,426
3978,-70.2488743,-17.98888301,MUR/HEX:1,1,220,124.12,3,0,MZA 4417 - LT 6,ZONA IV,427
3979,-70.24894125,-17.98885154,MUR/HEX:1,1,220,126.05,3,0,MZA 4417 - LT 7,ZONA IV,428
3980,-70.24900944,-17.98881911,MUR/HEX:1,1,220,128.22,3,0,MZA 4417 - LT 8,ZONA IV,429
3981,-70.24856232,-17.98887018,MUR/HEX:1,1,220,132.9,3,0,MZA 4418 - LT 1,ZONA IV,430
3982,-70.24848993,-17.98890477,MUR/HEX:1,1,220,139.28,3,0,MZA 4418 - LT 2,ZONA IV,431
3983,-70.24857275,-17.98902476,MUR/HEX:2,1,220,267.18,6,1,MZA 4418 - LT 3,ZONA IV,432
3984,-70.24864334,-17.98898996,MUR/HEX:1,1,220,129.25,3,0,MZA 4418 - LT 4,ZONA IV,433
3985,-70.24797281,-17.98934406,MUR/HEX:1,1,220,176.61,4,1,MZA 4419 - LT 1,ZONA IV,434
3986,-70.24791765,-17.98929385,MUR/HEX:1,1,220,175.06,4,1,MZA 4419 - LT 2,ZONA IV,435
3987,-70.24786309,-17.98924335,MUR/HEX:2,1,220,351.38,8,2,MZA 4419 - LT 3,ZONA IV,436
3988,-70.24780854,-17.98919286,MUR/HEX:1,1,220,175.21,4,1,MZA 4419 - LT 4,ZONA IV,437
3989,-70.24775343,-17.9891425,MUR/HEX:2,1,220,354.48,8,2,MZA 4419 - LT 5,ZONA IV,438
3990,-70.24769685,-17.98927636,MUR/HEX:2,1,220,314.46,7,2,MZA 4419 - LT 6,ZONA IV,439
3991,-70.24764489,-17.98932821,MUR/HEX:1,1,220,160.75,4,1,MZA 4419 - LT 7,ZONA IV,440
3992,-70.24751217,-17.98938209,MUR/HEX:2,1,220,323.64,7,2,MZA 4419 - LT 8,ZONA IV,441
3993,-70.2475666,-17.9894331,MUR/HEX:1,1,220,162.97,4,1,MZA 4419 - LT 9,ZONA IV,442
3994,-70.24762127,-17.98948348,MUR/HEX:3,1,220,480.9,11,3,MZA 4419 - LT 10,ZONA IV,443
3995,-70.24767564,-17.98953384,MUR/HEX:1,1,220,161.64,4,1,MZA 4419 - LT 11,ZONA IV,444
3996,-70.2477299,-17.98958463,MUR/HEX:1,1,220,160.98,4,1,MZA 4419 - LT 12,ZONA IV,445
3997,-70.24778084,-17.98945478,MUR/HEX:1,1,220,162.63,4,1,MZA 4419 - LT 13,ZONA IV,446
3998,-70.24783366,-17.98940309,MUR/HEX:2,1,220,322.64,7,2,MZA 4419 - LT 14,ZONA IV,447
3999,-70.25047123,-17.98835495,MUR/HEX:1,1,220,125.11,3,0,MZA 4420 - LT 1,ZONA IV,448
4000,-70.25053637,-17.98831457,MUR/HEX:1,1,220,121.65,3,0,MZA 4420 - LT 2,ZONA IV,449
4001,-70.25059909,-17.98827557,MUR/HEX:1,1,220,117.73,3,0,MZA 4420 - LT 3,ZONA IV,450
4002,-70.25066137,-17.98823696,MUR/HEX:2,1,220,243.32,6,1,MZA 4420 - LT 4,ZONA IV,451
4003,-70.2507243,-17.98819806,MUR/HEX:1,1,220,122.07,3,0,MZA 4420 - LT 5,ZONA IV,452
4004,-70.25078573,-17.98815963,MUR/HEX:2,1,220,237.78,5,1,MZA 4420 - LT 6,ZONA IV,453
4005,-70.25084729,-17.98812097,MUR/HEX:1,1,220,123.21,3,0,MZA 4420 - LT 7,ZONA IV,454
4006,-70.2509084,-17.98808144,MUR/HEX:1,1,220,117.82,3,0,MZA 4420 - LT 8,ZONA IV,455
4007,-70.25097147,-17.98803838,MUR/HEX:1,1,220,132.05,3,0,MZA 4420 - LT 9,ZONA IV,456
4008,-70.2510368,-17.98800011,MUR/HEX:1,1,220,114.16,3,0,MZA 4420 - LT 10,ZONA IV,457
4009,-70.25089891,-17.98792558,MUR/HEX:1,1,220,125.64,3,0,MZA 4420 - LT 11,ZONA IV,458
4010,-70.25083259,-17.98796762,MUR/HEX:1,1,220,121.13,3,0,MZA 4420 - LT 12,ZONA IV,459
4011,-70.25076942,-17.98800833,MUR/HEX:1,1,220,111.6,3,0,MZA 4420 - LT 13,ZONA IV,460
4012,-70.25070749,-17.98804755,MUR/HEX:1,1,220,113.82,3,0,MZA 4420 - LT 14,ZONA IV,461

4013,-70.25064452,-17.98808662,MUR/HEX:1,1,220,114.69,3,0,MZA 4420 - LT 15,ZONA IV,462
4014,-70.25058152,-17.98812517,MUR/HEX:1,1,220,115.85,3,0,MZA 4420 - LT 16,ZONA IV,463
4015,-70.25051909,-17.98816384,MUR/HEX:1,1,220,116.54,3,0,MZA 4420 - LT 17,ZONA IV,464
4016,-70.25045659,-17.98820294,MUR/HEX:1,1,220,117.93,3,0,MZA 4420 - LT 18,ZONA IV,465
4017,-70.25039393,-17.9882427,MUR/HEX:2,1,220,238.9,6,1,MZA 4420 - LT 19,ZONA IV,466
4018,-70.25065956,-17.98864627,MUR/HEX:2,1,220,238.7,6,1,MZA 4421 - LT 1,ZONA IV,467
4019,-70.25072298,-17.98860893,MUR/HEX:2,1,220,466.08,11,3,MZA 4421 - LT 2,ZONA IV,468
4020,-70.25078579,-17.98857094,MUR/HEX:1,1,220,118.78,3,0,MZA 4421 - LT 3,ZONA IV,469
4021,-70.250849,-17.98853284,MUR/HEX:1,1,220,117.05,3,0,MZA 4421 - LT 4,ZONA IV,470
4022,-70.25091404,-17.98849437,MUR/HEX:1,1,220,124.95,3,0,MZA 4421 - LT 5,ZONA IV,471
4023,-70.2509938,-17.98844293,MUR/HEX:1,1,220,26.31,1,0,MZA 4421 - LT 6,ZONA IV,472
4024,-70.25129644,-17.98825695,MUR/HEX:2,1,220,237.22,5,1,MZA 4421 - LT 7,ZONA IV,473
4025,-70.25135922,-17.98822004,MUR/HEX:1,1,220,116.32,3,0,MZA 4421 - LT 8,ZONA IV,474
4026,-70.25121384,-17.98814531,MUR/HEX:1,1,220,122.1,3,0,MZA 4421 - LT 9,ZONA IV,475
4027,-70.25090263,-17.9883408,MUR/HEX:1,1,220,117.21,3,0,MZA 4421 - LT 10,ZONA IV,476
4028,-70.25083963,-17.98837835,MUR/HEX:1,1,220,120.12,3,0,MZA 4421 - LT 11,ZONA IV,477
4029,-70.25077532,-17.98841755,MUR/HEX:1,1,220,122.28,3,0,MZA 4421 - LT 12,ZONA IV,478
4030,-70.25071076,-17.98845624,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,119.37,3,0,MZA 4421 - LT 13,ZONA IV,479
4031,-70.25064749,-17.98849439,MUR/HEX:1,1,220,118.65,3,0,MZA 4421 - LT 14,ZONA IV,480
4032,-70.25058418,-17.98853337,CR/LFINF+DUC/HEX:3/RES,1,220,358.23,8,2,MZA 4421 - LT 15,ZONA IV,481
4033,-70.25058022,-17.98891788,MUR/HEX:1,1,220,118.95,3,0,MZA 4422 - LT 1,ZONA IV,482
4034,-70.25054064,-17.98885585,MUR/HEX:1,1,220,118,3,0,MZA 4422 - LT 2,ZONA IV,483
4035,-70.25050055,-17.98879418,MUR/HEX:2,1,220,238.38,6,1,MZA 4422 - LT 3,ZONA IV,484
4036,-70.25046078,-17.98873354,MUR/HEX:1,1,220,114.42,3,0,MZA 4422 - LT 4,ZONA IV,485
4037,-70.25042122,-17.98867352,MUR/HEX:1,1,220,116.08,3,0,MZA 4422 - LT 5,ZONA IV,486
4038,-70.2503813,-17.98861218,MUR/HEX:2,1,220,235.68,5,1,MZA 4422 - LT 6,ZONA IV,487
4039,-70.25034192,-17.98855052,MUR/HEX:2,1,220,234.86,5,1,MZA 4422 - LT 7,ZONA IV,488
4040,-70.25030257,-17.98848914,MUR/HEX:2,1,220,238.78,6,1,MZA 4422 - LT 8,ZONA IV,489
4041,-70.25026214,-17.9884267,MUR/HEX:2,1,220,246.76,6,1,MZA 4422 - LT 9,ZONA IV,490
4042,-70.2502225,-17.98836551,MUR/HEX:1,1,220,115.26,3,0,MZA 4422 - LT 10,ZONA IV,491
4043,-70.25018276,-17.98830554,MUR/HEX:2,1,220,241.06,6,1,MZA 4422 - LT 11,ZONA IV,492
4044,-70.25006699,-17.98837525,MUR/HEX:3,1,220,341.58,8,2,MZA 4422 - LT 12,ZONA IV,493
4045,-70.25010354,-17.98843777,MUR/HEX:1,1,220,118.23,3,0,MZA 4422 - LT 13,ZONA IV,494
4046,-70.25015009,-17.98850277,MUR/HEX:2,1,220,235.62,5,1,MZA 4422 - LT 14,ZONA IV,495
4047,-70.25018834,-17.98855658,MUR/HEX:1,1,220,118.17,3,0,MZA 4422 - LT 15,ZONA IV,496
4048,-70.25022275,-17.9886211,MUR/HEX:2,1,220,237.56,5,1,MZA 4422 - LT 16,ZONA IV,497
4049,-70.25026308,-17.98868248,MUR/HEX:1,1,220,119.44,3,0,MZA 4422 - LT 17,ZONA IV,498
4050,-70.25030307,-17.98874376,MUR/HEX:2,1,220,234.9,5,1,MZA 4422 - LT 18,ZONA IV,499
4051,-70.25034212,-17.98880447,MUR/HEX:1,1,220,116.83,3,0,MZA 4422 - LT 19,ZONA IV,500
4052,-70.25038198,-17.98886583,MUR/HEX:2,1,220,242.06,6,1,MZA 4422 - LT 20,ZONA IV,501
4053,-70.25042202,-17.98892743,MUR/HEX:1,1,220,119.15,3,0,MZA 4422 - LT 21,ZONA IV,502
4054,-70.25046466,-17.98899288,MUR/HEX:1,1,220,123.31,3,0,MZA 4422 - LT 22,ZONA IV,503
4055,-70.24979985,-17.98872431,MUR/HEX:1,1,220,131.9,3,0,MZA 4423 - LT 1,ZONA IV,504
4056,-70.24972868,-17.98875283,MUR/HEX:2,1,220,242.62,6,1,MZA 4423 - LT 2,ZONA IV,505
4057,-70.24966169,-17.98878359,MUR/HEX:1,1,220,125.06,3,0,MZA 4423 - LT 3,ZONA IV,506
4058,-70.24959161,-17.98881093,MUR/HEX:1,1,220,119.5,3,0,MZA 4423 - LT 4,ZONA IV,507
4059,-70.24951292,-17.98884054,MUR/HEX:1,1,220,124.09,3,0,MZA 4423 - LT 5,ZONA IV,508
4060,-70.24945462,-17.98887538,MUR/HEX:1,1,220,123.23,3,0,MZA 4423 - LT 6,ZONA IV,509
4061,-70.24933324,-17.98888803,MUR/HEX:2,1,220,255.8,6,1,MZA 4423 - LT 7,ZONA IV,510
4062,-70.24937345,-17.98894955,MUR/HEX:1,1,220,124.05,3,0,MZA 4423 - LT 8,ZONA IV,511
4063,-70.24941383,-17.98901006,MUR/HEX:1,1,220,122.6,3,0,MZA 4423 - LT 9,ZONA IV,512
4064,-70.24945465,-17.98907159,MUR/HEX:2,1,220,250.78,6,1,MZA 4423 - LT 10,ZONA IV,513
4065,-70.24953376,-17.98899615,MUR/HEX:1,1,220,127.93,3,0,MZA 4423 - LT 11,ZONA IV,514
4066,-70.24960058,-17.98896563,MUR/HEX:1,1,220,130.04,3,0,MZA 4423 - LT 12,ZONA IV,515
4067,-70.24966831,-17.9889351,MUR/HEX:1,1,220,134.26,3,0,MZA 4423 - LT 13,ZONA IV,516
4068,-70.24973918,-17.98890755,MUR/HEX:1,1,220,130.69,3,0,MZA 4423 - LT 14,ZONA IV,517
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4070,-70.24987851,-17.98884557,MUR/HEX:1,1,220,145.14,3,0,MZA 4423 - LT 16,ZONA IV,519
4071,-70.24999984,-17.98902146,MUR/HEX:1,1,220,134.57,3,0,MZA 4424 - LT 1,ZONA IV,520
4072,-70.24992746,-17.98905117,MUR/HEX:1,1,220,130.38,3,0,MZA 4424 - LT 2,ZONA IV,521
4073,-70.2498574,-17.98908105,MUR/HEX:1,1,220,126.49,3,0,MZA 4424 - LT 3,ZONA IV,522
4074,-70.24978853,-17.98911164,MUR/HEX:1,1,220,126.57,3,0,MZA 4424 - LT 4,ZONA IV,523
4075,-70.24971922,-17.9891409,MUR/HEX:1,1,220,123.91,3,0,MZA 4424 - LT 5,ZONA IV,524
4076,-70.24965066,-17.98917098,MUR/HEX:1,1,220,124.21,3,0,MZA 4424 - LT 6,ZONA IV,525
4077,-70.24953037,-17.98918412,MUR/HEX:1,1,220,118.22,3,0,MZA 4424 - LT 7,ZONA IV,526
4078,-70.24956786,-17.98924392,MUR/HEX:1,1,220,119.44,3,0,MZA 4424 - LT 8,ZONA IV,527
4079,-70.249611,-17.98930361,MUR/HEX:2,1,220,254.02,6,1,MZA 4424 - LT 9,ZONA IV,528
4080,-70.24964981,-17.98936619,MUR/HEX:2,1,220,245.5,6,1,MZA 4424 - LT 10,ZONA IV,529
4081,-70.24973179,-17.98929212,MUR/HEX:1,1,220,125.84,3,0,MZA 4424 - LT 11,ZONA IV,530
4082,-70.24980033,-17.98926301,MUR/HEX:1,1,220,128.95,3,0,MZA 4424 - LT 12,ZONA IV,531
4083,-70.24986945,-17.98923388,MUR/HEX:1,1,220,127.95,3,0,MZA 4424 - LT 13,ZONA IV,532

4084,-70.24993861,-17.9892044,MUR/HEX:2,1,220,260.16,6,1,MZA 4424 - LT 14,ZONA IV,533
4085,-70.25000821,-17.98917482,MUR/HEX:2,1,220,259.58,6,1,MZA 4424 - LT 15,ZONA IV,534
4086,-70.2500817,-17.98914577,MUR/HEX:2,1,220,282.2,7,2,MZA 4424 - LT 16,ZONA IV,535
4087,-70.24941467,-17.98943761,MUR/HEX:1,1,220,123.45,3,0,MZA 4425 - LT 1,ZONA IV,536
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4089,-70.24928381,-17.98930064,MUR/HEX:1,1,220,127.2,3,0,MZA 4425 - LT 3,ZONA IV,538
4090,-70.24924388,-17.98923884,MUR/HEX:1,1,220,128.23,3,0,MZA 4425 - LT 4,ZONA IV,539
4091,-70.24920347,-17.98917756,MUR/HEX:1,1,220,125.69,3,0,MZA 4425 - LT 5,ZONA IV,540
4092,-70.24916365,-17.98911562,MUR/HEX:1,1,220,128.68,3,0,MZA 4425 - LT 6,ZONA IV,541
4093,-70.24912137,-17.98905251,MUR/HEX:1,1,220,132.48,3,0,MZA 4425 - LT 7,ZONA IV,542
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4095,-70.24894203,-17.98905259,MUR/HEX:2,1,220,279.7,6,1,MZA 4425 - LT 9,ZONA IV,544
4096,-70.24898262,-17.98911643,MUR/HEX:2,1,220,270.64,6,1,MZA 4425 - LT 10,ZONA IV,545
4097,-70.24902415,-17.98918201,MUR/HEX:1,1,220,130.81,3,0,MZA 4425 - LT 11,ZONA IV,546
4098,-70.24906386,-17.98923824,CR/LFINF+DUC/HEX:2/RES,1,220,261.84,6,1,MZA 4425 - LT 12,ZONA IV,547
4099,-70.24910374,-17.98929909,MUR/HEX:1,1,220,129.95,3,0,MZA 4425 - LT 13,ZONA IV,548
4100,-70.24914346,-17.98936025,MUR/HEX:1,1,220,130.53,3,0,MZA 4425 - LT 14,ZONA IV,549
4101,-70.24918393,-17.9894222,MUR/HEX:2,1,220,265.1,6,1,MZA 4425 - LT 15,ZONA IV,550
4102,-70.24920888,-17.98952904,MUR/HEX:1,1,220,122.45,3,0,MZA 4425 - LT 16,ZONA IV,551
4103,-70.2492769,-17.98949567,MUR/HEX:1,1,220,125.74,3,0,MZA 4425 - LT 17,ZONA IV,552
4104,-70.24934689,-17.98946606,MUR/HEX:2,1,220,240.52,6,1,MZA 4425 - LT 18,ZONA IV,553
4105,-70.24904094,-17.98957886,MUR/HEX:1,1,220,153.66,4,1,MZA 4426 - LT 1,ZONA IV,554
4106,-70.24894024,-17.98951904,MUR/HEX:1,1,220,73.85,2,0,MZA 4426 - LT 2,ZONA IV,555
4107,-70.24891959,-17.989499,MUR/HEX:2,1,220,147.7,3,0,MZA 4426 - LT 2B,ZONA IV,556
4108,-70.24890175,-17.98946158,MUR/HEX:1,1,220,73.28,2,0,MZA 4426 - LT 3,ZONA IV,557
4109,-70.24888088,-17.98943751,MUR/HEX:1,1,220,73.28,2,0,MZA 4426 - LT 3B,ZONA IV,558
4110,-70.24885899,-17.98940747,MUR/HEX:1,1,220,72.75,2,0,MZA 4426 - LT 4,ZONA IV,559
4111,-70.24883789,-17.98938023,MUR/HEX:1,1,220,72.75,2,0,MZA 4426 - LT 4B,ZONA IV,560
4112,-70.24881747,-17.98935442,MUR/HEX:1,1,220,69.28,2,0,MZA 4426 - LT 5,ZONA IV,561
4113,-70.2487967,-17.98932924,MUR/HEX:1,1,220,69.27,2,0,MZA 4426 - LT 5B,ZONA IV,562
4114,-70.24877959,-17.98930362,MUR/HEX:1,1,220,69.86,2,0,MZA 4426 - LT 6,ZONA IV,563
4115,-70.24875994,-17.98927948,MUR/HEX:2,1,220,139.72,3,0,MZA 4426 - LT 6 B,ZONA IV,564
4116,-70.24875466,-17.98917992,MUR/HEX:2,1,220,278.6,6,1,MZA 4426 - LT 7,ZONA IV,565
4117,-70.24868397,-17.98921759,MUR/HEX:1,1,220,134.67,3,0,MZA 4426 - LT 8,ZONA IV,566
4118,-70.24897178,-17.98961478,MUR/HEX:1,1,220,145.14,3,0,MZA 4426 - LT 9,ZONA IV,567
4119,-70.24832661,-17.98966105,MUR/HEX:1,1,220,179.53,4,1,MZA 4427 - LT 1,ZONA IV,568
4120,-70.24826931,-17.98961024,MCF/LWAL+DNO/HEX:2/RES,1,220,334.36,8,2,MZA 4427 - LT 2,ZONA IV,569
4121,-70.24821398,-17.98956105,MCF/LWAL+DNO/HEX:1/RES,1,220,170.48,4,1,MZA 4427 - LT 3,ZONA IV,570
4122,-70.24815788,-17.98951212,MUR/HEX:1,1,220,171.15,4,1,MZA 4427 - LT 4,ZONA IV,571
4123,-70.24810257,-17.9894632,MUR/HEX:1,1,220,170.25,4,1,MZA 4427 - LT 5,ZONA IV,572
4124,-70.2480497,-17.98959756,MUR/HEX:2,1,220,319.44,7,2,MZA 4427 - LT 6,ZONA IV,573
4125,-70.24799781,-17.98965103,MUR/HEX:1,1,220,163.21,4,1,MZA 4427 - LT 7,ZONA IV,574
4126,-70.24786584,-17.9897071,MUR/HEX:1,1,220,157.9,4,1,MZA 4427 - LT 8,ZONA IV,575
4127,-70.2479218,-17.98975533,MUR/HEX:1,1,220,157.54,4,1,MZA 4427 - LT 9,ZONA IV,576
4128,-70.24797718,-17.98980383,MUR/HEX:1,1,220,158.16,4,1,MZA 4427 - LT 10,ZONA IV,577
4129,-70.2480326,-17.98985263,MUR/HEX:2,1,220,319.56,7,2,MZA 4427 - LT 11,ZONA IV,578
4130,-70.24809096,-17.98990071,MUR/HEX:1,1,220,166.44,4,1,MZA 4427 - LT 12,ZONA IV,579
4131,-70.24813972,-17.98977262,MCF/LWAL+DNO/HEX:2/RES,1,220,332.94,8,2,MZA 4427 - LT 13,ZONA IV,580
4132,-70.24819187,-17.98971939,MUR/HEX:1,1,220,162.52,4,1,MZA 4427 - LT 14,ZONA IV,581
4133,-70.25227605,-17.98893237,MUR/HEX:1,1,220,145.73,3,0,MZA 4428 - LT 1,ZONA IV,582
4134,-70.25222862,-17.98887097,MUR/HEX:2,1,220,266.62,6,1,MZA 4428 - LT 2,ZONA IV,583
4135,-70.2521858,-17.98881247,MUR/HEX:1,1,220,131.68,3,0,MZA 4428 - LT 3,ZONA IV,584
4136,-70.25214349,-17.98875529,MUR/HEX:1,1,220,128.31,3,0,MZA 4428 - LT 4,ZONA IV,585
4137,-70.25210321,-17.9886983,MUR/HEX:1,1,220,131.2,3,0,MZA 4428 - LT 5,ZONA IV,586
4138,-70.25206243,-17.98863666,MUR/HEX:1,1,220,137.96,3,0,MZA 4428 - LT 6,ZONA IV,587
4139,-70.25201781,-17.98857318,CR/LFINF+DUC/HEX:1/RES,1,220,144.34,3,0,MZA 4428 - LT 7,ZONA IV,588
4140,-70.25197033,-17.98851159,MUR/HEX:1,1,220,142.06,3,0,MZA 4428 - LT 8,ZONA IV,589
4141,-70.25192404,-17.98845168,MUR/HEX:1,1,220,144.64,3,0,MZA 4428 - LT 9,ZONA IV,590
4142,-70.25187568,-17.98839111,MUR/HEX:1,1,220,161.55,4,1,MZA 4428 - LT 10,ZONA IV,591
4143,-70.25176316,-17.98833804,MUR/HEX:1,1,220,157.59,4,1,MZA 4428 - LT 11,ZONA IV,592
4144,-70.25165494,-17.98824415,MUR/HEX:2,1,220,289.5,7,2,MZA 4428 - LT 12,ZONA IV,593
4145,-70.25146702,-17.988109,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,76.84,2,0,MZA 4428 - LT 13,ZONA IV,594
4146,-70.25085039,-17.98893498,MUR/HEX:1,1,220,118.93,3,0,MZA 4429 - LT 1,ZONA IV,595
4147,-70.2509132,-17.98889683,MUR/HEX:2,1,220,242.34,6,1,MZA 4429 - LT 2,ZONA IV,596
4148,-70.25097637,-17.98885814,MUR/HEX:1,1,220,123.48,3,0,MZA 4429 - LT 3,ZONA IV,597
4149,-70.25103974,-17.98881921,MUR/HEX:1,1,220,123.78,3,0,MZA 4429 - LT 4,ZONA IV,598
4150,-70.25110266,-17.98878068,MUR/HEX:1,1,220,123.43,3,0,MZA 4429 - LT 5,ZONA IV,599
4151,-70.25116591,-17.98874161,MUR/HEX:1,1,220,127.76,3,0,MZA 4429 - LT 6,ZONA IV,600
4152,-70.25122989,-17.98870342,MUR/HEX:1,1,220,126.3,3,0,MZA 4429 - LT 7,ZONA IV,601
4153,-70.25129197,-17.9886653,MUR/HEX:1,1,220,125.02,3,0,MZA 4429 - LT 8,ZONA IV,602
4154,-70.25135424,-17.98862713,MUR/HEX:1,1,220,129.13,3,0,MZA 4429 - LT 9,ZONA IV,603

4155,-70.25141769,-17.98858825,MUR/HEX:1,1,220,131.83,3,0,MZA 4429 - LT 10,ZONA IV,604
4156,-70.25148072,-17.98854984,MUR/HEX:1,1,220,129.07,3,0,MZA 4429 - LT 11,ZONA IV,605
4157,-70.251544,-17.98851135,MUR/HEX:1,1,220,135.63,3,0,MZA 4429 - LT 12,ZONA IV,606
4158,-70.25161236,-17.98846913,MUR/HEX:1,1,220,151.84,4,1,MZA 4429 - LT 13,ZONA IV,607
4159,-70.25152604,-17.98835931,MUR/HEX:1,1,220,122.43,3,0,MZA 4429 - LT 14,ZONA IV,608
4160,-70.25145834,-17.98839972,MUR/HEX:1,1,220,111.44,3,0,MZA 4429 - LT 15,ZONA IV,609
4161,-70.25139498,-17.98843923,MUR/HEX:1,1,220,110.34,3,0,MZA 4429 - LT 16,ZONA IV,610
4162,-70.25133639,-17.98847525,MUR/HEX:1,1,220,94.29,2,0,MZA 4429 - LT 17,ZONA IV,611
4163,-70.25127796,-17.9885108,MUR/HEX:1,1,220,111.37,3,0,MZA 4429 - LT 18,ZONA IV,612
4164,-70.25121503,-17.98854982,MUR/HEX:1,1,220,113.11,3,0,MZA 4429 - LT 19,ZONA IV,613
4165,-70.25115328,-17.98858962,MUR/HEX:1,1,220,108.33,3,0,MZA 4429 - LT 20,ZONA IV,614
4166,-70.25109123,-17.98862887,MUR/HEX:1,1,220,108.83,3,0,MZA 4429 - LT 21,ZONA IV,615
4167,-70.25102675,-17.98866552,MUR/HEX:1,1,220,115.01,3,0,MZA 4429 - LT 22,ZONA IV,616
4168,-70.2509651,-17.98870357,MUR/HEX:1,1,220,110,3,0,MZA 4429 - LT 23,ZONA IV,617
4169,-70.25090292,-17.98874169,MUR/HEX:2,1,220,236.24,5,1,MZA 4429 - LT 24,ZONA IV,618
4170,-70.25083933,-17.98878088,MUR/HEX:3,1,220,350.7,8,2,MZA 4429 - LT 25,ZONA IV,619
4171,-70.25077604,-17.9888205,MUR/HEX:1,1,220,119.5,3,0,MZA 4429 - LT 26,ZONA IV,620
4172,-70.25096433,-17.9891103,MUR/HEX:1,1,220,118.31,3,0,MZA 4430 - LT 1,ZONA IV,621
4173,-70.25102808,-17.98907161,MUR/HEX:1,1,220,116.03,3,0,MZA 4430 - LT 2,ZONA IV,622
4174,-70.25109258,-17.98903317,MUR/HEX:1,1,220,119.33,3,0,MZA 4430 - LT 3,ZONA IV,623
4175,-70.25115687,-17.98899414,MUR/HEX:1,1,220,117.28,3,0,MZA 4430 - LT 4,ZONA IV,624
4176,-70.2512198,-17.98895576,MUR/HEX:2,1,220,233.7,5,1,MZA 4430 - LT 5,ZONA IV,625
4177,-70.25128329,-17.98891868,MUR/HEX:1,1,220,117.05,3,0,MZA 4430 - LT 6,ZONA IV,626
4178,-70.25134421,-17.98888102,MUR/HEX:1,1,220,110.23,3,0,MZA 4430 - LT 7,ZONA IV,627
4179,-70.2514067,-17.98884395,MUR/HEX:1,1,220,122.13,3,0,MZA 4430 - LT 8,ZONA IV,628
4180,-70.25147133,-17.98880534,MUR/HEX:1,1,220,118.14,3,0,MZA 4430 - LT 9,ZONA IV,629
4181,-70.2515346,-17.9887674,MUR/HEX:1,1,220,117.58,3,0,MZA 4430 - LT 10,ZONA IV,630
4182,-70.25159856,-17.98872925,MUR/HEX:1,1,220,120.43,3,0,MZA 4430 - LT 11,ZONA IV,631
4183,-70.2516639,-17.98869028,MUR/HEX:1,1,220,122.37,3,0,MZA 4430 - LT 12,ZONA IV,632
4184,-70.25172869,-17.98865205,MUR/HEX:1,1,220,117.46,3,0,MZA 4430 - LT 13,ZONA IV,633
4185,-70.25177927,-17.98860466,MUR/HEX:1,1,220,80.36,2,0,MZA 4430 - LT 14,ZONA IV,634
4186,-70.25180245,-17.98876694,MUR/HEX:1,1,220,124.25,3,0,MZA 4430 - LT 15,ZONA IV,635
4187,-70.25173849,-17.98880524,MUR/HEX:1,1,220,116.57,3,0,MZA 4430 - LT 16,ZONA IV,636
4188,-70.25167566,-17.98884292,MUR/HEX:1,1,220,120.04,3,0,MZA 4430 - LT 17,ZONA IV,637
4189,-70.25161225,-17.98888108,MUR/HEX:1,1,220,119.72,3,0,MZA 4430 - LT 18,ZONA IV,638
4190,-70.2515485,-17.98891925,MUR/HEX:1,1,220,121.43,3,0,MZA 4430 - LT 19,ZONA IV,639
4191,-70.25148543,-17.98895578,MUR/HEX:1,1,220,113.94,3,0,MZA 4430 - LT 20,ZONA IV,640
4192,-70.25142259,-17.98899167,MUR/HEX:1,1,220,114.53,3,0,MZA 4430 - LT 21,ZONA IV,641
4193,-70.2513592,-17.98902937,MUR/HEX:1,1,220,115.77,3,0,MZA 4430 - LT 22,ZONA IV,642
4194,-70.25129501,-17.9890684,MUR/HEX:1,1,220,119.95,3,0,MZA 4430 - LT 23,ZONA IV,643
4195,-70.25122959,-17.98910569,MUR/HEX:1,1,220,114.39,3,0,MZA 4430 - LT 24,ZONA IV,644
4196,-70.2511657,-17.98914457,MUR/HEX:1,1,220,116.62,3,0,MZA 4430 - LT 25,ZONA IV,645
4197,-70.25110176,-17.98918397,MUR/HEX:1,1,220,118.51,3,0,MZA 4430 - LT 26,ZONA IV,646
4198,-70.25103753,-17.98922235,MUR/HEX:3,1,220,356.1,8,2,MZA 4430 - LT 27,ZONA IV,647
4199,-70.25122589,-17.98951177,MUR/HEX:2,1,220,245.16,6,1,MZA 4431 - LT 1,ZONA IV,648
4200,-70.25128985,-17.98947413,MUR/HEX:1,1,220,116,3,0,MZA 4431 - LT 2,ZONA IV,649
4201,-70.25135272,-17.98943628,MUR/HEX:1,1,220,119.43,3,0,MZA 4431 - LT 3,ZONA IV,650
4202,-70.25141715,-17.98939782,MUR/HEX:2,1,220,241.64,6,1,MZA 4431 - LT 4,ZONA IV,651
4203,-70.25148175,-17.98935916,MUR/HEX:2,1,220,240.3,6,1,MZA 4431 - LT 5,ZONA IV,652
4204,-70.25154642,-17.98932111,MUR/HEX:1,1,220,120.52,3,0,MZA 4431 - LT 6,ZONA IV,653
4205,-70.25161097,-17.98928391,MUR/HEX:1,1,220,121.49,3,0,MZA 4431 - LT 7,ZONA IV,654
4206,-70.25167506,-17.98924708,MUR/HEX:2,1,220,245.88,6,1,MZA 4431 - LT 8,ZONA IV,655
4207,-70.25173955,-17.98920968,MUR/HEX:2,1,220,255.26,6,1,MZA 4431 - LT 9,ZONA IV,656
4208,-70.25180446,-17.98917176,MUR/HEX:1,1,220,127.96,3,0,MZA 4431 - LT 10,ZONA IV,657
4209,-70.25186848,-17.989134,MUR/HEX:2,1,220,253.96,6,1,MZA 4431 - LT 11,ZONA IV,658
4210,-70.25193347,-17.9890954,MUR/HEX:1,1,220,133.24,3,0,MZA 4431 - LT 12,ZONA IV,659
4211,-70.25199962,-17.98905601,MUR/HEX:1,1,220,132.47,3,0,MZA 4431 - LT 13,ZONA IV,660
4212,-70.25206604,-17.98901668,MUR/HEX:1,1,220,133.63,3,0,MZA 4431 - LT 14,ZONA IV,661
4213,-70.25198159,-17.98890563,MUR/HEX:2,1,220,258.42,6,1,MZA 4431 - LT 15,ZONA IV,662
4214,-70.25191289,-17.98894536,MUR/HEX:2,1,220,231.62,5,1,MZA 4431 - LT 16,ZONA IV,663
4215,-70.25184826,-17.98898448,MUR/HEX:1,1,220,116.52,3,0,MZA 4431 - LT 17,ZONA IV,664
4216,-70.25178597,-17.98902201,MUR/HEX:2,1,220,221.14,5,1,MZA 4431 - LT 18,ZONA IV,665
4217,-70.25172164,-17.98905903,MUR/HEX:2,1,220,231.68,5,1,MZA 4431 - LT 19,ZONA IV,666
4218,-70.25165747,-17.98909802,MUR/HEX:1,1,220,116.53,3,0,MZA 4431 - LT 20,ZONA IV,667
4219,-70.25159246,-17.98913588,MUR/HEX:2,1,220,231.9,5,1,MZA 4431 - LT 21,ZONA IV,668
4220,-70.25153055,-17.98917153,MUR/HEX:2,1,220,218.66,5,1,MZA 4431 - LT 22,ZONA IV,669
4221,-70.25146846,-17.98920802,MUR/HEX:1,1,220,120.05,3,0,MZA 4431 - LT 23,ZONA IV,670
4222,-70.25140386,-17.98924634,MUR/HEX:3,1,220,363.24,8,2,MZA 4431 - LT 24,ZONA IV,671
4223,-70.25134083,-17.98928418,MUR/HEX:1,1,220,114.66,3,0,MZA 4431 - LT 25,ZONA IV,672
4224,-70.2512784,-17.98932304,MUR/HEX:1,1,220,118.76,3,0,MZA 4431 - LT 26,ZONA IV,673
4225,-70.25121438,-17.98936027,MUR/HEX:2,1,220,237.22,5,1,MZA 4431 - LT 27,ZONA IV,674

4226,-70.25115143,-17.98939882,MUR/HEX:1,1,220,116.61,3,0,MZA 4431 - LT 28,ZONA IV,675
4227,-70.25105639,-17.98965174,MUR/HEX:1,1,220,117.73,3,0,MZA 4432 - LT 1,ZONA IV,676
4228,-70.2510175,-17.98958976,MUR/HEX:1,1,220,118.17,3,0,MZA 4432 - LT 2,ZONA IV,677
4229,-70.2509778,-17.98952825,MUR/HEX:2,1,220,238.1,5,1,MZA 4432 - LT 3,ZONA IV,678
4230,-70.25093804,-17.98946687,MUR/HEX:1,1,220,118.63,3,0,MZA 4432 - LT 4,ZONA IV,679
4231,-70.25089854,-17.98940592,MUR/HEX:1,1,220,117.75,3,0,MZA 4432 - LT 5,ZONA IV,680
4232,-70.25085929,-17.98934539,MUR/HEX:1,1,220,117.47,3,0,MZA 4432 - LT 6,ZONA IV,681
4233,-70.25081966,-17.98928402,MUR/HEX:1,1,220,121.16,3,0,MZA 4432 - LT 7,ZONA IV,682
4234,-70.2507788,-17.98922318,MUR/HEX:2,1,220,235.22,5,1,MZA 4432 - LT 8,ZONA IV,683
4235,-70.2507399,-17.98916401,MUR/HEX:1,1,220,115.32,3,0,MZA 4432 - LT 9,ZONA IV,684
4236,-70.25069848,-17.98910037,MUR/HEX:1,1,220,117.5,3,0,MZA 4432 - LT 10,ZONA IV,685
4237,-70.2506595,-17.9890395,MUR/HEX:1,1,220,117.5,3,0,MZA 4432 - LT 11,ZONA IV,686
4238,-70.25054387,-17.98911365,MUR/HEX:2,1,220,233.2,5,1,MZA 4432 - LT 12,ZONA IV,687
4239,-70.25058314,-17.98917686,MUR/HEX:1,1,220,123.92,3,0,MZA 4432 - LT 13,ZONA IV,688
4240,-70.2506223,-17.98923691,MUR/HEX:2,1,220,238.96,6,1,MZA 4432 - LT 14,ZONA IV,689
4241,-70.25066123,-17.9892971,MUR/HEX:1,1,220,115.17,3,0,MZA 4432 - LT 15,ZONA IV,690
4242,-70.25070102,-17.98935823,MUR/HEX:1,1,220,120.12,3,0,MZA 4432 - LT 16,ZONA IV,691
4243,-70.25074074,-17.9894194,MUR/HEX:2,1,220,239.88,6,1,MZA 4432 - LT 17,ZONA IV,692
4244,-70.25078027,-17.98948049,MUR/HEX:2,1,220,239.18,6,1,MZA 4432 - LT 18,ZONA IV,693
4245,-70.25081981,-17.98954129,MUR/HEX:2,1,220,238.84,6,1,MZA 4432 - LT 19,ZONA IV,694
4246,-70.25085945,-17.98960206,MUR/HEX:1,1,220,119.52,3,0,MZA 4432 - LT 20,ZONA IV,695
4247,-70.25089898,-17.98966276,MUR/HEX:1,1,220,118.68,3,0,MZA 4432 - LT 21,ZONA IV,696
4248,-70.25093861,-17.98972403,MUR/HEX:2,1,220,243.1,6,1,MZA 4432 - LT 22,ZONA IV,697
4249,-70.25022815,-17.98936722,MUR/HEX:1,1,220,136.49,3,0,MZA 4433 - LT 1,ZONA IV,698
4250,-70.25015526,-17.98939556,MUR/HEX:1,1,220,124.24,3,0,MZA 4433 - LT 2,ZONA IV,699
4251,-70.25008515,-17.9894205,MUR/HEX:1,1,220,129.63,3,0,MZA 4433 - LT 3,ZONA IV,700
4252,-70.25001562,-17.98945448,MUR/HEX:2,1,220,248.84,6,1,MZA 4433 - LT 4,ZONA IV,701
4253,-70.24994671,-17.98948334,MUR/HEX:2,1,220,252.08,6,1,MZA 4433 - LT 5,ZONA IV,702
4254,-70.24987747,-17.98951256,MUR/HEX:1,1,220,126.08,3,0,MZA 4433 - LT 6,ZONA IV,703
4255,-70.24975627,-17.98952395,MUR/HEX:1,1,220,122.64,3,0,MZA 4433 - LT 7,ZONA IV,704
4256,-70.24979556,-17.9895851,MUR/HEX:1,1,220,119.68,3,0,MZA 4433 - LT 8,ZONA IV,705
4257,-70.24983875,-17.98964507,MUR/HEX:1,1,220,123.66,3,0,MZA 4433 - LT 9,ZONA IV,706
4258,-70.24987831,-17.98970608,MUR/HEX:1,1,220,119.56,3,0,MZA 4433 - LT 10,ZONA IV,707
4259,-70.24995981,-17.98963288,MUR/HEX:2,1,220,250.62,6,1,MZA 4433 - LT 11,ZONA IV,708
4260,-70.2500291,-17.98960364,MUR/HEX:1,1,220,126.5,3,0,MZA 4433 - LT 12,ZONA IV,709
4261,-70.25009825,-17.98957427,MUR/HEX:1,1,220,124.81,3,0,MZA 4433 - LT 13,ZONA IV,710
4262,-70.2501675,-17.98954544,MUR/HEX:1,1,220,125.59,3,0,MZA 4433 - LT 14,ZONA IV,711
4263,-70.25023604,-17.98951635,MUR/HEX:1,1,220,122.93,3,0,MZA 4433 - LT 15,ZONA IV,712
4264,-70.25030907,-17.98948719,MUR/HEX:2,1,220,276.48,6,1,MZA 4433 - LT 16,ZONA IV,713
4265,-70.25042589,-17.98966216,MUR/HEX:1,1,220,133.86,3,0,MZA 4434 - LT 1,ZONA IV,714
4266,-70.25035444,-17.98969146,MUR/HEX:1,1,220,126.52,3,0,MZA 4434 - LT 2,ZONA IV,715
4267,-70.25028546,-17.98972033,MUR/HEX:1,1,220,126.17,3,0,MZA 4434 - LT 3,ZONA IV,716
4268,-70.25021683,-17.9897496,MUR/HEX:1,1,220,126.33,3,0,MZA 4434 - LT 4,ZONA IV,717
4269,-70.2501485,-17.98977881,MUR/HEX:1,1,220,125.37,3,0,MZA 4434 - LT 5,ZONA IV,718
4270,-70.25007946,-17.98980797,MUR/HEX:1,1,220,128.47,3,0,MZA 4434 - LT 6,ZONA IV,719
4271,-70.24995723,-17.98981995,MUR/HEX:1,1,220,125.02,3,0,MZA 4434 - LT 7,ZONA IV,720
4272,-70.24999612,-17.98988205,MUR/HEX:2,1,220,247.98,6,1,MZA 4434 - LT 8,ZONA IV,721
4273,-70.25003982,-17.98994247,MUR/HEX:1,1,220,127.32,3,0,MZA 4434 - LT 9,ZONA IV,722
4274,-70.25007862,-17.99000504,MUR/HEX:1,1,220,124.7,3,0,MZA 4434 - LT 10,ZONA IV,723
4275,-70.25016223,-17.98992986,MUR/HEX:1,1,220,129.41,3,0,MZA 4434 - LT 11,ZONA IV,724
4276,-70.25023145,-17.98990069,MUR/HEX:1,1,220,125.63,3,0,MZA 4434 - LT 12,ZONA IV,725
4277,-70.25029998,-17.98987117,MUR/HEX:1,1,220,127.43,3,0,MZA 4434 - LT 13,ZONA IV,726
4278,-70.25036951,-17.98984152,MUR/HEX:1,1,220,128.27,3,0,MZA 4434 - LT 14,ZONA IV,727
4279,-70.25043793,-17.9898127,MUR/HEX:2,1,220,244.4,6,1,MZA 4434 - LT 15,ZONA IV,728
4280,-70.25050834,-17.98978367,MUR/HEX:2,1,220,267.48,6,1,MZA 4434 - LT 16,ZONA IV,729
4281,-70.25062543,-17.98995923,MUR/HEX:1,1,220,131.68,3,0,MZA 4435 - LT 1,ZONA IV,730
4282,-70.2505523,-17.9899903,MUR/HEX:1,1,220,133.4,3,0,MZA 4435 - LT 2,ZONA IV,731
4283,-70.25048154,-17.99001854,MUR/HEX:1,1,220,121.39,3,0,MZA 4435 - LT 3,ZONA IV,732
4284,-70.25041374,-17.9900479,MUR/HEX:1,1,220,127.43,3,0,MZA 4435 - LT 4,ZONA IV,733
4285,-70.2503447,-17.99007756,MUR/HEX:2,1,220,252.92,6,1,MZA 4435 - LT 5,ZONA IV,734
4286,-70.2502758,-17.990107,MUR/HEX:2,1,220,255.08,6,1,MZA 4435 - LT 6,ZONA IV,735
4287,-70.25015685,-17.99011815,MUR/HEX:1,1,220,123.97,3,0,MZA 4435 - LT 7,ZONA IV,736
4288,-70.25019668,-17.99018031,MUR/HEX:2,1,220,230.22,5,1,MZA 4435 - LT 8,ZONA IV,737
4289,-70.25024131,-17.99024064,MUR/HEX:1,1,220,122.3,3,0,MZA 4435 - LT 9,ZONA IV,738
4290,-70.25027908,-17.99030309,MUR/HEX:1,1,220,117.36,3,0,MZA 4435 - LT 10,ZONA IV,739
4291,-70.25035835,-17.99023059,MUR/HEX:1,1,220,121.9,3,0,MZA 4435 - LT 11,ZONA IV,740
4292,-70.25042581,-17.99020082,MUR/HEX:2,1,220,261.6,6,1,MZA 4435 - LT 12,ZONA IV,741
4293,-70.25049552,-17.99017135,MUR/HEX:2,1,220,258.6,6,1,MZA 4435 - LT 13,ZONA IV,742
4294,-70.25056417,-17.99014303,MUR/HEX:2,1,220,253.56,6,1,MZA 4435 - LT 14,ZONA IV,743
4295,-70.25063372,-17.99011052,MUR/HEX:1,1,220,141.29,3,0,MZA 4435 - LT 15,ZONA IV,744
4296,-70.25070928,-17.99008173,MUR/HEX:1,1,220,139.13,3,0,MZA 4435 - LT 16,ZONA IV,745

4297,-70.25004468,-17.99036118,MUR/HEX:2,1,220,285.88,7,2,MZA 4438 - LT 1,ZONA IV,751
4298,-70.24997224,-17.99039498,MUR/HEX:1,1,220,129.3,0,MZA 4438 - LT 2,ZONA IV,752
4299,-70.24990195,-17.99042647,MUR/HEX:1,1,220,132.4,3,0,MZA 4438 - LT 3,ZONA IV,753
4300,-70.24983111,-17.99045828,MUR/HEX:2,1,220,262.48,6,1,MZA 4438 - LT 4,ZONA IV,754
4301,-70.24975837,-17.99048997,CR/LFINF+DUC/HEX:2/RES,1,220,275.54,6,1,MZA 4438 - LT 5,ZONA IV,755
4302,-70.24967784,-17.99036491,MUR/HEX:1,1,220,143.62,3,0,MZA 4438 - LT 6,ZONA IV,756
4303,-70.24974912,-17.99033321,MUR/HEX:1,1,220,132.84,3,0,MZA 4438 - LT 7,ZONA IV,757
4304,-70.24981847,-17.99030292,MUR/HEX:1,1,220,132.28,3,0,MZA 4438 - LT 8,ZONA IV,758
4305,-70.24988691,-17.99027311,MUR/HEX:1,1,220,126.56,3,0,MZA 4438 - LT 9,ZONA IV,759
4306,-70.2499599,-17.99024075,MUR/HEX:1,1,220,147.69,3,0,MZA 4438 - LT 10,ZONA IV,760
4307,-70.24868823,-17.98998184,CR/LFINF+DUC/HEX:2/RES,1,220,356.2,8,2,MZA 4439 - LT 1,ZONA IV,761
4308,-70.24863374,-17.9899326,MUR/HEX:1,1,220,180.99,4,1,MZA 4439 - LT 2,ZONA IV,762
4309,-70.24857654,-17.98988335,MUR/HEX:1,1,220,183.15,4,1,MZA 4439 - LT 3,ZONA IV,763
4310,-70.24852065,-17.98983287,MUR/HEX:1,1,220,175.88,4,1,MZA 4439 - LT 4,ZONA IV,764
4311,-70.2484656,-17.98978468,MUR/HEX:2,1,220,336.52,8,2,MZA 4439 - LT 5,ZONA IV,765
4312,-70.24840902,-17.98992008,MUR/HEX:1,1,220,168.85,4,1,MZA 4439 - LT 6,ZONA IV,766
4313,-70.24835503,-17.98997296,MUR/HEX:2,1,220,318.36,7,2,MZA 4439 - LT 7,ZONA IV,767
4314,-70.24822238,-17.99002876,MUR/HEX:1,1,220,169.67,4,1,MZA 4439 - LT 8,ZONA IV,768
4315,-70.24827974,-17.99007928,MUR/HEX:1,1,220,163.12,4,1,MZA 4439 - LT 9,ZONA IV,769
4316,-70.24833477,-17.99012931,MUR/HEX:2,1,220,320.56,7,2,MZA 4439 - LT 10,ZONA IV,770
4317,-70.24838986,-17.99017861,MUR/HEX:1,1,220,160.47,4,1,MZA 4439 - LT 11,ZONA IV,771
4318,-70.24844474,-17.99022863,MUR/HEX:1,1,220,161.16,4,1,MZA 4439 - LT 12,ZONA IV,772
4319,-70.24849281,-17.99009856,MUR/HEX:2,1,220,318.36,7,2,MZA 4439 - LT 13,ZONA IV,773
4320,-70.24854577,-17.99004584,MUR/HEX:1,1,220,167.53,4,1,MZA 4439 - LT 14,ZONA IV,774
4321,-70.24904553,-17.99030075,MUR/HEX:1,1,220,184.74,4,1,MZA 4440 - LT 1,ZONA IV,775
4322,-70.24899016,-17.99025145,MUR/HEX:1,1,220,185.03,4,1,MZA 4440 - LT 2,ZONA IV,776
4323,-70.24893447,-17.99020227,MUR/HEX:1,1,220,182.31,4,1,MZA 4440 - LT 3,ZONA IV,777
4324,-70.24887911,-17.99015308,MUR/HEX:1,1,220,180.73,4,1,MZA 4440 - LT 4,ZONA IV,778
4325,-70.24881546,-17.99011401,MUR/HEX:2,1,220,357.08,8,2,MZA 4440 - LT 5,ZONA IV,779
4326,-70.24876641,-17.99024205,MUR/HEX:2,1,220,325.22,8,2,MZA 4440 - LT 6,ZONA IV,780
4327,-70.24871387,-17.9902961,MUR/HEX:1,1,220,164.55,4,1,MZA 4440 - LT 7,ZONA IV,781
4328,-70.24858142,-17.99035112,MUR/HEX:1,1,220,155.18,4,1,MZA 4440 - LT 8,ZONA IV,782
4329,-70.24863655,-17.99040056,MUR/HEX:1,1,220,162.25,4,1,MZA 4440 - LT 9,ZONA IV,783
4330,-70.24869174,-17.99045056,MUR/HEX:2,1,220,318.7,7,2,MZA 4440 - LT 10,ZONA IV,784
4331,-70.2487463,-17.99050039,MUR/HEX:2,1,220,324.02,7,2,MZA 4440 - LT 11,ZONA IV,785
4332,-70.24880097,-17.99054979,MUR/HEX:1,1,220,160.59,4,1,MZA 4440 - LT 12,ZONA IV,786
4333,-70.24885159,-17.99041917,MUR/HEX:1,1,220,161.69,4,1,MZA 4440 - LT 13,ZONA IV,787
4334,-70.24890348,-17.99036591,MUR/HEX:1,1,220,158.85,4,1,MZA 4440 - LT 14,ZONA IV,788
4335,-70.24940028,-17.99062933,MUR/HEX:2,1,220,358.06,8,2,MZA 4441 - LT 1,ZONA IV,789
4336,-70.24934532,-17.9905784,MUR/HEX:1,1,220,181.13,4,1,MZA 4441 - LT 2,ZONA IV,790
4337,-70.24929081,-17.99052689,MCF/LWAL+DNO/HEX:2/RES,1,220,363.24,8,2,MZA 4441 - LT 3,ZONA IV,791
4338,-70.24923597,-17.99047538,MUR/HEX:2,1,220,368.72,9,2,MZA 4441 - LT 4,ZONA IV,792
4339,-70.24918048,-17.99042353,MUR/HEX:2,1,220,374.28,9,2,MZA 4441 - LT 5,ZONA IV,793
4340,-70.24912191,-17.99056099,MUR/HEX:1,1,220,160.81,4,1,MZA 4441 - LT 6,ZONA IV,794
4341,-70.24907069,-17.99061212,MUR/HEX:1,1,220,162.1,4,1,MZA 4441 - LT 7,ZONA IV,795
4342,-70.24894785,-17.99067702,MUR/HEX:1,1,220,248.39,6,1,MZA 4441 - LT 8,ZONA IV,796
4343,-70.24903281,-17.99075577,MUR/HEX:2,1,220,532.26,12,3,MZA 4441 - LT 9,ZONA IV,797
4344,-70.24910166,-17.99082355,MUR/HEX:2,1,220,316.82,7,2,MZA 4441 - LT 10,ZONA IV,798
4345,-70.24915456,-17.99087372,MUR/HEX:1,1,220,153.72,4,1,MZA 4441 - LT 11,ZONA IV,799
4346,-70.24920833,-17.9907435,MUR/HEX:2,1,220,340.68,8,2,MZA 4441 - LT 12,ZONA IV,800
4347,-70.24926039,-17.99068892,MUR/HEX:1,1,220,159.2,4,1,MZA 4441 - LT 13,ZONA IV,801
4348,-70.25082075,-17.99026095,MUR/HEX:1,1,220,136.73,3,0,MZA 4445 - LT 1,ZONA IV,802
4349,-70.25074852,-17.99028958,MUR/HEX:1,1,220,127.64,3,0,MZA 4445 - LT 2,ZONA IV,803
4350,-70.25067996,-17.99031859,MUR/HEX:1,1,220,126.39,3,0,MZA 4445 - LT 3,ZONA IV,804
4351,-70.25061176,-17.99034834,MUR/HEX:2,1,220,255.48,6,1,MZA 4445 - LT 4,ZONA IV,805
4352,-70.25054381,-17.99037709,MUR/HEX:2,1,220,247.64,6,1,MZA 4445 - LT 5,ZONA IV,806
4353,-70.25047541,-17.99040571,MUR/HEX:1,1,220,128.81,3,0,MZA 4445 - LT 6,ZONA IV,807
4354,-70.25035411,-17.990416,MUR/HEX:2,1,220,244.84,6,1,MZA 4445 - LT 7,ZONA IV,808
4355,-70.25039191,-17.99047884,MUR/HEX:2,1,220,249.7,6,1,MZA 4445 - LT 8,ZONA IV,809
4356,-70.25043213,-17.99054145,MUR/HEX:1,1,220,123.3,0,MZA 4445 - LT 9,ZONA IV,810
4357,-70.25046903,-17.99060367,MUR/HEX:1,1,220,119.76,3,0,MZA 4445 - LT 10,ZONA IV,811
4358,-70.25055192,-17.99053023,MUR/HEX:2,1,220,252.92,6,1,MZA 4445 - LT 11,ZONA IV,812
4359,-70.25062142,-17.99050041,MUR/HEX:2,1,220,257.6,1,MZA 4445 - LT 12,ZONA IV,813
4360,-70.25069155,-17.99047166,MUR/HEX:3,1,220,380.97,9,2,MZA 4445 - LT 13,ZONA IV,814
4361,-70.25076071,-17.99044207,MUR/HEX:1,1,220,127.33,3,0,MZA 4445 - LT 14,ZONA IV,815
4362,-70.25082927,-17.99041337,MUR/HEX:2,1,220,248.18,6,1,MZA 4445 - LT 15,ZONA IV,816
4363,-70.25090036,-17.99038486,MUR/HEX:2,1,220,269.54,6,1,MZA 4445 - LT 16,ZONA IV,817
4364,-70.25025183,-17.99069885,MUR/HEX:1,1,220,66.83,2,0,MZA 4446 - LT 1,ZONA IV,818
4365,-70.25019545,-17.99072397,MUR/HEX:2,1,220,133.66,3,0,MZA 4446 - LT 1 B,ZONA IV,819
4366,-70.25018738,-17.99064799,MUR/HEX:1,1,220,128.55,3,0,MZA 4446 - LT 2,ZONA IV,820
4367,-70.25014301,-17.99058885,MUR/HEX:1,1,220,140.8,3,0,MZA 4446 - LT 3,ZONA IV,821

4368,-70.25013742,-17.99051169,MUR/HEX:1,1,220,73.37,2,0,MZA 4446 - LT 4,ZONA IV,822
4369,-70.25007112,-17.99053954,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,73.37,2,0,MZA 4446 - LT 4 B,ZONA IV,823
4370,-70.25000978,-17.99060188,MUR/HEX:2,1,220,269.48,6,1,MZA 4446 - LT 5,ZONA IV,824
4371,-70.24993355,-17.99063275,MUR/HEX:1,1,220,144.31,3,0,MZA 4446 - LT 6,ZONA IV,825
4372,-70.24984048,-17.99066749,MUR/HEX:1,1,220,187.46,4,1,MZA 4446 - LT 7,ZONA IV,826
4373,-70.24994698,-17.9907805,MUR/HEX:1,1,220,172.62,4,1,MZA 4446 - LT 8,ZONA IV,827
4374,-70.25002708,-17.99075242,MUR/HEX:3,1,220,391.71,9,2,MZA 4446 - LT 9,ZONA IV,828
4375,-70.25009915,-17.99072372,MUR/HEX:2,1,220,253.78,6,1,MZA 4446 - LT 10,ZONA IV,829
4376,-70.24975119,-17.99095616,MUR/HEX:1,1,220,156.7,4,1,MZA 4447 - LT 1,ZONA IV,830
4377,-70.24969662,-17.99090633,MUR/HEX:1,1,220,159.18,4,1,MZA 4447 - LT 2,ZONA IV,831
4378,-70.2496419,-17.99085622,MUR/HEX:2,1,220,320.8,7,2,MZA 4447 - LT 3,ZONA IV,832
4379,-70.24958679,-17.99080536,MUR/HEX:1,1,220,165.16,4,1,MZA 4447 - LT 4,ZONA IV,833
4380,-70.24952824,-17.99075223,MUR/HEX:1,1,220,180.71,4,1,MZA 4447 - LT 5,ZONA IV,834
4381,-70.24947738,-17.99088197,MUR/HEX:1,1,220,165.08,4,1,MZA 4447 - LT 6,ZONA IV,835
4382,-70.24942705,-17.99093559,MUR/HEX:1,1,220,165.49,4,1,MZA 4447 - LT 7,ZONA IV,836
4383,-70.24929603,-17.99099094,MUR/HEX:3,1,220,534.75,12,3,MZA 4447 - LT 8,ZONA IV,837
4384,-70.24935418,-17.99104376,MUR/HEX:1,1,220,162.3,4,1,MZA 4447 - LT 9,ZONA IV,838
4385,-70.24941001,-17.99109317,MUR/HEX:1,1,220,160.88,4,1,MZA 4447 - LT 10,ZONA IV,839
4386,-70.2494654,-17.99114269,MUR/HEX:1,1,220,161.47,4,1,MZA 4447 - LT 11,ZONA IV,840
4387,-70.24952102,-17.99119281,MUR/HEX:1,1,220,163.53,4,1,MZA 4447 - LT 12,ZONA IV,841
4388,-70.24956941,-17.99106204,MUR/HEX:1,1,220,161.76,4,1,MZA 4447 - LT 13,ZONA IV,842
4389,-70.24961937,-17.99100866,MUR/HEX:1,1,220,161.68,4,1,MZA 4447 - LT 14,ZONA IV,843
4390,-70.25278655,-17.98965189,MUR/HEX:2,1,220,235.92,5,1,MZA 4448 - LT 1,ZONA IV,844
4391,-70.25273925,-17.98959672,MUR/HEX:2,1,220,259.6,1,MZA 4448 - LT 2,ZONA IV,845
4392,-70.25269118,-17.98953744,MUR/HEX:1,1,220,132.27,3,0,MZA 4448 - LT 3,ZONA IV,846
4393,-70.25264084,-17.98947768,MUR/HEX:1,1,220,143.27,3,0,MZA 4448 - LT 4,ZONA IV,847
4394,-70.25276199,-17.98945113,MUR/HEX:1,1,220,130.8,3,0,MZA 4448 - LT 5,ZONA IV,848
4395,-70.25282788,-17.98941,MUR/HEX:1,1,220,130.71,3,0,MZA 4448 - LT 6,ZONA IV,849
4396,-70.25292527,-17.98952148,MUR/HEX:1,1,220,158.15,4,1,MZA 4448 - LT 7,ZONA IV,850
4397,-70.25284658,-17.98956347,MUR/HEX:1,1,220,158.05,4,1,MZA 4448 - LT 8,ZONA IV,851
4398,-70.25302825,-17.98992632,MUR/HEX:1,1,220,118.54,3,0,MZA 4449 - LT 1,ZONA IV,852
4399,-70.25297761,-17.98986978,MUR/HEX:1,1,220,127.07,3,0,MZA 4449 - LT 2,ZONA IV,853
4400,-70.25292949,-17.98981451,MUR/HEX:1,1,220,129.59,3,0,MZA 4449 - LT 3,ZONA IV,854
4401,-70.25288136,-17.98975955,MUR/HEX:1,1,220,121.14,3,0,MZA 4449 - LT 4,ZONA IV,855
4402,-70.25299414,-17.98972666,MUR/HEX:1,1,220,122.21,3,0,MZA 4449 - LT 5,ZONA IV,856
4403,-70.25306115,-17.98968078,MUR/HEX:1,1,220,150.1,3,0,MZA 4449 - LT 6,ZONA IV,857
4404,-70.25316111,-17.98979595,MUR/HEX:1,1,220,156.95,4,1,MZA 4449 - LT 7,ZONA IV,858
4405,-70.2530939,-17.98984002,MUR/HEX:1,1,220,132.3,3,0,MZA 4449 - LT 8,ZONA IV,859
4406,-70.25325208,-17.99021222,MUR/HEX:1,1,220,124.89,3,0,MZA 4450 - LT 1,ZONA IV,860
4407,-70.25320486,-17.99015535,MUR/HEX:1,1,220,142.84,3,0,MZA 4450 - LT 2,ZONA IV,861
4408,-70.25315946,-17.9901015,MUR/HEX:1,1,220,132.51,3,0,MZA 4450 - LT 3,ZONA IV,862
4409,-70.25311858,-17.99004806,MUR/HEX:1,1,220,109.75,3,0,MZA 4450 - LT 4,ZONA IV,863
4410,-70.25323664,-17.99001331,MUR/HEX:1,1,220,125.31,3,0,MZA 4450 - LT 5,ZONA IV,864
4411,-70.25329753,-17.98996879,MUR/HEX:1,1,220,127.2,3,0,MZA 4450 - LT 6,ZONA IV,865
4412,-70.25338531,-17.99007841,MUR/HEX:1,1,220,124.66,3,0,MZA 4450 - LT 7,ZONA IV,866
4413,-70.25332502,-17.99012323,MUR/HEX:1,1,220,120.04,3,0,MZA 4450 - LT 8,ZONA IV,867
4414,-70.25172687,-17.99024737,MUR/HEX:1,1,220,114.45,3,0,MZA 4451 - LT 1,ZONA IV,868
4415,-70.25179061,-17.99020964,MUR/HEX:1,1,220,121.66,3,0,MZA 4451 - LT 2,ZONA IV,869
4416,-70.25185439,-17.99017174,MUR/HEX:2,1,220,232.1,5,1,MZA 4451 - LT 3,ZONA IV,870
4417,-70.2519182,-17.99013425,MUR/HEX:2,1,220,245.16,6,1,MZA 4451 - LT 4,ZONA IV,871
4418,-70.25198327,-17.9900958,MUR/HEX:1,1,220,123.93,3,0,MZA 4451 - LT 5,ZONA IV,872
4419,-70.25204731,-17.99005695,MUR/HEX:1,1,220,120.66,3,0,MZA 4451 - LT 6,ZONA IV,873
4420,-70.25211042,-17.99001849,MUR/HEX:1,1,220,119,3,0,MZA 4451 - LT 7,ZONA IV,874
4421,-70.25217394,-17.98998011,MUR/HEX:1,1,220,120.49,3,0,MZA 4451 - LT 8,ZONA IV,875
4422,-70.25223774,-17.98994193,MUR/HEX:1,1,220,119.35,3,0,MZA 4451 - LT 9,ZONA IV,876
4423,-70.2523,-17.98990476,MUR/HEX:1,1,220,114.99,3,0,MZA 4451 - LT 10,ZONA IV,877
4424,-70.25236021,-17.98986871,MUR/HEX:1,1,220,112.25,3,0,MZA 4451 - LT 11,ZONA IV,878
4425,-70.2524213,-17.98983211,MUR/HEX:1,1,220,118.62,3,0,MZA 4451 - LT 12,ZONA IV,879
4426,-70.25249609,-17.98978752,MUR/HEX:1,1,220,164.26,4,1,MZA 4451 - LT 13,ZONA IV,880
4427,-70.25257874,-17.98973912,MUR/HEX:1,1,220,146.8,3,0,MZA 4451 - LT 14,ZONA IV,881
4428,-70.25248567,-17.98962761,MUR/HEX:1,1,220,173.2,4,1,MZA 4451 - LT 15,ZONA IV,882
4429,-70.25241098,-17.98967206,MUR/HEX:1,1,220,127.31,3,0,MZA 4451 - LT 16,ZONA IV,883
4430,-70.2523472,-17.98971061,MUR/HEX:3,1,220,384.81,9,2,MZA 4451 - LT 17,ZONA IV,884
4431,-70.25228327,-17.98974942,MUR/HEX:1,1,220,127.69,3,0,MZA 4451 - LT 18,ZONA IV,885
4432,-70.25222072,-17.98978772,MUR/HEX:1,1,220,121.28,3,0,MZA 4451 - LT 19,ZONA IV,886
4433,-70.25215952,-17.98982485,MUR/HEX:1,1,220,120.08,3,0,MZA 4451 - LT 20,ZONA IV,887
4434,-70.25209667,-17.98986302,MUR/HEX:2,1,220,253.68,6,1,MZA 4451 - LT 21,ZONA IV,888
4435,-70.25203258,-17.98990184,MUR/HEX:1,1,220,123.41,3,0,MZA 4451 - LT 22,ZONA IV,889
4436,-70.25196969,-17.98993962,MUR/HEX:1,1,220,121.11,3,0,MZA 4451 - LT 23,ZONA IV,890
4437,-70.25190751,-17.98997702,MUR/HEX:1,1,220,120.53,3,0,MZA 4451 - LT 24,ZONA IV,891
4438,-70.25184537,-17.99002396,MUR/HEX:1,1,220,123.69,3,0,MZA 4451 - LT 25,ZONA IV,892

4439,-70.25178002,-17.99005409,MUR/HEX:1,1,220,126.51,3,0,MZA 4451 - LT 26,ZONA IV,893
4440,-70.25171585,-17.99009235,MUR/HEX:1,1,220,121.23,3,0,MZA 4451 - LT 27,ZONA IV,894
4441,-70.25165351,-17.99013075,MUR/HEX:1,1,220,121.68,3,0,MZA 4451 - LT 28,ZONA IV,895
4442,-70.25192239,-17.99055485,MUR/HEX:2,1,220,246.86,6,1,MZA 4452 - LT 1,ZONA IV,896
4443,-70.25198727,-17.99051567,MUR/HEX:1,1,220,122.92,3,0,MZA 4452 - LT 2,ZONA IV,897
4444,-70.25205118,-17.99047664,MUR/HEX:1,1,220,121.11,3,0,MZA 4452 - LT 3,ZONA IV,898
4445,-70.25211375,-17.99043926,MUR/HEX:1,1,220,117.28,3,0,MZA 4452 - LT 4,ZONA IV,899
4446,-70.25217636,-17.99040067,MUR/HEX:1,1,220,124.5,3,0,MZA 4452 - LT 5,ZONA IV,900
4447,-70.25224141,-17.99036218,MUR/HEX:1,1,220,125.36,3,0,MZA 4452 - LT 6,ZONA IV,901
4448,-70.25230531,-17.99032344,MUR/HEX:1,1,220,124.35,3,0,MZA 4452 - LT 7,ZONA IV,902
4449,-70.25236977,-17.99028519,MUR/HEX:1,1,220,126.71,3,0,MZA 4452 - LT 8,ZONA IV,903
4450,-70.25243409,-17.99024516,MUR/HEX:1,1,220,127.64,3,0,MZA 4452 - LT 9,ZONA IV,904
4451,-70.25249674,-17.99020794,MUR/HEX:2,1,220,234.98,5,1,MZA 4452 - LT 10,ZONA IV,905
4452,-70.25256011,-17.99016994,MUR/HEX:1,1,220,131.55,3,0,MZA 4452 - LT 11,ZONA IV,906
4453,-70.25262495,-17.99013064,MUR/HEX:1,1,220,125.41,3,0,MZA 4452 - LT 12,ZONA IV,907
4454,-70.25269171,-17.99009063,MUR/HEX:2,1,220,277.78,6,1,MZA 4452 - LT 13,ZONA IV,908
4455,-70.25275756,-17.99004971,MUR/HEX:1,1,220,127.47,3,0,MZA 4452 - LT 14,ZONA IV,909
4456,-70.25266373,-17.98993854,MUR/HEX:1,1,220,121.29,3,0,MZA 4452 - LT 15,ZONA IV,910
4457,-70.25260105,-17.98997734,MUR/HEX:1,1,220,123.68,3,0,MZA 4452 - LT 16,ZONA IV,911
4458,-70.25253831,-17.99001634,MUR/HEX:1,1,220,119.76,3,0,MZA 4452 - LT 17,ZONA IV,912
4459,-70.25247842,-17.99005334,MUR/HEX:1,1,220,110.25,3,0,MZA 4452 - LT 18,ZONA IV,913
4460,-70.25242027,-17.99008931,MUR/HEX:1,1,220,112.03,3,0,MZA 4452 - LT 19,ZONA IV,914
4461,-70.25235779,-17.99012784,MUR/HEX:1,1,220,124.69,3,0,MZA 4452 - LT 20,ZONA IV,915
4462,-70.25229307,-17.99016742,MUR/HEX:1,1,220,119.32,3,0,MZA 4452 - LT 21,ZONA IV,916
4463,-70.25222919,-17.99020653,MUR/HEX:1,1,220,121,3,0,MZA 4452 - LT 22,ZONA IV,917
4464,-70.25216487,-17.99024606,MUR/HEX:1,1,220,120.63,3,0,MZA 4452 - LT 23,ZONA IV,918
4465,-70.25210099,-17.99028624,MUR/HEX:1,1,220,119.22,3,0,MZA 4452 - LT 24,ZONA IV,919
4466,-70.25203791,-17.99032439,MUR/HEX:1,1,220,112.51,3,0,MZA 4452 - LT 25,ZONA IV,920
4467,-70.25197545,-17.99036241,MUR/HEX:1,1,220,117.06,3,0,MZA 4452 - LT 26,ZONA IV,921
4468,-70.25191178,-17.99040061,MUR/HEX:1,1,220,118.27,3,0,MZA 4452 - LT 27,ZONA IV,922
4469,-70.25184845,-17.99043968,MUR/HEX:1,1,220,118.38,3,0,MZA 4452 - LT 28,ZONA IV,923
4470,-70.25281959,-17.99001361,MUR/HEX:2,1,220,232.92,5,1,MZA 4452 - LT 29,ZONA IV,924
4471,-70.25272738,-17.98990125,MUR/HEX:1,1,220,125.2,3,0,MZA 4452 - LT 30,ZONA IV,925
4472,-70.25212098,-17.99085916,MUR/HEX:1,1,220,126.66,3,0,MZA 4453 - LT 1,ZONA IV,926
4473,-70.25218592,-17.99082165,CR/LFINF+DUC/HEX:2/RES,1,220,241.52,6,1,MZA 4453 - LT 2,ZONA IV,927
4474,-70.252249,-17.99078355,MUR/HEX:1,1,220,121.91,3,0,MZA 4453 - LT 3,ZONA IV,928
4475,-70.25231253,-17.99074527,MUR/HEX:1,1,220,121.91,3,0,MZA 4453 - LT 4,ZONA IV,929
4476,-70.25237577,-17.99070727,MUR/HEX:2,1,220,241.04,6,1,MZA 4453 - LT 5,ZONA IV,930
4477,-70.25243908,-17.99066894,MUR/HEX:1,1,220,122.52,3,0,MZA 4453 - LT 6,ZONA IV,931
4478,-70.25250322,-17.99063016,MUR/HEX:1,1,220,122.55,3,0,MZA 4453 - LT 7,ZONA IV,932
4479,-70.25256702,-17.99059225,MUR/HEX:1,1,220,119.71,3,0,MZA 4453 - LT 8,ZONA IV,933
4480,-70.25263038,-17.99055412,MUR/HEX:1,1,220,121.75,3,0,MZA 4453 - LT 9,ZONA IV,934
4481,-70.25269388,-17.99051607,MUR/HEX:1,1,220,120.09,3,0,MZA 4453 - LT 10,ZONA IV,935
4482,-70.25275641,-17.99047952,MUR/HEX:2,1,220,233.86,5,1,MZA 4453 - LT 11,ZONA IV,936
4483,-70.25281813,-17.99044163,MUR/HEX:1,1,220,119.9,3,0,MZA 4453 - LT 12,ZONA IV,937
4484,-70.25288085,-17.99040333,MUR/HEX:2,1,220,238.3,6,1,MZA 4453 - LT 13,ZONA IV,938
4485,-70.25294516,-17.99036465,MUR/HEX:2,1,220,246.98,6,1,MZA 4453 - LT 14,ZONA IV,939
4486,-70.25302877,-17.99031539,MUR/HEX:1,1,220,189.78,4,1,MZA 4453 - LT 15,ZONA IV,940
4487,-70.25295873,-17.99019926,MUR/HEX:1,1,220,136.57,3,0,MZA 4453 - LT 16,ZONA IV,941
4488,-70.25288713,-17.99023994,MUR/HEX:1,1,220,124.1,3,0,MZA 4453 - LT 17,ZONA IV,942
4489,-70.25281836,-17.99028067,MUR/HEX:2,1,220,262.1,6,1,MZA 4453 - LT 18,ZONA IV,943
4490,-70.25274752,-17.99032369,MUR/HEX:1,1,220,133.69,3,0,MZA 4453 - LT 19,ZONA IV,944
4491,-70.2526817,-17.99036363,MUR/HEX:1,1,220,109.85,3,0,MZA 4453 - LT 20,ZONA IV,945
4492,-70.2526201,-17.99040033,MUR/HEX:2,1,220,233.76,5,1,MZA 4453 - LT 21,ZONA IV,946
4493,-70.25255636,-17.99043836,MUR/HEX:1,1,220,118.34,3,0,MZA 4453 - LT 22,ZONA IV,947
4494,-70.2524932,-17.99047631,MUR/HEX:1,1,220,115.41,3,0,MZA 4453 - LT 23,ZONA IV,948
4495,-70.2524296,-17.99051462,MUR/HEX:1,1,220,119.43,3,0,MZA 4453 - LT 24,ZONA IV,949
4496,-70.25236493,-17.99055319,MUR/HEX:1,1,220,118.98,3,0,MZA 4453 - LT 25,ZONA IV,950
4497,-70.2523014,-17.99059133,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,115.8,3,0,MZA 4453 - LT 26,ZONA IV,951
4498,-70.25223821,-17.99062913,MUR/HEX:2,1,220,234.36,5,1,MZA 4453 - LT 27,ZONA IV,952
4499,-70.25217437,-17.99066693,MUR/HEX:1,1,220,118.43,3,0,MZA 4453 - LT 28,ZONA IV,953
4500,-70.25211126,-17.99070443,MUR/HEX:1,1,220,115.99,3,0,MZA 4453 - LT 29,ZONA IV,954
4501,-70.25204752,-17.99074341,MUR/HEX:1,1,220,123.24,3,0,MZA 4453 - LT 30,ZONA IV,955
4502,-70.25188766,-17.99088716,MUR/HEX:1,1,220,113.11,3,0,MZA 4454 - LT 1,ZONA IV,956
4503,-70.25184844,-17.99082534,MUR/HEX:1,1,220,111.02,3,0,MZA 4454 - LT 2,ZONA IV,957
4504,-70.25180894,-17.99076405,MUR/HEX:2,1,220,227.64,5,1,MZA 4454 - LT 3,ZONA IV,958
4505,-70.25176942,-17.99070279,MUR/HEX:1,1,220,113.99,3,0,MZA 4454 - LT 4,ZONA IV,959
4506,-70.25172884,-17.99064178,MUR/HEX:1,1,220,115.49,3,0,MZA 4454 - LT 5,ZONA IV,960
4507,-70.25168898,-17.99058188,MUR/HEX:2,1,220,216.36,5,1,MZA 4454 - LT 6,ZONA IV,961
4508,-70.25165008,-17.99052157,MUR/HEX:1,1,220,115.64,3,0,MZA 4454 - LT 7,ZONA IV,962
4509,-70.2516105,-17.99045968,MUR/HEX:1,1,220,116.75,3,0,MZA 4454 - LT 8,ZONA IV,963

4510,-70.25157166,-17.99039922,MUR/HEX:1,1,220,113.49,3,0,MZA 4454 - LT 9,ZONA IV,964
4511,-70.25153285,-17.99033798,MUR/HEX:1,1,220,122.03,3,0,MZA 4454 - LT 10,ZONA IV,965
4512,-70.2514929,-17.99027588,MUR/HEX:1,1,220,122.03,3,0,MZA 4454 - LT 11,ZONA IV,966
4513,-70.25145104,-17.99021311,MUR/HEX:2,1,220,256.52,6,1,MZA 4454 - LT 12,ZONA IV,967
4514,-70.25133088,-17.99028626,MUR/HEX:2,1,220,260.1,6,1,MZA 4454 - LT 13,ZONA IV,968
4515,-70.25137087,-17.99035073,MUR/HEX:1,1,220,123.66,3,0,MZA 4454 - LT 14,ZONA IV,969
4516,-70.25141036,-17.9904115,MUR/HEX:1,1,220,123.28,3,0,MZA 4454 - LT 15,ZONA IV,970
4517,-70.25145084,-17.99047224,MUR/HEX:1,1,220,124.78,3,0,MZA 4454 - LT 16,ZONA IV,971
4518,-70.25149129,-17.9905329,MUR/HEX:3,1,220,363.99,8,2,MZA 4454 - LT 17,ZONA IV,972
4519,-70.25153181,-17.99059356,MUR/HEX:1,1,220,123.18,3,0,MZA 4454 - LT 18,ZONA IV,973
4520,-70.25157193,-17.9906547,MUR/HEX:1,1,220,122.25,3,0,MZA 4454 - LT 19,ZONA IV,974
4521,-70.25161241,-17.9907164,MUR/HEX:1,1,220,125.6,3,0,MZA 4454 - LT 20,ZONA IV,975
4522,-70.25165259,-17.99077829,MUR/HEX:2,1,220,247.76,6,1,MZA 4454 - LT 21,ZONA IV,976
4523,-70.25169214,-17.99083866,MUR/HEX:2,1,220,241.4,6,1,MZA 4454 - LT 22,ZONA IV,977
4524,-70.25173179,-17.9908996,MUR/HEX:2,1,220,253.08,6,1,MZA 4454 - LT 23,ZONA IV,978
4525,-70.25177167,-17.99096111,MUR/HEX:2,1,220,249.76,6,1,MZA 4454 - LT 24,ZONA IV,979
4526,-70.25103976,-17.99059585,MUR/HEX:1,1,220,138.07,3,0,MZA 4455 - LT 1,ZONA IV,980
4527,-70.25096625,-17.99062452,CR/LFINF+DUC/HEX:2/RES,1,220,252.56,6,1,MZA 4455 - LT 2,ZONA IV,981
4528,-70.25089732,-17.99065354,MUR/HEX:1,1,220,125.61,3,0,MZA 4455 - LT 3,ZONA IV,982
4529,-70.25082894,-17.99068169,MUR/HEX:1,1,220,123.44,3,0,MZA 4455 - LT 4,ZONA IV,983
4530,-70.25076028,-17.99071119,MUR/HEX:2,1,220,257.86,6,1,MZA 4455 - LT 5,ZONA IV,984
4531,-70.25068893,-17.99074123,MUR/HEX:2,1,220,265.12,6,1,MZA 4455 - LT 6,ZONA IV,985
4532,-70.25056639,-17.99075339,MUR/HEX:1,1,220,125.72,3,0,MZA 4455 - LT 7,ZONA IV,986
4533,-70.25060438,-17.99081572,MUR/HEX:2,1,220,242.36,6,1,MZA 4455 - LT 8,ZONA IV,987
4534,-70.25064497,-17.99087569,MUR/HEX:1,1,220,123.05,3,0,MZA 4455 - LT 9,ZONA IV,988
4535,-70.25068339,-17.99093825,MUR/HEX:1,1,220,126.36,3,0,MZA 4455 - LT 10,ZONA IV,989
4536,-70.25076857,-17.99086471,MUR/HEX:2,1,220,266.44,6,1,MZA 4455 - LT 11,ZONA IV,990
4537,-70.25083911,-17.99083477,MUR/HEX:2,1,220,255.8,6,1,MZA 4455 - LT 12,ZONA IV,991
4538,-70.25090821,-17.99080616,MUR/HEX:1,1,220,126.84,3,0,MZA 4455 - LT 13,ZONA IV,992
4539,-70.2509771,-17.99077789,MUR/HEX:1,1,220,126.72,3,0,MZA 4455 - LT 14,ZONA IV,993
4540,-70.25104567,-17.99074807,MUR/HEX:1,1,220,128.73,3,0,MZA 4455 - LT 15,ZONA IV,994
4541,-70.25111873,-17.99071775,MUR/HEX:1,1,220,141.04,3,0,MZA 4455 - LT 16,ZONA IV,995
4542,-70.25123178,-17.99089417,MUR/HEX:2,1,220,280.82,6,1,MZA 4456 - LT 1,ZONA IV,996
4543,-70.25115836,-17.99092413,MUR/HEX:1,1,220,130.1,3,0,MZA 4456 - LT 2,ZONA IV,997
4544,-70.25108934,-17.99095364,MUR/HEX:1,1,220,126.69,3,0,MZA 4456 - LT 3,ZONA IV,998
4545,-70.25102073,-17.99098368,MUR/HEX:1,1,220,129.86,3,0,MZA 4456 - LT 4,ZONA IV,999
4546,-70.25095137,-17.99101369,MUR/HEX:1,1,220,128.93,3,0,MZA 4456 - LT 5,ZONA IV,1000
4547,-70.25088163,-17.99104372,MUR/HEX:2,1,220,262.28,6,1,MZA 4456 - LT 6,ZONA IV,1001
4548,-70.25076109,-17.99105639,MUR/HEX:1,1,220,126.86,3,0,MZA 4456 - LT 7,ZONA IV,1002
4549,-70.25079955,-17.99111944,MUR/HEX:1,1,220,120.91,3,0,MZA 4456 - LT 8,ZONA IV,1003
4550,-70.25084124,-17.99118771,MUR/HEX:1,1,220,123.09,3,0,MZA 4456 - LT 9,ZONA IV,1004
4551,-70.25087926,-17.991242,MUR/HEX:1,1,220,123.99,3,0,MZA 4456 - LT 10,ZONA IV,1005
4552,-70.2509628,-17.99116805,MUR/HEX:1,1,220,130.05,3,0,MZA 4456 - LT 11,ZONA IV,1006
4553,-70.25103278,-17.99113748,MUR/HEX:1,1,220,130.54,3,0,MZA 4456 - LT 12,ZONA IV,1007
4554,-70.25110248,-17.99110743,MUR/HEX:1,1,220,128.93,3,0,MZA 4456 - LT 13,ZONA IV,1008
4555,-70.25117142,-17.99107767,MUR/HEX:1,1,220,128.44,3,0,MZA 4456 - LT 14,ZONA IV,1009
4556,-70.25124073,-17.99104808,MUR/HEX:1,1,220,130.37,3,0,MZA 4456 - LT 15,ZONA IV,1010
4557,-70.2513131,-17.99101807,MUR/HEX:2,1,220,277.74,6,1,MZA 4456 - LT 16,ZONA IV,1011
4558,-70.25042635,-17.99104884,MUR/HEX:1,1,220,145.3,3,0,MZA 4457 - LT 1,ZONA IV,1012
4559,-70.25039254,-17.99098721,MUR/HEX:1,1,220,142.45,3,0,MZA 4457 - LT 2,ZONA IV,1013
4560,-70.25035557,-17.99092569,MUR/HEX:2,1,220,285.06,7,2,MZA 4457 - LT 3,ZONA IV,1014
4561,-70.25031769,-17.99086212,MUR/HEX:2,1,220,279.22,6,1,MZA 4457 - LT 4,ZONA IV,1015
4562,-70.25022724,-17.99094047,MUR/HEX:2,1,220,254.92,6,1,MZA 4457 - LT 5,ZONA IV,1016
4563,-70.2501586,-17.99097005,MUR/HEX:1,1,220,131.96,3,0,MZA 4457 - LT 6,ZONA IV,1017
4564,-70.25008909,-17.99099979,MUR/HEX:2,1,220,263.42,6,1,MZA 4457 - LT 7,ZONA IV,1018
4565,-70.25015624,-17.99112757,MUR/HEX:1,1,220,121.41,3,0,MZA 4457 - LT 8,ZONA IV,1019
4566,-70.25025472,-17.99110844,MUR/HEX:1,1,220,41.49,1,0,MZA 4457 - LT 9,ZONA IV,1020
4567,-70.2502215,-17.99108664,MUR/HEX:2,1,220,82.96,2,0,MZA 4457 - LT 9A,ZONA IV,1021
4568,-70.25022103,-17.99113788,MUR/HEX:2,1,220,82.96,2,0,MZA 4457 - LT 9B,ZONA IV,1022
4569,-70.25029474,-17.99106765,MUR/HEX:2,1,220,242.38,6,1,MZA 4457 - LT 10,ZONA IV,1023
4570,-70.2506187,-17.99135264,MUR/HEX:1,1,220,144.3,3,0,MZA 4458 - LT 1,ZONA IV,1024
4571,-70.25058457,-17.99129048,MUR/HEX:1,1,220,148.52,3,0,MZA 4458 - LT 2,ZONA IV,1025
4572,-70.25054807,-17.99122701,MUR/HEX:1,1,220,146.83,3,0,MZA 4458 - LT 3,ZONA IV,1026
4573,-70.25051179,-17.99116324,CR/LFINF+DUC/HEX:3/RES,1,220,427.8,10,3,MZA 4458 - LT 4,ZONA IV,1027
4574,-70.25041821,-17.99124396,MUR/HEX:1,1,220,128.65,3,0,MZA 4458 - LT 5,ZONA IV,1028
4575,-70.25034967,-17.99127378,MUR/HEX:2,1,220,258.08,6,1,MZA 4458 - LT 6,ZONA IV,1029
4576,-70.25027568,-17.99130566,MUR/HEX:1,1,220,149.69,3,0,MZA 4458 - LT 7,ZONA IV,1030
4577,-70.25034849,-17.9914378,MUR/HEX:1,1,220,148.64,3,0,MZA 4458 - LT 8,ZONA IV,1031
4578,-70.25042003,-17.991405,MUR/HEX:1,1,220,130.3,3,0,MZA 4458 - LT 9,ZONA IV,1032
4579,-70.25048587,-17.9913736,MUR/HEX:1,1,220,128.83,3,0,MZA 4458 - LT 10,ZONA IV,1033
4580,-70.2534728,-17.99049853,MUR/HEX:1,1,220,112.55,3,0,MZA 4459 - LT 1,ZONA IV,1034

4581,-70.2534259,-17.99044078,MUR/HEX:1,1,220,125.45,3,0,MZA 4459 - LT 2,ZONA IV,1035
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4583,-70.25333592,-17.99032442,MUR/HEX:1,1,220,118.04,3,0,MZA 4459 - LT 4,ZONA IV,1037
4584,-70.25344992,-17.99030162,MUR/HEX:1,1,220,128.21,3,0,MZA 4459 - LT 5,ZONA IV,1038
4585,-70.25351108,-17.9902565,MUR/HEX:1,1,220,119.84,3,0,MZA 4459 - LT 6,ZONA IV,1039
4586,-70.25359457,-17.9903635,MUR/HEX:1,1,220,114.14,3,0,MZA 4459 - LT 7,ZONA IV,1040
4587,-70.25353629,-17.99040813,MUR/HEX:2,1,220,226.56,5,1,MZA 4459 - LT 8,ZONA IV,1041
4588,-70.25372266,-17.99027011,MCF/LWAL+DNO/HEX:2/RES,1,220,241.46,6,1,MZA 4459 - LT 1,ZONA IV,1042
4589,-70.25363645,-17.99018179,MCF/LWAL+DNO/HEX:2/RES,1,220,243.28,6,1,MZA 4459 - LT 2,ZONA IV,1043
4590,-70.25357458,-17.99021334,MUR/HEX:1,1,220,118.03,3,0,MZA 4459 - LT 3,ZONA IV,1044
4591,-70.25365798,-17.99031827,MUR/HEX:2,1,220,260.14,6,1,MZA 4459 - LT 4,ZONA IV,1045
4592,-70.25369546,-17.99077284,MUR/HEX:1,1,220,123.26,3,0,MZA 4460 - LT 1,ZONA IV,1046
4593,-70.25364781,-17.99071499,MUR/HEX:1,1,220,122.56,3,0,MZA 4460 - LT 2,ZONA IV,1047
4594,-70.25360149,-17.99065789,MUR/HEX:2,1,220,233.28,5,1,MZA 4460 - LT 3,ZONA IV,1048
4595,-70.25355479,-17.9905986,MUR/HEX:1,1,220,118.15,3,0,MZA 4460 - LT 4,ZONA IV,1049
4596,-70.25366278,-17.9905626,MUR/HEX:2,1,220,265.3,6,1,MZA 4460 - LT 5,ZONA IV,1050
4597,-70.25372539,-17.99051646,MUR/HEX:1,1,220,117.29,3,0,MZA 4460 - LT 6,ZONA IV,1051
4598,-70.25382412,-17.99062782,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,117.86,3,0,MZA 4460 - LT 7,ZONA IV,1052
4599,-70.2537602,-17.99067759,MUR/HEX:1,1,220,127.44,3,0,MZA 4460 - LT 8,ZONA IV,1053
4600,-70.25230795,-17.99117425,MUR/HEX:1,1,220,174.78,4,1,MZA 4461 - LT 1,ZONA IV,1054
4601,-70.25238824,-17.99112745,MUR/HEX:1,1,220,123.55,3,0,MZA 4461 - LT 2,ZONA IV,1055
4602,-70.2524527,-17.9910885,MUR/HEX:1,1,220,119.54,3,0,MZA 4461 - LT 3,ZONA IV,1056
4603,-70.25251623,-17.99105019,MUR/HEX:1,1,220,120.33,3,0,MZA 4461 - LT 4,ZONA IV,1057
4604,-70.25257999,-17.99101185,MUR/HEX:1,1,220,121.17,3,0,MZA 4461 - LT 5,ZONA IV,1058
4605,-70.25264503,-17.99097291,MUR/HEX:2,1,220,252.22,6,1,MZA 4461 - LT 6,ZONA IV,1059
4606,-70.25270942,-17.99093426,MUR/HEX:1,1,220,120.52,3,0,MZA 4461 - LT 7,ZONA IV,1060
4607,-70.25277215,-17.99089599,MUR/HEX:1,1,220,121.2,3,0,MZA 4461 - LT 8,ZONA IV,1061
4608,-70.25283562,-17.99085715,MUR/HEX:1,1,220,122.5,3,0,MZA 4461 - LT 9,ZONA IV,1062
4609,-70.25289943,-17.9908185,MUR/HEX:1,1,220,121.42,3,0,MZA 4461 - LT 10,ZONA IV,1063
4610,-70.2529626,-17.99078017,MUR/HEX:1,1,220,120.47,3,0,MZA 4461 - LT 11,ZONA IV,1064
4611,-70.25302872,-17.99074445,MUR/HEX:1,1,220,123.49,3,0,MZA 4461 - LT 12,ZONA IV,1065
4612,-70.2530876,-17.99070229,MUR/HEX:1,1,220,123.48,3,0,MZA 4461 - LT 13,ZONA IV,1066
4613,-70.2531551,-17.99066416,MUR/HEX:1,1,220,123.47,3,0,MZA 4461 - LT 14,ZONA IV,1067
4614,-70.25321754,-17.99062643,MUR/HEX:1,1,220,117.82,3,0,MZA 4461 - LT 15,ZONA IV,1068
4615,-70.25328281,-17.99058872,MUR/HEX:1,1,220,131.3,0,MZA 4461 - LT 16,ZONA IV,1069
4616,-70.2531919,-17.99048285,MUR/HEX:2,1,220,266.28,6,1,MZA 4461 - LT 17,ZONA IV,1070
4617,-70.2531231,-17.99052217,MUR/HEX:1,1,220,116.96,3,0,MZA 4461 - LT 18,ZONA IV,1071
4618,-70.2530599,-17.99056226,MUR/HEX:1,1,220,235.05,5,1,MZA 4461 - LT 19,ZONA IV,1072
4619,-70.25299393,-17.99059772,MUR/HEX:2,1,220,116.74,3,0,MZA 4461 - LT 20,ZONA IV,1073
4620,-70.25293299,-17.99063779,MCF/LWAL+DNO/HEX:2/RES,1,220,116.74,3,0,MZA 4461 - LT 21,ZONA IV,1074
4621,-70.25286915,-17.99067675,MUR/HEX:1,1,220,118.65,3,0,MZA 4461 - LT 22,ZONA IV,1075
4622,-70.25280448,-17.99071587,MUR/HEX:1,1,220,119.15,3,0,MZA 4461 - LT 23,ZONA IV,1076
4623,-70.2527375,-17.99075628,MUR/HEX:1,1,220,127.5,3,0,MZA 4461 - LT 24,ZONA IV,1077
4624,-70.25266786,-17.99079868,MUR/HEX:1,1,220,129.98,3,0,MZA 4461 - LT 25,ZONA IV,1078
4625,-70.25260327,-17.99083791,MUR/HEX:1,1,220,107.93,2,0,MZA 4461 - LT 26,ZONA IV,1079
4626,-70.25254203,-17.99087463,MUR/HEX:1,1,220,117.66,3,0,MZA 4461 - LT 27,ZONA IV,1080
4627,-70.25247872,-17.99091285,MUR/HEX:1,1,220,116.9,3,0,MZA 4461 - LT 28,ZONA IV,1081
4628,-70.25241593,-17.99095015,MUR/HEX:1,1,220,116.28,3,0,MZA 4461 - LT 29,ZONA IV,1082
4629,-70.25235258,-17.99098792,MUR/HEX:1,1,220,121.43,3,0,MZA 4461 - LT 30,ZONA IV,1083
4630,-70.25228905,-17.99102675,MUR/HEX:1,1,220,119.25,3,0,MZA 4461 - LT 31,ZONA IV,1084
4631,-70.25222551,-17.99106928,MUR/HEX:1,1,220,125.75,3,0,MZA 4461 - LT 32,ZONA IV,1085
4632,-70.25245834,-17.99162619,MUR/HEX:2,1,220,210.16,5,1,MZA 4462 - LT 1,ZONA IV,1086
4633,-70.2525084,-17.99158335,MUR/HEX:1,1,220,128.81,3,0,MZA 4462 - LT 2,ZONA IV,1087
4634,-70.25256806,-17.99154085,MUR/HEX:1,1,220,133.34,3,0,MZA 4462 - LT 3,ZONA IV,1088
4635,-70.25262864,-17.99149812,MUR/HEX:1,1,220,132.13,3,0,MZA 4462 - LT 4,ZONA IV,1089
4636,-70.25268891,-17.99145503,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,133.92,3,0,MZA 4462 - LT 5,ZONA IV,1090
4637,-70.25274934,-17.99141117,MUR/HEX:1,1,220,132.09,3,0,MZA 4462 - LT 6,ZONA IV,1091
4638,-70.25280946,-17.99136776,CR/LFIN+DUC/HEX:2/RES,1,220,259.8,6,1,MZA 4462 - LT 7,ZONA IV,1092
4639,-70.25286946,-17.99132439,MUR/HEX:2,1,220,259.36,6,1,MZA 4462 - LT 8,ZONA IV,1093
4640,-70.25292968,-17.99128105,MUR/HEX:2,1,220,257.6,1,MZA 4462 - LT 9,ZONA IV,1094
4641,-70.25298998,-17.99123783,MUR/HEX:2,1,220,256.96,6,1,MZA 4462 - LT 10,ZONA IV,1095
4642,-70.2530506,-17.99119429,MUR/HEX:1,1,220,128.92,3,0,MZA 4462 - LT 11,ZONA IV,1096
4643,-70.25311064,-17.99115112,MUR/HEX:1,1,220,124.74,3,0,MZA 4462 - LT 12,ZONA IV,1097
4644,-70.25317021,-17.99110828,MUR/HEX:1,1,220,125.5,3,0,MZA 4462 - LT 13,ZONA IV,1098
4645,-70.25323029,-17.99106515,MUR/HEX:1,1,220,125.36,3,0,MZA 4462 - LT 14,ZONA IV,1099
4646,-70.25328839,-17.99102336,MUR/HEX:1,1,220,116.25,3,0,MZA 4462 - LT 15,ZONA IV,1100
4647,-70.25334626,-17.99098183,MUR/HEX:2,1,220,245.58,6,1,MZA 4462 - LT 16,ZONA IV,1101
4648,-70.25341074,-17.99093552,MUR/HEX:1,1,220,142.51,3,0,MZA 4462 - LT 17,ZONA IV,1102
4649,-70.25350644,-17.99089646,MUR/HEX:1,1,220,89.62,2,0,MZA 4462 - LT 18,ZONA IV,1103
4650,-70.25347356,-17.99086072,MUR/HEX:1,1,220,89.62,2,0,MZA 4462 - LT 18 A,ZONA IV,1104
4651,-70.25341098,-17.99076572,MUR/HEX:1,1,220,135.71,3,0,MZA 4462 - LT 19,ZONA IV,1105

4652,-70.25334566,-17.99081105,MUR/HEX:1,1,220,117.06,3,0,MZA 4462 - LT 20,ZONA IV,1106
4653,-70.25328524,-17.99085213,MUR/HEX:1,1,220,117.97,3,0,MZA 4462 - LT 21,ZONA IV,1107
4654,-70.25322511,-17.99089236,MUR/HEX:1,1,220,121.39,3,0,MZA 4462 - LT 22,ZONA IV,1108
4655,-70.25316423,-17.99093289,MUR/HEX:1,1,220,127.35,3,0,MZA 4462 - LT 23,ZONA IV,1109
4656,-70.25310072,-17.99097418,MUR/HEX:1,1,220,139.75,3,0,MZA 4462 - LT 24,ZONA IV,1110
4657,-70.25303633,-17.99101622,MUR/HEX:1,1,220,142.82,3,0,MZA 4462 - LT 25,ZONA IV,1111
4658,-70.25297467,-17.99105656,MUR/HEX:1,1,220,137.67,3,0,MZA 4462 - LT 26,ZONA IV,1112
4659,-70.25291375,-17.99109608,MUR/HEX:1,1,220,148.92,3,0,MZA 4462 - LT 27,ZONA IV,1113
4660,-70.25285086,-17.99113721,MUR/HEX:1,1,220,158.45,4,1,MZA 4462 - LT 28,ZONA IV,1114
4661,-70.25278854,-17.99117796,MCF/LWAL+DNO/HEX:2/RES,1,220,311.56,7,2,MZA 4462 - LT 29,ZONA IV,1115
4662,-70.25272693,-17.99121803,MUR/HEX:2,1,220,329.56,8,2,MZA 4462 - LT 30,ZONA IV,1116
4663,-70.25266467,-17.99125852,MUR/HEX:1,1,220,169.53,4,1,MZA 4462 - LT 31,ZONA IV,1117
4664,-70.2526027,-17.99129876,MUR/HEX:1,1,220,173.84,4,1,MZA 4462 - LT 32,ZONA IV,1118
4665,-70.25253968,-17.99134011,MUR/HEX:1,1,220,187.12,4,1,MZA 4462 - LT 33,ZONA IV,1119
4666,-70.25240175,-17.99135064,MUR/HEX:1,1,220,140.4,3,0,MZA 4462 - LT 34,ZONA IV,1120
4667,-70.25230072,-17.99177978,MUR/HEX:1,1,220,125.4,3,0,MZA 4463 - LT 1,ZONA IV,1121
4668,-70.25227171,-17.99171304,MUR/HEX:1,1,220,121.23,3,0,MZA 4463 - LT 2,ZONA IV,1122
4669,-70.25224205,-17.991647,MCF/LWAL+DNO/HEX:1/RES,1,220,123.28,3,0,MZA 4463 - LT 3,ZONA IV,1123
4670,-70.25221194,-17.99158056,MUR/HEX:1,1,220,121.76,3,0,MZA 4463 - LT 4,ZONA IV,1124
4671,-70.252182,-17.99151443,MUR/HEX:1,1,220,120.21,3,0,MZA 4463 - LT 5,ZONA IV,1125
4672,-70.25215223,-17.99144824,MUR/HEX:1,1,220,120.49,3,0,MZA 4463 - LT 6,ZONA IV,1126
4673,-70.25212255,-17.9913815,MUR/HEX:2,1,220,242.12,6,1,MZA 4463 - LT 7,ZONA IV,1127
4674,-70.25209298,-17.99131473,MUR/HEX:1,1,220,120.96,3,0,MZA 4463 - LT 8,ZONA IV,1128
4675,-70.252063,-17.99124772,MUR/HEX:2,1,220,244.22,6,1,MZA 4463 - LT 9,ZONA IV,1129
4676,-70.25203307,-17.99118143,MUR/HEX:2,1,220,235.54,5,1,MZA 4463 - LT 10,ZONA IV,1130
4677,-70.25200267,-17.99111395,MUR/HEX:1,1,220,124.68,3,0,MZA 4463 - LT 11,ZONA IV,1131
4678,-70.25196914,-17.99103675,MUR/HEX:2,1,220,299.64,7,2,MZA 4463 - LT 12,ZONA IV,1132
4679,-70.25184336,-17.99109466,MUR/HEX:2,1,220,263.54,6,1,MZA 4463 - LT 13,ZONA IV,1133
4680,-70.25187406,-17.99116628,MUR/HEX:1,1,220,121.93,3,0,MZA 4463 - LT 14,ZONA IV,1134
4681,-70.25190363,-17.99123336,MUR/HEX:1,1,220,115.99,3,0,MZA 4463 - LT 15,ZONA IV,1135
4682,-70.25193312,-17.99129921,MUR/HEX:3,1,220,351.69,8,2,MZA 4463 - LT 16,ZONA IV,1136
4683,-70.25196231,-17.99136563,MUR/HEX:1,1,220,118.25,3,0,MZA 4463 - LT 17,ZONA IV,1137
4684,-70.25199179,-17.99143225,CR/LFINF+DUC/HEX:2/RES,1,220,237.66,5,1,MZA 4463 - LT 18,ZONA IV,1138
4685,-70.25202137,-17.99149868,MUR/HEX:1,1,220,118.05,3,0,MZA 4463 - LT 19,ZONA IV,1139
4686,-70.25205096,-17.99156475,MUR/HEX:1,1,220,117.25,3,0,MZA 4463 - LT 20,ZONA IV,1140
4687,-70.25208048,-17.9916312,MUR/HEX:1,1,220,118.73,3,0,MZA 4463 - LT 21,ZONA IV,1141
4688,-70.25211018,-17.99169781,MUR/HEX:1,1,220,118.17,3,0,MZA 4463 - LT 22,ZONA IV,1142
4689,-70.25213996,-17.99176978,MUR/HEX:1,1,220,119.5,3,0,MZA 4463 - LT 23,ZONA IV,1143
4690,-70.25217744,-17.99183051,MUR/HEX:1,1,220,127.57,3,0,MZA 4463 - LT 24,ZONA IV,1144
4691,-70.25144633,-17.99123122,MUR/HEX:2,1,220,272.84,6,1,MZA 4464 - LT 1,ZONA IV,1145
4692,-70.25137487,-17.99126062,MUR/HEX:2,1,220,257.78,6,1,MZA 4464 - LT 2,ZONA IV,1146
4693,-70.25130621,-17.99129027,CR/LFINF+DUC/HEX:2/RES,1,220,256.38,6,1,MZA 4464 - LT 3,ZONA IV,1147
4694,-70.2512374,-17.99131994,MUR/HEX:2,1,220,258.76,6,1,MZA 4464 - LT 4,ZONA IV,1148
4695,-70.25116837,-17.99134975,MUR/HEX:1,1,220,129.3,0,MZA 4464 - LT 5,ZONA IV,1149
4696,-70.25109976,-17.99137943,MUR/HEX:1,1,220,127.89,3,0,MZA 4464 - LT 6,ZONA IV,1150
4697,-70.2509761,-17.99139304,MUR/HEX:1,1,220,138.31,3,0,MZA 4464 - LT 7,ZONA IV,1151
4698,-70.2510125,-17.99146129,MUR/HEX:1,1,220,138.17,3,0,MZA 4464 - LT 8,ZONA IV,1152
4699,-70.25103832,-17.99152553,MCF/LWAL+DNO/HEX:2/RES,1,220,279.66,6,1,MZA 4464 - LT 9,ZONA IV,1153
4700,-70.25106919,-17.99159213,MCF/LWAL+DNO/HEX:2/RES,1,220,284.18,7,2,MZA 4464 - LT 10,ZONA IV,1154
4701,-70.25116352,-17.99151163,MCF/LWAL+DNO/HEX:1/RES,1,220,128.92,3,0,MZA 4464 - LT 11,ZONA IV,1155
4702,-70.25123246,-17.99148179,MUR/HEX:1,1,220,129.24,3,0,MZA 4464 - LT 12,ZONA IV,1156
4703,-70.25130154,-17.99145195,MUR/HEX:1,1,220,129.33,3,0,MZA 4464 - LT 13,ZONA IV,1157
4704,-70.25137039,-17.99142225,MUR/HEX:1,1,220,128.24,3,0,MZA 4464 - LT 14,ZONA IV,1158
4705,-70.25143907,-17.99139258,MUR/HEX:1,1,220,128.64,3,0,MZA 4464 - LT 15,ZONA IV,1159
4706,-70.25151434,-17.99136138,MUR/HEX:1,1,220,150.73,3,0,MZA 4464 - LT 16,ZONA IV,1160
4707,-70.25158109,-17.99156008,MUR/HEX:1,1,220,131.76,3,0,MZA 4465 - LT 1,ZONA IV,1161
4708,-70.25151114,-17.99159043,MUR/HEX:1,1,220,128.9,3,0,MZA 4465 - LT 2,ZONA IV,1162
4709,-70.25144157,-17.99162031,MUR/HEX:1,1,220,129.81,3,0,MZA 4465 - LT 3,ZONA IV,1163
4710,-70.25137245,-17.99165057,MUR/HEX:1,1,220,127.94,3,0,MZA 4465 - LT 4,ZONA IV,1164
4711,-70.25130337,-17.99167996,MCF/LWAL+DNO/HEX:1/RES,1,220,128.3,3,0,MZA 4465 - LT 5,ZONA IV,1165
4712,-70.25123435,-17.99170982,MUR/HEX:2,1,220,256.72,6,1,MZA 4465 - LT 6,ZONA IV,1166
4713,-70.25111603,-17.99172163,MUR/HEX:1,1,220,128.07,3,0,MZA 4465 - LT 7,ZONA IV,1167
4714,-70.25114726,-17.99178738,MUR/HEX:1,1,220,125.63,3,0,MZA 4465 - LT 8,ZONA IV,1168
4715,-70.25117822,-17.99185392,MUR/HEX:1,1,220,131.53,3,0,MZA 4465 - LT 9,ZONA IV,1169
4716,-70.25120881,-17.99192198,MCF/LWAL+DNO/HEX:2/RES,1,220,262.96,6,1,MZA 4465 - LT 10,ZONA IV,1170
4717,-70.25129725,-17.99184286,MUR/HEX:1,1,220,131.8,3,0,MZA 4465 - LT 11,ZONA IV,1171
4718,-70.25136629,-17.99181278,MUR/HEX:1,1,220,130.06,3,0,MZA 4465 - LT 12,ZONA IV,1172
4719,-70.25143606,-17.99178288,MUR/HEX:1,1,220,132.98,3,0,MZA 4465 - LT 13,ZONA IV,1173
4720,-70.25150558,-17.99175222,MUR/HEX:1,1,220,129.63,3,0,MZA 4465 - LT 14,ZONA IV,1174
4721,-70.25157456,-17.99172239,MUR/HEX:1,1,220,129.23,3,0,MZA 4465 - LT 15,ZONA IV,1175
4722,-70.25164361,-17.99169222,MUR/HEX:1,1,220,129.56,3,0,MZA 4465 - LT 16,ZONA IV,1176

4723,-70.25175707,-17.99204948,MUR/HEX:1,1,220,172.2,4,1,MZA 4466 - LT 1,ZONA IV,1177
4724,-70.25172047,-17.99195267,MUR/HEX:1,1,220,168.77,4,1,MZA 4466 - LT 2,ZONA IV,1178
4725,-70.25168705,-17.99186804,MUR/HEX:2,1,220,331.54,8,2,MZA 4466 - LT 3,ZONA IV,1179
4726,-70.25159112,-17.99194154,MUR/HEX:1,1,220,128.18,3,0,MZA 4466 - LT 4,ZONA IV,1180
4727,-70.25152212,-17.99197125,MUR/HEX:1,1,220,130.3,3,0,MZA 4466 - LT 5,ZONA IV,1181
4728,-70.25145271,-17.99200134,MUR/HEX:1,1,220,130.2,3,0,MZA 4466 - LT 6,ZONA IV,1182
4729,-70.25138363,-17.99203129,MUR/HEX:1,1,220,129.29,3,0,MZA 4466 - LT 7,ZONA IV,1183
4730,-70.25126348,-17.99204325,MUR/HEX:1,1,220,132.37,3,0,MZA 4466 - LT 8,ZONA IV,1184
4731,-70.25129417,-17.9921102,MCF/LWAL+DNO/HEX:2/RES,1,220,264.78,6,1,MZA 4466 - LT 9,ZONA IV,1185
4732,-70.25132442,-17.99217715,MUR/HEX:1,1,220,135.18,3,0,MZA 4466 - LT 10,ZONA IV,1186
4733,-70.25135492,-17.99224435,MUR/HEX:1,1,220,136.98,3,0,MZA 4466 - LT 11,ZONA IV,1187
4734,-70.25144682,-17.99216462,MUR/HEX:1,1,220,131.53,3,0,MZA 4466 - LT 12,ZONA IV,1188
4735,-70.25151645,-17.99213445,MUR/HEX:1,1,220,131.47,3,0,MZA 4466 - LT 13,ZONA IV,1189
4736,-70.25158575,-17.99210443,MUR/HEX:1,1,220,130.6,3,0,MZA 4466 - LT 14,ZONA IV,1190
4737,-70.25163511,-17.99208315,MUR/HEX:3,1,220,194.28,4,1,MZA 4466 - LT 15,ZONA IV,1191
4738,-70.25167011,-17.99206823,MUR/HEX:1,1,220,64.76,1,0,MZA 4466 - LT 15 B,ZONA IV,1192
4739,-70.2505629,-17.99251692,MUR/HEX:1,1,220,79.92,2,0,MZA 4468 - LT 1,ZONA IV,1193
4740,-70.25063723,-17.99249658,MUR/HEX:2,1,220,275.32,6,1,MZA 4468 - LT 2,ZONA IV,1194
4741,-70.25055886,-17.99242318,MUR/HEX:1,1,220,116.2,3,0,MZA 4468 - LT 3,ZONA IV,1195
4742,-70.25052785,-17.99236631,MUR/HEX:1,1,220,122.73,3,0,MZA 4468 - LT 4,ZONA IV,1196
4743,-70.25049852,-17.99230942,MUR/HEX:1,1,220,119.02,3,0,MZA 4468 - LT 5,ZONA IV,1197
4744,-70.25046778,-17.9922537,MUR/HEX:2,1,220,253.68,6,1,MZA 4468 - LT 6,ZONA IV,1198
4745,-70.25043768,-17.99219679,MUR/HEX:1,1,220,127.56,3,0,MZA 4468 - LT 7,ZONA IV,1199
4746,-70.2504075,-17.99214024,MUR/HEX:1,1,220,131.35,3,0,MZA 4468 - LT 8,ZONA IV,1200
4747,-70.25037747,-17.99208312,MUR/HEX:2,1,220,270.06,6,1,MZA 4468 - LT 9,ZONA IV,1201
4748,-70.2503457,-17.99202603,MUR/HEX:2,1,220,280.7,6,1,MZA 4468 - LT 10,ZONA IV,1202
4749,-70.250316,-17.99196846,MUR/HEX:2,1,220,277.04,6,1,MZA 4468 - LT 11,ZONA IV,1203
4750,-70.25028532,-17.99191351,MUR/HEX:1,1,220,137.75,3,0,MZA 4468 - LT 12,ZONA IV,1204
4751,-70.25026023,-17.99186005,MUR/HEX:2,1,220,292.78,7,2,MZA 4468 - LT 13,ZONA IV,1205
4752,-70.25022581,-17.99180012,MUR/HEX:2,1,220,297.6,7,2,MZA 4468 - LT 14,ZONA IV,1206
4753,-70.25019471,-17.99174272,MUR/HEX:1,1,220,155.97,4,1,MZA 4468 - LT 15,ZONA IV,1207
4754,-70.25016358,-17.99168601,MUR/HEX:1,1,220,155.13,4,1,MZA 4468 - LT 16,ZONA IV,1208
4755,-70.25013267,-17.9916306,MUR/HEX:2,1,220,318.68,7,2,MZA 4468 - LT 17,ZONA IV,1209
4756,-70.25010148,-17.9915751,MUR/HEX:1,1,220,165.59,4,1,MZA 4468 - LT 18,ZONA IV,1210
4757,-70.25007055,-17.99151851,MUR/HEX:1,1,220,173.26,4,1,MZA 4468 - LT 19,ZONA IV,1211
4758,-70.25003832,-17.99146273,MUR/HEX:2,1,220,348.5,8,2,MZA 4468 - LT 20,ZONA IV,1212
4759,-70.25000829,-17.99140786,MUR/HEX:2,1,220,342.14,8,2,MZA 4468 - LT 21,ZONA IV,1213
4760,-70.24997441,-17.99135349,MUR/HEX:1,1,220,189.16,4,1,MZA 4468 - LT 22,ZONA IV,1214
4761,-70.25000458,-17.99121031,MUR/HEX:2,1,220,229.76,5,1,MZA 4468 - LT 23,ZONA IV,1215
4762,-70.24994891,-17.9912407,MCF/LWAL+DNO/HEX:2/RES,1,220,243.26,6,1,MZA 4468 - LT 24,ZONA IV,1216
4763,-70.24989158,-17.99126965,MUR/HEX:2,1,220,232.14,5,1,MZA 4468 - LT 25,ZONA IV,1217
4764,-70.24983565,-17.99129785,MCF/LWAL+DNO/HEX:2/RES,1,220,228.24,5,1,MZA 4468 - LT 26,ZONA IV,1218
4765,-70.25040779,-17.99251944,MUR/HEX:2,1,220,469.6,11,3,MZA 4468 - LT 1,ZONA IV,1219
4766,-70.25035327,-17.99244199,MCF/LWAL+DNO/HEX:2/RES,1,220,475.52,11,3,MZA 4468 - LT 2,ZONA IV,1220
4767,-70.25030751,-17.99236503,MUR/HEX:1,1,220,237.15,5,1,MZA 4468 - LT 3,ZONA IV,1221
4768,-70.25025983,-17.992284,MUR/HEX:1,1,220,245.09,6,1,MZA 4468 - LT 4,ZONA IV,1222
4769,-70.25021322,-17.99220558,MUR/HEX:1,1,220,238.14,5,1,MZA 4468 - LT 5,ZONA IV,1223
4770,-70.25016767,-17.99212635,MUR/HEX:1,1,220,251.43,6,1,MZA 4468 - LT 6,ZONA IV,1224
4771,-70.25012041,-17.99204678,MUR/HEX:1,1,220,249.18,6,1,MZA 4468 - LT 7,ZONA IV,1225
4772,-70.2500739,-17.99196749,MUR/HEX:1,1,220,253.37,6,1,MZA 4468 - LT 8,ZONA IV,1226
4773,-70.2500274,-17.99188878,MCF/LWAL+DNO/HEX:1/RES,1,220,251.44,6,1,MZA 4468 - LT 9,ZONA IV,1227
4774,-70.24998039,-17.99181079,MCF/LWAL+DNO/HEX:2/RES,1,220,507.2,12,3,MZA 4468 - LT 10,ZONA IV,1228
4775,-70.24993008,-17.99173326,MCF/LWAL+DNO/HEX:2/RES,1,220,513.48,12,3,MZA 4468 - LT 11,ZONA IV,1229
4776,-70.24988282,-17.99165586,MUR/HEX:1,1,220,241.93,6,1,MZA 4468 - LT 12,ZONA IV,1230
4777,-70.24983678,-17.99157899,MUR/HEX:1,1,220,248.97,6,1,MZA 4468 - LT 13,ZONA IV,1231
4778,-70.2497892,-17.99150117,MUR/HEX:1,1,220,248.35,6,1,MZA 4468 - LT 14,ZONA IV,1232
4779,-70.24974006,-17.99142275,MUR/HEX:1,1,220,253.61,6,1,MZA 4468 - LT 15,ZONA IV,1233
4780,-70.24969128,-17.99134139,MCF/LWAL+DNO/HEX:2/RES,1,220,518.22,12,3,MZA 4468 - LT 16,ZONA IV,1234
4781,-70.25180987,-17.99249378,MUR/HEX:1,1,220,135.17,3,0,MZA 4473 - LT 1,ZONA IV,1235
4782,-70.2517939,-17.99241745,MUR/HEX:1,1,220,168.79,4,1,MZA 4473 - LT 2,ZONA IV,1236
4783,-70.25181077,-17.9923262,MUR/HEX:2,1,220,270.86,6,1,MZA 4473 - LT 3,ZONA IV,1237
4784,-70.25179236,-17.99225737,MUR/HEX:1,1,220,137.84,3,0,MZA 4473 - LT 4,ZONA IV,1238
4785,-70.25169394,-17.99234179,MUR/HEX:2,1,220,259.56,6,1,MZA 4473 - LT 5,ZONA IV,1239
4786,-70.2516257,-17.99237217,MUR/HEX:1,1,220,127.6,3,0,MZA 4473 - LT 6,ZONA IV,1240
4787,-70.25155772,-17.99240173,MUR/HEX:2,1,220,256.72,6,1,MZA 4473 - LT 7,ZONA IV,1241
4788,-70.25143597,-17.99241963,MUR/HEX:1,1,220,156.89,4,1,MZA 4473 - LT 8,ZONA IV,1242
4789,-70.25146711,-17.99249314,MUR/HEX:2,1,220,301.68,7,2,MZA 4473 - LT 9,ZONA IV,1243
4790,-70.25149577,-17.99256006,MUR/HEX:1,1,220,139.6,3,0,MZA 4473 - LT 10,ZONA IV,1244
4791,-70.25152163,-17.99262163,MUR/HEX:2,1,220,270.3,6,1,MZA 4473 - LT 11,ZONA IV,1245
4792,-70.2516206,-17.99253524,MUR/HEX:1,1,220,129.29,3,0,MZA 4473 - LT 12,ZONA IV,1246
4793,-70.25168931,-17.99250589,MUR/HEX:2,1,220,260.14,6,1,MZA 4473 - LT 13,ZONA IV,1247

4794,-70.25181758,-17.99297743,MUR/HEX:1,1,220,158.76,4,1,MZA 4474 - LT 1,ZONA IV,1248
4795,-70.25180476,-17.99289054,CR/LFINF+DUC/HEX:2/RES,1,220,333.12,8,2,MZA 4474 - LT 2,ZONA IV,1249
4796,-70.25179319,-17.99280881,CR/LFINF+DNO/HEX:4/RES,1,220,769.12,18,5,MZA 4474 - LT 3,ZONA IV,1250
4797,-70.25176684,-17.99269837,MUR/HEX:2,1,220,257.6,6,1,MZA 4474 - LT 5,ZONA IV,1251
4798,-70.25169365,-17.99272724,MUR/HEX:2,1,220,279.52,6,1,MZA 4474 - LT 6,ZONA IV,1252
4799,-70.25156496,-17.99273718,MUR/HEX:2,1,220,294.38,7,2,MZA 4474 - LT 7,ZONA IV,1253
4800,-70.25158352,-17.99280339,MUR/HEX:2,1,220,266.44,6,1,MZA 4474 - LT 8,ZONA IV,1254
4801,-70.25161144,-17.99286456,MUR/HEX:2,1,220,281.92,7,2,MZA 4474 - LT 9,ZONA IV,1255
4802,-70.25163192,-17.99292682,MUR/HEX:1,1,220,132.36,3,0,MZA 4474 - LT 10,ZONA IV,1256
4803,-70.25164985,-17.99298634,MUR/HEX:1,1,220,122.35,3,0,MZA 4474 - LT 11,ZONA IV,1257
4804,-70.25167075,-17.99304712,MUR/HEX:2,1,220,270.82,6,1,MZA 4474 - LT 12,ZONA IV,1258
4805,-70.25138358,-17.99410417,MUR/HEX:1,1,220,236.44,5,1,MZA 4476 - LT 2,ZONA IV,1261
4806,-70.25149883,-17.99416361,MUR/HEX:2,1,220,271.16,6,1,MZA 4476 - LT 3,ZONA IV,1262
4807,-70.25142082,-17.994038,MUR/HEX:2,1,220,271.14,6,1,MZA 4476 - LT 3B,ZONA IV,1263
4808,-70.25131099,-17.99393337,MUR/HEX:1,1,220,127.3,0,MZA 4476 - LT 4,ZONA IV,1264
4809,-70.25123705,-17.99397209,MUR/HEX:1,1,220,127.3,0,MZA 4476 - LT 4B,ZONA IV,1265
4810,-70.25123076,-17.99387502,MUR/HEX:1,1,220,252.25,6,1,MZA 4476 - LT 5,ZONA IV,1266
4811,-70.25123177,-17.99377298,MUR/HEX:1,1,220,128.19,3,0,MZA 4476 - LT 6,ZONA IV,1267
4812,-70.25113928,-17.99382002,MUR/HEX:1,1,220,128.18,3,0,MZA 4476 - LT 6B,ZONA IV,1268
4813,-70.25118119,-17.99369084,MUR/HEX:1,1,220,194.2,4,1,MZA 4476 - LT 7,ZONA IV,1269
4814,-70.25108303,-17.99374428,MUR/HEX:1,1,220,66.79,2,0,MZA 4476 - LT 7B,ZONA IV,1270
4815,-70.25113591,-17.99361818,MUR/HEX:1,1,220,128.47,3,0,MZA 4476 - LT 8,ZONA IV,1271
4816,-70.25104343,-17.9936684,MUR/HEX:1,1,220,128.46,3,0,MZA 4476 - LT 8B,ZONA IV,1272
4817,-70.25108442,-17.99354194,MUR/HEX:1,1,220,129.91,3,0,MZA 4476 - LT 9,ZONA IV,1273
4818,-70.25099665,-17.99358439,MUR/HEX:2,1,220,253.82,6,1,MZA 4476 - LT 9B,ZONA IV,1274
4819,-70.2510405,-17.9934588,MUR/HEX:2,1,220,256.7,6,1,MZA 4476 - LT 10,ZONA IV,1275
4820,-70.25095463,-17.99350033,MUR/HEX:1,1,220,128.34,3,0,MZA 4476 - LT 10B,ZONA IV,1276
4821,-70.25098952,-17.99338583,MUR/HEX:1,1,220,133.7,3,0,MZA 4476 - LT 11,ZONA IV,1277
4822,-70.25090508,-17.9934269,MUR/HEX:1,1,220,133.69,3,0,MZA 4476 - LT 11B,ZONA IV,1278
4823,-70.25094938,-17.99329897,MUR/HEX:2,1,220,278.38,6,1,MZA 4476 - LT 12,ZONA IV,1279
4824,-70.25085452,-17.9933483,MUR/HEX:2,1,220,278.36,6,1,MZA 4476 - LT 12B,ZONA IV,1280
4825,-70.25092354,-17.99321434,MUR/HEX:1,1,220,143.62,3,0,MZA 4476 - LT 13,ZONA IV,1281
4826,-70.2508187,-17.99326464,MUR/HEX:1,1,220,143.61,3,0,MZA 4476 - LT 13B,ZONA IV,1282
4827,-70.25080075,-17.9931686,MUR/HEX:1,1,220,250.93,6,1,MZA 4476 - LT 14,ZONA IV,1283
4828,-70.25075356,-17.99308997,MUR/HEX:1,1,220,249.94,6,1,MZA 4476 - LT 15,ZONA IV,1284
4829,-70.25070599,-17.99301183,MUR/HEX:1,1,220,250.25,6,1,MZA 4476 - LT 16,ZONA IV,1285
4830,-70.25065892,-17.99293372,MUR/HEX:3,1,220,747.3,17,5,MZA 4476 - LT 17,ZONA IV,1286
4831,-70.25061191,-17.99285523,MUR/HEX:1,1,220,252.55,6,1,MZA 4476 - LT 18,ZONA IV,1287
4832,-70.25053482,-17.99278295,MUR/HEX:1,1,220,254.87,6,1,MZA 4476 - LT 19,ZONA IV,1288
4833,-70.25181497,-17.99426131,MUR/HEX:2,1,220,410.3,9,2,MZA 4486 - LT 1,ZONA IV,1289
4834,-70.25174462,-17.99420555,MUR/HEX:2,1,220,239.78,6,1,MZA 4486 - LT 2,ZONA IV,1290
4835,-70.2517111,-17.99415037,MUR/HEX:3,1,220,364.89,8,2,MZA 4486 - LT 3,ZONA IV,1291
4836,-70.25167777,-17.99409509,MUR/HEX:3,1,220,357.27,8,2,MZA 4486 - LT 4,ZONA IV,1292
4837,-70.25164418,-17.99404033,MUR/HEX:2,1,220,239.08,6,1,MZA 4486 - LT 5,ZONA IV,1293
4838,-70.25161659,-17.99398684,MUR/HEX:2,1,220,236.58,5,1,MZA 4486 - LT 6,ZONA IV,1294
4839,-70.25157786,-17.99393037,MUR/HEX:2,1,220,237.46,5,1,MZA 4486 - LT 7,ZONA IV,1295
4840,-70.25150912,-17.9938879,MUR/HEX:1,1,220,72.96,2,0,MZA 4486 - LT 8,ZONA IV,1296
4841,-70.25158045,-17.99385427,MUR/HEX:1,1,220,58.78,1,0,MZA 4486 - LT 8B,ZONA IV,1297
4842,-70.25167098,-17.99386264,MUR/HEX:2,1,220,279.02,6,1,MZA 4486 - LT 9,ZONA IV,1298
4843,-70.25172854,-17.99382875,MUR/HEX:2,1,220,250.68,6,1,MZA 4486 - LT 10,ZONA IV,1299
4844,-70.25179934,-17.99377811,MUR/HEX:3,1,220,657.93,15,4,MZA 4486 - LT 11,ZONA IV,1300
4845,-70.25177976,-17.99393444,MUR/HEX:1,1,220,138.49,3,0,MZA 4486 - LT 12,ZONA IV,1301
4846,-70.25180216,-17.99399594,MUR/HEX:3,1,220,353.64,8,2,MZA 4486 - LT 13,ZONA IV,1302
4847,-70.2518279,-17.99409822,MUR/HEX:2,1,220,335.58,8,2,MZA 4486 - LT 14,ZONA IV,1303
4848,-70.25329117,-17.99139157,MUR/HEX:1,1,220,158.46,4,1,MZA 5505 - LT 1,ZONA V,1
4849,-70.25324425,-17.99144835,MUR/HEX:1,1,220,156.12,4,1,MZA 5505 - LT 2,ZONA V,2
4850,-70.25319769,-17.99150546,MUR/HEX:1,1,220,165.31,4,1,MZA 5505 - LT 3,ZONA V,3
4851,-70.25315075,-17.99156251,MUR/HEX:1,1,220,155.86,4,1,MZA 5505 - LT 4,ZONA V,4
4852,-70.25310592,-17.99161968,MUR/HEX:1,1,220,166.49,4,1,MZA 5505 - LT 5,ZONA V,5
4853,-70.2530593,-17.99167509,MUR/HEX:1,1,220,161.42,4,1,MZA 5505 - LT 6,ZONA V,6
4854,-70.25301073,-17.99173128,MUR/HEX:1,1,220,165.35,4,1,MZA 5505 - LT 7,ZONA V,7
4855,-70.25314677,-17.9913474,MUR/HEX:1,1,220,186.65,4,1,MZA 5505 - LT 8,ZONA V,8
4856,-70.25304315,-17.99144972,MUR/HEX:1,1,220,190.89,4,1,MZA 5505 - LT 9,ZONA V,9
4857,-70.25296872,-17.99152374,MUR/HEX:1,1,220,137.39,3,0,MZA 5505 - LT 10,ZONA V,10
4858,-70.25291462,-17.99157747,MUR/HEX:1,1,220,133.76,3,0,MZA 5505 - LT 11,ZONA V,11
4859,-70.25286654,-17.99162759,MUR/HEX:1,1,220,136.66,3,0,MZA 5505 - LT 12,ZONA V,12
4860,-70.25369295,-17.9916844,MUR/HEX:1,1,220,166.08,4,1,MZA 5506 - LT 36,ZONA V,13
4861,-70.25364693,-17.99174341,MUR/HEX:1,1,220,159.81,4,1,MZA 5506 - LT 37,ZONA V,14
4862,-70.2536008,-17.99180065,MUR/HEX:1,1,220,156.5,4,1,MZA 5506 - LT 38,ZONA V,15
4863,-70.25355555,-17.9918576,MUR/HEX:2,1,220,316.76,7,2,MZA 5506 - LT 39,ZONA V,16
4864,-70.2535102,-17.99191467,MUR/HEX:1,1,220,164.44,4,1,MZA 5506 - LT 40,ZONA V,17

4865,-70.25346433,-17.99197182,MUR/HEX:1,1,220,160.81,4,1,MZA 5506 - LT 41,ZONA V,18
4866,-70.25341824,-17.99202887,MUR/HEX:2,1,220,319.1,7,2,MZA 5506 - LT 42,ZONA V,19
4867,-70.2535448,-17.99157705,MUR/HEX:1,1,220,162.86,4,1,MZA 5506 - LT 43,ZONA V,20
4868,-70.25349795,-17.99163532,MUR/HEX:1,1,220,160.71,4,1,MZA 5506 - LT 44,ZONA V,21
4869,-70.25345206,-17.99169267,MUR/HEX:1,1,220,150.01,3,0,MZA 5506 - LT 45,ZONA V,22
4870,-70.25340655,-17.99174978,MUR/HEX:2,1,220,320.92,7,2,MZA 5506 - LT 46,ZONA V,23
4871,-70.25336116,-17.99180673,MUR/HEX:1,1,220,158.45,4,1,MZA 5506 - LT 47,ZONA V,24
4872,-70.25331566,-17.99186393,MUR/HEX:1,1,220,153.54,4,1,MZA 5506 - LT 48,ZONA V,25
4873,-70.25327052,-17.99192177,MUR/HEX:2,1,220,309.4,7,2,MZA 5506 - LT 49,ZONA V,26
4874,-70.25405633,-17.99194729,MUR/HEX:1,1,220,173.85,4,1,MZA 5507 - LT 22,ZONA V,27
4875,-70.25400834,-17.99200493,MCF/LWAL+DNO/HEX:2/RES,1,220,333.44,8,2,MZA 5507 - LT 23,ZONA V,28
4876,-70.25396135,-17.99206171,MUR/HEX:1,1,220,166.64,4,1,MZA 5507 - LT 24,ZONA V,29
4877,-70.25391462,-17.99211792,MUR/HEX:1,1,220,162.75,4,1,MZA 5507 - LT 25,ZONA V,30
4878,-70.25386816,-17.9921738,MUR/HEX:1,1,220,172.26,4,1,MZA 5507 - LT 26,ZONA V,31
4879,-70.25382215,-17.99222918,MUR/HEX:1,1,220,163.97,4,1,MZA 5507 - LT 27,ZONA V,32
4880,-70.25377419,-17.9922859,MUR/HEX:1,1,220,168.48,4,1,MZA 5507 - LT 28,ZONA V,33
4881,-70.2539043,-17.99183658,MCF/LWAL+DNO/HEX:2/RES,1,220,351.8,8,2,MZA 5507 - LT 29,ZONA V,34
4882,-70.25385649,-17.99189368,MUR/HEX:1,1,220,168.99,4,1,MZA 5507 - LT 30,ZONA V,35
4883,-70.25381015,-17.9919512,MUR/HEX:1,1,220,165.25,4,1,MZA 5507 - LT 31,ZONA V,36
4884,-70.25376436,-17.99200788,MUR/HEX:1,1,220,164.44,4,1,MZA 5507 - LT 32,ZONA V,37
4885,-70.25371811,-17.99206424,MUR/HEX:2,1,220,342.68,8,2,MZA 5507 - LT 33,ZONA V,38
4886,-70.25367204,-17.99212049,MUR/HEX:1,1,220,162.37,4,1,MZA 5507 - LT 34,ZONA V,39
4887,-70.25362757,-17.99217921,MUR/HEX:1,1,220,174.49,4,1,MZA 5507 - LT 35,ZONA V,40
4888,-70.25400226,-17.99245483,MUR/HEX:1,1,220,90.18,2,0,MZA 5508 - LT 21A,ZONA V,41
4889,-70.25393586,-17.99240919,MUR/HEX:1,1,220,90.18,2,0,MZA 5508 - LT 21B,ZONA V,42
4890,-70.25401423,-17.99237229,MUR/HEX:1,1,220,171.66,4,1,MZA 5508 - LT 20,ZONA V,43
4891,-70.25406082,-17.99231589,MUR/HEX:1,1,220,171.78,4,1,MZA 5508 - LT 19,ZONA V,44
4892,-70.25410833,-17.99226039,MUR/HEX:1,1,220,168.03,4,1,MZA 5508 - LT 18,ZONA V,45
4893,-70.25415519,-17.9922042,MUR/HEX:1,1,220,166.26,4,1,MZA 5508 - LT 17,ZONA V,46
4894,-70.2542023,-17.99214777,MUR/HEX:1,1,220,165.55,4,1,MZA 5508 - LT 16,ZONA V,47
4895,-70.25425021,-17.99209043,MUR/HEX:1,1,220,166.37,4,1,MZA 5508 - LT 15,ZONA V,48
4896,-70.25458817,-17.99234246,MUR/HEX:1,1,220,167.82,4,1,MZA 5509 - LT 1,ZONA V,49
4897,-70.25454577,-17.992401,MUR/HEX:1,1,220,162.57,4,1,MZA 5509 - LT 2,ZONA V,50
4898,-70.25449992,-17.99245686,MUR/HEX:1,1,220,160.27,4,1,MZA 5509 - LT 3,ZONA V,51
4899,-70.25445279,-17.99251337,MUR/HEX:1,1,220,154.92,4,1,MZA 5509 - LT 4,ZONA V,52
4900,-70.25440701,-17.9925692,MUR/HEX:2,1,220,315.9,7,2,MZA 5509 - LT 5,ZONA V,53
4901,-70.25436128,-17.99262509,MUR/HEX:1,1,220,162.75,4,1,MZA 5509 - LT 6,ZONA V,54
4902,-70.25431501,-17.99268024,MUR/HEX:1,1,220,161.01,4,1,MZA 5509 - LT 7,ZONA V,55
4903,-70.25444122,-17.99223498,MUR/HEX:1,1,220,175.53,4,1,MZA 5509 - LT 8,ZONA V,56
4904,-70.2543942,-17.9922912,MUR/HEX:2,1,220,336.32,8,2,MZA 5509 - LT 9,ZONA V,57
4905,-70.25434904,-17.99234624,MUR/HEX:1,1,220,163.87,4,1,MZA 5509 - LT 10,ZONA V,58
4906,-70.25430251,-17.99240302,MUR/HEX:1,1,220,162.62,4,1,MZA 5509 - LT 11,ZONA V,59
4907,-70.25425657,-17.99245933,MUR/HEX:1,1,220,158.93,4,1,MZA 5509 - LT 12,ZONA V,60
4908,-70.25421062,-17.99251591,MUR/HEX:1,1,220,162.38,4,1,MZA 5509 - LT 13,ZONA V,61
4909,-70.2541649,-17.99257205,MUR/HEX:1,1,220,163.73,4,1,MZA 5509 - LT 14,ZONA V,62
4910,-70.25499767,-17.99263597,MUR/HEX:1,1,220,160.86,4,1,MZA 5510 - LT 8,ZONA V,63
4911,-70.25495362,-17.99269089,MUR/HEX:1,1,220,156.73,4,1,MZA 5510 - LT 9,ZONA V,64
4912,-70.25490789,-17.99274843,MUR/HEX:1,1,220,160.59,4,1,MZA 5510 - LT 10,ZONA V,65
4913,-70.25486327,-17.99280658,MUR/HEX:1,1,220,149.79,3,0,MZA 5510 - LT 11,ZONA V,66
4914,-70.25481801,-17.99286394,MUR/HEX:2,1,220,333.7,8,2,MZA 5510 - LT 12,ZONA V,67
4915,-70.25477234,-17.99292109,MUR/HEX:1,1,220,157.02,4,1,MZA 5510 - LT 13,ZONA V,68
4916,-70.25472476,-17.99297816,MUR/HEX:2,1,220,313.36,7,2,MZA 5510 - LT 14,ZONA V,69
4917,-70.25484725,-17.99252473,MUR/HEX:1,1,220,159.86,4,1,MZA 5510 - LT 15,ZONA V,70
4918,-70.25480409,-17.99258001,MUR/HEX:1,1,220,155.04,4,1,MZA 5510 - LT 16,ZONA V,71
4919,-70.25475847,-17.99263794,MUR/HEX:1,1,220,166.5,4,1,MZA 5510 - LT 17,ZONA V,72
4920,-70.25471281,-17.99269562,MUR/HEX:1,1,220,147.33,3,0,MZA 5510 - LT 18,ZONA V,73
4921,-70.25466776,-17.99275201,MUR/HEX:2,1,220,331.14,8,2,MZA 5510 - LT 19,ZONA V,74
4922,-70.25462265,-17.99280886,MUR/HEX:2,1,220,302.4,7,2,MZA 5510 - LT 20,ZONA V,75
4923,-70.25457762,-17.99286809,MUR/HEX:1,1,220,167.7,4,1,MZA 5510 - LT 21,ZONA V,76
4924,-70.25588365,-17.99328132,MUR/HEX:1,1,220,160.25,4,1,MZA 5512 - LT 1,ZONA V,77
4925,-70.25583641,-17.99333651,MUR/HEX:1,1,220,157.32,4,1,MZA 5512 - LT 2,ZONA V,78
4926,-70.25579118,-17.99339501,MUR/HEX:1,1,220,156.37,4,1,MZA 5512 - LT 3,ZONA V,79
4927,-70.25574533,-17.99345197,MCF/LWAL+DNO/HEX:1/RES,1,220,156.84,4,1,MZA 5512 - LT 4,ZONA V,80
4928,-70.25569967,-17.99350887,MUR/HEX:1,1,220,160.67,4,1,MZA 5512 - LT 5,ZONA V,81
4929,-70.25565577,-17.99356697,MUR/HEX:1,1,220,150.66,3,0,MZA 5512 - LT 6,ZONA V,82
4930,-70.25560976,-17.99362458,MUR/HEX:2,1,220,288.48,7,2,MZA 5512 - LT 7,ZONA V,83
4931,-70.25573375,-17.99317011,MUR/HEX:1,1,220,159.06,4,1,MZA 5512 - LT 8,ZONA V,84
4932,-70.25569233,-17.9932271,MUR/HEX:1,1,220,163.83,4,1,MZA 5512 - LT 9,ZONA V,85
4933,-70.2556462,-17.99328555,MUR/HEX:3,1,220,469.89,11,3,MZA 5512 - LT 10,ZONA V,86
4934,-70.25559969,-17.9933429,MUR/HEX:2,1,220,325.4,8,2,MZA 5512 - LT 11,ZONA V,87
4935,-70.25555254,-17.99340111,MUR/HEX:1,1,220,161.37,4,1,MZA 5512 - LT 12,ZONA V,88

4936,-70.25550623,-17.99345895,MUR/HEX:1,1,220,148.74,3,0,MZA 5512 - LT 13,ZONA V,89
4937,-70.2554615,-17.99351726,MUR/HEX:2,1,220,293.58,7,2,MZA 5512 - LT 14,ZONA V,90
4938,-70.25254429,-17.99233862,MUR/HEX:1,1,220,200.35,5,1,MZA 5513 - LT 1,ZONA V,91
4939,-70.25249776,-17.99239705,MCF/LWAL+DNO/HEX:3/RES,1,220,566.82,13,4,MZA 5513 - LT 2,ZONA V,92
4940,-70.25245171,-17.99245487,MUR/HEX:2,1,220,401.46,9,2,MZA 5513 - LT 3,ZONA V,93
4941,-70.25240661,-17.99251149,MUR/HEX:1,1,220,194.67,4,1,MZA 5513 - LT 4,ZONA V,94
4942,-70.25235773,-17.99256962,MCF/LWAL+DNO/HEX:2/RES,1,220,392.7,9,2,MZA 5513 - LT 5,ZONA V,95
4943,-70.25259033,-17.99228096,MUR/HEX:1,1,220,197.57,5,1,MZA 5513 - LT 6,ZONA V,96
4944,-70.25263583,-17.99222375,MUR/HEX:2,1,220,413.94,10,3,MZA 5513 - LT 7,ZONA V,97
4945,-70.2526805,-17.99216697,MCF/LWAL+DNO/HEX:2/RES,1,220,379.08,9,2,MZA 5513 - LT 8,ZONA V,98
4946,-70.2527258,-17.99210967,MUR/HEX:1,1,220,196.77,5,1,MZA 5513 - LT 9,ZONA V,99
4947,-70.25277074,-17.99205294,MUR/HEX:1,1,220,201.85,5,1,MZA 5513 - LT 10,ZONA V,100
4948,-70.25288443,-17.99186286,MUR/HEX:1,1,220,207.71,5,1,MZA 5513 - LT 1,ZONA V,101
4949,-70.25286134,-17.99193808,MUR/HEX:1,1,220,201.1,5,1,MZA 5513 - LT 2,ZONA V,102
4950,-70.2528152,-17.99199511,MUR/HEX:1,1,220,187.12,4,1,MZA 5513 - LT 3,ZONA V,103
4951,-70.25272119,-17.9917438,MUR/HEX:2,1,220,332.08,8,2,MZA 5513 - LT 4,ZONA V,104
4952,-70.25269515,-17.99181678,MUR/HEX:2,1,220,344.52,8,2,MZA 5513 - LT 5,ZONA V,105
4953,-70.25263823,-17.99186647,MCF/LWAL+DNO/HEX:2/RES,1,220,387.8,9,2,MZA 5513 - LT 6,ZONA V,106
4954,-70.25222457,-17.99206353,MUR/HEX:3,1,220,414.93,10,3,MZA 5513 - LT 1,ZONA V,107
4955,-70.25229327,-17.992003,MUR/HEX:2,1,220,258.64,6,1,MZA 5513 - LT 2,ZONA V,108
4956,-70.25239436,-17.99191013,MUR/HEX:2,1,220,372.02,9,2,MZA 5513 - LT 3,ZONA V,109
4957,-70.25317376,-17.99234627,MUR/HEX:1,1,220,160.33,4,1,MZA 5514 - LT 1,ZONA V,111
4958,-70.25312783,-17.99240565,MUR/HEX:2,1,220,326.36,8,2,MZA 5514 - LT 2,ZONA V,112
4959,-70.25308287,-17.99246391,MUR/HEX:2,1,220,326.94,8,2,MZA 5514 - LT 3,ZONA V,113
4960,-70.25303794,-17.99252189,MCF/LWAL+DNO/HEX:2/RES,1,220,323.3,7,2,MZA 5514 - LT 4,ZONA V,114
4961,-70.25299295,-17.99257951,MUR/HEX:1,1,220,163.9,4,1,MZA 5514 - LT 5,ZONA V,115
4962,-70.25294918,-17.99263683,MUR/HEX:1,1,220,162.35,4,1,MZA 5514 - LT 6,ZONA V,116
4963,-70.25302293,-17.99223621,MCF/LWAL+DNO/HEX:2/RES,1,220,325.02,8,2,MZA 5514 - LT 7,ZONA V,117
4964,-70.25297822,-17.9922932,MUR/HEX:2,1,220,326.08,8,2,MZA 5514 - LT 8,ZONA V,118
4965,-70.25293292,-17.99235075,MCF/LWAL+DNO/HEX:2/RES,1,220,338.08,8,2,MZA 5514 - LT 9,ZONA V,119
4966,-70.25288814,-17.99240776,MUR/HEX:1,1,220,162.44,4,1,MZA 5514 - LT 10,ZONA V,120
4967,-70.25284317,-17.99246503,MUR/HEX:1,1,220,158.62,4,1,MZA 5514 - LT 11,ZONA V,121
4968,-70.25279783,-17.99252388,MUR/HEX:2,1,220,327.72,8,2,MZA 5514 - LT 12,ZONA V,122
4969,-70.25330836,-17.99216912,MUR/HEX:1,1,220,170.4,1,MZA 5514 - LT 16,ZONA V,124
4970,-70.25326242,-17.99222675,MUR/HEX:2,1,220,324.74,7,2,MZA 5514 - LT 17,ZONA V,125
4971,-70.25321529,-17.99228414,MUR/HEX:2,1,220,329.34,8,2,MZA 5514 - LT 18,ZONA V,126
4972,-70.25315836,-17.9920606,MUR/HEX:3,1,220,478.89,11,3,MZA 5514 - LT 19,ZONA V,127
4973,-70.25311386,-17.99211894,MUR/HEX:2,1,220,319.16,7,2,MZA 5514 - LT 20,ZONA V,128
4974,-70.25306806,-17.99217835,MUR/HEX:1,1,220,168.89,4,1,MZA 5514 - LT 21,ZONA V,129
4975,-70.2542053,-17.99281901,MUR/HEX:1,1,220,156.52,4,1,MZA 5515 - LT 1,ZONA V,130
4976,-70.25416092,-17.99287667,MUR/HEX:2,1,220,306.42,7,2,MZA 5515 - LT 2,ZONA V,131
4977,-70.25411538,-17.99293458,MCF/LWAL+DNO/HEX:1/RES,1,220,163.75,4,1,MZA 5515 - LT 3,ZONA V,132
4978,-70.25405562,-17.99280192,MUR/HEX:1,1,220,183.45,4,1,MZA 5515 - LT 4,ZONA V,133
4979,-70.25399508,-17.9927589,MUR/HEX:1,1,220,196.6,5,1,MZA 5515 - LT 5,ZONA V,134
4980,-70.25393481,-17.99271571,MUR/HEX:1,1,220,189.76,4,1,MZA 5515 - LT 6,ZONA V,135
4981,-70.25387547,-17.99267289,MUR/HEX:1,1,220,186.75,4,1,MZA 5515 - LT 7,ZONA V,136
4982,-70.25381571,-17.99262959,MUR/HEX:2,1,220,387.62,9,2,MZA 5515 - LT 8,ZONA V,137
4983,-70.25375572,-17.992586,MUR/HEX:2,1,220,383.9,9,2,MZA 5515 - LT 9,ZONA V,138
4984,-70.25369571,-17.99254249,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,191.99,4,1,MZA 5515 - LT 10,ZONA V,139
4985,-70.25363532,-17.99249856,MUR/HEX:2,1,220,383.16,9,2,MZA 5515 - LT 11,ZONA V,140
4986,-70.25357485,-17.99245458,MUR/HEX:1,1,220,191.17,4,1,MZA 5515 - LT 12,ZONA V,141
4987,-70.25351347,-17.99231977,MCF/LWAL+DNO/HEX:1/RES,1,220,168.77,4,1,MZA 5515 - LT 13,ZONA V,142
4988,-70.25346711,-17.99237767,MUR/HEX:1,1,220,171.67,4,1,MZA 5515 - LT 14,ZONA V,143
4989,-70.25342118,-17.99243489,MUR/HEX:1,1,220,169.71,4,1,MZA 5515 - LT 15,ZONA V,144
4990,-70.25407847,-17.99306754,MUR/HEX:1,1,220,162.32,4,1,MZA 5515 - LT 20,ZONA V,145
4991,-70.25401491,-17.99302497,MUR/HEX:1,1,220,164.8,4,1,MZA 5515 - LT 21,ZONA V,146
4992,-70.25395426,-17.99298108,MUR/HEX:2,1,220,327.26,8,2,MZA 5515 - LT 22,ZONA V,147
4993,-70.25389425,-17.99293773,MUR/HEX:1,1,220,156.62,4,1,MZA 5515 - LT 23,ZONA V,148
4994,-70.25383358,-17.99289387,MUR/HEX:1,1,220,162.14,4,1,MZA 5515 - LT 24,ZONA V,149
4995,-70.25377385,-17.99284856,MUR/HEX:1,1,220,164.81,4,1,MZA 5515 - LT 25,ZONA V,150
4996,-70.25371431,-17.99280582,MUR/HEX:1,1,220,151.97,4,1,MZA 5515 - LT 26,ZONA V,151
4997,-70.25365605,-17.99276408,MUR/HEX:1,1,220,158.25,4,1,MZA 5515 - LT 27,ZONA V,152
4998,-70.25359544,-17.99272069,MCF/LWAL+DNO/HEX:1/RES,1,220,159.9,4,1,MZA 5515 - LT 28,ZONA V,153
4999,-70.25353294,-17.99267655,MUR/HEX:2,1,220,320.18,7,2,MZA 5515 - LT 29,ZONA V,154
5000,-70.25347284,-17.99263318,MCF/LWAL+DNO/HEX:2/RES,1,220,328.78,8,2,MZA 5515 - LT 30,ZONA V,155
5001,-70.25341347,-17.99258938,MCF/LWAL+DNO/HEX:2/RES,1,220,322.28,7,2,MZA 5515 - LT 31,ZONA V,156
5002,-70.25335373,-17.99254569,MCF/LWAL+DNO/HEX:1/RES,1,220,159.71,4,1,MZA 5515 - LT 32,ZONA V,157
5003,-70.25329407,-17.99250227,MUR/HEX:2,1,220,357.98,8,2,MZA 5515 - LT 33,ZONA V,158
5004,-70.25391609,-17.99318295,MCF/LWAL+DNO/HEX:2/RES,1,220,332.08,8,2,MZA 5517 - LT 1,ZONA V,159
5005,-70.25387066,-17.99324054,MCF/LWAL+DNO/HEX:2/RES,1,220,328.4,8,2,MZA 5517 - LT 2,ZONA V,160
5006,-70.25382411,-17.99329792,MUR/HEX:2,1,220,327.18,8,2,MZA 5517 - LT 3,ZONA V,161

5007,-70.25377711,-17.99335543,MUR/HEX:1,1,220,149,3,0,MZA 5517 - LT 4,ZONA V,162
5008,-70.25373114,-17.99341278,MUR/HEX:2,1,220,338.18,8,2,MZA 5517 - LT 5,ZONA V,163
5009,-70.25368554,-17.99346994,MUR/HEX:2,1,220,318.6,7,2,MZA 5517 - LT 6,ZONA V,164
5010,-70.25363986,-17.99352732,MUR/HEX:1,1,220,159.47,4,1,MZA 5517 - LT 7,ZONA V,165
5011,-70.25359391,-17.99358475,MUR/HEX:1,1,220,159.86,4,1,MZA 5517 - LT 8,ZONA V,166
5012,-70.25354868,-17.99364116,MUR/HEX:1,1,220,164.2,4,1,MZA 5517 - LT 9,ZONA V,167
5013,-70.25350335,-17.99369824,MUR/HEX:2,1,220,306.88,7,2,MZA 5517 - LT 10,ZONA V,168
5014,-70.25345687,-17.99375584,MUR/HEX:2,1,220,316.76,7,2,MZA 5517 - LT 11,ZONA V,169
5015,-70.25376402,-17.99307211,MCF/LWAL+DNO/HEX:2/RES,1,220,342,8,2,MZA 5517 - LT 12,ZONA V,170
5016,-70.25371823,-17.99312918,MUR/HEX:2,1,220,336.08,8,2,MZA 5517 - LT 13,ZONA V,171
5017,-70.25367259,-17.99318715,MUR/HEX:1,1,220,168.51,4,1,MZA 5517 - LT 14,ZONA V,172
5018,-70.25362676,-17.99324466,MUR/HEX:1,1,220,145.82,3,0,MZA 5517 - LT 15,ZONA V,173
5019,-70.25358133,-17.99330196,MUR/HEX:1,1,220,180.82,4,1,MZA 5517 - LT 16,ZONA V,174
5020,-70.25353558,-17.99335918,MUR/HEX:2,1,220,314.12,7,2,MZA 5517 - LT 17,ZONA V,175
5021,-70.25349005,-17.99341669,MUR/HEX:1,1,220,164.21,4,1,MZA 5517 - LT 18,ZONA V,176
5022,-70.25344453,-17.99347382,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5517 - LT 19,ZONA V,177
5023,-70.25339932,-17.99353025,MUR/HEX:1,1,220,169.26,4,1,MZA 5517 - LT 20,ZONA V,178
5024,-70.25335413,-17.99358768,MUR/HEX:1,1,220,162.22,4,1,MZA 5517 - LT 21,ZONA V,179
5025,-70.25330858,-17.99364563,MUR/HEX:1,1,220,167.59,4,1,MZA 5517 - LT 22,ZONA V,180
5026,-70.25324278,-17.99330462,MUR/HEX:2,1,220,339.3,8,2,MZA 5518 - LT 1,ZONA V,181
5027,-70.25318353,-17.99326039,MUR/HEX:1,1,220,163.44,4,1,MZA 5518 - LT 2,ZONA V,182
5028,-70.25312353,-17.99321663,MUR/HEX:2,1,220,316.26,7,2,MZA 5518 - LT 3,ZONA V,183
5029,-70.25306328,-17.99317262,MUR/HEX:1,1,220,166.6,4,1,MZA 5518 - LT 4,ZONA V,184
5030,-70.25300319,-17.99312892,MUR/HEX:1,1,220,163.01,4,1,MZA 5518 - LT 5,ZONA V,185
5031,-70.25294323,-17.99308514,MUR/HEX:1,1,220,155.96,4,1,MZA 5518 - LT 6,ZONA V,186
5032,-70.25288307,-17.99304114,MUR/HEX:2,1,220,334.78,8,2,MZA 5518 - LT 7,ZONA V,187
5033,-70.25282306,-17.9929971,MCF/LWAL+DNO/HEX:2/RES,1,220,319.2,7,2,MZA 5518 - LT 8,ZONA V,188
5034,-70.2527628,-17.99295298,MUR/HEX:2,1,220,340.78,8,2,MZA 5518 - LT 9,ZONA V,189
5035,-70.25270242,-17.99290921,MUR/HEX:2,1,220,322.68,7,2,MZA 5518 - LT 10,ZONA V,190
5036,-70.2526423,-17.99286553,MCF/LWAL+DNO/HEX:2/RES,1,220,323.04,7,2,MZA 5518 - LT 11,ZONA V,191
5037,-70.25258228,-17.99282162,MCF/LWAL+DNO/HEX:2/RES,1,220,327.52,8,2,MZA 5518 - LT 12,ZONA V,192
5038,-70.25252194,-17.99277834,MUR/HEX:2,1,220,306.5,7,2,MZA 5518 - LT 13,ZONA V,193
5039,-70.25312885,-17.99344813,MCF/LWAL+DNO/HEX:1/RES,1,220,166.87,4,1,MZA 5518 - LT 14,ZONA V,194
5040,-70.2530688,-17.99340445,MUR/HEX:2,1,220,331.28,8,2,MZA 5518 - LT 15,ZONA V,195
5041,-70.25300896,-17.99336055,MCF/LWAL+DNO/HEX:2/RES,1,220,323.66,7,2,MZA 5518 - LT 16,ZONA V,196
5042,-70.25294872,-17.99331645,MUR/HEX:1,1,220,163.12,4,1,MZA 5518 - LT 17,ZONA V,197
5043,-70.2528887,-17.99327258,MCF/LWAL+DNO/HEX:1/RES,1,220,159.08,4,1,MZA 5518 - LT 18,ZONA V,198
5044,-70.2528288,-17.99322881,MUR/HEX:2,1,220,325.8,8,2,MZA 5518 - LT 19,ZONA V,199
5045,-70.25276863,-17.99318515,MUR/HEX:2,1,220,335.36,8,2,MZA 5518 - LT 20,ZONA V,200
5046,-70.25270856,-17.99314131,MUR/HEX:1,1,220,162.08,4,1,MZA 5518 - LT 21,ZONA V,201
5047,-70.252648,-17.99309735,MCF/LWAL+DNO/HEX:2/RES,1,220,332.84,8,2,MZA 5518 - LT 22,ZONA V,202
5048,-70.25258761,-17.99305345,MUR/HEX:2,1,220,322.88,7,2,MZA 5518 - LT 23,ZONA V,203
5049,-70.25252788,-17.99300947,MCF/LWAL+DNO/HEX:2/RES,1,220,321.44,7,2,MZA 5518 - LT 24,ZONA V,204
5050,-70.25246761,-17.99296581,MCF/LWAL+DNO/HEX:2/RES,1,220,327.78,8,2,MZA 5518 - LT 25,ZONA V,205
5051,-70.25240802,-17.99292116,MUR/HEX:1,1,220,160.16,4,1,MZA 5518 - LT 26,ZONA V,206
5052,-70.25448768,-17.99336489,MUR/HEX:2,1,220,336.6,8,2,MZA 5519 - LT 15,ZONA V,207
5053,-70.25442667,-17.99332109,MUR/HEX:1,1,220,171.09,4,1,MZA 5519 - LT 16,ZONA V,208
5054,-70.25436581,-17.99327644,MCF/LWAL+DNO/HEX:2/RES,1,220,351.76,8,2,MZA 5519 - LT 17,ZONA V,209
5055,-70.25430575,-17.99323233,MUR/HEX:2,1,220,332.98,8,2,MZA 5519 - LT 18,ZONA V,210
5056,-70.25424683,-17.99318781,MCF/LWAL+DNO/HEX:1/RES,1,220,185.87,4,1,MZA 5519 - LT 19,ZONA V,211
5057,-70.25461542,-17.99311401,MUR/HEX:1,1,220,150.03,3,0,MZA 5519 - LT 16,ZONA V,212
5058,-70.25457114,-17.99317054,MUR/HEX:1,1,220,151.5,3,0,MZA 5519 - LT 17,ZONA V,213
5059,-70.25452568,-17.99322709,MUR/HEX:1,1,220,148.43,3,0,MZA 5519 - LT 18,ZONA V,214
5060,-70.25446582,-17.99300355,MUR/HEX:1,1,220,165.06,4,1,MZA 5519 - LT 19,ZONA V,215
5061,-70.25442047,-17.99305941,MUR/HEX:1,1,220,162.17,4,1,MZA 5519 - LT 20,ZONA V,216
5062,-70.25437509,-17.99311607,MUR/HEX:1,1,220,148.33,3,0,MZA 5519 - LT 21,ZONA V,217
5063,-70.25549823,-17.99377119,MUR/HEX:1,1,220,171.03,4,1,MZA 5520 - LT 1,ZONA V,218
5064,-70.25545408,-17.99382777,MCF/LWAL+DNO/HEX:2/RES,1,220,295.9,7,2,MZA 5520 - LT 2,ZONA V,219
5065,-70.25540928,-17.99388342,MUR/HEX:1,1,220,162.7,4,1,MZA 5520 - LT 3,ZONA V,220
5066,-70.25534773,-17.99374944,MUR/HEX:1,1,220,188.47,4,1,MZA 5520 - LT 4,ZONA V,221
5067,-70.25528742,-17.99370551,MUR/HEX:2,1,220,410.84,9,2,MZA 5520 - LT 5,ZONA V,222
5068,-70.25522712,-17.99366136,MUR/HEX:1,1,220,184.33,4,1,MZA 5520 - LT 6,ZONA V,223
5069,-70.25516733,-17.99361752,MUR/HEX:2,1,220,390.12,9,2,MZA 5520 - LT 7,ZONA V,224
5070,-70.25510746,-17.99357398,MUR/HEX:1,1,220,201.35,5,1,MZA 5520 - LT 8,ZONA V,225
5071,-70.25504863,-17.99352764,MUR/HEX:1,1,220,180.48,4,1,MZA 5520 - LT 9,ZONA V,226
5072,-70.2549905,-17.99348147,MUR/HEX:1,1,220,203.69,5,1,MZA 5520 - LT 10,ZONA V,227
5073,-70.25493001,-17.99343683,MUR/HEX:1,1,220,184.82,4,1,MZA 5520 - LT 11,ZONA V,228
5074,-70.25487033,-17.99339277,MUR/HEX:2,1,220,382.1,9,2,MZA 5520 - LT 12,ZONA V,229
5075,-70.2548115,-17.99326044,MUR/HEX:1,1,220,152.21,4,1,MZA 5520 - LT 13,ZONA V,230
5076,-70.25476532,-17.99331715,MUR/HEX:1,1,220,153.71,4,1,MZA 5520 - LT 14,ZONA V,231
5077,-70.2547202,-17.99337303,MUR/HEX:1,1,220,160.16,4,1,MZA 5520 - LT 15,ZONA V,232

5078,-70.25537404,-17.99401738,MUR/HEX:1,1,220,148.16,3,0,MZA 5520 - LT 1,ZONA V,233
5079,-70.25531386,-17.99397349,MUR/HEX:1,1,220,156.58,4,1,MZA 5520 - LT 2,ZONA V,234
5080,-70.25525437,-17.99392944,MCF/LWAL+DNO/HEX:2/RES,1,220,299.54,7,2,MZA 5520 - LT 3,ZONA V,235
5081,-70.25519469,-17.9938855,MUR/HEX:1,1,220,167.65,4,1,MZA 5520 - LT 4,ZONA V,236
5082,-70.25513398,-17.99384095,MUR/HEX:1,1,220,162.98,4,1,MZA 5520 - LT 5,ZONA V,237
5083,-70.25507294,-17.99379594,MUR/HEX:2,1,220,327.32,8,2,MZA 5520 - LT 6,ZONA V,238
5084,-70.25501361,-17.99375199,MUR/HEX:1,1,220,161.24,4,1,MZA 5520 - LT 7,ZONA V,239
5085,-70.25495422,-17.99370822,MUR/HEX:2,1,220,317.7,2,MZA 5520 - LT 8,ZONA V,240
5086,-70.25489415,-17.99366439,MUR/HEX:2,1,220,308.96,7,2,MZA 5520 - LT 9,ZONA V,241
5087,-70.25483457,-17.99362069,MUR/HEX:1,1,220,169.4,1,MZA 5520 - LT 10,ZONA V,242
5088,-70.2547746,-17.99357685,MCF/LWAL+DNO/HEX:2/RES,1,220,310.46,7,2,MZA 5520 - LT 11,ZONA V,243
5089,-70.25471332,-17.99353215,MUR/HEX:1,1,220,171.02,4,1,MZA 5520 - LT 12,ZONA V,244
5090,-70.2546519,-17.99348659,MUR/HEX:1,1,220,164.36,4,1,MZA 5520 - LT 13,ZONA V,245
5091,-70.25459213,-17.993442,MUR/HEX:2,1,220,292.84,7,2,MZA 5520 - LT 14,ZONA V,246
5092,-70.25427612,-17.99353945,MCF/LWAL+DNO/HEX:1/RES,1,220,172.04,4,1,MZA 5521 - LT 1,ZONA V,247
5093,-70.25423105,-17.99359677,MUR/HEX:2,1,220,318.78,7,2,MZA 5521 - LT 2,ZONA V,248
5094,-70.25418524,-17.9936541,MUR/HEX:3,1,220,490.44,11,3,MZA 5521 - LT 3,ZONA V,249
5095,-70.25413972,-17.99371141,MUR/HEX:2,1,220,318.6,7,2,MZA 5521 - LT 4,ZONA V,250
5096,-70.25409413,-17.99376861,MUR/HEX:2,1,220,333.36,8,2,MZA 5521 - LT 5,ZONA V,251
5097,-70.25404878,-17.99382583,MUR/HEX:2,1,220,318.42,7,2,MZA 5521 - LT 6,ZONA V,252
5098,-70.25400365,-17.99388288,MUR/HEX:1,1,220,159.57,4,1,MZA 5521 - LT 7,ZONA V,253
5099,-70.25395841,-17.99393988,MUR/HEX:1,1,220,164.6,4,1,MZA 5521 - LT 8,ZONA V,254
5100,-70.25391302,-17.99399705,MUR/HEX:1,1,220,159.29,4,1,MZA 5521 - LT 9,ZONA V,255
5101,-70.25386665,-17.99405322,MUR/HEX:1,1,220,162.63,4,1,MZA 5521 - LT 10,ZONA V,256
5102,-70.2541256,-17.99343179,MUR/HEX:2,1,220,334.76,8,2,MZA 5521 - LT 11,ZONA V,257
5103,-70.25407816,-17.99348734,MUR/HEX:2,1,220,332.8,8,2,MZA 5521 - LT 12,ZONA V,258
5104,-70.25403441,-17.99354443,MUR/HEX:2,1,220,332.64,8,2,MZA 5521 - LT 13,ZONA V,259
5105,-70.25398896,-17.9936019,MUR/HEX:2,1,220,312.2,7,2,MZA 5521 - LT 14,ZONA V,260
5106,-70.25394341,-17.99365913,MCF/LWAL+DNO/HEX:2/RES,1,220,340.86,8,2,MZA 5521 - LT 15,ZONA V,261
5107,-70.25389792,-17.99371622,MCF/LWAL+DNO/HEX:2/RES,1,220,316.04,7,2,MZA 5521 - LT 16,ZONA V,262
5108,-70.25385266,-17.99377265,MUR/HEX:2,1,220,310.94,7,2,MZA 5521 - LT 17,ZONA V,263
5109,-70.25380737,-17.99382912,MUR/HEX:1,1,220,165.47,4,1,MZA 5521 - LT 18,ZONA V,264
5110,-70.25376181,-17.99388618,MUR/HEX:1,1,220,170.89,4,1,MZA 5521 - LT 19,ZONA V,265
5111,-70.25371614,-17.99394408,MUR/HEX:1,1,220,154.44,4,1,MZA 5521 - LT 20,ZONA V,266
5112,-70.25511718,-17.99421798,MUR/HEX:1,1,220,168.51,4,1,MZA 5522 - LT 2,ZONA V,268
5113,-70.25505714,-17.9941745,MUR/HEX:2,1,220,323.2,7,2,MZA 5522 - LT 3,ZONA V,269
5114,-70.25499678,-17.99413083,MCF/LWAL+DNO/HEX:1/RES,1,220,161.39,4,1,MZA 5522 - LT 4,ZONA V,270
5115,-70.25493677,-17.99408706,MCF/LWAL+DNO/HEX:2/RES,1,220,331.4,8,2,MZA 5522 - LT 5,ZONA V,271
5116,-70.25487707,-17.99404333,MUR/HEX:1,1,220,152.97,4,1,MZA 5522 - LT 6,ZONA V,272
5117,-70.25481694,-17.99399959,MUR/HEX:2,1,220,326.16,8,2,MZA 5522 - LT 7,ZONA V,273
5118,-70.25475719,-17.99395572,MUR/HEX:1,1,220,165.75,4,1,MZA 5522 - LT 8,ZONA V,274
5119,-70.25469753,-17.9939117,MUR/HEX:1,1,220,159.85,4,1,MZA 5522 - LT 9,ZONA V,275
5120,-70.2546372,-17.99386771,MCF/LWAL+DNO/HEX:2/RES,1,220,310.42,7,2,MZA 5522 - LT 10,ZONA V,276
5121,-70.25457626,-17.99382356,MCF/LWAL+DNO/HEX:2/RES,1,220,308.28,7,2,MZA 5522 - LT 11,ZONA V,277
5122,-70.25451571,-17.99377992,MCF/LWAL+DNO/HEX:1/RES,1,220,162.7,4,1,MZA 5522 - LT 12,ZONA V,278
5123,-70.25445539,-17.99373633,MCF/LWAL+DNO/HEX:2/RES,1,220,332.3,8,2,MZA 5522 - LT 13,ZONA V,279
5124,-70.25439467,-17.99369296,MUR/HEX:2,1,220,352.16,8,2,MZA 5522 - LT 14,ZONA V,280
5125,-70.25508991,-17.99437342,MUR/HEX:1,1,220,162.04,4,1,MZA 5522 - LT 15,ZONA V,281
5126,-70.2550056,-17.99435864,MCF/LWAL+DNO/HEX:2/RES,1,220,329.22,8,2,MZA 5522 - LT 16,ZONA V,282
5127,-70.25494297,-17.99431753,MCF/LWAL+DNO/HEX:2/RES,1,220,322.54,7,2,MZA 5522 - LT 17,ZONA V,283
5128,-70.25488318,-17.99427342,MCF/LWAL+DNO/HEX:2/RES,1,220,324.46,7,2,MZA 5522 - LT 18,ZONA V,284
5129,-70.25482295,-17.99422979,MUR/HEX:1,1,220,164.14,4,1,MZA 5522 - LT 19,ZONA V,285
5130,-70.25476263,-17.99418686,MCF/LWAL+DNO/HEX:2/RES,1,220,306.94,7,2,MZA 5522 - LT 20,ZONA V,286
5131,-70.2546978,-17.99416099,MCF/LWAL+DNO/HEX:2/RES,1,220,323.34,7,2,MZA 5522 - LT 21,ZONA V,287
5132,-70.25464273,-17.99409934,MUR/HEX:1,1,220,165.42,4,1,MZA 5522 - LT 22,ZONA V,288
5133,-70.25459591,-17.99406492,MUR/HEX:1,1,220,81.51,2,0,MZA 5522 - LT 23,ZONA V,289
5134,-70.25456825,-17.99404458,MUR/HEX:1,1,220,81.51,2,0,MZA 5522 - LT 23B,ZONA V,290
5135,-70.25452321,-17.99401148,MUR/HEX:2,1,220,305.06,7,2,MZA 5522 - LT 24,ZONA V,291
5136,-70.25446291,-17.99396694,MUR/HEX:2,1,220,306.08,7,2,MZA 5522 - LT 25,ZONA V,292
5137,-70.25440228,-17.99392299,MUR/HEX:2,1,220,314.98,7,2,MZA 5522 - LT 26,ZONA V,293
5138,-70.25434252,-17.99387868,MCF/LWAL+DNO/HEX:2/RES,1,220,338.94,8,2,MZA 5522 - LT 27,ZONA V,294
5139,-70.2542823,-17.99383464,MUR/HEX:2,1,220,328.96,8,2,MZA 5522 - LT 28,ZONA V,295
5140,-70.25293168,-17.99369465,MUR/HEX:1,1,220,160.48,4,1,MZA 5523 - LT 1,ZONA V,296
5141,-70.25287155,-17.99365104,MUR/HEX:1,1,220,160.6,4,1,MZA 5523 - LT 2,ZONA V,297
5142,-70.25281094,-17.99360754,MUR/HEX:1,1,220,159.81,4,1,MZA 5523 - LT 3,ZONA V,298
5143,-70.25275081,-17.99356344,MUR/HEX:1,1,220,160.02,4,1,MZA 5523 - LT 4,ZONA V,299
5144,-70.25268973,-17.99352128,MUR/HEX:1,1,220,157.1,4,1,MZA 5523 - LT 5,ZONA V,300
5145,-70.25262768,-17.99347924,MUR/HEX:1,1,220,151.3,0,MZA 5523 - LT 6,ZONA V,301
5146,-70.25256782,-17.99343561,MUR/HEX:1,1,220,151.34,3,0,MZA 5523 - LT 7,ZONA V,302
5147,-70.25250893,-17.99339166,MUR/HEX:1,1,220,149.19,3,0,MZA 5523 - LT 8,ZONA V,303
5148,-70.25245131,-17.9933448,MUR/HEX:1,1,220,163.95,4,1,MZA 5523 - LT 9,ZONA V,304

5149,-70.25239085,-17.99330034,MUR/HEX:1,1,220,161.37,4,1,MZA 5523 - LT 10,ZONA V,305
5150,-70.25232795,-17.99325473,MUR/HEX:1,1,220,172.31,4,1,MZA 5523 - LT 11,ZONA V,306
5151,-70.25332876,-17.99391709,MCF/LWAL+DNO/HEX:2/RES,1,220,378.2,9,2,MZA 5524 - LT 1,ZONA V,309
5152,-70.25328365,-17.99397482,MCF/LWAL+DNO/HEX:2/RES,1,220,330.52,8,2,MZA 5524 - LT 2,ZONA V,310
5153,-70.25323851,-17.99403162,MCF/LWAL+DNO/HEX:2/RES,1,220,206.24,5,1,MZA 5524 - LT 3,ZONA V,311
5154,-70.25328806,-17.99405184,MCF/LWAL+DNO/HEX:2/RES,1,220,126.96,3,0,MZA 5524 - LT 3B,ZONA V,312
5155,-70.25319254,-17.99408907,MCF/LWAL+DNO/HEX:2/RES,1,220,312.28,7,2,MZA 5524 - LT 4,ZONA V,313
5156,-70.25314686,-17.99414648,MCF/LWAL+DNO/HEX:2/RES,1,220,356.38,8,2,MZA 5524 - LT 5,ZONA V,314
5157,-70.25310111,-17.99420388,MCF/LWAL+DNO/HEX:2/RES,1,220,326.24,8,2,MZA 5524 - LT 6,ZONA V,315
5158,-70.25305528,-17.99426133,MUR/HEX:2,1,220,328.72,8,2,MZA 5524 - LT 7,ZONA V,316
5159,-70.25300982,-17.99431853,MCF/LWAL+DNO/HEX:1/RES,1,220,165.25,4,1,MZA 5524 - LT 8,ZONA V,317
5160,-70.25296376,-17.99437629,MCF/LWAL+DNO/HEX:1/RES,1,220,169.29,4,1,MZA 5524 - LT 9,ZONA V,318
5161,-70.25291791,-17.99443371,MUR/HEX:2,1,220,313.12,7,2,MZA 5524 - LT 10,ZONA V,319
5162,-70.25287257,-17.9944909,MUR/HEX:2,1,220,332.98,8,2,MZA 5524 - LT 11,ZONA V,320
5163,-70.25282686,-17.99454877,MUR/HEX:2,1,220,353.2,8,2,MZA 5524 - LT 12,ZONA V,321
5164,-70.25322114,-17.99383492,MCF/LWAL+DNO/HEX:3/RES,1,220,202.98,5,1,MZA 5524 - LT 13,ZONA V,322
5165,-70.25314737,-17.99378588,MUR/HEX:1,1,220,109.2,3,0,MZA 5524 - LT 13B,ZONA V,323
5166,-70.25313343,-17.99386445,MUR/HEX:1,1,220,162.24,4,1,MZA 5524 - LT 14,ZONA V,324
5167,-70.25308794,-17.99392153,MCF/LWAL+DNO/HEX:1/RES,1,220,159.13,4,1,MZA 5524 - LT 15,ZONA V,325
5168,-70.2530425,-17.99397928,MUR/HEX:1,1,220,152.59,4,1,MZA 5524 - LT 16,ZONA V,326
5169,-70.25299701,-17.9940362,MUR/HEX:1,1,220,166.59,4,1,MZA 5524 - LT 17,ZONA V,327
5170,-70.25295107,-17.9940932,MUR/HEX:1,1,220,165.56,4,1,MZA 5524 - LT 18,ZONA V,328
5171,-70.25290528,-17.99415082,MUR/HEX:1,1,220,155.05,4,1,MZA 5524 - LT 19,ZONA V,329
5172,-70.25285978,-17.99420815,MCF/LWAL+DNO/HEX:2/RES,1,220,329.04,8,2,MZA 5524 - LT 20,ZONA V,330
5173,-70.25281386,-17.9942659,MCF/LWAL+DNO/HEX:1/RES,1,220,164.7,4,1,MZA 5524 - LT 21,ZONA V,331
5174,-70.25276779,-17.99432334,MCF/LWAL+DNO/HEX:2/RES,1,220,306.12,7,2,MZA 5524 - LT 22,ZONA V,332
5175,-70.25272215,-17.99438061,MUR/HEX:1,1,220,159.4,4,1,MZA 5524 - LT 23,ZONA V,333
5176,-70.25267586,-17.99443828,MUR/HEX:1,1,220,173.81,4,1,MZA 5524 - LT 24,ZONA V,334
5177,-70.25427791,-17.99458084,MUR/HEX:2,1,220,353.72,8,2,MZA 5526 - LT 1,ZONA V,335
5178,-70.25421817,-17.9945367,MCF/LWAL+DNO/HEX:2/RES,1,220,322.6,7,2,MZA 5526 - LT 2,ZONA V,336
5179,-70.25415798,-17.99449286,MUR/HEX:2,1,220,321.22,7,2,MZA 5526 - LT 3,ZONA V,337
5180,-70.25409798,-17.99444897,MCF/LWAL+DNO/HEX:1/RES,1,220,173.77,4,1,MZA 5526 - LT 4,ZONA V,338
5181,-70.2540378,-17.99440523,MCF/LWAL+DNO/HEX:1/RES,1,220,153.38,4,1,MZA 5526 - LT 5,ZONA V,339
5182,-70.25397776,-17.99436159,MCF/LWAL+DNO/HEX:2/RES,1,220,326.92,8,2,MZA 5526 - LT 6,ZONA V,340
5183,-70.2539174,-17.99431777,MUR/HEX:1,1,220,156.02,4,1,MZA 5526 - LT 7,ZONA V,341
5184,-70.25385701,-17.99427342,MCF/LWAL+DNO/HEX:1/RES,1,220,157.38,4,1,MZA 5526 - LT 8,ZONA V,342
5185,-70.25379671,-17.99422955,MCF/LWAL+DNO/HEX:2/RES,1,220,311.2,7,2,MZA 5526 - LT 9,ZONA V,343
5186,-70.25373644,-17.99418578,MCF/LWAL+DNO/HEX:2/RES,1,220,332.22,8,2,MZA 5526 - LT 10,ZONA V,344
5187,-70.25367631,-17.99414189,MUR/HEX:2,1,220,309.44,7,2,MZA 5526 - LT 11,ZONA V,345
5188,-70.25361655,-17.99409812,MUR/HEX:1,1,220,153.7,4,1,MZA 5526 - LT 12,ZONA V,346
5189,-70.25355633,-17.99405514,MUR/HEX:1,1,220,156.81,4,1,MZA 5526 - LT 13,ZONA V,347
5190,-70.25417668,-17.99472412,MCF/LWAL+DNO/HEX:1/RES,1,220,174.58,4,1,MZA 5526 - LT 14,ZONA V,348
5191,-70.25410939,-17.99467737,MUR/HEX:1,1,220,162.01,4,1,MZA 5526 - LT 15,ZONA V,349
5192,-70.25404346,-17.99463647,MUR/HEX:1,1,220,161.25,4,1,MZA 5526 - LT 16,ZONA V,350
5193,-70.25398362,-17.99459278,MUR/HEX:1,1,220,175.13,4,1,MZA 5526 - LT 17,ZONA V,351
5194,-70.25392346,-17.99454915,MCF/LWAL+DNO/HEX:2/RES,1,220,318.7,7,2,MZA 5526 - LT 18,ZONA V,352
5195,-70.25386349,-17.99450541,MUR/HEX:2,1,220,341.14,8,2,MZA 5526 - LT 19,ZONA V,353
5196,-70.25380367,-17.99446122,MUR/HEX:2,1,220,300.88,7,2,MZA 5526 - LT 20,ZONA V,354
5197,-70.25374335,-17.99441727,MUR/HEX:2,1,220,319.5,7,2,MZA 5526 - LT 21,ZONA V,355
5198,-70.25368318,-17.99437357,MCF/LWAL+DNO/HEX:2/RES,1,220,321.28,7,2,MZA 5526 - LT 22,ZONA V,356
5199,-70.25362297,-17.99432965,MUR/HEX:2,1,220,329.74,8,2,MZA 5526 - LT 23,ZONA V,357
5200,-70.25356312,-17.9942856,MCF/LWAL+DNO/HEX:2/RES,1,220,318.68,7,2,MZA 5526 - LT 24,ZONA V,358
5201,-70.25350299,-17.99424231,MUR/HEX:1,1,220,160.11,4,1,MZA 5526 - LT 25,ZONA V,359
5202,-70.25344392,-17.99419757,MUR/HEX:2,1,220,324.92,8,2,MZA 5526 - LT 26,ZONA V,360
5203,-70.2539679,-17.99497139,CR/LFINF+DUC/HEX:2/RES,1,220,364,8,2,MZA 5527 - LT 6,ZONA V,361
5204,-70.25390831,-17.99492662,MCF/LWAL+DNO/HEX:2/RES,1,220,337.76,8,2,MZA 5527 - LT 7,ZONA V,362
5205,-70.25384763,-17.99488346,MUR/HEX:1,1,220,155.25,4,1,MZA 5527 - LT 8,ZONA V,363
5206,-70.25378756,-17.99483902,MUR/HEX:1,1,220,182.3,4,1,MZA 5527 - LT 9,ZONA V,364
5207,-70.25372758,-17.99479512,MCF/LWAL+DNO/HEX:2/RES,1,220,332.32,8,2,MZA 5527 - LT 10,ZONA V,365
5208,-70.25366752,-17.99475158,MCF/LWAL+DNO/HEX:2/RES,1,220,344.76,8,2,MZA 5527 - LT 11,ZONA V,366
5209,-70.25360745,-17.99470776,MCF/LWAL+DNO/HEX:2/RES,1,220,365.34,8,2,MZA 5527 - LT 12,ZONA V,367
5210,-70.25354718,-17.99466359,MCF/LWAL+DNO/HEX:2/RES,1,220,326.74,8,2,MZA 5527 - LT 13,ZONA V,368
5211,-70.25348672,-17.99461961,MUR/HEX:1,1,220,171.08,4,1,MZA 5527 - LT 14,ZONA V,369
5212,-70.25342714,-17.99457611,MCF/LWAL+DUC/HEX:2/RES,1,220,350.3,8,2,MZA 5527 - LT 15,ZONA V,370
5213,-70.25336751,-17.99453245,MUR/HEX:1,1,220,158.65,4,1,MZA 5527 - LT 16,ZONA V,371
5214,-70.25330729,-17.99448844,MUR/HEX:1,1,220,178.89,4,1,MZA 5527 - LT 17,ZONA V,372
5215,-70.25324577,-17.99444446,MUR/HEX:1,1,220,174.21,4,1,MZA 5527 - LT 18,ZONA V,373
5216,-70.25387698,-17.99508586,MCF/LWAL+DNO/HEX:2/RES,1,220,174.91,4,1,MZA 5527 - LT 24,ZONA V,374
5217,-70.25383578,-17.99514287,MCF/LWAL+DNO/HEX:2/RES,1,220,174.91,4,1,MZA 5527 - LT 24A,ZONA V,375
5218,-70.25379322,-17.9950709,MUR/HEX:1,1,220,155.43,4,1,MZA 5527 - LT 25,ZONA V,376
5219,-70.25373367,-17.99502683,MUR/HEX:1,1,220,152.42,4,1,MZA 5527 - LT 26,ZONA V,377

5220,-70.25367299,-17.99498298,MUR/HEX:1,1,220,172.57,4,1,MZA 5527 - LT 27,ZONA V,378
5221,-70.25361263,-17.99493916,MUR/HEX:1,1,220,155.59,4,1,MZA 5527 - LT 28,ZONA V,379
5222,-70.25355317,-17.99489486,MUR/HEX:1,1,220,158.59,4,1,MZA 5527 - LT 29,ZONA V,380
5223,-70.2535104,-17.99486234,MUR/HEX:1,1,220,133.59,3,0,MZA 5527 - LT 30,ZONA V,381
5224,-70.25348162,-17.99484361,MUR/HEX:1,1,220,41.77,1,0,MZA 5527 - LT 30B,ZONA V,382
5225,-70.25343272,-17.99480748,MUR/HEX:1,1,220,147.04,3,0,MZA 5527 - LT 31,ZONA V,383
5226,-70.25337221,-17.9947637,MUR/HEX:1,1,220,164.11,4,1,MZA 5527 - LT 32,ZONA V,384
5227,-70.25331239,-17.9947197,MUR/HEX:1,1,220,172.53,4,1,MZA 5527 - LT 33,ZONA V,385
5228,-70.25325285,-17.99467577,MUR/HEX:1,1,220,153.17,4,1,MZA 5527 - LT 34,ZONA V,386
5229,-70.25319271,-17.99463209,MUR/HEX:1,1,220,178.8,4,1,MZA 5527 - LT 35,ZONA V,387
5230,-70.25313134,-17.99458741,MUR/HEX:1,1,220,162.11,4,1,MZA 5527 - LT 36,ZONA V,388
5231,-70.25490404,-17.9945163,MUR/HEX:1,1,220,178.84,4,1,MZA 5528 - LT 1,ZONA V,389
5232,-70.25485909,-17.99457397,MUR/HEX:1,1,220,153.44,4,1,MZA 5528 - LT 2,ZONA V,390
5233,-70.25481344,-17.99463135,MUR/HEX:1,1,220,170.12,4,1,MZA 5528 - LT 3,ZONA V,391
5234,-70.25476785,-17.99468885,MUR/HEX:1,1,220,165.09,4,1,MZA 5528 - LT 4,ZONA V,392
5235,-70.25472248,-17.99474588,MUR/HEX:1,1,220,156.82,4,1,MZA 5528 - LT 5,ZONA V,393
5236,-70.2546765,-17.99480329,MUR/HEX:2,1,220,335.44,8,2,MZA 5528 - LT 6,ZONA V,394
5237,-70.25463077,-17.99486081,MCF/LWAL+DNO/HEX:1/RES,1,220,168.31,4,1,MZA 5528 - LT 7,ZONA V,395
5238,-70.25458544,-17.99491798,MUR/HEX:1,1,220,155.65,4,1,MZA 5528 - LT 8,ZONA V,396
5239,-70.25453989,-17.99497525,MUR/HEX:2,1,220,335.68,8,2,MZA 5528 - LT 9,ZONA V,397
5240,-70.25449359,-17.99503215,MUR/HEX:2,1,220,310.62,7,2,MZA 5528 - LT 10,ZONA V,398
5241,-70.25475428,-17.99440644,MCF/LWAL+DNO/HEX:1/RES,1,220,172.98,4,1,MZA 5528 - LT 11,ZONA V,399
5242,-70.25470819,-17.99446359,MUR/HEX:1,1,220,145.54,3,0,MZA 5528 - LT 12,ZONA V,400
5243,-70.25466266,-17.99452127,MCF/LWAL+DNO/HEX:1/RES,1,220,170.59,4,1,MZA 5528 - LT 13,ZONA V,401
5244,-70.25461692,-17.99457878,MUR/HEX:1,1,220,163.05,4,1,MZA 5528 - LT 14,ZONA V,402
5245,-70.25457169,-17.99463596,MCF/LWAL+DNO/HEX:1/RES,1,220,152.01,4,1,MZA 5528 - LT 15,ZONA V,403
5246,-70.25452603,-17.99469335,MUR/HEX:2,1,220,317.52,7,2,MZA 5528 - LT 16,ZONA V,404
5247,-70.25448033,-17.9947507,MUR/HEX:2,1,220,339.66,8,2,MZA 5528 - LT 17,ZONA V,405
5248,-70.2544349,-17.99480769,MCF/LWAL+DUC/HEX:2/RES,1,220,303.66,7,2,MZA 5528 - LT 18,ZONA V,406
5249,-70.25438885,-17.99486479,MCF/LWAL+DNO/HEX:1/RES,1,220,165.29,4,1,MZA 5528 - LT 19,ZONA V,407
5250,-70.25434371,-17.99492315,MUR/HEX:2,1,220,299.22,7,2,MZA 5528 - LT 20,ZONA V,408
5251,-70.25437625,-17.99526933,MUR/HEX:1,1,220,188.57,4,1,MZA 5529 - LT 1,ZONA V,409
5252,-70.25431622,-17.99522408,MUR/HEX:1,1,220,165.9,4,1,MZA 5529 - LT 2,ZONA V,410
5253,-70.25425633,-17.99518053,MUR/HEX:1,1,220,161.31,4,1,MZA 5529 - LT 3,ZONA V,411
5254,-70.25419634,-17.99513675,MUR/HEX:1,1,220,160.06,4,1,MZA 5529 - LT 4,ZONA V,412
5255,-70.25413584,-17.99509319,MUR/HEX:1,1,220,170.96,4,1,MZA 5529 - LT 5,ZONA V,413
5256,-70.2542626,-17.99541384,MCF/LWAL+DNO/HEX:2/RES,1,220,359.58,8,2,MZA 5529 - LT 19,ZONA V,414
5257,-70.25420094,-17.99536946,MCF/LWAL+DNO/HEX:1/RES,1,220,166.87,4,1,MZA 5529 - LT 20,ZONA V,415
5258,-70.25414081,-17.99532589,MUR/HEX:1,1,220,169.9,4,1,MZA 5529 - LT 21,ZONA V,416
5259,-70.25408087,-17.99528156,MCF/LWAL+DNO/HEX:1/RES,1,220,161.53,4,1,MZA 5529 - LT 22,ZONA V,417
5260,-70.25402081,-17.99523679,MUR/HEX:3,1,220,494.88,11,3,MZA 5529 - LT 23,ZONA V,418
5261,-70.25841735,-17.99488319,MUR/HEX:2,1,220,374.18,9,2,MZA 5533 - LT 12,ZONA V,419
5262,-70.25835188,-17.99483362,MUR/HEX:1,1,220,157.55,4,1,MZA 5533 - LT 13,ZONA V,420
5263,-70.25829214,-17.99478823,MUR/HEX:2,1,220,317.68,7,2,MZA 5533 - LT 14,ZONA V,421
5264,-70.2582323,-17.99474363,MUR/HEX:2,1,220,314.44,7,2,MZA 5533 - LT 15,ZONA V,422
5265,-70.25817561,-17.99470096,MUR/HEX:2,1,220,289.06,7,2,MZA 5533 - LT 16,ZONA V,423
5266,-70.2581181,-17.99465945,MCF/LWAL+DNO/HEX:2/RES,1,220,316.24,7,2,MZA 5533 - LT 17,ZONA V,424
5267,-70.25805883,-17.99461308,MCF/LWAL+DNO/HEX:2/RES,1,220,329.5,8,2,MZA 5533 - LT 18,ZONA V,425
5268,-70.2579991,-17.9945661,MUR/HEX:2,1,220,330.52,8,2,MZA 5533 - LT 19,ZONA V,426
5269,-70.25793985,-17.99452146,MUR/HEX:2,1,220,323.86,7,2,MZA 5533 - LT 20,ZONA V,427
5270,-70.25916156,-17.99543235,MCF/LWAL+DNO/HEX:2/RES,1,220,315.06,7,2,MZA 5534 - LT 1,ZONA V,428
5271,-70.25909896,-17.9953862,MUR/HEX:1,1,220,158.14,4,1,MZA 5534 - LT 2,ZONA V,429
5272,-70.25903573,-17.99534028,MUR/HEX:1,1,220,157.39,4,1,MZA 5534 - LT 3,ZONA V,430
5273,-70.25897284,-17.99529429,MCF/LWAL+DNO/HEX:1/RES,1,220,156.79,4,1,MZA 5534 - LT 4,ZONA V,431
5274,-70.25891106,-17.99524787,MUR/HEX:2,1,220,309.94,7,2,MZA 5534 - LT 5,ZONA V,432
5275,-70.25884886,-17.99520327,MUR/HEX:1,1,220,153.51,4,1,MZA 5534 - LT 6,ZONA V,433
5276,-70.25878631,-17.9951594,MUR/HEX:1,1,220,154.23,4,1,MZA 5534 - LT 7,ZONA V,434
5277,-70.25872419,-17.99511404,MUR/HEX:1,1,220,155.92,4,1,MZA 5534 - LT 8,ZONA V,435
5278,-70.25866255,-17.99506759,MUR/HEX:1,1,220,155.5,4,1,MZA 5534 - LT 9,ZONA V,436
5279,-70.25860266,-17.99502143,MUR/HEX:2,1,220,299.3,7,2,MZA 5534 - LT 10,ZONA V,437
5280,-70.2585437,-17.99497477,MUR/HEX:1,1,220,153.8,4,1,MZA 5534 - LT 11,ZONA V,438
5281,-70.25628489,-17.9939119,MUR/HEX:2,1,220,374.5,9,2,MZA 5535 - LT 15,ZONA V,439
5282,-70.25623836,-17.99396563,MUR/HEX:1,1,220,186.65,4,1,MZA 5535 - LT 16,ZONA V,440
5283,-70.25618979,-17.99402303,MCF/LWAL+DNO/HEX:2/RES,1,220,373.16,9,2,MZA 5535 - LT 17,ZONA V,441
5284,-70.25609409,-17.99378929,MUR/HEX:2,1,220,381.14,9,2,MZA 5535 - LT 18,ZONA V,442
5285,-70.25604683,-17.99384735,MUR/HEX:2,1,220,398.52,9,2,MZA 5535 - LT 19,ZONA V,443
5286,-70.25600348,-17.99390177,MUR/HEX:1,1,220,189.55,4,1,MZA 5535 - LT 20,ZONA V,444
5287,-70.25684717,-17.99397708,MUR/HEX:1,1,220,144.05,3,0,MZA 5536 - LT 1,ZONA V,446
5288,-70.25680132,-17.99403118,MUR/HEX:2,1,220,336.26,8,2,MZA 5536 - LT 2,ZONA V,447
5289,-70.25675551,-17.99408834,MUR/HEX:1,1,220,157.69,4,1,MZA 5536 - LT 3,ZONA V,448
5290,-70.25670914,-17.99414573,MUR/HEX:1,1,220,152.87,4,1,MZA 5536 - LT 4,ZONA V,449

5291,-70.25666247,-17.99420271,MUR/HEX:1,1,220,163.95,4,1,MZA 5536 - LT 5,ZONA V,450
5292,-70.25661805,-17.99425713,MCF/LWAL+DNO/HEX:1/RES,1,220,154.71,4,1,MZA 5536 - LT 6,ZONA V,451
5293,-70.25657249,-17.99431223,MUR/HEX:1,1,220,179.61,4,1,MZA 5536 - LT 7,ZONA V,452
5294,-70.25669071,-17.99386603,MUR/HEX:1,1,220,163.03,4,1,MZA 5536 - LT 8,ZONA V,453
5295,-70.2566485,-17.99392178,MUR/HEX:1,1,220,163.76,4,1,MZA 5536 - LT 9,ZONA V,454
5296,-70.25660333,-17.99397737,MUR/HEX:1,1,220,150.89,3,0,MZA 5536 - LT 10,ZONA V,455
5297,-70.2565582,-17.99403378,MUR/HEX:1,1,220,155.2,4,1,MZA 5536 - LT 11,ZONA V,456
5298,-70.25651265,-17.99409036,MUR/HEX:1,1,220,155.07,4,1,MZA 5536 - LT 12,ZONA V,457
5299,-70.25646555,-17.99414407,MUR/HEX:1,1,220,157.11,4,1,MZA 5536 - LT 13,ZONA V,458
5300,-70.25642013,-17.9942006,MCF/LWAL+DNO/HEX:1/RES,1,220,171.71,4,1,MZA 5536 - LT 14,ZONA V,459
5301,-70.25725244,-17.99427438,MUR/HEX:1,1,220,145.49,3,0,MZA 5537 - LT 15,ZONA V,460
5302,-70.25720521,-17.9943326,MCF/LWAL+DNO/HEX:2/RES,1,220,283.52,7,2,MZA 5537 - LT 16,ZONA V,461
5303,-70.25715968,-17.99438963,MUR/HEX:1,1,220,165.18,4,1,MZA 5537 - LT 17,ZONA V,462
5304,-70.25711421,-17.99444584,MCF/LWAL+DNO/HEX:1/RES,1,220,155.4,1,MZA 5537 - LT 18,ZONA V,463
5305,-70.25706916,-17.99450116,MUR/HEX:1,1,220,151.12,3,0,MZA 5537 - LT 19,ZONA V,464
5306,-70.25702454,-17.99455718,MUR/HEX:1,1,220,141.29,3,0,MZA 5537 - LT 20,ZONA V,465
5307,-70.2569774,-17.99461326,MCF/LWAL+DNO/HEX:2/RES,1,220,367.82,8,2,MZA 5537 - LT 21,ZONA V,466
5308,-70.2571015,-17.99416758,MUR/HEX:2,1,220,298.52,7,2,MZA 5537 - LT 22,ZONA V,467
5309,-70.25705765,-17.99422352,MUR/HEX:1,1,220,158.56,4,1,MZA 5537 - LT 23,ZONA V,468
5310,-70.25701187,-17.99427939,MUR/HEX:1,1,220,157.66,4,1,MZA 5537 - LT 24,ZONA V,469
5311,-70.25696527,-17.99433517,MUR/HEX:1,1,220,154.19,4,1,MZA 5537 - LT 25,ZONA V,470
5312,-70.25692006,-17.99439156,MUR/HEX:1,1,220,151.94,4,1,MZA 5537 - LT 26,ZONA V,471
5313,-70.25687439,-17.99444784,MCF/LWAL+DNO/HEX:1/RES,1,220,128.47,3,0,MZA 5537 - LT 27,ZONA V,472
5314,-70.25682954,-17.99450616,MCF/LWAL+DNO/HEX:2/RES,1,220,368.08,8,2,MZA 5537 - LT 28,ZONA V,473
5315,-70.2575976,-17.99452876,MUR/HEX:2,1,220,293.4,7,2,MZA 5538 - LT 1,ZONA V,474
5316,-70.25755231,-17.99458473,MUR/HEX:1,1,220,172.67,4,1,MZA 5538 - LT 2,ZONA V,475
5317,-70.25750741,-17.99463996,MUR/HEX:1,1,220,156.89,4,1,MZA 5538 - LT 3,ZONA V,476
5318,-70.25746204,-17.99469628,MUR/HEX:1,1,220,151.67,4,1,MZA 5538 - LT 4,ZONA V,477
5319,-70.25741526,-17.9947545,MUR/HEX:2,1,220,334.96,8,2,MZA 5538 - LT 5,ZONA V,478
5320,-70.25736809,-17.99481316,MUR/HEX:1,1,220,162.96,4,1,MZA 5538 - LT 6,ZONA V,479
5321,-70.25732156,-17.99487051,MUR/HEX:1,1,220,177.17,4,1,MZA 5538 - LT 7,ZONA V,480
5322,-70.25744796,-17.99441789,MCF/LWAL+DNO/HEX:2/RES,1,220,329.18,8,2,MZA 5538 - LT 8,ZONA V,481
5323,-70.25740143,-17.994475,MUR/HEX:1,1,220,171.45,4,1,MZA 5538 - LT 9,ZONA V,482
5324,-70.25735671,-17.99453078,MUR/HEX:1,1,220,153.41,4,1,MZA 5538 - LT 10,ZONA V,483
5325,-70.25731212,-17.99458711,MCF/LWAL+DNO/HEX:2/RES,1,220,294.1,7,2,MZA 5538 - LT 11,ZONA V,484
5326,-70.25726643,-17.99464481,MUR/HEX:1,1,220,167.8,4,1,MZA 5538 - LT 12,ZONA V,485
5327,-70.25721902,-17.99470243,MUR/HEX:2,1,220,326.74,8,2,MZA 5538 - LT 13,ZONA V,486
5328,-70.25717213,-17.99475913,MUR/HEX:1,1,220,179.94,4,1,MZA 5538 - LT 14,ZONA V,487
5329,-70.2576944,-17.99507136,MUR/HEX:2,1,220,317.02,7,2,MZA 5539 - LT 1,ZONA V,488
5330,-70.25763424,-17.99502778,MUR/HEX:1,1,220,156.05,4,1,MZA 5539 - LT 2,ZONA V,489
5331,-70.25757179,-17.99497963,MUR/HEX:1,1,220,177.7,4,1,MZA 5539 - LT 3,ZONA V,490
5332,-70.25771141,-17.99492468,MCF/LWAL+DNO/HEX:1/RES,1,220,205.33,5,1,MZA 5539 - LT 4,ZONA V,491
5333,-70.25775816,-17.99486728,MUR/HEX:1,1,220,197.65,5,1,MZA 5539 - LT 5,ZONA V,492
5334,-70.25780485,-17.99481133,MUR/HEX:1,1,220,198.77,5,1,MZA 5539 - LT 6,ZONA V,493
5335,-70.25784984,-17.9947541,MUR/HEX:1,1,220,197.66,5,1,MZA 5539 - LT 7,ZONA V,494
5336,-70.258059,-17.99534235,MUR/HEX:2,1,220,343.68,8,2,MZA 5540 - LT 1,ZONA V,495
5337,-70.25799671,-17.99529522,MCF/LWAL+DNO/HEX:1/RES,1,220,158.81,4,1,MZA 5540 - LT 2,ZONA V,496
5338,-70.25793622,-17.99525099,MUR/HEX:1,1,220,158.54,4,1,MZA 5540 - LT 3,ZONA V,497
5339,-70.25787555,-17.99520611,MUR/HEX:2,1,220,323.04,7,2,MZA 5540 - LT 4,ZONA V,498
5340,-70.25781473,-17.99516,MUR/HEX:2,1,220,325.58,8,2,MZA 5540 - LT 5,ZONA V,499
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5342,-70.25813953,-17.99515182,MUR/HEX:1,1,220,166.21,4,1,MZA 5540 - LT 7,ZONA V,501
5343,-70.25818606,-17.99509517,MUR/HEX:1,1,220,166.75,4,1,MZA 5540 - LT 8,ZONA V,502
5344,-70.25823253,-17.99503664,MUR/HEX:1,1,220,174.02,4,1,MZA 5540 - LT 9,ZONA V,503
5345,-70.25807826,-17.99492464,MUR/HEX:1,1,220,156.14,4,1,MZA 5540 - LT 10,ZONA V,504
5346,-70.25803307,-17.99498192,MUR/HEX:1,1,220,161.14,4,1,MZA 5540 - LT 11,ZONA V,505
5347,-70.25798661,-17.99503905,MUR/HEX:1,1,220,161.28,4,1,MZA 5540 - LT 12,ZONA V,506
5348,-70.25794047,-17.99509575,MUR/HEX:1,1,220,160.22,4,1,MZA 5540 - LT 13,ZONA V,507
5349,-70.25842679,-17.99561321,MUR/HEX:1,1,220,165.71,4,1,MZA 5541 - LT 1,ZONA V,508
5350,-70.25836506,-17.9955685,MCF/LWAL+DNO/HEX:2/RES,1,220,326.76,8,2,MZA 5541 - LT 2,ZONA V,509
5351,-70.25830477,-17.99552281,MUR/HEX:1,1,220,163.4,4,1,MZA 5541 - LT 3,ZONA V,510
5352,-70.25824366,-17.99547885,MCF/LWAL+DNO/HEX:1/RES,1,220,161.27,4,1,MZA 5541 - LT 4,ZONA V,511
5353,-70.25818366,-17.99543547,MUR/HEX:2,1,220,315.98,7,2,MZA 5541 - LT 5,ZONA V,512
5354,-70.25846042,-17.99547986,MUR/HEX:1,1,220,161.94,4,1,MZA 5541 - LT 6,ZONA V,513
5355,-70.25850571,-17.99542557,MUR/HEX:1,1,220,157.31,4,1,MZA 5541 - LT 7,ZONA V,514
5356,-70.25855295,-17.99537114,MUR/HEX:1,1,220,164.9,4,1,MZA 5541 - LT 8,ZONA V,515
5357,-70.25860105,-17.99531358,MUR/HEX:1,1,220,167.75,4,1,MZA 5541 - LT 9,ZONA V,516
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5361,-70.25830818,-17.99536706,MUR/HEX:2,1,220,315.04,7,2,MZA 5541 - LT 13,ZONA V,520

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5364,-70.25867186,-17.99578944,MCF/LWAL+DNO/HEX:2/RES,1,220,315.54,7,2,MZA 5542 - LT 3,ZONA V,523
5365,-70.2586108,-17.99574448,MCF/LWAL+DNO/HEX:2/RES,1,220,331.56,8,2,MZA 5542 - LT 4,ZONA V,524
5366,-70.25854848,-17.99570005,MCF/LWAL+DNO/HEX:1/RES,1,220,160.81,4,1,MZA 5542 - LT 5,ZONA V,525
5367,-70.25883791,-17.99575291,MUR/HEX:1,1,220,159.88,4,1,MZA 5542 - LT 6,ZONA V,526
5368,-70.25888207,-17.99569468,MCF/LWAL+DNO/HEX:1/RES,1,220,165.19,4,1,MZA 5542 - LT 7,ZONA V,527
5369,-70.25892735,-17.99563707,MUR/HEX:1,1,220,164.42,4,1,MZA 5542 - LT 8,ZONA V,528
5370,-70.25897321,-17.99558037,MCF/LWAL+DNO/HEX:1/RES,1,220,163.48,4,1,MZA 5542 - LT 9,ZONA V,529
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5372,-70.25876996,-17.99552343,MUR/HEX:1,1,220,167.81,4,1,MZA 5542 - LT 11,ZONA V,531
5373,-70.25872434,-17.9955812,MUR/HEX:1,1,220,170.78,4,1,MZA 5542 - LT 12,ZONA V,532
5374,-70.25867986,-17.99563872,MUR/HEX:1,1,220,169.27,4,1,MZA 5542 - LT 13,ZONA V,533
5375,-70.25607278,-17.99417583,MUR/HEX:1,1,220,175.29,4,1,MZA 5543 - LT 19,ZONA V,534
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5380,-70.25579444,-17.99416618,MUR/HEX:1,1,220,160.22,4,1,MZA 5543 - LT 24,ZONA V,539
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5389,-70.25727582,-17.99523226,MUR/HEX:1,1,220,146.9,3,0,MZA 5544 - LT 3,ZONA V,548
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5393,-70.25703497,-17.9949675,MUR/HEX:1,1,220,162.5,4,1,MZA 5544 - LT 4,ZONA V,552
5394,-70.25697417,-17.99492462,MUR/HEX:2,1,220,319.5,7,2,MZA 5544 - LT 5,ZONA V,553
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5396,-70.25685432,-17.99483758,MCF/LWAL+DNO/HEX:1/RES,1,220,164.92,4,1,MZA 5544 - LT 7,ZONA V,555
5397,-70.25679373,-17.99479454,MCF/LWAL+DNO/HEX:2/RES,1,220,311.92,7,2,MZA 5544 - LT 8,ZONA V,556
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5399,-70.25667411,-17.99470738,MUR/HEX:2,1,220,347.06,8,2,MZA 5544 - LT 10,ZONA V,558
5400,-70.25661354,-17.99466367,MUR/HEX:1,1,220,163.81,4,1,MZA 5544 - LT 11,ZONA V,559
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5403,-70.25643364,-17.99453373,MUR/HEX:1,1,220,172.19,4,1,MZA 5544 - LT 14,ZONA V,562
5404,-70.25637457,-17.9944905,MUR/HEX:1,1,220,170.25,4,1,MZA 5544 - LT 15,ZONA V,563
5405,-70.25631618,-17.99444683,MCF/LWAL+DNO/HEX:1/RES,1,220,181.49,4,1,MZA 5544 - LT 16,ZONA V,564
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5407,-70.25619445,-17.99436022,MUR/HEX:1,1,220,169.74,4,1,MZA 5544 - LT 18,ZONA V,566
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5411,-70.25690628,-17.99512923,MUR/HEX:1,1,220,195.3,5,1,MZA 5544 - LT 4,ZONA V,570
5412,-70.25684581,-17.99508577,MUR/HEX:1,1,220,180.24,4,1,MZA 5544 - LT 5,ZONA V,571
5413,-70.25678559,-17.9950424,MUR/HEX:2,1,220,371.52,9,2,MZA 5544 - LT 6,ZONA V,572
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5415,-70.2566647,-17.99495513,MUR/HEX:2,1,220,344.72,8,2,MZA 5544 - LT 8,ZONA V,574
5416,-70.25660437,-17.99491147,MUR/HEX:2,1,220,381.02,9,2,MZA 5544 - LT 9,ZONA V,575
5417,-70.25654399,-17.9948676,MUR/HEX:2,1,220,400.24,9,2,MZA 5544 - LT 10,ZONA V,576
5418,-70.25648364,-17.99482373,MUR/HEX:2,1,220,386.48,9,2,MZA 5544 - LT 11,ZONA V,577
5419,-70.25642325,-17.9947799,MUR/HEX:2,1,220,384.46,9,2,MZA 5544 - LT 12,ZONA V,578
5420,-70.25636326,-17.99473754,MUR/HEX:2,1,220,391.94,9,2,MZA 5544 - LT 13,ZONA V,579
5421,-70.25630364,-17.9946933,MUR/HEX:1,1,220,200.21,5,1,MZA 5544 - LT 14,ZONA V,580
5422,-70.25624237,-17.99464989,MUR/HEX:2,1,220,381.42,9,2,MZA 5544 - LT 15,ZONA V,581
5423,-70.25618208,-17.99460622,MUR/HEX:1,1,220,199.21,5,1,MZA 5544 - LT 16,ZONA V,582
5424,-70.25612136,-17.99456245,MUR/HEX:1,1,220,190.32,4,1,MZA 5544 - LT 17,ZONA V,583
5425,-70.25606006,-17.99451879,MUR/HEX:1,1,220,187.96,4,1,MZA 5544 - LT 18,ZONA V,584
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5427,-70.25715728,-17.99530572,MUR/HEX:1,1,220,204.06,5,1,MZA 5544 - LT 25,ZONA V,586
5428,-70.25777303,-17.99541549,MUR/HEX:1,1,220,165.83,4,1,MZA 5545 - LT 1,ZONA V,587
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5431,-70.25762302,-17.995302,MUR/HEX:2,1,220,321.56,7,2,MZA 5545 - LT 4,ZONA V,590
5432,-70.2575758,-17.99535867,MUR/HEX:1,1,220,160.44,4,1,MZA 5545 - LT 5,ZONA V,591

5433,-70.25753016,-17.9954155,MUR/HEX:2,1,220,313.3,7,2,MZA 5545 - LT 6,ZONA V,592
5434,-70.25813375,-17.99601523,MUR/HEX:1,1,220,166.11,4,1,MZA 5545 - LT 11,ZONA V,593
5435,-70.258073,-17.99597251,MUR/HEX:1,1,220,163.74,4,1,MZA 5545 - LT 12,ZONA V,594
5436,-70.25801315,-17.99592808,MUR/HEX:1,1,220,167.44,4,1,MZA 5545 - LT 13,ZONA V,595
5437,-70.25795296,-17.99588397,MUR/HEX:2,1,220,327.06,8,2,MZA 5545 - LT 14,ZONA V,596
5438,-70.25789322,-17.99584011,MUR/HEX:2,1,220,327.74,8,2,MZA 5545 - LT 15,ZONA V,597
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5442,-70.25765268,-17.9956651,MUR/HEX:1,1,220,165.27,4,1,MZA 5545 - LT 19,ZONA V,601
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5444,-70.25753063,-17.9955765,MUR/HEX:1,1,220,166.83,4,1,MZA 5545 - LT 21,ZONA V,603
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5466,-70.25535431,-17.99504898,MUR/HEX:2,1,220,350.86,8,2,MZA 5547 - LT 9,ZONA V,625
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5469,-70.2552165,-17.9952213,MUR/HEX:2,1,220,354.5,8,2,MZA 5547 - LT 12,ZONA V,628
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5510,-70.25625467,-17.99568603,MUR/HEX:2,1,220,356.94,8,2,MZA 5550 - LT 4,ZONA V,670
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5512,-70.25603937,-17.99561964,MUR/HEX:2,1,220,366.86,8,2,MZA 5550 - LT 6,ZONA V,672
5513,-70.25608487,-17.99556183,MUR/HEX:1,1,220,180.14,4,1,MZA 5550 - LT 7,ZONA V,673
5514,-70.25613053,-17.99550445,MUR/HEX:2,1,220,365.1,8,2,MZA 5550 - LT 8,ZONA V,674
5515,-70.25617631,-17.9954473,MUR/HEX:1,1,220,179.78,4,1,MZA 5550 - LT 9,ZONA V,675
5516,-70.25622206,-17.99539034,MUR/HEX:1,1,220,180.81,4,1,MZA 5550 - LT 10,ZONA V,676
5517,-70.25540149,-17.99597519,MCF/LWAL+DNO/HEX:2/RES,1,220,348.42,8,2,MZA 5551 - LT 1,ZONA V,678
5518,-70.25534134,-17.99593797,MUR/HEX:1,1,220,175.5,4,1,MZA 5551 - LT 2,ZONA V,679
5519,-70.25528362,-17.99589643,MUR/HEX:2,1,220,351.8,2,MZA 5551 - LT 3,ZONA V,680
5520,-70.25522165,-17.99584385,MUR/HEX:2,1,220,343.82,8,2,MZA 5551 - LT 4,ZONA V,681
5521,-70.25516206,-17.99580088,MUR/HEX:1,1,220,172.19,4,1,MZA 5551 - LT 5,ZONA V,682
5522,-70.2551017,-17.99575674,MUR/HEX:2,1,220,355.46,8,2,MZA 5551 - LT 6,ZONA V,683
5523,-70.25504127,-17.99571206,MUR/HEX:2,1,220,350.82,8,2,MZA 5551 - LT 7,ZONA V,684
5524,-70.25498179,-17.99566731,MUR/HEX:2,1,220,354.32,8,2,MZA 5551 - LT 8,ZONA V,685
5525,-70.25492256,-17.99562314,MUR/HEX:1,1,220,177.1,4,1,MZA 5551 - LT 9,ZONA V,686
5526,-70.25486255,-17.99557921,MCF/LWAL+DNO/HEX:1/RES,1,220,180.45,4,1,MZA 5551 - LT 10,ZONA V,687
5527,-70.2546996,-17.99554463,MCF/LWAL+DNO/HEX:2/RES,1,220,365.78,8,2,MZA 5551 - LT 11,ZONA V,688
5528,-70.25474251,-17.99549017,MUR/HEX:2,1,220,361.46,8,2,MZA 5551 - LT 12,ZONA V,689
5529,-70.25476957,-17.99543725,MCF/LWAL+DNO/HEX:2/RES,1,220,355.38,8,2,MZA 5551 - LT 13,ZONA V,690
5530,-70.25527499,-17.99613452,MUR/HEX:2,1,220,360.36,8,2,MZA 5551 - LT 14,ZONA V,691
5531,-70.25521491,-17.996091,MUR/HEX:2,1,220,359.96,8,2,MZA 5551 - LT 15,ZONA V,692
5532,-70.25515465,-17.99604706,MUR/HEX:3,1,220,546.21,13,4,MZA 5551 - LT 16,ZONA V,693
5533,-70.2550941,-17.99600357,MUR/HEX:3,1,220,539.61,12,3,MZA 5551 - LT 17,ZONA V,694
5534,-70.25503457,-17.99596001,MUR/HEX:3,1,220,537.21,12,3,MZA 5551 - LT 18,ZONA V,695
5535,-70.25497411,-17.99591627,MUR/HEX:3,1,220,554.46,13,4,MZA 5551 - LT 19,ZONA V,696
5536,-70.25491356,-17.99587211,MUR/HEX:1,1,220,181.28,4,1,MZA 5551 - LT 20,ZONA V,697
5537,-70.25485401,-17.99582817,MUR/HEX:2,1,220,358.94,8,2,MZA 5551 - LT 21,ZONA V,698
5538,-70.25479404,-17.99578498,MCF/LWAL+DNO/HEX:1/RES,1,220,180.08,4,1,MZA 5551 - LT 22,ZONA V,699
5539,-70.254734,-17.99574111,MUR/HEX:3,1,220,545.61,13,4,MZA 5551 - LT 23,ZONA V,700
5540,-70.25467383,-17.99569736,MUR/HEX:2,1,220,360.88,8,2,MZA 5551 - LT 24,ZONA V,701
5541,-70.25461352,-17.99565319,MUR/HEX:3,1,220,548.49,13,4,MZA 5551 - LT 25,ZONA V,702
5542,-70.2545537,-17.99560887,MUR/HEX:3,1,220,533.52,12,3,MZA 5551 - LT 26,ZONA V,703
5543,-70.25612755,-17.99584306,MCF/LWAL+DNO/HEX:1/RES,1,220,181.2,4,1,MZA 5552 - LT 1,ZONA V,704
5544,-70.25608212,-17.99590125,MCF/LWAL+DNO/HEX:2/RES,1,220,361.84,8,2,MZA 5552 - LT 2,ZONA V,705
5545,-70.25603679,-17.99595865,MUR/HEX:2,1,220,355.64,8,2,MZA 5552 - LT 3,ZONA V,706
5546,-70.25599105,-17.99601562,MUR/HEX:2,1,220,359.5,8,2,MZA 5552 - LT 4,ZONA V,707
5547,-70.25594531,-17.99607307,MUR/HEX:2,1,220,359.3,8,2,MZA 5552 - LT 5,ZONA V,708
5548,-70.25589966,-17.99613021,MUR/HEX:2,1,220,356.46,8,2,MZA 5552 - LT 6,ZONA V,709
5549,-70.25585394,-17.99618721,MUR/HEX:2,1,220,357.18,8,2,MZA 5552 - LT 7,ZONA V,710
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5551,-70.25576215,-17.9963028,MUR/HEX:1,1,220,182.28,4,1,MZA 5552 - LT 9,ZONA V,712
5552,-70.25561439,-17.99637638,MUR/HEX:3,1,220,534.12,12,3,MZA 5552 - LT 10,ZONA V,713
5553,-70.25567057,-17.99641751,MUR/HEX:2,1,220,357.52,8,2,MZA 5552 - LT 11,ZONA V,714
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5555,-70.25595979,-17.99571945,MUR/HEX:2,1,220,369.84,9,2,MZA 5552 - LT 13,ZONA V,716
5556,-70.25591325,-17.99577797,MUR/HEX:2,1,220,363.36,8,2,MZA 5552 - LT 14,ZONA V,717
5557,-70.25586755,-17.99583524,MUR/HEX:2,1,220,354.04,8,2,MZA 5552 - LT 15,ZONA V,718
5558,-70.25582193,-17.99589207,MCF/LWAL+DNO/HEX:2/RES,1,220,361.38,8,2,MZA 5552 - LT 16,ZONA V,719
5559,-70.25577621,-17.99594962,MCF/LWAL+DNO/HEX:2/RES,1,220,361.46,8,2,MZA 5552 - LT 17,ZONA V,720
5560,-70.25573062,-17.99600711,MCF/LWAL+DNO/HEX:2/RES,1,220,359.02,8,2,MZA 5552 - LT 18,ZONA V,721
5561,-70.25568494,-17.99606448,MUR/HEX:1,1,220,180.45,4,1,MZA 5552 - LT 19,ZONA V,722
5562,-70.25563922,-17.99612173,MUR/HEX:2,1,220,358.78,8,2,MZA 5552 - LT 20,ZONA V,723
5563,-70.25559354,-17.99617936,MUR/HEX:2,1,220,364.58,8,2,MZA 5552 - LT 21,ZONA V,724
5564,-70.25555813,-17.99633519,MUR/HEX:2,1,220,359.36,8,2,MZA 5552 - LT 22,ZONA V,725
5565,-70.25550211,-17.99629399,MUR/HEX:3,1,220,531.66,12,3,MZA 5552 - LT 23,ZONA V,726
5566,-70.25544569,-17.99625265,MUR/HEX:3,1,220,545.01,13,4,MZA 5552 - LT 24,ZONA V,727
5567,-70.25667208,-17.99569031,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,170.15,4,1,MZA 5553 - LT 1,ZONA V,728
5568,-70.25662181,-17.99575213,MUR/HEX:2,1,220,345.68,8,2,MZA 5553 - LT 2,ZONA V,729
5569,-70.25657594,-17.99580899,MUR/HEX:1,1,220,161.43,4,1,MZA 5553 - LT 3,ZONA V,730
5570,-70.25653043,-17.99586631,MUR/HEX:2,1,220,348.36,8,2,MZA 5553 - LT 4,ZONA V,731
5571,-70.25648511,-17.99592384,MUR/HEX:1,1,220,167.97,4,1,MZA 5553 - LT 5,ZONA V,732
5572,-70.25643959,-17.99598165,MUR/HEX:2,1,220,291.12,7,2,MZA 5553 - LT 6,ZONA V,733
5573,-70.25639425,-17.99603912,MUR/HEX:2,1,220,323.26,7,2,MZA 5553 - LT 7,ZONA V,734
5574,-70.25634905,-17.99609631,MUR/HEX:1,1,220,164.06,4,1,MZA 5553 - LT 8,ZONA V,735

5575,-70.25630291,-17.99615411,MUR/HEX:1,1,220,159.17,4,1,MZA 5553 - LT 9,ZONA V,736
5576,-70.25625701,-17.99621207,MUR/HEX:2,1,220,298.86,7,2,MZA 5553 - LT 10,ZONA V,737
5577,-70.25621203,-17.99626918,MUR/HEX:1,1,220,164.76,4,1,MZA 5553 - LT 11,ZONA V,738
5578,-70.25616745,-17.99632558,MCF/LWAL+DNO/HEX:1/RES,1,220,162.47,4,1,MZA 5553 - LT 12,ZONA V,739
5579,-70.25612226,-17.9963826,MUR/HEX:2,1,220,313.18,7,2,MZA 5553 - LT 13,ZONA V,740
5580,-70.25607612,-17.99644042,MUR/HEX:2,1,220,326.82,8,2,MZA 5553 - LT 14,ZONA V,741
5581,-70.25603035,-17.99649821,MCF/LWAL+DNO/HEX:1/RES,1,220,155.58,4,1,MZA 5553 - LT 15,ZONA V,742
5582,-70.25598482,-17.99655582,MUR/HEX:1,1,220,161.15,4,1,MZA 5553 - LT 16,ZONA V,743
5583,-70.25593908,-17.99661332,MUR/HEX:1,1,220,159.55,4,1,MZA 5553 - LT 17,ZONA V,744
5584,-70.25590096,-17.99667566,MUR/HEX:2,1,220,339.42,8,2,MZA 5553 - LT 18,ZONA V,745
5585,-70.25702056,-17.9955516,MCF/LWAL+DNO/HEX:1/RES,1,220,241.16,1,MZA 5553 - LT 1,ZONA V,747
5586,-70.25696328,-17.99562437,MUR/HEX:1,1,220,160.8,4,1,MZA 5553 - LT 2,ZONA V,748
5587,-70.25691735,-17.99568166,MUR/HEX:1,1,220,158.49,4,1,MZA 5553 - LT 3,ZONA V,749
5588,-70.25687186,-17.99573846,MUR/HEX:1,1,220,159.01,4,1,MZA 5553 - LT 4,ZONA V,750
5589,-70.25682546,-17.99579634,MCF/LWAL+DNO/HEX:2/RES,1,220,329.8,8,2,MZA 5553 - LT 5,ZONA V,751
5590,-70.25677941,-17.9958539,MUR/HEX:1,1,220,155.65,4,1,MZA 5553 - LT 6,ZONA V,752
5591,-70.25673426,-17.99591063,MCF/LWAL+DNO/HEX:1/RES,1,220,158.03,4,1,MZA 5553 - LT 7,ZONA V,753
5592,-70.25668819,-17.99596941,MCF/LWAL+DNO/HEX:1/RES,1,220,166.48,4,1,MZA 5553 - LT 8,ZONA V,754
5593,-70.2566422,-17.99602763,MUR/HEX:1,1,220,156.99,4,1,MZA 5553 - LT 9,ZONA V,755
5594,-70.25659697,-17.99608409,MCF/LWAL+DNO/HEX:2/RES,1,220,316.66,7,2,MZA 5553 - LT 10,ZONA V,756
5595,-70.25655128,-17.99614138,MCF/LWAL+DNO/HEX:2/RES,1,220,319.68,7,2,MZA 5553 - LT 11,ZONA V,757
5596,-70.25650571,-17.996199,MUR/HEX:2,1,220,319.26,7,2,MZA 5553 - LT 12,ZONA V,758
5597,-70.25645956,-17.99625697,MCF/LWAL+DNO/HEX:1/RES,1,220,162.6,4,1,MZA 5553 - LT 13,ZONA V,759
5598,-70.25632032,-17.9964334,MCF/LWAL+DNO/HEX:2/RES,1,220,318.6,7,2,MZA 5553 - LT 16,ZONA V,762
5599,-70.25627426,-17.99649049,MCF/LWAL+DNO/HEX:2/RES,1,220,320.24,7,2,MZA 5553 - LT 17,ZONA V,763
5600,-70.25622849,-17.9965483,MUR/HEX:1,1,220,161.61,4,1,MZA 5553 - LT 18,ZONA V,764
5601,-70.25618263,-17.99660673,MCF/LWAL+DNO/HEX:3/RES,1,220,487.32,11,3,MZA 5553 - LT 19,ZONA V,765
5602,-70.25613611,-17.99666436,MCF/LWAL+DNO/HEX:2/RES,1,220,319.8,7,2,MZA 5553 - LT 20,ZONA V,766
5603,-70.25609205,-17.99672823,MCF/LWAL+DNO/HEX:2/RES,1,220,327.9,8,2,MZA 5553 - LT 21,ZONA V,767
5604,-70.25604356,-17.99677922,MCF/LWAL+DNO/HEX:2/RES,1,220,307.86,7,2,MZA 5553 - LT 22,ZONA V,768
5605,-70.2557938,-17.99626068,MUR/HEX:1,1,220,165.51,4,1,MZA 5554 - LT 1,ZONA V,769
5606,-70.25787838,-17.99621583,MCF/LWAL+DNO/HEX:2/RES,1,220,326.8,2,MZA 5554 - LT 2,ZONA V,770
5607,-70.25781834,-17.99617332,MCF/LWAL+DNO/HEX:2/RES,1,220,317.64,7,2,MZA 5554 - LT 3,ZONA V,771
5608,-70.2577588,-17.99612964,MCF/LWAL+DNO/HEX:2/RES,1,220,323.12,7,2,MZA 5554 - LT 4,ZONA V,772
5609,-70.25769996,-17.99608575,MCF/LWAL+DNO/HEX:2/RES,1,220,321.04,7,2,MZA 5554 - LT 5,ZONA V,773
5610,-70.25764064,-17.99604233,MUR/HEX:1,1,220,162.37,4,1,MZA 5554 - LT 6,ZONA V,774
5611,-70.25757976,-17.99599691,MCF/LWAL+DNO/HEX:2/RES,1,220,346.56,8,2,MZA 5554 - LT 7,ZONA V,775
5612,-70.2575184,-17.99595144,MUR/HEX:1,1,220,166.89,4,1,MZA 5554 - LT 8,ZONA V,776
5613,-70.25745813,-17.99590735,MUR/HEX:1,1,220,166.64,4,1,MZA 5554 - LT 9,ZONA V,777
5614,-70.25739892,-17.99586413,MUR/HEX:1,1,220,160.82,4,1,MZA 5554 - LT 10,ZONA V,778
5615,-70.25733946,-17.99582096,MCF/LWAL+DNO/HEX:2/RES,1,220,334.66,8,2,MZA 5554 - LT 11,ZONA V,779
5616,-70.25727749,-17.99577662,MCF/LWAL+DNO/HEX:2/RES,1,220,342.5,8,2,MZA 5554 - LT 12,ZONA V,780
5617,-70.25721388,-17.99573502,MUR/HEX:1,1,220,157.5,4,1,MZA 5554 - LT 13,ZONA V,781
5618,-70.25782572,-17.99640525,MCF/LWAL+DNO/HEX:2/RES,1,220,321.86,7,2,MZA 5554 - LT 14,ZONA V,782
5619,-70.25776468,-17.9963623,MUR/HEX:1,1,220,158.99,4,1,MZA 5554 - LT 15,ZONA V,783
5620,-70.25770449,-17.99631922,MUR/HEX:2,1,220,317.6,7,2,MZA 5554 - LT 16,ZONA V,784
5621,-70.25764417,-17.99627572,MCF/LWAL+DNO/HEX:2/RES,1,220,324.74,7,2,MZA 5554 - LT 17,ZONA V,785
5622,-70.25758423,-17.99623167,MUR/HEX:1,1,220,158.84,4,1,MZA 5554 - LT 18,ZONA V,786
5623,-70.25752438,-17.99618818,MCF/LWAL+DNO/HEX:1/RES,1,220,160.83,4,1,MZA 5554 - LT 19,ZONA V,787
5624,-70.25746382,-17.99614308,MCF/LWAL+DNO/HEX:1/RES,1,220,165.94,4,1,MZA 5554 - LT 20,ZONA V,788
5625,-70.25740244,-17.99609891,MCF/LWAL+DNO/HEX:2/RES,1,220,322.44,7,2,MZA 5554 - LT 21,ZONA V,789
5626,-70.25734195,-17.99605511,MCF/LWAL+DNO/HEX:2/RES,1,220,324.5,7,2,MZA 5554 - LT 22,ZONA V,790
5627,-70.25728195,-17.99601168,MUR/HEX:1,1,220,158.27,4,1,MZA 5554 - LT 23,ZONA V,791
5628,-70.25722267,-17.99596756,MCF/LWAL+DNO/HEX:1/RES,1,220,161.47,4,1,MZA 5554 - LT 24,ZONA V,792
5629,-70.25716159,-17.99592284,MUR/HEX:1,1,220,165.81,4,1,MZA 5554 - LT 25,ZONA V,793
5630,-70.25710149,-17.9958779,MCF/LWAL+DNO/HEX:2/RES,1,220,316.04,7,2,MZA 5554 - LT 26,ZONA V,794
5631,-70.25827891,-17.99644367,MUR/HEX:1,1,220,164.13,4,1,MZA 5555 - LT 1,ZONA V,795
5632,-70.25823352,-17.99650197,MCF/LWAL+DNO/HEX:1/RES,1,220,163.21,4,1,MZA 5555 - LT 2,ZONA V,796
5633,-70.25818805,-17.99655943,MUR/HEX:1,1,220,162.2,4,1,MZA 5555 - LT 3,ZONA V,797
5634,-70.25814291,-17.99661612,MUR/HEX:1,1,220,160.23,4,1,MZA 5555 - LT 4,ZONA V,798
5635,-70.25809738,-17.99667288,MUR/HEX:2,1,220,326.28,8,2,MZA 5555 - LT 5,ZONA V,799
5636,-70.25805096,-17.99673061,MCF/LWAL+DNO/HEX:2/RES,1,220,330.52,8,2,MZA 5555 - LT 6,ZONA V,800
5637,-70.25800438,-17.99678857,MUR/HEX:1,1,220,163.88,4,1,MZA 5555 - LT 7,ZONA V,801
5638,-70.25795812,-17.99684636,MUR/HEX:1,1,220,164.13,4,1,MZA 5555 - LT 8,ZONA V,802
5639,-70.25791266,-17.99690405,MCF/LWAL+DNO/HEX:2/RES,1,220,321.94,7,2,MZA 5555 - LT 9,ZONA V,803
5640,-70.25786758,-17.99696038,MCF/LWAL+DNO/HEX:1/RES,1,220,157.95,4,1,MZA 5555 - LT 10,ZONA V,804
5641,-70.25812803,-17.996334,MUR/HEX:1,1,220,163.08,4,1,MZA 5555 - LT 11,ZONA V,805
5642,-70.25808265,-17.99639251,MUR/HEX:1,1,220,157.41,4,1,MZA 5555 - LT 12,ZONA V,806
5643,-70.25803738,-17.99644972,MCF/LWAL+DNO/HEX:1/RES,1,220,155.55,4,1,MZA 5555 - LT 13,ZONA V,807
5644,-70.25799191,-17.99650612,MCF/LWAL+DNO/HEX:2/RES,1,220,310.82,7,2,MZA 5555 - LT 14,ZONA V,808
5645,-70.25794673,-17.99656321,MCF/LWAL+DNO/HEX:2/RES,1,220,313.76,7,2,MZA 5555 - LT 15,ZONA V,809

5646,-70.25789997,-17.99662063,MCF/LWAL+DNO/HEX:2/RES,1,220,323.82,7,2,MZA 5555 - LT 16,ZONA V,810
5647,-70.25785301,-17.99667896,MUR/HEX:1,1,220,162.15,4,1,MZA 5555 - LT 17,ZONA V,811
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5649,-70.25776013,-17.99679531,MUR/HEX:1,1,220,157.67,4,1,MZA 5555 - LT 19,ZONA V,813
5650,-70.25771632,-17.99685174,MCF/LWAL+DNO/HEX:1/RES,1,220,151.98,4,1,MZA 5555 - LT 20,ZONA V,814
5651,-70.25718176,-17.99617108,MCF/LWAL+DNO/HEX:2/RES,1,220,334.54,8,2,MZA 5556 - LT 1,ZONA V,815
5652,-70.25713677,-17.99622857,MCF/LWAL+DNO/HEX:2/RES,1,220,326.04,8,2,MZA 5556 - LT 2,ZONA V,816
5653,-70.25709074,-17.99628575,MCF/LWAL+DNO/HEX:2/RES,1,220,335.88,8,2,MZA 5556 - LT 3,ZONA V,817
5654,-70.2570441,-17.99634338,MUR/HEX:1,1,220,165.5,4,1,MZA 5556 - LT 4,ZONA V,818
5655,-70.25699822,-17.99639974,MUR/HEX:1,1,220,159.34,4,1,MZA 5556 - LT 5,ZONA V,819
5656,-70.25695237,-17.9964557,MUR/HEX:1,1,220,162.28,4,1,MZA 5556 - LT 6,ZONA V,820
5657,-70.25690604,-17.99651294,MUR/HEX:1,1,220,162.43,4,1,MZA 5556 - LT 7,ZONA V,821
5658,-70.25685948,-17.9965706,MCF/LWAL+DNO/HEX:1/RES,1,220,162.5,4,1,MZA 5556 - LT 8,ZONA V,822
5659,-70.25681388,-17.99662854,MCF/LWAL+DNO/HEX:1/RES,1,220,161.45,4,1,MZA 5556 - LT 9,ZONA V,823
5660,-70.25676736,-17.99668517,MUR/HEX:1,1,220,160.46,4,1,MZA 5556 - LT 10,ZONA V,824
5661,-70.25702889,-17.99605819,MUR/HEX:1,1,220,169.22,4,1,MZA 5556 - LT 11,ZONA V,825
5662,-70.25698191,-17.99611608,MCF/LWAL+DNO/HEX:2/RES,1,220,321.84,7,2,MZA 5556 - LT 12,ZONA V,826
5663,-70.25693747,-17.99617339,MCF/LWAL+DNO/HEX:2/RES,1,220,322.16,7,2,MZA 5556 - LT 13,ZONA V,827
5664,-70.25689149,-17.99623032,MCF/LWAL+DNO/HEX:2/RES,1,220,324.82,7,2,MZA 5556 - LT 14,ZONA V,828
5665,-70.25684529,-17.99628717,MUR/HEX:1,1,220,160.65,4,1,MZA 5556 - LT 15,ZONA V,829
5666,-70.25679986,-17.99634474,MCF/LWAL+DUC/HEX:3/RES,1,220,489.6,11,3,MZA 5556 - LT 16,ZONA V,830
5667,-70.25675385,-17.9964025,MCF/LWAL+DNO/HEX:2/RES,1,220,325.02,8,2,MZA 5556 - LT 17,ZONA V,831
5668,-70.25670773,-17.99646056,MCF/LWAL+DNO/HEX:1/RES,1,220,162.93,4,1,MZA 5556 - LT 18,ZONA V,832
5669,-70.25666181,-17.99651795,MCF/LWAL+DNO/HEX:1/RES,1,220,160.21,4,1,MZA 5556 - LT 19,ZONA V,833
5670,-70.25661578,-17.99657535,MCF/LWAL+DNO/HEX:1/RES,1,220,163.07,4,1,MZA 5556 - LT 20,ZONA V,834
5671,-70.25779643,-17.99714014,MCF/LWAL+DNO/HEX:2/RES,1,220,324.34,7,2,MZA 5558 - LT 1,ZONA V,835
5672,-70.25773714,-17.99709392,MUR/HEX:1,1,220,159.17,4,1,MZA 5558 - LT 2,ZONA V,836
5673,-70.25767688,-17.99705029,MCF/LWAL+DNO/HEX:1/RES,1,220,159.4,1,MZA 5558 - LT 3,ZONA V,837
5674,-70.25761675,-17.99700652,MUR/HEX:1,1,220,159.9,4,1,MZA 5558 - LT 4,ZONA V,838
5675,-70.25755661,-17.99696238,MCF/LWAL+DNO/HEX:1/RES,1,220,161.71,4,1,MZA 5558 - LT 5,ZONA V,839
5676,-70.25749631,-17.9969178,MCF/LWAL+DNO/HEX:2/RES,1,220,328.08,8,2,MZA 5558 - LT 6,ZONA V,840
5677,-70.25743617,-17.996873,MCF/LWAL+DNO/HEX:2/RES,1,220,330.66,8,2,MZA 5558 - LT 7,ZONA V,841
5678,-70.25737665,-17.99682864,MCF/LWAL+DNO/HEX:3/RES,1,220,494.04,11,3,MZA 5558 - LT 8,ZONA V,842
5679,-70.25731549,-17.99678431,MCF/LWAL+DNO/HEX:2/RES,1,220,347.48,8,2,MZA 5558 - LT 9,ZONA V,843
5680,-70.25725388,-17.9967405,MCF/LWAL+DNO/HEX:2/RES,1,220,326.86,8,2,MZA 5558 - LT 10,ZONA V,844
5681,-70.25719382,-17.99669778,MCF/LWAL+DNO/HEX:2/RES,1,220,327.52,8,2,MZA 5558 - LT 11,ZONA V,845
5682,-70.25713298,-17.99665529,MUR/HEX:1,1,220,163.1,4,1,MZA 5558 - LT 12,ZONA V,846
5683,-70.25768227,-17.99728214,MCF/LWAL+DNO/HEX:2/RES,1,220,325.22,8,2,MZA 5558 - LT 13,ZONA V,847
5684,-70.25762303,-17.99723839,MCF/LWAL+DNO/HEX:2/RES,1,220,322.42,7,2,MZA 5558 - LT 14,ZONA V,848
5685,-70.25756264,-17.9971944,MCF/LWAL+DNO/HEX:2/RES,1,220,323.96,7,2,MZA 5558 - LT 15,ZONA V,849
5686,-70.25750177,-17.99714997,MUR/HEX:1,1,220,161.94,4,1,MZA 5558 - LT 16,ZONA V,850
5687,-70.25744113,-17.99710546,MCF/LWAL+DNO/HEX:2/RES,1,220,320.74,7,2,MZA 5558 - LT 17,ZONA V,851
5688,-70.25738068,-17.99706098,MCF/LWAL+DNO/HEX:2/RES,1,220,320.02,7,2,MZA 5558 - LT 18,ZONA V,852
5689,-70.25732034,-17.99701641,MCF/LWAL+DNO/HEX:2/RES,1,220,314.54,7,2,MZA 5558 - LT 19,ZONA V,853
5690,-70.25726002,-17.99697302,MCF/LWAL+DNO/HEX:2/RES,1,220,311.64,7,2,MZA 5558 - LT 20,ZONA V,854
5691,-70.2571995,-17.9969286,MCF/LWAL+DNO/HEX:2/RES,1,220,321.02,7,2,MZA 5558 - LT 21,ZONA V,855
5692,-70.25713871,-17.99688559,MCF/LWAL+DNO/HEX:2/RES,1,220,308.04,7,2,MZA 5558 - LT 22,ZONA V,856
5693,-70.25707896,-17.99684316,MUR/HEX:1,1,220,156.95,4,1,MZA 5558 - LT 23,ZONA V,857
5694,-70.25701869,-17.99680006,MCF/LWAL+DNO/HEX:3/RES,1,220,475.11,11,3,MZA 5558 - LT 24,ZONA V,858
5695,-70.25664951,-17.9969226,MUR/HEX:1,1,220,162.71,4,1,MZA 5559 - LT 1,ZONA V,859
5696,-70.25658935,-17.9968783,MUR/HEX:1,1,220,161.1,4,1,MZA 5559 - LT 2,ZONA V,860
5697,-70.25652923,-17.99683512,MUR/HEX:1,1,220,159.71,4,1,MZA 5559 - LT 3,ZONA V,861
5698,-70.25646934,-17.99679194,MCF/LWAL+DNO/HEX:2/RES,1,220,319.36,7,2,MZA 5559 - LT 4,ZONA V,862
5699,-70.25640773,-17.99674843,MUR/HEX:1,1,220,166.61,4,1,MZA 5559 - LT 5,ZONA V,863
5700,-70.25653607,-17.99706656,MCF/LWAL+DUC/HEX:2/RES,1,220,322.36,7,2,MZA 5559 - LT 6,ZONA V,864
5701,-70.25647478,-17.99702346,MCF/LWAL+DUC/HEX:2/RES,1,220,323.48,7,2,MZA 5559 - LT 7,ZONA V,865
5702,-70.25641458,-17.99697946,MCF/LWAL+DUC/HEX:2/RES,1,220,317.9,7,2,MZA 5559 - LT 8,ZONA V,866
5703,-70.25635447,-17.99693624,MCF/LWAL+DNO/HEX:3/RES,1,220,478.14,11,3,MZA 5559 - LT 9,ZONA V,867
5704,-70.25629315,-17.9968917,MCF/LWAL+DNO/HEX:3/RES,1,220,500.04,12,3,MZA 5559 - LT 10,ZONA V,868
5705,-70.25748435,-17.99753044,MCF/LWAL+DNO/HEX:2/RES,1,220,320.46,7,2,MZA 5560 - LT 1,ZONA V,869
5706,-70.2574244,-17.99748652,MCF/LWAL+DNO/HEX:3/RES,1,220,484.05,11,3,MZA 5560 - LT 2,ZONA V,870
5707,-70.25736419,-17.99744251,MCF/LWAL+DNO/HEX:2/RES,1,220,323.66,7,2,MZA 5560 - LT 3,ZONA V,871
5708,-70.25730362,-17.99739866,MCF/LWAL+DNO/HEX:2/RES,1,220,323.1,7,2,MZA 5560 - LT 4,ZONA V,872
5709,-70.25724291,-17.99735472,MUR/HEX:1,1,220,161.55,4,1,MZA 5560 - LT 5,ZONA V,873
5710,-70.25718306,-17.99731067,MCF/LWAL+DNO/HEX:2/RES,1,220,322.16,7,2,MZA 5560 - LT 6,ZONA V,874
5711,-70.25712311,-17.99726683,MUR/HEX:1,1,220,162.78,4,1,MZA 5560 - LT 7,ZONA V,875
5712,-70.25706259,-17.99722289,MCF/LWAL+DNO/HEX:1/RES,1,220,163.57,4,1,MZA 5560 - LT 8,ZONA V,876
5713,-70.25700138,-17.99717859,MCF/LWAL+DNO/HEX:1/RES,1,220,165.96,4,1,MZA 5560 - LT 9,ZONA V,877
5714,-70.25693986,-17.99713412,MCF/LWAL+DNO/HEX:2/RES,1,220,328.94,8,2,MZA 5560 - LT 10,ZONA V,878
5715,-70.25687922,-17.9970904,MUR/HEX:1,1,220,160.31,4,1,MZA 5560 - LT 11,ZONA V,879
5716,-70.25681846,-17.99704729,MUR/HEX:1,1,220,162.19,4,1,MZA 5560 - LT 12,ZONA V,880

5717,-70.25736765,-17.99767505,MCF/LWAL+DNO/HEX:2/RES,1,220,326.12,8,2,MZA 5560 - LT 13,ZONA V,881
5718,-70.25730772,-17.99763143,CR/LFINF+DUC/HEX:4/RES,1,220,653.36,15,4,MZA 5560 - LT 14,ZONA V,882
5719,-70.25724742,-17.99758756,MCF/LWAL+DUC/HEX:3/RES,1,220,490.02,11,3,MZA 5560 - LT 15,ZONA V,883
5720,-70.25718728,-17.99754344,CR/LFINF+DUC/HEX:4/RES,1,220,651.56,15,4,MZA 5560 - LT 16,ZONA V,884
5721,-70.25712715,-17.99749952,MCF/LWAL+DNO/HEX:2/RES,1,220,324.32,7,2,MZA 5560 - LT 17,ZONA V,885
5722,-70.25706713,-17.99745567,MCF/LWAL+DNO/HEX:2/RES,1,220,321.28,7,2,MZA 5560 - LT 18,ZONA V,886
5723,-70.25700701,-17.99741199,MCF/LWAL+DUC/HEX:3/RES,1,220,485.85,11,3,MZA 5560 - LT 19,ZONA V,887
5724,-70.25694626,-17.99736802,MCF/LWAL+DNO/HEX:2/RES,1,220,326.36,8,2,MZA 5560 - LT 20,ZONA V,888
5725,-70.25688579,-17.99732359,MCF/LWAL+DNO/HEX:2/RES,1,220,326.08,8,2,MZA 5560 - LT 21,ZONA V,889
5726,-70.25682447,-17.99727969,MCF/LWAL+DNO/HEX:2/RES,1,220,329.2,8,2,MZA 5560 - LT 22,ZONA V,890
5727,-70.25676381,-17.99723561,MCF/LWAL+DNO/HEX:3/RES,1,220,483.72,11,3,MZA 5560 - LT 23,ZONA V,891
5728,-70.25670383,-17.9971911,MCF/LWAL+DNO/HEX:1/RES,1,220,162.42,4,1,MZA 5560 - LT 24,ZONA V,892
5729,-70.25922104,-17.99618882,MUR/HEX:2,1,220,305.88,7,2,MZA 5561 - LT 1,ZONA V,893
5730,-70.25916187,-17.99614462,MUR/HEX:1,1,220,162.15,4,1,MZA 5561 - LT 2,ZONA V,894
5731,-70.25910051,-17.99610084,MCF/LWAL+DNO/HEX:2/RES,1,220,315.62,7,2,MZA 5561 - LT 3,ZONA V,895
5732,-70.25904011,-17.99605639,MCF/LWAL+DNO/HEX:2/RES,1,220,319.32,7,2,MZA 5561 - LT 4,ZONA V,896
5733,-70.25897195,-17.99600693,MCF/LWAL+DNO/HEX:2/RES,1,220,390.66,9,2,MZA 5561 - LT 5,ZONA V,897
5734,-70.25925248,-17.99605353,MUR/HEX:1,1,220,167.85,4,1,MZA 5561 - LT 6,ZONA V,898
5735,-70.25929946,-17.99599571,MUR/HEX:1,1,220,170.74,4,1,MZA 5561 - LT 7,ZONA V,899
5736,-70.25934644,-17.99594032,MCF/LWAL+DNO/HEX:1/RES,1,220,158.18,4,1,MZA 5561 - LT 8,ZONA V,900
5737,-70.25938902,-17.99588373,MCF/LWAL+DNO/HEX:3/RES,1,220,499.77,12,3,MZA 5561 - LT 9,ZONA V,901
5738,-70.25923081,-17.99576553,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,174.29,4,1,MZA 5561 - LT 10,ZONA V,902
5739,-70.25918473,-17.99582236,MCF/LWAL+DNO/HEX:1/RES,1,220,169.37,4,1,MZA 5561 - LT 11,ZONA V,903
5740,-70.25914129,-17.9958813,MUR/HEX:1,1,220,176.49,4,1,MZA 5561 - LT 12,ZONA V,904
5741,-70.25909319,-17.99593832,MCF/LWAL+DNO/HEX:1/RES,1,220,171.47,4,1,MZA 5561 - LT 13,ZONA V,905
5742,-70.25960293,-17.99604441,MUR/HEX:1,1,220,158.06,4,1,MZA 5562 - LT 1,ZONA V,906
5743,-70.2595585,-17.99609999,MUR/HEX:1,1,220,154.9,4,1,MZA 5562 - LT 2,ZONA V,907
5744,-70.25951446,-17.99615695,MUR/HEX:1,1,220,164.05,4,1,MZA 5562 - LT 3,ZONA V,908
5745,-70.26038689,-17.99704452,MCF/LWAL+DNO/HEX:2/RES,1,220,373.74,9,2,MZA 5563 - LT 1,ZONA V,909
5746,-70.26031424,-17.99699047,MCF/LWAL+DNO/HEX:2/RES,1,220,405.6,9,2,MZA 5563 - LT 2,ZONA V,910
5747,-70.26024542,-17.99694061,MUR/HEX:1,1,220,162.62,4,1,MZA 5563 - LT 3,ZONA V,911
5748,-70.26018577,-17.99689706,MCF/LWAL+DNO/HEX:3/RES,1,220,465.15,11,3,MZA 5563 - LT 4,ZONA V,912
5749,-70.26012516,-17.99685219,MCF/LWAL+DNO/HEX:2/RES,1,220,338.88,8,2,MZA 5563 - LT 5,ZONA V,913
5750,-70.26006294,-17.99680686,MCF/LWAL+DNO/HEX:2/RES,1,220,323.36,7,2,MZA 5563 - LT 6,ZONA V,914
5751,-70.26000417,-17.99676299,MUR/HEX:1,1,220,153.93,4,1,MZA 5563 - LT 7,ZONA V,915
5752,-70.25994468,-17.99672009,MUR/HEX:1,1,220,161.49,4,1,MZA 5563 - LT 8,ZONA V,916
5753,-70.25988463,-17.99667566,MCF/LWAL+DNO/HEX:1/RES,1,220,159.95,4,1,MZA 5563 - LT 9,ZONA V,917
5754,-70.25982487,-17.99663161,MCF/LWAL+DNO/HEX:1/RES,1,220,159.46,4,1,MZA 5563 - LT 10,ZONA V,918
5755,-70.25976453,-17.9965884,MCF/LWAL+DNO/HEX:1/RES,1,220,159.71,4,1,MZA 5563 - LT 11,ZONA V,919
5756,-70.25970552,-17.99654419,MCF/LWAL+DNO/HEX:3/RES,1,220,472.95,11,3,MZA 5563 - LT 12,ZONA V,920
5757,-70.25964586,-17.99650074,MUR/HEX:1,1,220,159.81,4,1,MZA 5563 - LT 13,ZONA V,921
5758,-70.25958608,-17.99645638,MCF/LWAL+DNO/HEX:2/RES,1,220,321.16,7,2,MZA 5563 - LT 14,ZONA V,922
5759,-70.25952566,-17.99641272,MCF/LWAL+DNO/HEX:2/RES,1,220,320.12,7,2,MZA 5563 - LT 15,ZONA V,923
5760,-70.25946636,-17.99636838,MCF/LWAL+DNO/HEX:1/RES,1,220,158.69,4,1,MZA 5563 - LT 16,ZONA V,924
5761,-70.25940615,-17.99632483,MUR/HEX:1,1,220,160.96,4,1,MZA 5563 - LT 17,ZONA V,925
5762,-70.25934424,-17.99627893,MCF/LWAL+DNO/HEX:2/RES,1,220,341.5,8,2,MZA 5563 - LT 18,ZONA V,926
5763,-70.25889674,-17.99656744,MUR/HEX:1,1,220,166.81,4,1,MZA 5564 - LT 1,ZONA V,927
5764,-70.25883578,-17.99652395,MUR/HEX:1,1,220,163.31,4,1,MZA 5564 - LT 2,ZONA V,928
5765,-70.25877495,-17.99648062,MCF/LWAL+DNO/HEX:2/RES,1,220,330.84,8,2,MZA 5564 - LT 3,ZONA V,929
5766,-70.25871454,-17.99643664,MCF/LWAL+DNO/HEX:1/RES,1,220,163.14,4,1,MZA 5564 - LT 4,ZONA V,930
5767,-70.25865472,-17.99639194,MCF/LWAL+DNO/HEX:2/RES,1,220,329.76,8,2,MZA 5564 - LT 5,ZONA V,931
5768,-70.25901831,-17.9963271,MCF/LWAL+DNO/HEX:1/RES,1,220,161.39,4,1,MZA 5564 - LT 1,ZONA V,932
5769,-70.25897472,-17.99638305,MCF/LWAL+DNO/HEX:2/RES,1,220,297.96,7,2,MZA 5564 - LT 2,ZONA V,933
5770,-70.25893249,-17.9964368,MCF/LWAL+DNO/HEX:1/RES,1,220,148.64,3,0,MZA 5564 - LT 3,ZONA V,934
5771,-70.25886465,-17.99621638,MCF/LWAL+DNO/HEX:1/RES,1,220,164.83,4,1,MZA 5564 - LT 4,ZONA V,935
5772,-70.25882177,-17.99627236,MUR/HEX:1,1,220,151.3,3,0,MZA 5564 - LT 5,ZONA V,936
5773,-70.2587802,-17.99632614,MCF/LWAL+DNO/HEX:2/RES,1,220,306.06,7,2,MZA 5564 - LT 6,ZONA V,937
5774,-70.25902765,-17.99666212,MUR/HEX:1,1,220,159.49,4,1,MZA 5565 - LT 26,ZONA V,938
5775,-70.25908727,-17.99670613,MUR/HEX:1,1,220,162.14,4,1,MZA 5565 - LT 27,ZONA V,939
5776,-70.25914665,-17.99675024,MUR/HEX:1,1,220,160.35,4,1,MZA 5565 - LT 28,ZONA V,940
5777,-70.2592075,-17.99679414,MUR/HEX:1,1,220,169.45,4,1,MZA 5565 - LT 29,ZONA V,941
5778,-70.2592676,-17.99683982,MUR/HEX:1,1,220,163.42,4,1,MZA 5565 - LT 30,ZONA V,942
5779,-70.25939006,-17.99659856,MUR/HEX:2,1,220,297.72,7,2,MZA 5565 - LT 1,ZONA V,943
5780,-70.25934448,-17.99665053,MCF/LWAL+DNO/HEX:1/RES,1,220,154.67,4,1,MZA 5565 - LT 2,ZONA V,944
5781,-70.25930214,-17.99670515,MUR/HEX:1,1,220,152.46,4,1,MZA 5565 - LT 3,ZONA V,945
5782,-70.25924111,-17.99648865,MCF/LWAL+DNO/HEX:1/RES,1,220,148.17,3,0,MZA 5565 - LT 4,ZONA V,946
5783,-70.25919467,-17.99654093,MCF/LWAL+DNO/HEX:1/RES,1,220,149.96,3,0,MZA 5565 - LT 5,ZONA V,947
5784,-70.25915143,-17.99659577,MCF/LWAL+DNO/HEX:1/RES,1,220,147.94,3,0,MZA 5565 - LT 6,ZONA V,948
5785,-70.25939221,-17.99692738,MUR/HEX:1,1,220,170.44,4,1,MZA 5566 - LT 31,ZONA V,949
5786,-70.25945217,-17.99697358,MCF/LWAL+DNO/HEX:2/RES,1,220,328.4,8,2,MZA 5566 - LT 32,ZONA V,950
5787,-70.25951211,-17.99701737,MCF/LWAL+DNO/HEX:2/RES,1,220,330.02,8,2,MZA 5566 - LT 33,ZONA V,951

5788,-70.25957223,-17.99706062,MUR/HEX:1,1,220,163.15,4,1,MZA 5566 - LT 34,ZONA V,952
5789,-70.25963176,-17.99710346,MUR/HEX:1,1,220,160.09,4,1,MZA 5566 - LT 35,ZONA V,953
5790,-70.25975375,-17.99686254,MCF/LWAL+DNO/HEX:3/RES,1,220,472.71,11,3,MZA 5566 - LT 1,ZONA V,954
5791,-70.25971027,-17.99691663,MCF/LWAL+DNO/HEX:2/RES,1,220,302.26,7,2,MZA 5566 - LT 2,ZONA V,955
5792,-70.25966615,-17.99696948,MUR/HEX:1,1,220,152.82,4,1,MZA 5566 - LT 3,ZONA V,956
5793,-70.25960103,-17.99675261,MUR/HEX:1,1,220,154.8,4,1,MZA 5566 - LT 4,ZONA V,957
5794,-70.25955727,-17.99680615,MCF/LWAL+DNO/HEX:1/RES,1,220,149.21,3,0,MZA 5566 - LT 5,ZONA V,958
5795,-70.25951387,-17.99685903,MUR/HEX:1,1,220,151.6,3,0,MZA 5566 - LT 6,ZONA V,959
5796,-70.26018948,-17.99718133,MUR/HEX:2,1,220,372.68,9,2,MZA 5567 - LT 1,ZONA V,960
5797,-70.2601616,-17.99724713,MCF/LWAL+DNO/HEX:2/RES,1,220,297.96,7,2,MZA 5567 - LT 2,ZONA V,961
5798,-70.26011952,-17.99730018,MCF/LWAL+DNO/HEX:2/RES,1,220,297.94,7,2,MZA 5567 - LT 3,ZONA V,962
5799,-70.26005749,-17.99716894,MCF/LWAL+DNO/HEX:1/RES,1,220,177.75,4,1,MZA 5567 - LT 4,ZONA V,963
5800,-70.25999771,-17.99712542,MUR/HEX:1,1,220,180.7,4,1,MZA 5567 - LT 5,ZONA V,964
5801,-70.25993818,-17.99708194,MUR/HEX:1,1,220,177.01,4,1,MZA 5567 - LT 6,ZONA V,965
5802,-70.25987807,-17.99703815,MUR/HEX:1,1,220,184.13,4,1,MZA 5567 - LT 7,ZONA V,966
5803,-70.25869006,-17.99674294,MUR/HEX:1,1,220,158.66,4,1,MZA 5568 - LT 1,ZONA V,967
5804,-70.2586451,-17.99680015,MUR/HEX:1,1,220,158.59,4,1,MZA 5568 - LT 2,ZONA V,968
5805,-70.25859969,-17.99685755,MUR/HEX:1,1,220,161.34,4,1,MZA 5568 - LT 3,ZONA V,969
5806,-70.25855457,-17.99691562,MUR/HEX:1,1,220,161.8,4,1,MZA 5568 - LT 4,ZONA V,970
5807,-70.2585086,-17.99697274,MUR/HEX:1,1,220,161.42,4,1,MZA 5568 - LT 5,ZONA V,971
5808,-70.25846195,-17.99702972,MCF/LWAL+DNO/HEX:1/RES,1,220,161.09,4,1,MZA 5568 - LT 6,ZONA V,972
5809,-70.2584167,-17.99708697,MCF/LWAL+DNO/HEX:2/RES,1,220,315.22,7,2,MZA 5568 - LT 7,ZONA V,973
5810,-70.25837083,-17.9971434,MCF/LWAL+DUC/HEX:2/RES,1,220,319.17,2,MZA 5568 - LT 8,ZONA V,974
5811,-70.25832421,-17.99720137,MCF/LWAL+DNO/HEX:2/RES,1,220,332.34,8,2,MZA 5568 - LT 9,ZONA V,975
5812,-70.25827835,-17.99726044,MCF/LWAL+DNO/HEX:1/RES,1,220,163.29,4,1,MZA 5568 - LT 10,ZONA V,976
5813,-70.25853802,-17.99663212,MCF/LWAL+DNO/HEX:2/RES,1,220,329.78,8,2,MZA 5568 - LT 11,ZONA V,977
5814,-70.25849206,-17.99668942,MCF/LWAL+DNO/HEX:2/RES,1,220,330.14,8,2,MZA 5568 - LT 12,ZONA V,978
5815,-70.25844616,-17.9967471,MCF/LWAL+DNO/HEX:1/RES,1,220,165.8,4,1,MZA 5568 - LT 13,ZONA V,979
5816,-70.2584006,-17.9968046,MCF/LWAL+DNO/HEX:1/RES,1,220,162.41,4,1,MZA 5568 - LT 14,ZONA V,980
5817,-70.2583553,-17.99686157,MCF/LWAL+DNO/HEX:2/RES,1,220,324.56,7,2,MZA 5568 - LT 15,ZONA V,981
5818,-70.25830953,-17.99691883,MUR/HEX:1,1,220,164.22,4,1,MZA 5568 - LT 16,ZONA V,982
5819,-70.25826436,-17.99697525,MCF/LWAL+DNO/HEX:1/RES,1,220,157.79,4,1,MZA 5568 - LT 2,ZONA V,983
5820,-70.25821938,-17.9970315,MUR/HEX:1,1,220,163.06,4,1,MZA 5568 - LT 18,ZONA V,984
5821,-70.25817235,-17.99709045,MUR/HEX:1,1,220,172.79,4,1,MZA 5568 - LT 19,ZONA V,985
5822,-70.25812642,-17.99714963,MCF/LWAL+DNO/HEX:2/RES,1,220,320.42,7,2,MZA 5568 - LT 20,ZONA V,986
5823,-70.25910261,-17.99703918,MUR/HEX:2,1,220,330.06,8,2,MZA 5569 - LT 1,ZONA V,987
5824,-70.25905681,-17.99709698,MUR/HEX:1,1,220,162.13,4,1,MZA 5569 - LT 2,ZONA V,988
5825,-70.25901104,-17.99715456,MCF/LWAL+DNO/HEX:1/RES,1,220,163.32,4,1,MZA 5569 - LT 3,ZONA V,989
5826,-70.25896537,-17.99721197,MUR/HEX:2,1,220,321.36,7,2,MZA 5569 - LT 4,ZONA V,990
5827,-70.25891941,-17.99726971,MUR/HEX:1,1,220,164.29,4,1,MZA 5569 - LT 5,ZONA V,991
5828,-70.25887332,-17.99732786,MCF/LWAL+DNO/HEX:1/RES,1,220,161.92,4,1,MZA 5569 - LT 6,ZONA V,992
5829,-70.2588276,-17.99738556,MCF/LWAL+DNO/HEX:2/RES,1,220,322.98,7,2,MZA 5569 - LT 7,ZONA V,993
5830,-70.25878192,-17.99744329,MUR/HEX:3,1,220,484.89,11,3,MZA 5569 - LT 8,ZONA V,994
5831,-70.25873614,-17.99750137,MCF/LWAL+DNO/HEX:2/RES,1,220,326.08,8,2,MZA 5569 - LT 9,ZONA V,995
5832,-70.25869973,-17.99756642,MUR/HEX:2,1,220,281.94,7,2,MZA 5569 - LT 10,ZONA V,996
5833,-70.25895079,-17.99692933,MCF/LWAL+DNO/HEX:2/RES,1,220,322.86,7,2,MZA 5569 - LT 11,ZONA V,997
5834,-70.25890459,-17.99698633,MCF/LWAL+DNO/HEX:1/RES,1,220,160.07,4,1,MZA 5569 - LT 12,ZONA V,998
5835,-70.25885921,-17.99704404,MCF/LWAL+DNO/HEX:2/RES,1,220,323.18,7,2,MZA 5569 - LT 13,ZONA V,999
5836,-70.25881334,-17.99710179,MUR/HEX:1,1,220,160.61,4,1,MZA 5569 - LT 14,ZONA V,1000
5837,-70.25876783,-17.99715995,MCF/LWAL+DNO/HEX:2/RES,1,220,324.6,7,2,MZA 5569 - LT 15,ZONA V,1001
5838,-70.25872195,-17.99721771,MUR/HEX:2,1,220,321.06,7,2,MZA 5569 - LT 16,ZONA V,1002
5839,-70.25867616,-17.99727518,MUR/HEX:1,1,220,161.46,4,1,MZA 5569 - LT 17,ZONA V,1003
5840,-70.25863047,-17.99733298,MUR/HEX:2,1,220,323.08,7,2,MZA 5569 - LT 18,ZONA V,1004
5841,-70.2585845,-17.99739093,MCF/LWAL+DNO/HEX:2/RES,1,220,325.8,8,2,MZA 5569 - LT 19,ZONA V,1005
5842,-70.25854865,-17.99745651,MUR/HEX:2,1,220,367.06,8,2,MZA 5569 - LT 20,ZONA V,1006
5843,-70.25819835,-17.99736121,MUR/HEX:1,1,220,163.63,4,1,MZA 5570 - LT 1,ZONA V,1007
5844,-70.25815244,-17.99741906,MCF/LWAL+DNO/HEX:2/RES,1,220,322.22,7,2,MZA 5570 - LT 2,ZONA V,1008
5845,-70.25810677,-17.99747631,MUR/HEX:1,1,220,160.93,4,1,MZA 5570 - LT 3,ZONA V,1009
5846,-70.25806051,-17.99753415,MUR/HEX:1,1,220,164.92,4,1,MZA 5570 - LT 4,ZONA V,1010
5847,-70.25801363,-17.99759149,MCF/LWAL+DNO/HEX:2/RES,1,220,320.26,7,2,MZA 5570 - LT 5,ZONA V,1011
5848,-70.25804623,-17.99724978,MCF/LWAL+DNO/HEX:1/RES,1,220,167.02,4,1,MZA 5570 - LT 6,ZONA V,1012
5849,-70.25800026,-17.99730805,MUR/HEX:1,1,220,162.23,4,1,MZA 5570 - LT 7,ZONA V,1013
5850,-70.25795458,-17.99736568,MCF/LWAL+DNO/HEX:2/RES,1,220,324.08,7,2,MZA 5570 - LT 8,ZONA V,1014
5851,-70.25790941,-17.99742406,MCF/LWAL+DNO/HEX:2/RES,1,220,324.38,7,2,MZA 5570 - LT 9,ZONA V,1015
5852,-70.25786412,-17.99748232,MUR/HEX:1,1,220,159.42,4,1,MZA 5570 - LT 10,ZONA V,1016
5853,-70.2589817,-17.99799988,MCF/LWAL+DNO/HEX:3/RES,1,220,497.13,11,3,MZA 5571 - LT 1,ZONA V,1017
5854,-70.25891947,-17.99795502,MCF/LWAL+DNO/HEX:2/RES,1,220,326.54,8,2,MZA 5571 - LT 2,ZONA V,1018
5855,-70.25885882,-17.99791099,MUR/HEX:1,1,220,158.9,4,1,MZA 5571 - LT 3,ZONA V,1019
5856,-70.2588,-17.99786846,MCF/LWAL+DNO/HEX:3/RES,1,220,459.81,11,3,MZA 5571 - LT 4,ZONA V,1020
5857,-70.2587413,-17.99782541,MUR/HEX:2,1,220,321.12,7,2,MZA 5571 - LT 5,ZONA V,1021
5858,-70.25868151,-17.99778194,MUR/HEX:1,1,220,159.57,4,1,MZA 5571 - LT 6,ZONA V,1022

5859,-70.25862019,-17.99773768,MUR/HEX:1,1,220,167.97,4,1,MZA 5571 - LT 7,ZONA V,1023
5860,-70.2585584,-17.99769327,MUR/HEX:2,1,220,322.32,7,2,MZA 5571 - LT 8,ZONA V,1024
5861,-70.25849816,-17.99764983,MUR/HEX:2,1,220,318.76,7,2,MZA 5571 - LT 9,ZONA V,1025
5862,-70.25843831,-17.99760601,MUR/HEX:1,1,220,161.38,4,1,MZA 5571 - LT 10,ZONA V,1026
5863,-70.25837746,-17.99756196,MUR/HEX:1,1,220,165.24,4,1,MZA 5571 - LT 11,ZONA V,1027
5864,-70.25886656,-17.9981437,MCF/LWAL+DNO/HEX:3/RES,1,220,503.04,12,3,MZA 5571 - LT 12,ZONA V,1028
5865,-70.25880515,-17.99809888,MCF/LWAL+DNO/HEX:1/RES,1,220,161.17,4,1,MZA 5571 - LT 13,ZONA V,1029
5866,-70.25874511,-17.998055,MUR/HEX:1,1,220,158.59,4,1,MZA 5571 - LT 14,ZONA V,1030
5867,-70.25868545,-17.99801228,MCF/LWAL+DNO/HEX:2/RES,1,220,311.62,7,2,MZA 5571 - LT 15,ZONA V,1031
5868,-70.25862609,-17.99796854,MCF/LWAL+DNO/HEX:1/RES,1,220,159.26,4,1,MZA 5571 - LT 16,ZONA V,1032
5869,-70.25856596,-17.99792513,MCF/LWAL+DNO/HEX:2/RES,1,220,315.48,7,2,MZA 5571 - LT 17,ZONA V,1033
5870,-70.2585052,-17.99788079,MCF/LWAL+DNO/HEX:2/RES,1,220,328.32,8,2,MZA 5571 - LT 18,ZONA V,1034
5871,-70.25844376,-17.99783672,MCF/LWAL+DNO/HEX:2/RES,1,220,318.74,7,2,MZA 5571 - LT 19,ZONA V,1035
5872,-70.25838319,-17.99779329,MUR/HEX:1,1,220,159.45,4,1,MZA 5571 - LT 20,ZONA V,1036
5873,-70.25832321,-17.99774937,MCF/LWAL+DUC/HEX:2/RES,1,220,317.22,7,2,MZA 5571 - LT 21,ZONA V,1037
5874,-70.2582631,-17.99770485,MCF/LWAL+DNO/HEX:2/RES,1,220,321.94,7,2,MZA 5571 - LT 22,ZONA V,1038
5875,-70.25947729,-17.99810658,MCF/LWAL+DNO/HEX:2/RES,1,220,330.6,8,2,MZA 5572 - LT 1,ZONA V,1039
5876,-70.25943127,-17.99816433,MCF/LWAL+DNO/HEX:2/RES,1,220,323.86,7,2,MZA 5572 - LT 2,ZONA V,1040
5877,-70.25938572,-17.99822201,MUR/HEX:1,1,220,163.28,4,1,MZA 5572 - LT 3,ZONA V,1041
5878,-70.25934011,-17.99827959,MUR/HEX:1,1,220,161.35,4,1,MZA 5572 - LT 4,ZONA V,1042
5879,-70.25929414,-17.99833793,MCF/LWAL+DNO/HEX:2/RES,1,220,332.34,8,2,MZA 5572 - LT 5,ZONA V,1043
5880,-70.25924726,-17.99839623,MCF/LWAL+DNO/HEX:2/RES,1,220,327.1,8,2,MZA 5572 - LT 6,ZONA V,1044
5881,-70.25920014,-17.9984542,MCF/LWAL+DNO/HEX:2/RES,1,220,329.44,8,2,MZA 5572 - LT 7,ZONA V,1045
5882,-70.25932542,-17.99799644,MUR/HEX:1,1,220,163.02,4,1,MZA 5572 - LT 8,ZONA V,1046
5883,-70.25927916,-17.99805437,MCF/LWAL+DNO/HEX:2/RES,1,220,319.42,7,2,MZA 5572 - LT 9,ZONA V,1047
5884,-70.25923378,-17.99811199,MCF/LWAL+DNO/HEX:2/RES,1,220,320.94,7,2,MZA 5572 - LT 10,ZONA V,1048
5885,-70.25918851,-17.99816954,MUR/HEX:1,1,220,158.1,4,1,MZA 5572 - LT 11,ZONA V,1049
5886,-70.25914267,-17.99822707,MUR/HEX:1,1,220,162.4,4,1,MZA 5572 - LT 12,ZONA V,1050
5887,-70.25909633,-17.99828543,MCF/LWAL+DNO/HEX:2/RES,1,220,326.26,8,2,MZA 5572 - LT 13,ZONA V,1051
5888,-70.25905051,-17.99834465,MUR/HEX:1,1,220,164.5,4,1,MZA 5572 - LT 14,ZONA V,1052
5889,-70.25789421,-17.9978314,MCF/LWAL+DNO/HEX:2/RES,1,220,319.7,2,MZA 5573 - LT 1,ZONA V,1055
5890,-70.25783448,-17.9977866,MCF/LWAL+DNO/HEX:2/RES,1,220,322.96,7,2,MZA 5573 - LT 2,ZONA V,1056
5891,-70.25777434,-17.99774245,MUR/HEX:1,1,220,159.75,4,1,MZA 5573 - LT 3,ZONA V,1057
5892,-70.25771389,-17.99769794,MCF/LWAL+DNO/HEX:2/RES,1,220,328.64,8,2,MZA 5573 - LT 4,ZONA V,1058
5893,-70.25765352,-17.99765383,MCF/LWAL+DNO/HEX:2/RES,1,220,316.08,7,2,MZA 5573 - LT 5,ZONA V,1059
5894,-70.25777814,-17.99797661,MCF/LWAL+DNO/HEX:2/RES,1,220,337.22,8,2,MZA 5573 - LT 6,ZONA V,1060
5895,-70.2577177,-17.99793139,MCF/LWAL+DNO/HEX:2/RES,1,220,329.6,8,2,MZA 5573 - LT 7,ZONA V,1061
5896,-70.25765746,-17.9978876,MCF/LWAL+DNO/HEX:2/RES,1,220,329.32,8,2,MZA 5573 - LT 8,ZONA V,1062
5897,-70.25760047,-17.99784592,MCF/LWAL+DUC/HEX:3/RES,1,220,444.99,10,3,MZA 5573 - LT 9,ZONA V,1063
5898,-70.25754114,-17.99780137,MCF/LWAL+DUC/HEX:3/RES,1,220,540.66,12,3,MZA 5573 - LT 10,ZONA V,1064
5899,-70.25867027,-17.99839715,MUR/HEX:1,1,220,171.01,4,1,MZA 5574 - LT 1,ZONA V,1065
5900,-70.25860928,-17.99835137,MUR/HEX:1,1,220,162.23,4,1,MZA 5574 - LT 2,ZONA V,1066
5901,-70.25854841,-17.99830697,MCF/LWAL+DNO/HEX:3/RES,1,220,499.38,12,3,MZA 5574 - LT 3,ZONA V,1067
5902,-70.25848738,-17.99826275,MUR/HEX:1,1,220,161.1,4,1,MZA 5574 - LT 4,ZONA V,1068
5903,-70.25842694,-17.99821876,MCF/LWAL+DUC/HEX:2/RES,1,220,324.52,7,2,MZA 5574 - LT 5,ZONA V,1069
5904,-70.25836685,-17.99817441,MCF/LWAL+DNO/HEX:2/RES,1,220,321.64,7,2,MZA 5574 - LT 6,ZONA V,1070
5905,-70.25830691,-17.99813011,MUR/HEX:1,1,220,162.56,4,1,MZA 5574 - LT 7,ZONA V,1071
5906,-70.25824618,-17.99808572,MUR/HEX:1,1,220,164.05,4,1,MZA 5574 - LT 8,ZONA V,1072
5907,-70.25818546,-17.99804158,MUR/HEX:1,1,220,160.81,4,1,MZA 5574 - LT 9,ZONA V,1073
5908,-70.25812545,-17.9979978,MUR/HEX:1,1,220,159.72,4,1,MZA 5574 - LT 10,ZONA V,1074
5909,-70.2580646,-17.99795454,MUR/HEX:1,1,220,161.42,4,1,MZA 5574 - LT 11,ZONA V,1075
5910,-70.25855515,-17.99854327,MCF/LWAL+DNO/HEX:3/RES,1,220,522.36,12,3,MZA 5574 - LT 12,ZONA V,1076
5911,-70.25849291,-17.99849828,MCF/LWAL+DNO/HEX:1/RES,1,220,164.37,4,1,MZA 5574 - LT 13,ZONA V,1077
5912,-70.25843273,-17.99845331,MUR/HEX:1,1,220,166.18,4,1,MZA 5574 - LT 14,ZONA V,1078
5913,-70.25837204,-17.99840917,MCF/LWAL+DUC/HEX:3/RES,1,220,490.62,11,3,MZA 5574 - LT 15,ZONA V,1079
5914,-70.25831201,-17.99836486,MCF/LWAL+DNO/HEX:3/RES,1,220,492.36,11,3,MZA 5574 - LT 16,ZONA V,1080
5915,-70.25825116,-17.99832087,MCF/LWAL+DNO/HEX:2/RES,1,220,331.18,8,2,MZA 5574 - LT 17,ZONA V,1081
5916,-70.25819048,-17.99827586,MCF/LWAL+DNO/HEX:2/RES,1,220,330.86,8,2,MZA 5574 - LT 18,ZONA V,1082
5917,-70.25812943,-17.99823102,MCF/LWAL+DNO/HEX:3/RES,1,220,499.56,12,3,MZA 5574 - LT 19,ZONA V,1083
5918,-70.25806923,-17.99818659,MCF/LWAL+DNO/HEX:2/RES,1,220,324.02,7,2,MZA 5574 - LT 20,ZONA V,1084
5919,-70.25800941,-17.99814324,MCF/LWAL+DNO/HEX:2/RES,1,220,325.94,8,2,MZA 5574 - LT 21,ZONA V,1085
5920,-70.25794883,-17.99809903,MCF/LWAL+DNO/HEX:3/RES,1,220,502.5,12,3,MZA 5574 - LT 22,ZONA V,1086
5921,-70.25908117,-17.99869567,MCF/LWAL+DNO/HEX:2/RES,1,220,332.74,8,2,MZA 5575 - LT 1,ZONA V,1087
5922,-70.25901895,-17.99865027,MUR/HEX:1,1,220,162.4,1,MZA 5575 - LT 2,ZONA V,1088
5923,-70.25889993,-17.99856199,MCF/LWAL+DNO/HEX:2/RES,1,220,328.24,8,2,MZA 5575 - LT 4,ZONA V,1090
5924,-70.25883854,-17.99851871,MCF/LWAL+DNO/HEX:2/RES,1,220,331.36,8,2,MZA 5575 - LT 5,ZONA V,1091
5925,-70.25896482,-17.9988407,MUR/HEX:1,1,220,166.31,4,1,MZA 5575 - LT 6,ZONA V,1092
5926,-70.25890356,-17.99879643,MCF/LWAL+DNO/HEX:3/RES,1,220,489.72,11,3,MZA 5575 - LT 7,ZONA V,1093
5927,-70.25884359,-17.99875272,MCF/LWAL+DNO/HEX:2/RES,1,220,321.76,7,2,MZA 5575 - LT 8,ZONA V,1094
5928,-70.25878296,-17.99870941,MCF/LWAL+DNO/HEX:1/RES,1,220,165.72,4,1,MZA 5575 - LT 9,ZONA V,1095
5929,-70.25872237,-17.99866394,MCF/LWAL+DNO/HEX:2/RES,1,220,333.96,8,2,MZA 5575 - LT 10,ZONA V,1096

5930,-70.26061953,-17.99727607,MUR/HEX:2,1,220,270.06,6,1,MZA 5576 - LT 1,ZONA V,1097
5931,-70.26066418,-17.99722346,MUR/HEX:1,1,220,135.03,3,0,MZA 5576 - LT 2,ZONA V,1098
5932,-70.26070584,-17.99717435,MUR/HEX:1,1,220,117.03,3,0,MZA 5576 - LT 3,ZONA V,1099
5933,-70.26075049,-17.99712174,MUR/HEX:1,1,220,153.04,4,1,MZA 5576 - LT 4,ZONA V,1100
5934,-70.26088773,-17.99721799,MUR/HEX:1,1,220,153.04,4,1,MZA 5576 - LT 5,ZONA V,1101
5935,-70.26084309,-17.99727061,MUR/HEX:1,1,220,117.03,3,0,MZA 5576 - LT 6,ZONA V,1102
5936,-70.26080258,-17.9973232,MUR/HEX:1,1,220,135.03,3,0,MZA 5576 - LT 7,ZONA V,1103
5937,-70.26075381,-17.99737585,MUR/HEX:1,1,220,135.03,3,0,MZA 5576 - LT 8,ZONA V,1104
5938,-70.26091997,-17.99715411,MUR/HEX:1,1,220,135.03,3,0,MZA 5576 - LT 9,ZONA V,1105
5939,-70.26079927,-17.99706925,MUR/HEX:1,1,220,135.03,3,0,MZA 5576 - LT 9A,ZONA V,1106
5940,-70.26096379,-17.9975319,MCF/LWAL+DNO/HEX:2/RES,1,220,274.26,6,1,MZA 5577 - LT 1,ZONA V,1107
5941,-70.26100842,-17.99747929,MUR/HEX:1,1,220,137.25,3,0,MZA 5577 - LT 2,ZONA V,1108
5942,-70.26105723,-17.99743025,MUR/HEX:1,1,220,137.25,3,0,MZA 5577 - LT 3,ZONA V,1109
5943,-70.26110208,-17.99737761,MUR/HEX:1,1,220,137.25,3,0,MZA 5577 - LT 4,ZONA V,1110
5944,-70.26114237,-17.99732139,MUR/HEX:1,1,220,137.25,3,0,MZA 5577 - LT 5,ZONA V,1111
5945,-70.26127897,-17.99742289,MUR/HEX:1,1,220,137.45,3,0,MZA 5577 - LT 6,ZONA V,1112
5946,-70.26123436,-17.99747555,MUR/HEX:1,1,220,137.53,3,0,MZA 5577 - LT 7,ZONA V,1113
5947,-70.26118974,-17.99752822,MUR/HEX:1,1,220,137.6,3,0,MZA 5577 - LT 8,ZONA V,1114
5948,-70.26114513,-17.99758088,MUR/HEX:1,1,220,137.68,3,0,MZA 5577 - LT 9,ZONA V,1115
5949,-70.26110054,-17.99763352,MUR/HEX:1,1,220,137.64,3,0,MZA 5577 - LT 10,ZONA V,1116
5950,-70.26132126,-17.99779749,MUR/HEX:1,1,220,134.99,3,0,MZA 5578 - LT 1,ZONA V,1117
5951,-70.26136581,-17.99774482,MUR/HEX:1,1,220,134.97,3,0,MZA 5578 - LT 2,ZONA V,1118
5952,-70.26141452,-17.99769574,MUR/HEX:1,1,220,134.97,3,0,MZA 5578 - LT 3,ZONA V,1119
5953,-70.26145494,-17.99763947,MUR/HEX:1,1,220,135.06,3,0,MZA 5578 - LT 4,ZONA V,1120
5954,-70.2614995,-17.99758675,MUR/HEX:1,1,220,134.99,3,0,MZA 5578 - LT 5,ZONA V,1121
5955,-70.26164263,-17.99769304,MUR/HEX:1,1,220,152.76,4,1,MZA 5578 - LT 6,ZONA V,1122
5956,-70.26159488,-17.9977458,MUR/HEX:1,1,220,159.9,4,1,MZA 5578 - LT 7,ZONA V,1123
5957,-70.2615524,-17.99780001,MUR/HEX:1,1,220,141.86,3,0,MZA 5578 - LT 8,ZONA V,1124
5958,-70.261507,-17.99784972,MUR/HEX:1,1,220,148.77,3,0,MZA 5578 - LT 9,ZONA V,1125
5959,-70.26146183,-17.9979019,MUR/HEX:1,1,220,147.49,3,0,MZA 5578 - LT 10,ZONA V,1126
5960,-70.26166939,-17.99801421,MUR/HEX:1,1,220,132.37,3,0,MZA 5579 - LT 1,ZONA V,1127
5961,-70.26173083,-17.99805891,MUR/HEX:1,1,220,128.98,3,0,MZA 5579 - LT 2,ZONA V,1128
5962,-70.2617961,-17.99810743,MUR/HEX:1,1,220,133.52,3,0,MZA 5579 - LT 3,ZONA V,1129
5963,-70.2604831,-17.99739665,MUR/HEX:1,1,220,122.93,3,0,MZA 5580 - LT 1,ZONA V,1130
5964,-70.26057455,-17.99746428,MUR/HEX:1,1,220,121.62,3,0,MZA 5580 - LT 2,ZONA V,1131
5965,-70.26066373,-17.99753053,MUR/HEX:1,1,220,119.41,3,0,MZA 5580 - LT 3,ZONA V,1132
5966,-70.26075216,-17.99759604,MUR/HEX:1,1,220,120.82,3,0,MZA 5580 - LT 4,ZONA V,1133
5967,-70.26084061,-17.99766221,MUR/HEX:1,1,220,118.8,3,0,MZA 5580 - LT 5,ZONA V,1134
5968,-70.2609302,-17.99772844,MUR/HEX:1,1,220,122.02,3,0,MZA 5580 - LT 6,ZONA V,1135
5969,-70.26101971,-17.99779507,MUR/HEX:1,1,220,120.51,3,0,MZA 5580 - LT 7,ZONA V,1136
5970,-70.26110862,-17.99786099,MUR/HEX:1,1,220,120.31,3,0,MZA 5580 - LT 8,ZONA V,1137
5971,-70.26120031,-17.99792994,MUR/HEX:1,1,220,117.7,3,0,MZA 5580 - LT 9,ZONA V,1138
5972,-70.26128401,-17.99799147,MUR/HEX:1,1,220,118.7,3,0,MZA 5580 - LT 10,ZONA V,1139
5973,-70.2613724,-17.99805715,MUR/HEX:1,1,220,119.71,3,0,MZA 5580 - LT 11,ZONA V,1140
5974,-70.26153539,-17.99817826,MUR/HEX:1,1,220,113.27,3,0,MZA 5581 - LT 1,ZONA V,1141
5975,-70.26161935,-17.99824064,MUR/HEX:1,1,220,113.27,3,0,MZA 5581 - LT 2,ZONA V,1142
5976,-70.26170331,-17.99830303,MUR/HEX:1,1,220,113.27,3,0,MZA 5581 - LT 3,ZONA V,1143
5977,-70.26178727,-17.99836541,MUR/HEX:1,1,220,116,3,0,MZA 5581 - LT 4,ZONA V,1144
5978,-70.26080521,-17.99789679,MUR/HEX:1,1,220,206.97,5,1,MZA 5582 - LT 1,ZONA V,1145
5979,-70.26074036,-17.99784049,MUR/HEX:1,1,220,188.43,4,1,MZA 5582 - LT 2,ZONA V,1146
5980,-70.26067126,-17.99779856,MUR/HEX:1,1,220,183.81,4,1,MZA 5582 - LT 3,ZONA V,1147
5981,-70.26060997,-17.99775459,MUR/HEX:1,1,220,186.46,4,1,MZA 5582 - LT 4,ZONA V,1148
5982,-70.26055061,-17.99770392,MUR/HEX:1,1,220,186.46,4,1,MZA 5582 - LT 5,ZONA V,1149
5983,-70.26046349,-17.9977018,MUR/HEX:1,1,220,92.94,2,0,MZA 5582 - LT 6,ZONA V,1150
5984,-70.26052057,-17.99762888,MUR/HEX:1,1,220,92.93,2,0,MZA 5582 - LT 6B,ZONA V,1151
5985,-70.26042593,-17.99753212,MUR/HEX:1,1,220,157.67,4,1,MZA 5582 - LT 7,ZONA V,1152
5986,-70.26038197,-17.99758991,MUR/HEX:1,1,220,158.46,4,1,MZA 5582 - LT 8,ZONA V,1153
5987,-70.26033825,-17.99764718,MUR/HEX:1,1,220,155.33,4,1,MZA 5582 - LT 9,ZONA V,1154
5988,-70.26017982,-17.99777125,MCF/LWAL+DNO/HEX:2/RES,1,220,336.46,8,2,MZA 5584 - LT 10,ZONA V,1156
5989,-70.26025554,-17.99782587,MCF/LWAL+DNO/HEX:3/RES,1,220,518.85,12,3,MZA 5584 - LT 11,ZONA V,1157
5990,-70.26033847,-17.99787025,MUR/HEX:1,1,220,195.36,5,1,MZA 5584 - LT 12,ZONA V,1158
5991,-70.2604142,-17.99792377,MUR/HEX:1,1,220,200.78,5,1,MZA 5584 - LT 13,ZONA V,1159
5992,-70.26049096,-17.99797785,MUR/HEX:1,1,220,201.45,5,1,MZA 5584 - LT 14,ZONA V,1160
5993,-70.26056679,-17.99803206,MUR/HEX:1,1,220,198.84,5,1,MZA 5584 - LT 15,ZONA V,1161
5994,-70.26064236,-17.99808629,MUR/HEX:2,1,220,400.14,9,2,MZA 5584 - LT 16,ZONA V,1162
5995,-70.2607185,-17.99814013,MUR/HEX:1,1,220,197.78,5,1,MZA 5584 - LT 17,ZONA V,1163
5996,-70.26079307,-17.99819462,MCF/LWAL+DNO/HEX:1/RES,1,220,191.78,4,1,MZA 5584 - LT 18,ZONA V,1164
5997,-70.26086656,-17.99824859,MCF/LWAL+DNO/HEX:1/RES,1,220,191.65,4,1,MZA 5584 - LT 19,ZONA V,1165
5998,-70.2609444,-17.99829987,MCF/LWAL+DNO/HEX:1/RES,1,220,205.86,5,1,MZA 5584 - LT 20,ZONA V,1166
5999,-70.26102172,-17.9983543,MCF/LWAL+DNO/HEX:3/RES,1,220,609.84,14,4,MZA 5584 - LT 21,ZONA V,1167
6000,-70.26109752,-17.99840965,MUR/HEX:1,1,220,202.64,5,1,MZA 5584 - LT 22,ZONA V,1168

6001,-70.26109727,-17.99916053,MUR/HEX:1,1,220,198.71,5,1,MZA 5585 - LT 1,ZONA V,1169
6002,-70.26115539,-17.99908931,MCF/LWAL+DNO/HEX:1/RES,1,220,202.71,5,1,MZA 5585 - LT 2,ZONA V,1170
6003,-70.26121287,-17.9990172,MCF/LWAL+DNO/HEX:2/RES,1,220,402.44,9,2,MZA 5585 - LT 3,ZONA V,1171
6004,-70.26126994,-17.99894516,MCF/LWAL+DNO/HEX:2/RES,1,220,401.46,9,2,MZA 5585 - LT 4,ZONA V,1172
6005,-70.26132712,-17.99887311,MCF/LWAL+DNO/HEX:2/RES,1,220,401.36,9,2,MZA 5585 - LT 5,ZONA V,1173
6006,-70.26138843,-17.99879588,MCF/LWAL+DNO/HEX:1/RES,1,220,229.03,5,1,MZA 5585 - LT 6,ZONA V,1174
6007,-70.26144856,-17.99872017,MCF/LWAL+DNO/HEX:2/RES,1,220,383.22,9,2,MZA 5585 - LT 7,ZONA V,1175
6008,-70.26150458,-17.99864921,MCF/LWAL+DNO/HEX:1/RES,1,220,201.62,5,1,MZA 5585 - LT 8,ZONA V,1176
6009,-70.2613541,-17.99854012,MUR/HEX:1,1,220,203.89,5,1,MZA 5585 - LT 9,ZONA V,1177
6010,-70.26129623,-17.99861246,MCF/LWAL+DNO/HEX:1/RES,1,220,202.42,5,1,MZA 5585 - LT 10,ZONA V,1178
6011,-70.26123524,-17.99868841,MCF/LWAL+DNO/HEX:2/RES,1,220,436.16,10,3,MZA 5585 - LT 11,ZONA V,1179
6012,-70.26117583,-17.99876374,MCF/LWAL+DNO/HEX:2/RES,1,220,404.06,9,2,MZA 5585 - LT 12,ZONA V,1180
6013,-70.26111846,-17.99883586,MUR/HEX:1,1,220,201.32,5,1,MZA 5585 - LT 13,ZONA V,1181
6014,-70.26106156,-17.99890789,MUR/HEX:1,1,220,199.97,5,1,MZA 5585 - LT 14,ZONA V,1182
6015,-70.26100452,-17.99897992,MUR/HEX:1,1,220,200.67,5,1,MZA 5585 - LT 15,ZONA V,1183
6016,-70.26094701,-17.99905239,MCF/LWAL+DNO/HEX:2/RES,1,220,403.92,9,2,MZA 5585 - LT 16,ZONA V,1184
6017,-70.26091173,-17.99866092,MUR/HEX:1,1,220,201.41,5,1,MZA 5586 - LT 1,ZONA V,1185
6018,-70.26085133,-17.99861666,MCF/LWAL+DNO/HEX:2/RES,1,220,402.66,9,2,MZA 5586 - LT 2,ZONA V,1186
6019,-70.26079116,-17.99857307,MUR/HEX:1,1,220,200.57,5,1,MZA 5586 - LT 3,ZONA V,1187
6020,-70.2607309,-17.99852991,MCF/LWAL+DNO/HEX:1/RES,1,220,200.61,5,1,MZA 5586 - LT 4,ZONA V,1188
6021,-70.26067094,-17.99848677,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,199.26,5,1,MZA 5586 - LT 5,ZONA V,1189
6022,-70.26061096,-17.99844389,MCF/LWAL+DNO/HEX:1/RES,1,220,200.15,5,1,MZA 5586 - LT 6,ZONA V,1190
6023,-70.26054967,-17.99840058,MCF/LWAL+DNO/HEX:2/RES,1,220,409.94,9,2,MZA 5586 - LT 7,ZONA V,1191
6024,-70.26048819,-17.99835671,MUR/HEX:1,1,220,201.36,5,1,MZA 5586 - LT 8,ZONA V,1192
6025,-70.2604273,-17.99831306,MCF/LWAL+DNO/HEX:3/RES,1,220,605.16,14,4,MZA 5586 - LT 9,ZONA V,1193
6026,-70.260367,-17.99826981,MUR/HEX:1,1,220,197.32,5,1,MZA 5586 - LT 10,ZONA V,1194
6027,-70.26030683,-17.99822655,MUR/HEX:1,1,220,201.52,5,1,MZA 5586 - LT 11,ZONA V,1195
6028,-70.26024574,-17.99818279,MUR/HEX:1,1,220,202.96,5,1,MZA 5586 - LT 12,ZONA V,1196
6029,-70.26018961,-17.99814238,MUR/HEX:1,1,220,169.29,4,1,MZA 5586 - LT 13,ZONA V,1197
6030,-70.26013697,-17.99810422,MCF/LWAL+DNO/HEX:1/RES,1,220,181.6,4,1,MZA 5586 - LT 14,ZONA V,1198
6031,-70.26008137,-17.99797019,MUR/HEX:1,1,220,167.47,4,1,MZA 5586 - LT 15,ZONA V,1199
6032,-70.26003382,-17.99802988,MUR/HEX:1,1,220,166.63,4,1,MZA 5586 - LT 16,ZONA V,1200
6033,-70.25998694,-17.99809011,MCF/LWAL+DNO/HEX:3/RES,1,220,504.36,12,3,MZA 5586 - LT 17,ZONA V,1201
6034,-70.2599394,-17.99814892,MCF/LWAL+DNO/HEX:3/RES,1,220,492.75,11,3,MZA 5586 - LT 18,ZONA V,1202
6035,-70.25989359,-17.99820789,MCF/LWAL+DNO/HEX:2/RES,1,220,329.82,8,2,MZA 5586 - LT 19,ZONA V,1203
6036,-70.25982639,-17.99826829,MCF/LWAL+DNO/HEX:2/RES,1,220,344.8,2,MZA 5586 - LT 20,ZONA V,1204
6037,-70.25999591,-17.99828361,MCF/LWAL+DNO/HEX:1/RES,1,220,176.4,1,MZA 5586 - LT 21,ZONA V,1205
6038,-70.26004816,-17.99832247,MCF/LWAL+DNO/HEX:1/RES,1,220,169.63,4,1,MZA 5586 - LT 22,ZONA V,1206
6039,-70.26010511,-17.99836274,MUR/HEX:1,1,220,200.51,5,1,MZA 5586 - LT 23,ZONA V,1207
6040,-70.26016597,-17.99840596,MCF/LWAL+DNO/HEX:2/RES,1,220,392.86,9,2,MZA 5586 - LT 24,ZONA V,1208
6041,-70.26022538,-17.99844976,MCF/LWAL+DNO/HEX:2/RES,1,220,393.94,9,2,MZA 5586 - LT 25,ZONA V,1209
6042,-70.260286,-17.99849286,MCF/LWAL+DNO/HEX:2/RES,1,220,399.04,9,2,MZA 5586 - LT 26,ZONA V,1210
6043,-70.26034675,-17.99853636,MCF/LWAL+DUC/HEX:2/RES,1,220,397.94,9,2,MZA 5586 - LT 27,ZONA V,1211
6044,-70.26040786,-17.99857999,MCF/LWAL+DNO/HEX:2/RES,1,220,402.76,9,2,MZA 5586 - LT 28,ZONA V,1212
6045,-70.26046836,-17.99862398,MUR/HEX:1,1,220,197.87,5,1,MZA 5586 - LT 29,ZONA V,1213
6046,-70.26052844,-17.99866713,CR/LFIN+DUC/HEX:4/RES,1,220,788.28,18,5,MZA 5586 - LT 30,ZONA V,1214
6047,-70.26058863,-17.99871028,MCF/LWAL+DNO/HEX:1/RES,1,220,198.32,5,1,MZA 5586 - LT 31,ZONA V,1215
6048,-70.26064868,-17.99875384,MCF/LWAL+DNO/HEX:1/RES,1,220,198.74,5,1,MZA 5586 - LT 32,ZONA V,1216
6049,-70.26070883,-17.99879724,MCF/LWAL+DNO/HEX:2/RES,1,220,399.82,9,2,MZA 5586 - LT 33,ZONA V,1217
6050,-70.26076934,-17.99884067,MUR/HEX:1,1,220,200.94,5,1,MZA 5586 - LT 34,ZONA V,1218
6051,-70.26018394,-17.99883065,MCF/LWAL+DNO/HEX:2/RES,1,220,405.06,9,2,MZA 5587 - LT 1,ZONA V,1219
6052,-70.26012309,-17.99878685,MCF/LWAL+DNO/HEX:2/RES,1,220,407.16,9,2,MZA 5587 - LT 2,ZONA V,1220
6053,-70.26006238,-17.99874303,MCF/LWAL+DNO/HEX:2/RES,1,220,402.7,9,2,MZA 5587 - LT 3,ZONA V,1221
6054,-70.26000235,-17.99869971,MCF/LWAL+DNO/HEX:2/RES,1,220,397.18,9,2,MZA 5587 - LT 4,ZONA V,1222
6055,-70.25994206,-17.99865618,MUR/HEX:1,1,220,202.68,5,1,MZA 5587 - LT 5,ZONA V,1223
6056,-70.25988078,-17.998612,MCF/LWAL+DNO/HEX:2/RES,1,220,409.16,9,2,MZA 5587 - LT 6,ZONA V,1224
6057,-70.25981979,-17.99856808,MUR/HEX:1,1,220,199.74,5,1,MZA 5587 - LT 7,ZONA V,1225
6058,-70.25975945,-17.99852462,MCF/LWAL+DNO/HEX:2/RES,1,220,399.38,9,2,MZA 5587 - LT 8,ZONA V,1226
6059,-70.25969908,-17.99848115,MCF/LWAL+DNO/HEX:2/RES,1,220,398.32,9,2,MZA 5587 - LT 9,ZONA V,1227
6060,-70.25963876,-17.99843951,MCF/LWAL+DNO/HEX:2/RES,1,220,384.54,9,2,MZA 5587 - LT 10,ZONA V,1228
6061,-70.25949714,-17.99861772,MCF/LWAL+DNO/HEX:2/RES,1,220,398.76,9,2,MZA 5587 - LT 11,ZONA V,1229
6062,-70.25955729,-17.99866204,MUR/HEX:1,1,220,405.78,9,2,MZA 5587 - LT 12,ZONA V,1230
6063,-70.2596181,-17.99870496,MUR/HEX:1,1,220,197.79,5,1,MZA 5587 - LT 13,ZONA V,1231
6064,-70.25967756,-17.99874904,MCF/LWAL+DNO/HEX:2/RES,1,220,403.04,9,2,MZA 5587 - LT 14,ZONA V,1232
6065,-70.25973872,-17.99879234,MUR/HEX:1,1,220,202.15,5,1,MZA 5587 - LT 15,ZONA V,1233
6066,-70.25979925,-17.99883593,MCF/LWAL+DNO/HEX:1/RES,1,220,199.37,5,1,MZA 5587 - LT 16,ZONA V,1234
6067,-70.25985885,-17.99888002,MCF/LWAL+DNO/HEX:2/RES,1,220,398.8,9,2,MZA 5587 - LT 17,ZONA V,1235
6068,-70.25991923,-17.99892279,MUR/HEX:1,1,220,197.94,5,1,MZA 5587 - LT 18,ZONA V,1236
6069,-70.2599793,-17.99896675,MCF/LWAL+DNO/HEX:2/RES,1,220,404.1,9,2,MZA 5587 - LT 19,ZONA V,1237
6070,-70.26004018,-17.99901086,MCF/LWAL+DNO/HEX:1/RES,1,220,201.34,5,1,MZA 5587 - LT 20,ZONA V,1238
6071,-70.26009992,-17.999054,MUR/HEX:1,1,220,193.22,4,1,MZA 5587 - LT 21,ZONA V,1239

6072,-70.2601611,-17.99909698,MCF/LWAL+DNO/HEX:2/RES,1,220,412.4,10,3,MZA 5587 - LT 22,ZONA V,1240
6073,-70.26045225,-17.99997676,MCF/LWAL+DNO/HEX:2/RES,1,220,403.42,9,2,MZA 5588 - LT 1,ZONA V,1241
6074,-70.2605101,-17.99990481,MCF/LWAL+DNO/HEX:2/RES,1,220,399.7,9,2,MZA 5588 - LT 2,ZONA V,1242
6075,-70.26056757,-17.99983267,MUR/HEX:1,1,220,202.21,5,1,MZA 5588 - LT 3,ZONA V,1243
6076,-70.26062491,-17.99976034,MCF/LWAL+DNO/HEX:2/RES,1,220,402.22,9,2,MZA 5588 - LT 4,ZONA V,1244
6077,-70.26068578,-17.99968323,MUR/HEX:1,1,220,227.54,5,1,MZA 5588 - LT 5,ZONA V,1245
6078,-70.2607481,-17.99960707,MCF/LWAL+DNO/HEX:2/RES,1,220,411.1,9,2,MZA 5588 - LT 6,ZONA V,1246
6079,-70.26080465,-17.99953338,MUR/HEX:1,1,220,202.28,5,1,MZA 5588 - LT 7,ZONA V,1247
6080,-70.260862,-17.999461,MUR/HEX:1,1,220,200.91,5,1,MZA 5588 - LT 8,ZONA V,1248
6081,-70.26091891,-17.99938922,MCF/LWAL+DNO/HEX:1/RES,1,220,199.15,5,1,MZA 5588 - LT 9,ZONA V,1249
6082,-70.26097589,-17.99931699,MCF/LWAL+DNO/HEX:2/RES,1,220,405.36,9,2,MZA 5588 - LT 10,ZONA V,1250
6083,-70.26082522,-17.99920822,MCF/LWAL+DNO/HEX:1/RES,1,220,201.21,5,1,MZA 5588 - LT 11,ZONA V,1251
6084,-70.26076704,-17.9992799,MUR/HEX:1,1,220,201.93,5,1,MZA 5588 - LT 12,ZONA V,1252
6085,-70.26071016,-17.99935219,MCF/LWAL+DNO/HEX:2/RES,1,220,402.12,9,2,MZA 5588 - LT 13,ZONA V,1253
6086,-70.26065302,-17.99942433,MUR/HEX:1,1,220,202.33,5,1,MZA 5588 - LT 14,ZONA V,1254
6087,-70.26059563,-17.99949669,MCF/LWAL+DNO/HEX:2/RES,1,220,405.3,9,2,MZA 5588 - LT 15,ZONA V,1255
6088,-70.26053496,-17.99957379,MUR/HEX:1,1,220,227.27,5,1,MZA 5588 - LT 16,ZONA V,1256
6089,-70.26047397,-17.99965065,MUR/HEX:1,1,220,201.11,5,1,MZA 5588 - LT 17,ZONA V,1257
6090,-70.26041635,-17.99972268,MUR/HEX:1,1,220,203.06,5,1,MZA 5588 - LT 18,ZONA V,1258
6091,-70.26035854,-17.99979487,MCF/LWAL+DNO/HEX:1/RES,1,220,203.65,5,1,MZA 5588 - LT 19,ZONA V,1259
6092,-70.26030204,-17.99986783,MCF/LWAL+DNO/HEX:2/RES,1,220,405.08,9,2,MZA 5588 - LT 20,ZONA V,1260
6093,-70.26021769,-17.99952279,MUR/HEX:6,1,220,799.56,18,5,MZA 5589 - LT 1,ZONA V,1261
6094,-70.26014275,-17.99946806,MUR/HEX:1,1,220,198.23,5,1,MZA 5589 - LT 2,ZONA V,1262
6095,-70.26006693,-17.99941339,MUR/HEX:1,1,220,202.46,5,1,MZA 5589 - LT 3,ZONA V,1263
6096,-70.2599913,-17.99935872,MUR/HEX:1,1,220,197.38,5,1,MZA 5589 - LT 4,ZONA V,1264
6097,-70.25991582,-17.9993043,MCF/LWAL+DNO/HEX:1/RES,1,220,201.52,5,1,MZA 5589 - LT 5,ZONA V,1265
6098,-70.2598392,-17.99924894,MUR/HEX:1,1,220,203.07,5,1,MZA 5589 - LT 6,ZONA V,1266
6099,-70.25976362,-17.99919406,MCF/LWAL+DNO/HEX:2/RES,1,220,395.42,9,2,MZA 5589 - LT 7,ZONA V,1267
6100,-70.25968893,-17.99914,MCF/LWAL+DNO/HEX:2/RES,1,220,396.98,9,2,MZA 5589 - LT 8,ZONA V,1268
6101,-70.25961403,-17.99908568,MCF/LWAL+DNO/HEX:2/RES,1,220,399.22,9,2,MZA 5589 - LT 9,ZONA V,1269
6102,-70.25953872,-17.99903098,MUR/HEX:1,1,220,201.93,5,1,MZA 5589 - LT 10,ZONA V,1270
6103,-70.25946338,-17.99897646,MCF/LWAL+DNO/HEX:2/RES,1,220,399.96,9,2,MZA 5589 - LT 11,ZONA V,1271
6104,-70.25938818,-17.99892231,MUR/HEX:1,1,220,200.36,5,1,MZA 5589 - LT 12,ZONA V,1272
6105,-70.25931222,-17.99886875,MUR/HEX:1,1,220,199.97,5,1,MZA 5589 - LT 13,ZONA V,1273
6106,-70.25927265,-17.99906621,MUR/HEX:3,1,220,607.41,14,4,MZA 5589 - LT 15,ZONA V,1275
6107,-70.25934883,-17.99912169,MUR/HEX:2,1,220,406.96,9,2,MZA 5589 - LT 16,ZONA V,1276
6108,-70.25942537,-17.99917618,MCF/LWAL+DNO/HEX:3/RES,1,220,603.93,14,4,MZA 5589 - LT 17,ZONA V,1277
6109,-70.25950079,-17.99923049,MUR/HEX:3,1,220,597.45,14,4,MZA 5589 - LT 18,ZONA V,1278
6110,-70.2595758,-17.9992846,MUR/HEX:2,1,220,397.24,9,2,MZA 5589 - LT 19,ZONA V,1279
6111,-70.2596507,-17.99933879,MUR/HEX:2,1,220,397.5,9,2,MZA 5589 - LT 20,ZONA V,1280
6112,-70.25972636,-17.99939266,MCF/LWAL+DNO/HEX:2/RES,1,220,400.44,9,2,MZA 5589 - LT 21,ZONA V,1281
6113,-70.25980173,-17.9994479,MCF/LWAL+DNO/HEX:2/RES,1,220,404.26,9,2,MZA 5589 - LT 22,ZONA V,1282
6114,-70.25987698,-17.99950286,MCF/LWAL+DNO/HEX:1/RES,1,220,199.93,5,1,MZA 5589 - LT 23,ZONA V,1283
6115,-70.25995272,-17.99955743,MUR/HEX:1,1,220,203.83,5,1,MZA 5589 - LT 24,ZONA V,1284
6116,-70.26002843,-17.99961225,MUR/HEX:2,1,220,400.94,9,2,MZA 5589 - LT 25,ZONA V,1285
6117,-70.26010419,-17.9996662,MUR/HEX:3,1,220,604.32,14,4,MZA 5589 - LT 26,ZONA V,1286
6118,-70.26151122,-17.9994756,MCF/LWAL+DNO/HEX:2/RES,1,220,320.7,2,MZA 5590 - LT 1,ZONA V,1287
6119,-70.26155395,-17.9994146,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 2,ZONA V,1288
6120,-70.26159956,-17.99935697,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 3,ZONA V,1289
6121,-70.26164518,-17.99929934,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 4,ZONA V,1290
6122,-70.26169419,-17.99924508,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 5,ZONA V,1291
6123,-70.26173641,-17.99918408,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 6,ZONA V,1292
6124,-70.26178203,-17.99912645,MCF/LWAL+DNO/HEX:2/RES,1,220,320.7,2,MZA 5590 - LT 7,ZONA V,1293
6125,-70.26182764,-17.99906882,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 8,ZONA V,1294
6126,-70.26187648,-17.99901456,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 9,ZONA V,1295
6127,-70.26191887,-17.99895356,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 10,ZONA V,1296
6128,-70.26196449,-17.99889593,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 11,ZONA V,1297
6129,-70.26201737,-17.99884165,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 12,ZONA V,1298
6130,-70.26185953,-17.99872918,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 13,ZONA V,1299
6131,-70.26181392,-17.99878681,MCF/LWAL+DNO/HEX:2/RES,1,220,320.7,2,MZA 5590 - LT 14,ZONA V,1300
6132,-70.2617683,-17.99884444,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 15,ZONA V,1301
6133,-70.26172269,-17.99890207,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 16,ZONA V,1302
6134,-70.26167707,-17.9989597,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 17,ZONA V,1303
6135,-70.26163146,-17.99901733,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 18,ZONA V,1304
6136,-70.26158584,-17.99907496,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 19,ZONA V,1305
6137,-70.26154023,-17.99913259,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 20,ZONA V,1306
6138,-70.26149461,-17.99919022,MCF/LWAL+DNO/HEX:1/RES,1,220,160.4,1,MZA 5590 - LT 21,ZONA V,1307
6139,-70.26144899,-17.99924785,MUR/HEX:1,1,220,160.4,1,MZA 5590 - LT 22,ZONA V,1308
6140,-70.26141014,-17.99930883,MCF/LWAL+DNO/HEX:2/RES,1,220,320.7,2,MZA 5590 - LT 23,ZONA V,1309
6141,-70.26135776,-17.99936311,MCF/LWAL+DNO/HEX:3/RES,1,220,480.11,3,MZA 5590 - LT 24,ZONA V,1310
6142,-70.26221194,-17.99934887,MCF/LWAL+DNO/HEX:2/RES,1,220,320.7,2,MZA 5591 - LT 1,ZONA V,1311

6143,-70.26225806,-17.99929161,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5591 - LT 2,ZONA V,1312
6144,-70.26230418,-17.99923434,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5591 - LT 3,ZONA V,1313
6145,-70.26235386,-17.99918045,MCF/LWAL+DNO/HEX:2/RES,1,220,320,7,2,MZA 5591 - LT 4,ZONA V,1314
6146,-70.26239641,-17.99911981,MUR/HEX:2,1,220,320,7,2,MZA 5591 - LT 5,ZONA V,1315
6147,-70.26225036,-17.99901287,MCF/LWAL+DNO/HEX:2/RES,1,220,320,7,2,MZA 5591 - LT 6,ZONA V,1316
6148,-70.26220407,-17.99907013,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 7,ZONA V,1317
6149,-70.26215456,-17.99912402,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 8,ZONA V,1318
6150,-70.26210845,-17.99918129,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 9,ZONA V,1319
6151,-70.26206233,-17.99923855,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 10,ZONA V,1320
6152,-70.26216132,-17.99941273,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 11,ZONA V,1321
6153,-70.26212864,-17.99946318,MCF/LWAL+DNO/HEX:2/RES,1,220,650,15,4,MZA 5591 - LT 12,ZONA V,1322
6154,-70.26209169,-17.99950879,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 13,ZONA V,1323
6155,-70.2620165,-17.99930105,MUR/HEX:1,1,220,160,4,1,MZA 5591 - LT 14,ZONA V,1324
6156,-70.26195695,-17.99938571,MUR/HEX:1,1,220,165,4,1,MZA 5591 - LT 15,ZONA V,1325
6157,-70.26250492,-17.99901555,MCF/LWAL+DNO/HEX:2/RES,1,220,283.82,7,2,MZA 5592 - LT 1,ZONA V,1326
6158,-70.26235753,-17.99890978,MCF/LWAL+DNO/HEX:2/RES,1,220,272.16,6,1,MZA 5592 - LT 3,ZONA V,1327
6159,-70.26228545,-17.99885806,MCF/LWAL+DNO/HEX:2/RES,1,220,277.34,6,1,MZA 5592 - LT 4,ZONA V,1328
6160,-70.2622127,-17.99880585,MCF/LWAL+DNO/HEX:3/RES,1,220,416.01,10,3,MZA 5592 - LT 5,ZONA V,1329
6161,-70.26214232,-17.99875534,MCF/LWAL+DNO/HEX:2/RES,1,220,259.2,6,1,MZA 5592 - LT 6,ZONA V,1330
6162,-70.26207432,-17.99870654,MCF/LWAL+DNO/HEX:2/RES,1,220,259.2,6,1,MZA 5592 - LT 7,ZONA V,1331
6163,-70.26200173,-17.99865445,MCF/LWAL+DNO/HEX:2/RES,1,220,294.18,7,2,MZA 5592 - LT 8,ZONA V,1332
6164,-70.26191895,-17.99859504,MCF/LWAL+DNO/HEX:2/RES,1,220,168.48,4,1,MZA 5592 - LT 9,ZONA V,1333
6165,-70.26257937,-17.99906899,MCF/LWAL+DNO/HEX:2/RES,1,220,213.84,5,1,MZA 5592 - LT 10,ZONA V,1334
6166,-70.26265383,-17.99912242,MCF/LWAL+DNO/HEX:2/RES,1,220,281.8,7,2,MZA 5592 - LT 11,ZONA V,1335
6167,-70.26272829,-17.99917585,MCF/LWAL+DNO/HEX:2/RES,1,220,279.72,6,1,MZA 5592 - LT 12,ZONA V,1336
6168,-70.26291855,-17.99931239,MCF/LWAL+DNO/HEX:3/RES,1,220,354.86,8,2,MZA 5592 - LT 13,ZONA V,1337
6169,-70.2617121,-17.99990498,MUR/HEX:1,1,220,163.82,4,1,MZA 5593 - LT 1,ZONA V,1338
6170,-70.26165002,-17.99986171,MUR/HEX:1,1,220,159.83,4,1,MZA 5593 - LT 2,ZONA V,1339
6171,-70.26159297,-17.99982193,MUR/HEX:1,1,220,161.47,4,1,MZA 5593 - LT 3,ZONA V,1340
6172,-70.26152943,-17.99977461,MUR/HEX:2,1,220,321.86,7,2,MZA 5593 - LT 4,ZONA V,1341
6173,-70.26146942,-17.99973082,MUR/HEX:2,1,220,319.68,7,2,MZA 5593 - LT 5,ZONA V,1342
6174,-70.2614128,-17.99969088,MCF/LWAL+DNO/HEX:2/RES,1,220,321.62,7,2,MZA 5593 - LT 6,ZONA V,1343
6175,-70.26134913,-17.99964375,MCF/LWAL+DNO/HEX:1/RES,1,220,160.7,4,1,MZA 5593 - LT 7,ZONA V,1344
6176,-70.261289,-17.99959998,MUR/HEX:3,1,220,481.5,11,3,MZA 5593 - LT 8,ZONA V,1345
6177,-70.26123209,-17.99955957,MUR/HEX:1,1,220,160.3,4,1,MZA 5593 - LT 9,ZONA V,1346
6178,-70.26116859,-17.99951244,MUR/HEX:2,1,220,321.2,7,2,MZA 5593 - LT 10,ZONA V,1347
6179,-70.26105463,-17.99965657,MCF/LWAL+DNO/HEX:2/RES,1,220,322.8,7,2,MZA 5593 - LT 11,ZONA V,1348
6180,-70.2611151,-17.99970047,MUR/HEX:1,1,220,159.7,4,1,MZA 5593 - LT 12,ZONA V,1349
6181,-70.26117523,-17.99974425,MCF/LWAL+DNO/HEX:3/RES,1,220,478.5,11,3,MZA 5593 - LT 13,ZONA V,1350
6182,-70.26123536,-17.99978802,MUR/HEX:1,1,220,159.3,4,1,MZA 5593 - LT 14,ZONA V,1351
6183,-70.26129584,-17.99983207,MUR/HEX:1,1,220,161.01,4,1,MZA 5593 - LT 15,ZONA V,1352
6184,-70.26135625,-17.99987593,MUR/HEX:2,1,220,316.94,7,2,MZA 5593 - LT 16,ZONA V,1353
6185,-70.26141646,-17.99991932,MUR/HEX:1,1,220,159.66,4,1,MZA 5593 - LT 17,ZONA V,1354
6186,-70.26147659,-17.99996333,MUR/HEX:1,1,220,159.13,4,1,MZA 5593 - LT 18,ZONA V,1355
6187,-70.26153703,-18.00000679,MUR/HEX:2,1,220,318.28,7,2,MZA 5593 - LT 19,ZONA V,1356
6188,-70.26159885,-18.00004968,MUR/HEX:1,1,220,165.89,4,1,MZA 5593 - LT 20,ZONA V,1357
6189,-70.26141859,-18.00027539,MUR/HEX:1,1,220,160,4,1,MZA 5594 - LT 1,ZONA V,1358
6190,-70.2613584,-18.0002317,MUR/HEX:1,1,220,160,4,1,MZA 5594 - LT 2,ZONA V,1359
6191,-70.26129821,-18.000188,MUR/HEX:1,1,220,160,4,1,MZA 5594 - LT 3,ZONA V,1360
6192,-70.26123802,-18.0001443,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 4,ZONA V,1361
6193,-70.26117783,-18.0001006,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5594 - LT 5,ZONA V,1362
6194,-70.26111764,-18.00005691,MUR/HEX:1,1,220,160,4,1,MZA 5594 - LT 6,ZONA V,1363
6195,-70.26105745,-18.00001321,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5594 - LT 7,ZONA V,1364
6196,-70.26099726,-17.99996951,MCF/LWAL+DNO/HEX:2/RES,1,220,320,7,2,MZA 5594 - LT 8,ZONA V,1365
6197,-70.26093707,-17.99992581,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5594 - LT 9,ZONA V,1366
6198,-70.26087688,-17.99988212,MCF/LWAL+DNO/HEX:2/RES,1,220,320,7,2,MZA 5594 - LT 10,ZONA V,1367
6199,-70.26076272,-18.0000261,MCF/LWAL+DNO/HEX:1/RES,1,220,160,4,1,MZA 5594 - LT 11,ZONA V,1368
6200,-70.2608229,-18.00006979,MCF/LWAL+DNO/HEX:3/RES,1,220,480,11,3,MZA 5594 - LT 12,ZONA V,1369
6201,-70.26088309,-18.00011349,MCF/LWAL+DNO/HEX:3/RES,1,220,480,11,3,MZA 5594 - LT 13,ZONA V,1370
6202,-70.26094328,-18.00015719,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 14,ZONA V,1371
6203,-70.26100347,-18.00020089,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 15,ZONA V,1372
6204,-70.26106366,-18.00024458,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 16,ZONA V,1373
6205,-70.26112385,-18.00028828,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 17,ZONA V,1374
6206,-70.26118404,-18.00033198,MUR/HEX:1,1,220,160,4,1,MZA 5594 - LT 18,ZONA V,1375
6207,-70.26125133,-18.00037903,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 19,ZONA V,1376
6208,-70.26130442,-18.00041937,MUR/HEX:2,1,220,320,7,2,MZA 5594 - LT 20,ZONA V,1377
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6210,-70.26430696,-17.99921835,MCF/LWAL+DNO/HEX:2/RES,1,220,313.2,7,2,MZA 5601 - LT 2,ZONA V,1379
6211,-70.26424842,-17.99917981,MCF/LWAL+DNO/HEX:2/RES,1,220,313.02,7,2,MZA 5601 - LT 3,ZONA V,1380
6212,-70.26418938,-17.99914157,MUR/HEX:2,1,220,312.86,7,2,MZA 5601 - LT 4,ZONA V,1381
6213,-70.26413152,-17.9991003,MUR/HEX:1,1,220,156.35,4,1,MZA 5601 - LT 5,ZONA V,1382

6214,-70.26407193,-17.99906159,MUR/HEX:2,1,220,312.52,7,2,MZA 5601 - LT 6,ZONA V,1383
6215,-70.2640117,-17.99902068,MCF/LWAL+DNO/HEX:1/RES,1,220,156.18,4,1,MZA 5601 - LT 7,ZONA V,1384
6216,-70.26388771,-17.99894762,MUR/HEX:1,1,220,283.69,7,2,MZA 5601 - LT 8,ZONA V,1385
6217,-70.26316933,-17.99975109,MUR/HEX:2,1,220,314.64,7,2,MZA 5602 - LT 1,ZONA V,1386
6218,-70.26320596,-17.99969292,MUR/HEX:1,1,220,159.56,4,1,MZA 5602 - LT 2,ZONA V,1387
6219,-70.26324403,-17.99963547,MUR/HEX:1,1,220,158.8,4,1,MZA 5602 - LT 3,ZONA V,1388
6220,-70.26328152,-17.99957764,MUR/HEX:2,1,220,321.06,7,2,MZA 5602 - LT 4,ZONA V,1389
6221,-70.26378553,-17.99915733,MUR/HEX:1,1,220,159.93,4,1,MZA 5602 - LT 5,ZONA V,1390
6222,-70.26374852,-17.99921717,MUR/HEX:1,1,220,154.97,4,1,MZA 5602 - LT 6,ZONA V,1391
6223,-70.2637107,-17.99927574,MUR/HEX:1,1,220,155.53,4,1,MZA 5602 - LT 7,ZONA V,1392
6224,-70.26367025,-17.999334,MUR/HEX:2,1,220,321.74,7,2,MZA 5602 - LT 8,ZONA V,1393
6225,-70.26363548,-17.99939266,MUR/HEX:1,1,220,142.07,3,0,MZA 5602 - LT 9,ZONA V,1394
6226,-70.26359743,-17.9994475,MUR/HEX:1,1,220,151.68,4,1,MZA 5602 - LT 10,ZONA V,1395
6227,-70.26355944,-17.99950528,MCF/LWAL+DNO/HEX:2/RES,1,220,301.76,7,2,MZA 5602 - LT 11,ZONA V,1396
6228,-70.2635217,-17.9995629,MUR/HEX:1,1,220,148.99,3,0,MZA 5602 - LT 12,ZONA V,1397
6229,-70.26348382,-17.99962026,MUR/HEX:1,1,220,149.93,3,0,MZA 5602 - LT 13,ZONA V,1398
6230,-70.26344616,-17.99967766,MUR/HEX:2,1,220,298.84,7,2,MZA 5602 - LT 14,ZONA V,1399
6231,-70.26340838,-17.99973487,MUR/HEX:2,1,220,300.28,7,2,MZA 5602 - LT 15,ZONA V,1400
6232,-70.26337037,-17.99979208,MUR/HEX:1,1,220,149.94,3,0,MZA 5602 - LT 16,ZONA V,1401
6233,-70.26333156,-17.99984884,MUR/HEX:1,1,220,149.61,3,0,MZA 5602 - LT 17,ZONA V,1402
6234,-70.26332434,-17.99951299,MUR/HEX:1,1,220,199.13,5,1,MZA 5602 - LT 18,ZONA V,1403
6235,-70.2634104,-17.9994619,MUR/HEX:2,1,220,241.62,6,1,MZA 5602 - LT 19,ZONA V,1404
6236,-70.26339232,-18.00028842,MUR/HEX:1,1,220,149.33,3,0,MZA 5603 - LT 1,ZONA V,1405
6237,-70.26342955,-18.00023121,MUR/HEX:1,1,220,149.59,3,0,MZA 5603 - LT 2,ZONA V,1406
6238,-70.26346737,-18.00017387,MUR/HEX:1,1,220,151.25,3,0,MZA 5603 - LT 3,ZONA V,1407
6239,-70.26350549,-18.00011641,MUR/HEX:1,1,220,150.93,3,0,MZA 5603 - LT 4,ZONA V,1408
6240,-70.263544,-18.00005838,MUR/HEX:1,1,220,153.66,4,1,MZA 5603 - LT 5,ZONA V,1409
6241,-70.2635817,-18.00000026,MUR/HEX:1,1,220,150.17,3,0,MZA 5603 - LT 6,ZONA V,1410
6242,-70.26361963,-17.99994283,MUR/HEX:1,1,220,153.49,4,1,MZA 5603 - LT 7,ZONA V,1411
6243,-70.26365774,-17.99988618,MUR/HEX:2,1,220,292.14,7,2,MZA 5603 - LT 8,ZONA V,1412
6244,-70.26369514,-17.99982948,MUR/HEX:2,1,220,303.02,7,2,MZA 5603 - LT 9,ZONA V,1413
6245,-70.26373288,-17.99977186,MUR/HEX:1,1,220,150.97,3,0,MZA 5603 - LT 10,ZONA V,1414
6246,-70.26377074,-17.99971433,MUR/HEX:1,1,220,152.26,4,1,MZA 5603 - LT 11,ZONA V,1415
6247,-70.26380732,-17.99965695,MUR/HEX:2,1,220,296.92,7,2,MZA 5603 - LT 12,ZONA V,1416
6248,-70.26384521,-17.99960058,MUR/HEX:1,1,220,152.34,4,1,MZA 5603 - LT 13,ZONA V,1417
6249,-70.26388367,-17.99954364,MUR/HEX:2,1,220,302.88,7,2,MZA 5603 - LT 14,ZONA V,1418
6250,-70.26392118,-17.99948621,MUR/HEX:2,1,220,302.88,7,2,MZA 5603 - LT 15,ZONA V,1419
6251,-70.26395957,-17.99942886,MUR/HEX:1,1,220,153.3,4,1,MZA 5603 - LT 16,ZONA V,1420
6252,-70.26399707,-17.99937169,MUR/HEX:1,1,220,148.19,3,0,MZA 5603 - LT 17,ZONA V,1421
6253,-70.26403706,-17.9993146,MUR/HEX:1,1,220,157.94,4,1,MZA 5603 - LT 18,ZONA V,1422
6254,-70.26419557,-17.99941187,MUR/HEX:1,1,220,162.41,4,1,MZA 5603 - LT 19,ZONA V,1423
6255,-70.26415626,-17.99947029,MUR/HEX:1,1,220,144.9,3,0,MZA 5603 - LT 20,ZONA V,1424
6256,-70.26411848,-17.99952711,MUR/HEX:1,1,220,151.64,4,1,MZA 5603 - LT 21,ZONA V,1425
6257,-70.26408027,-17.99958449,MUR/HEX:2,1,220,295.6,7,2,MZA 5603 - LT 22,ZONA V,1426
6258,-70.26404256,-17.99964196,MUR/HEX:1,1,220,150.17,3,0,MZA 5603 - LT 23,ZONA V,1427
6259,-70.26400515,-17.99969951,MUR/HEX:1,1,220,149.52,3,0,MZA 5603 - LT 24,ZONA V,1428
6260,-70.26396831,-17.99975595,MUR/HEX:2,1,220,290.58,7,2,MZA 5603 - LT 25,ZONA V,1429
6261,-70.2639307,-17.9998119,MUR/HEX:1,1,220,149.75,3,0,MZA 5603 - LT 26,ZONA V,1430
6262,-70.26389352,-17.99986956,MUR/HEX:1,1,220,152.01,4,1,MZA 5603 - LT 27,ZONA V,1431
6263,-70.26385452,-17.99992662,MUR/HEX:1,1,220,150.41,3,0,MZA 5603 - LT 28,ZONA V,1432
6264,-70.26381701,-17.99998379,MUR/HEX:1,1,220,147.07,3,0,MZA 5603 - LT 29,ZONA V,1433
6265,-70.26377897,-18.00004057,MUR/HEX:1,1,220,150.72,3,0,MZA 5603 - LT 30,ZONA V,1434
6266,-70.2637412,-18.00009802,MUR/HEX:2,1,220,298.38,7,2,MZA 5603 - LT 31,ZONA V,1435
6267,-70.2637026,-18.00015538,MUR/HEX:2,1,220,302.64,7,2,MZA 5603 - LT 32,ZONA V,1436
6268,-70.26366478,-18.00021298,MUR/HEX:1,1,220,148.81,3,0,MZA 5603 - LT 33,ZONA V,1437
6269,-70.26362736,-18.00027038,MUR/HEX:2,1,220,300.8,7,2,MZA 5603 - LT 34,ZONA V,1438
6270,-70.26358964,-18.00032733,MUR/HEX:1,1,220,148.46,3,0,MZA 5603 - LT 35,ZONA V,1439
6271,-70.26355165,-18.00038402,MUR/HEX:2,1,220,299.1,7,2,MZA 5603 - LT 36,ZONA V,1440
6272,-70.26288889,-17.99965413,MUR/HEX:1,1,220,159.69,4,1,MZA 5604 - LT 1,ZONA V,1441
6273,-70.26284866,-17.99971288,MUR/HEX:2,1,220,307.14,7,2,MZA 5604 - LT 2,ZONA V,1442
6274,-70.2628097,-17.99977047,MUR/HEX:1,1,220,152.29,4,1,MZA 5604 - LT 3,ZONA V,1443
6275,-70.26277125,-17.99982771,MUR/HEX:1,1,220,151.94,4,1,MZA 5604 - LT 4,ZONA V,1444
6276,-70.26273264,-17.99988485,MUR/HEX:1,1,220,151.73,4,1,MZA 5604 - LT 5,ZONA V,1445
6277,-70.26294251,-17.99951198,MUR/HEX:1,1,220,135.75,3,0,MZA 5604 - LT 9,ZONA V,1446
6278,-70.26291053,-17.99954885,MUR/HEX:1,1,220,156.83,4,1,MZA 5604 - LT 10,ZONA V,1447
6279,-70.26272151,-17.99962018,MUR/HEX:1,1,220,185.96,4,1,MZA 5604 - LT 12,ZONA V,1449
6280,-70.26380215,-18.00053646,MCF/LWAL+DNO/HEX:2/RES,1,220,305.52,7,2,MZA 5605 - LT 1,ZONA V,1450
6281,-70.26383867,-18.00047858,MUR/HEX:1,1,220,146.11,3,0,MZA 5605 - LT 2,ZONA V,1451
6282,-70.26387626,-18.00042259,MUR/HEX:1,1,220,148.69,3,0,MZA 5605 - LT 3,ZONA V,1452
6283,-70.26391346,-18.00036551,MUR/HEX:1,1,220,149.23,3,0,MZA 5605 - LT 4,ZONA V,1453
6284,-70.26395239,-18.00030856,MUR/HEX:1,1,220,152.38,4,1,MZA 5605 - LT 5,ZONA V,1454

6285,-70.26399014,-18.00024976,MUR/HEX:2,1,220,307.42,7,2,MZA 5605 - LT 6,ZONA V,1455
6286,-70.2640276,-18.0001921,MUR/HEX:1,1,220,147.66,3,0,MZA 5605 - LT 7,ZONA V,1456
6287,-70.26406469,-18.0001355,MUR/HEX:1,1,220,148.39,3,0,MZA 5605 - LT 8,ZONA V,1457
6288,-70.26410292,-18.00007783,MUR/HEX:1,1,220,153.95,4,1,MZA 5605 - LT 9,ZONA V,1458
6289,-70.2641416,-18.00001924,MUR/HEX:1,1,220,152.25,4,1,MZA 5605 - LT 10,ZONA V,1459
6290,-70.26418797,-18.00028583,MUR/HEX:1,1,220,161.14,4,1,MZA 5605 - LT 11,ZONA V,1460
6291,-70.26414877,-18.00034627,MUR/HEX:1,1,220,152.55,4,1,MZA 5605 - LT 12,ZONA V,1461
6292,-70.26411023,-18.00040581,MUR/HEX:1,1,220,156.5,4,1,MZA 5605 - LT 13,ZONA V,1462
6293,-70.26407182,-18.00046388,MUR/HEX:1,1,220,146.38,3,0,MZA 5605 - LT 14,ZONA V,1463
6294,-70.2640346,-18.00052029,MUR/HEX:2,1,220,293.7,7,2,MZA 5605 - LT 15,ZONA V,1464
6295,-70.26399825,-18.00057966,MUR/HEX:2,1,220,281.44,6,1,MZA 5605 - LT 16,ZONA V,1465
6296,-70.26396262,-18.00062886,MUR/HEX:1,1,220,150.3,3,0,MZA 5605 - LT 17,ZONA V,1466
6297,-70.26415816,-17.99994835,MCF/LWAL+DNO/HEX:2/RES,1,220,217.78,5,1,MZA 5605 - LT 18,ZONA V,1467
6298,-70.26421347,-18.00078459,MUR/HEX:1,1,220,145.78,3,0,MZA 5606 - LT 1,ZONA V,1468
6299,-70.26424779,-18.00072564,MUR/HEX:1,1,220,148.97,3,0,MZA 5606 - LT 2,ZONA V,1469
6300,-70.26428562,-18.00066792,MUR/HEX:1,1,220,153.61,4,1,MZA 5606 - LT 3,ZONA V,1470
6301,-70.26432473,-18.0006112,MUR/HEX:1,1,220,149.71,3,0,MZA 5606 - LT 4,ZONA V,1471
6302,-70.26436109,-18.00055497,MUR/HEX:1,1,220,146.52,3,0,MZA 5606 - LT 5,ZONA V,1472
6303,-70.26444753,-18.0007662,MUR/HEX:2,1,220,309.8,7,2,MZA 5606 - LT 6,ZONA V,1473
6304,-70.26440934,-18.00082243,MUR/HEX:2,1,220,300.82,7,2,MZA 5606 - LT 7,ZONA V,1474
6305,-70.26437003,-18.00087897,MUR/HEX:1,1,220,151.12,3,0,MZA 5606 - LT 8,ZONA V,1475
6306,-70.2643992,-18.00050009,MUR/HEX:2,1,220,298.5,7,2,MZA 5606 - LT 9,ZONA V,1476
6307,-70.26448699,-18.0007067,MUR/HEX:1,1,220,165.45,4,1,MZA 5606 - LT 10,ZONA V,1477
6308,-70.26151262,-18.00044417,MCF/LWAL+DNO/HEX:3/RES,1,220,682.29,9,3,MZA 5607 - LT 1,ZONA V,1478
6309,-70.26147443,-18.00060368,MUR/HEX:2,1,220,380.3,3,2,MZA 5607 - LT 2,ZONA V,1479
6310,-70.26153165,-18.00064552,MUR/HEX:2,1,220,335.6,5,3,MZA 5607 - LT 3,ZONA V,1480
6311,-70.26160117,-18.0007908,MUR/HEX:2,1,220,327.02,3,2,MZA 5607 - LT 4,ZONA V,1481
6312,-70.26164354,-18.0007264,MUR/HEX:2,1,220,287.08,2,2,MZA 5607 - LT 5,ZONA V,1482
6313,-70.26168179,-18.00066936,MUR/HEX:1,1,220,138.9,4,1,MZA 5607 - LT 6,ZONA V,1483
6314,-70.26172092,-18.0006112,MUR/HEX:1,1,220,161.02,4,1,MZA 5607 - LT 7,ZONA V,1484
6315,-70.26176019,-18.00055273,MCF/LWAL+DNO/HEX:1/RES,1,220,147.2,4,1,MZA 5607 - LT 8,ZONA V,1485
6316,-70.26179862,-18.00049555,MUR/HEX:2,1,220,299.2,4,2,MZA 5607 - LT 9,ZONA V,1486
6317,-70.26183824,-18.00043659,MUR/HEX:1,1,220,176.24,4,1,MZA 5607 - LT 10,ZONA V,1487
6318,-70.26188444,-18.00036594,MUR/HEX:2,1,220,439.36,5,3,MZA 5607 - LT 11,ZONA V,1488
6319,-70.26164862,-18.00036288,MUR/HEX:1,1,220,117.56,2,0,MZA 5607 - LT 1,ZONA V,1489
6320,-70.26173,-18.00024614,MCF/LWAL+DNO/HEX:3/RES,1,220,629.22,5,4,MZA 5607 - LT 2,ZONA V,1490
6321,-70.26178756,-18.00017823,MUR/HEX:1,1,220,222.38,5,1,MZA 5607 - LT 3,ZONA V,1491
6322,-70.26180027,-18.00096527,MCF/LWAL+DNO/HEX:1/RES,1,220,160.02,4,1,MZA 5608 - LT 1,ZONA V,1492
6323,-70.26183862,-18.0009058,MCF/LWAL+DNO/HEX:1/RES,1,220,149.57,3,0,MZA 5608 - LT 2,ZONA V,1493
6324,-70.26187517,-18.00084954,MCF/LWAL+DNO/HEX:1/RES,1,220,144.31,3,0,MZA 5608 - LT 3,ZONA V,1494
6325,-70.2619116,-18.00079361,MCF/LWAL+DNO/HEX:2/RES,1,220,296.82,7,2,MZA 5608 - LT 4,ZONA V,1495
6326,-70.26194808,-18.00073759,MCF/LWAL+DNO/HEX:2/RES,1,220,289.92,7,2,MZA 5608 - LT 5,ZONA V,1496
6327,-70.26198483,-18.00068144,MCF/LWAL+DNO/HEX:1/RES,1,220,149.69,3,0,MZA 5608 - LT 6,ZONA V,1497
6328,-70.26202209,-18.0006246,MCF/LWAL+DNO/HEX:1/RES,1,220,148.18,3,0,MZA 5608 - LT 7,ZONA V,1498
6329,-70.26206072,-18.00056685,MCF/LWAL+DNO/HEX:1/RES,1,220,156.16,4,1,MZA 5608 - LT 8,ZONA V,1499
6330,-70.26209805,-18.00050676,MCF/LWAL+DNO/HEX:1/RES,1,220,154.25,4,1,MZA 5608 - LT 9,ZONA V,1500
6331,-70.26213696,-18.00044929,MCF/LWAL+DNO/HEX:2/RES,1,220,298.96,7,2,MZA 5608 - LT 10,ZONA V,1501
6332,-70.26217363,-18.00039212,MCF/LWAL+DNO/HEX:1/RES,1,220,147.26,3,0,MZA 5608 - LT 11,ZONA V,1502
6333,-70.26221131,-18.00033533,MCF/LWAL+DNO/HEX:2/RES,1,220,299.98,7,2,MZA 5608 - LT 12,ZONA V,1503
6334,-70.26224946,-18.00027855,MUR/HEX:1,1,220,148.15,3,0,MZA 5608 - LT 13,ZONA V,1504
6335,-70.26256021,-18.0001443,MCF/LWAL+DNO/HEX:1/RES,1,220,156.01,4,1,MZA 5608 - LT 14,ZONA V,1505
6336,-70.26252272,-18.00020287,MCF/LWAL+DNO/HEX:1/RES,1,220,152.05,4,1,MZA 5608 - LT 15,ZONA V,1506
6337,-70.26248486,-18.00026051,MCF/LWAL+DNO/HEX:2/RES,1,220,306.9,7,2,MZA 5608 - LT 16,ZONA V,1507
6338,-70.26244702,-18.00031754,MCF/LWAL+DNO/HEX:2/RES,1,220,299.5,7,2,MZA 5608 - LT 17,ZONA V,1508
6339,-70.26240932,-18.00037466,MCF/LWAL+DNO/HEX:1/RES,1,220,152.58,4,1,MZA 5608 - LT 18,ZONA V,1509
6340,-70.26237151,-18.00043225,MCF/LWAL+DNO/HEX:1/RES,1,220,150.83,3,0,MZA 5608 - LT 19,ZONA V,1510
6341,-70.26233469,-18.00048863,MCF/LWAL+DNO/HEX:1/RES,1,220,145.59,3,0,MZA 5608 - LT 20,ZONA V,1511
6342,-70.26229754,-18.00054488,MCF/LWAL+DNO/HEX:2/RES,1,220,301.38,7,2,MZA 5608 - LT 21,ZONA V,1512
6343,-70.26225962,-18.0006022,MCF/LWAL+DNO/HEX:1/RES,1,220,149.75,3,0,MZA 5608 - LT 22,ZONA V,1513
6344,-70.26222061,-18.00066016,MCF/LWAL+DNO/HEX:1/RES,1,220,154.94,4,1,MZA 5608 - LT 23,ZONA V,1514
6345,-70.26218337,-18.00071848,MCF/LWAL+DNO/HEX:1/RES,1,220,146.96,3,0,MZA 5608 - LT 24,ZONA V,1515
6346,-70.26214614,-18.00077521,MCF/LWAL+DNO/HEX:1/RES,1,220,148.25,3,0,MZA 5608 - LT 25,ZONA V,1516
6347,-70.26210923,-18.00083135,MCF/LWAL+DNO/HEX:1/RES,1,220,143.31,3,0,MZA 5608 - LT 26,ZONA V,1517
6348,-70.2620726,-18.00088783,MCF/LWAL+DNO/HEX:1/RES,1,220,148.18,3,0,MZA 5608 - LT 27,ZONA V,1518
6349,-70.26203573,-18.00094387,MCF/LWAL+DNO/HEX:2/RES,1,220,284.92,7,2,MZA 5608 - LT 28,ZONA V,1519
6350,-70.26199948,-18.00100031,MCF/LWAL+DNO/HEX:1/RES,1,220,149.2,3,0,MZA 5608 - LT 29,ZONA V,1520
6351,-70.26196099,-18.00106154,MCF/LWAL+DNO/HEX:1/RES,1,220,166.38,4,1,MZA 5608 - LT 30,ZONA V,1521
6352,-70.26229024,-18.0002161,MUR/HEX:2,1,220,350.36,8,2,MZA 5608 - LT 31,ZONA V,1522
6353,-70.26260077,-18.0000489,MUR/HEX:1,1,220,195.31,5,1,MZA 5608 - LT 32,ZONA V,1523
6354,-70.26233773,-18.0001447,MUR/HEX:1,1,220,240.48,6,1,MZA 5608 - LT 33,ZONA V,1524
6355,-70.26223805,-18.00116311,MUR/HEX:1,1,220,181.03,4,1,MZA 5609 - LT 1,ZONA V,1525

6356,-70.26228164,-18.00109947,MUR/HEX:1,1,220,153.51,4,1,MZA 5609 - LT 2,ZONA V,1526
6357,-70.26231848,-18.00104256,MCF/LWAL+DNO/HEX:2/RES,1,220,286.12,7,2,MZA 5609 - LT 3,ZONA V,1527
6358,-70.26235531,-18.00098607,MCF/LWAL+DNO/HEX:1/RES,1,220,152.78,4,1,MZA 5609 - LT 4,ZONA V,1528
6359,-70.26239336,-18.00092773,MCF/LWAL+DNO/HEX:3/RES,1,220,460.35,11,3,MZA 5609 - LT 5,ZONA V,1529
6360,-70.26243179,-18.00086944,MUR/HEX:1,1,220,153.64,4,1,MZA 5609 - LT 6,ZONA V,1530
6361,-70.26246993,-18.00081173,MCF/LWAL+DNO/HEX:1/RES,1,220,149.68,3,0,MZA 5609 - LT 7,ZONA V,1531
6362,-70.26250775,-18.00075471,MCF/LWAL+DNO/HEX:2/RES,1,220,299.52,7,2,MZA 5609 - LT 8,ZONA V,1532
6363,-70.26254584,-18.00069768,MUR/HEX:1,1,220,148.57,3,0,MZA 5609 - LT 9,ZONA V,1533
6364,-70.26258373,-18.00064053,MUR/HEX:1,1,220,148.39,3,0,MZA 5609 - LT 10,ZONA V,1534
6365,-70.26262129,-18.00058364,MUR/HEX:1,1,220,146.06,3,0,MZA 5609 - LT 11,ZONA V,1535
6366,-70.26265853,-18.00052665,MCF/LWAL+DNO/HEX:1/RES,1,220,147.78,3,0,MZA 5609 - LT 12,ZONA V,1536
6367,-70.26269612,-18.00046906,MCF/LWAL+DNO/HEX:2/RES,1,220,299.7,7,2,MZA 5609 - LT 13,ZONA V,1537
6368,-70.26273389,-18.0004116,MCF/LWAL+DNO/HEX:2/RES,1,220,295.4,7,2,MZA 5609 - LT 14,ZONA V,1538
6369,-70.26277118,-18.00035448,MUR/HEX:1,1,220,147.62,3,0,MZA 5609 - LT 15,ZONA V,1539
6370,-70.26280877,-18.00029661,MCF/LWAL+DNO/HEX:1/RES,1,220,152.04,4,1,MZA 5609 - LT 16,ZONA V,1540
6371,-70.26284656,-18.0002387,MCF/LWAL+DNO/HEX:1/RES,1,220,149.3,0,MZA 5609 - LT 17,ZONA V,1541
6372,-70.26288435,-18.00018151,MCF/LWAL+DNO/HEX:3/RES,1,220,451.68,10,3,MZA 5609 - LT 18,ZONA V,1542
6373,-70.26304534,-18.00027809,MCF/LWAL+DNO/HEX:2/RES,1,220,307.14,7,2,MZA 5609 - LT 19,ZONA V,1543
6374,-70.26300821,-18.00033576,MCF/LWAL+DNO/HEX:2/RES,1,220,306.44,7,2,MZA 5609 - LT 20,ZONA V,1544
6375,-70.26297005,-18.00039298,MCF/LWAL+DNO/HEX:2/RES,1,220,308.48,7,2,MZA 5609 - LT 21,ZONA V,1545
6376,-70.26293269,-18.00045098,MUR/HEX:1,1,220,153.81,4,1,MZA 5609 - LT 22,ZONA V,1546
6377,-70.26289458,-18.00050832,MCF/LWAL+DNO/HEX:2/RES,1,220,305.42,7,2,MZA 5609 - LT 23,ZONA V,1547
6378,-70.26285638,-18.00056537,MUR/HEX:1,1,220,152.4,4,1,MZA 5609 - LT 24,ZONA V,1548
6379,-70.26281876,-18.00062269,MUR/HEX:1,1,220,151.47,3,0,MZA 5609 - LT 25,ZONA V,1549
6380,-70.26278132,-18.00067997,MCF/LWAL+DNO/HEX:2/RES,1,220,302.24,7,2,MZA 5609 - LT 26,ZONA V,1550
6381,-70.26274317,-18.00073656,MUR/HEX:1,1,220,149.82,3,0,MZA 5609 - LT 27,ZONA V,1551
6382,-70.26270584,-18.00079402,MUR/HEX:1,1,220,151.73,4,1,MZA 5609 - LT 28,ZONA V,1552
6383,-70.26266764,-18.00085124,MUR/HEX:1,1,220,150.16,3,0,MZA 5609 - LT 29,ZONA V,1553
6384,-70.26262999,-18.00090823,MCF/LWAL+DNO/HEX:2/RES,1,220,297.74,7,2,MZA 5609 - LT 30,ZONA V,1554
6385,-70.26259212,-18.00096556,MCF/LWAL+DNO/HEX:1/RES,1,220,151.79,4,1,MZA 5609 - LT 31,ZONA V,1555
6386,-70.26255394,-18.00102354,MCF/LWAL+DNO/HEX:2/RES,1,220,302.68,7,2,MZA 5609 - LT 32,ZONA V,1556
6387,-70.26251561,-18.00108066,MCF/LWAL+DNO/HEX:2/RES,1,220,296.82,7,2,MZA 5609 - LT 33,ZONA V,1557
6388,-70.26247991,-18.00114566,MUR/HEX:1,1,220,186.865,4,1,MZA 5609 - LT 34,ZONA V,1558
6389,-70.26243316,-18.00122325,MCF/LWAL+DNO/HEX:2/RES,1,220,373.73,9,2,MZA 5609 - LT 35,ZONA V,1559
6390,-70.26271915,-18.00130438,MUR/HEX:1,1,220,218.58,5,1,MZA 5610 - LT 1,ZONA V,1560
6391,-70.26276721,-18.00123349,MUR/HEX:1,1,220,151.34,3,0,MZA 5610 - LT 2,ZONA V,1561
6392,-70.26280593,-18.00117582,MUR/HEX:1,1,220,149.54,3,0,MZA 5610 - LT 3,ZONA V,1562
6393,-70.26284378,-18.00111871,MCF/LWAL+DNO/HEX:1/RES,1,220,148.67,3,0,MZA 5610 - LT 4,ZONA V,1563
6394,-70.26288103,-18.00106128,MUR/HEX:2,1,220,299.4,7,2,MZA 5610 - LT 5,ZONA V,1564
6395,-70.26291934,-18.00100392,MCF/LWAL+DNO/HEX:2/RES,1,220,303.7,2,MZA 5610 - LT 6,ZONA V,1565
6396,-70.26295734,-18.00094615,MCF/LWAL+DNO/HEX:2/RES,1,220,302.16,7,2,MZA 5610 - LT 7,ZONA V,1566
6397,-70.26299446,-18.00088862,MCF/LWAL+DNO/HEX:2/RES,1,220,298.66,7,2,MZA 5610 - LT 8,ZONA V,1567
6398,-70.26303196,-18.00083175,MCF/LWAL+DNO/HEX:2/RES,1,220,299.32,7,2,MZA 5610 - LT 9,ZONA V,1568
6399,-70.26306952,-18.00077473,MCF/LWAL+DNO/HEX:2/RES,1,220,299.42,7,2,MZA 5610 - LT 10,ZONA V,1569
6400,-70.26310805,-18.00071773,MCF/LWAL+DNO/HEX:2/RES,1,220,301.24,7,2,MZA 5610 - LT 11,ZONA V,1570
6401,-70.26314581,-18.00066007,MUR/HEX:1,1,220,150.28,3,0,MZA 5610 - LT 12,ZONA V,1571
6402,-70.26318315,-18.00060298,MUR/HEX:1,1,220,147.9,3,0,MZA 5610 - LT 13,ZONA V,1572
6403,-70.26322068,-18.00054596,MCF/LWAL+DNO/HEX:2/RES,1,220,302.58,7,2,MZA 5610 - LT 14,ZONA V,1573
6404,-70.26325923,-18.0004886,MCF/LWAL+DNO/HEX:3/RES,1,220,453.42,10,3,MZA 5610 - LT 15,ZONA V,1574
6405,-70.26329105,-18.00043989,MUR/HEX:1,1,220,151.14,3,0,MZA 5610 - LT 16,ZONA V,1575
6406,-70.26345642,-18.00052748,MCF/LWAL+DNO/HEX:3/RES,1,220,462.03,11,3,MZA 5610 - LT 17,ZONA V,1576
6407,-70.26341864,-18.00058569,MCF/LWAL+DNO/HEX:3/RES,1,220,449.22,10,3,MZA 5610 - LT 18,ZONA V,1577
6408,-70.26338076,-18.00064305,MUR/HEX:1,1,220,151.48,3,0,MZA 5610 - LT 19,ZONA V,1578
6409,-70.26334319,-18.00069996,MCF/LWAL+DUC/HEX:2/RES,1,220,294.28,7,2,MZA 5610 - LT 20,ZONA V,1579
6410,-70.26330578,-18.0007566,MUR/HEX:2,1,220,300.48,7,2,MZA 5610 - LT 21,ZONA V,1580
6411,-70.26326768,-18.00081405,MCF/LWAL+DNO/HEX:2/RES,1,220,302.6,7,2,MZA 5610 - LT 22,ZONA V,1581
6412,-70.26323007,-18.00087112,MUR/HEX:1,1,220,147.51,3,0,MZA 5610 - LT 23,ZONA V,1582
6413,-70.26319278,-18.00092774,MCF/LWAL+DNO/HEX:2/RES,1,220,297.96,7,2,MZA 5610 - LT 24,ZONA V,1583
6414,-70.26315525,-18.00098438,MCF/LWAL+DNO/HEX:1/RES,1,220,148.09,3,0,MZA 5610 - LT 25,ZONA V,1584
6415,-70.26311731,-18.00104183,MCF/LWAL+DNO/HEX:2/RES,1,220,305.66,7,2,MZA 5610 - LT 26,ZONA V,1585
6416,-70.26307865,-18.00110025,MCF/LWAL+DNO/HEX:1/RES,1,220,152.97,4,1,MZA 5610 - LT 27,ZONA V,1586
6417,-70.26304049,-18.00115786,MCF/LWAL+DNO/HEX:1/RES,1,220,148.41,3,0,MZA 5610 - LT 28,ZONA V,1587
6418,-70.26300291,-18.00121503,MUR/HEX:1,1,220,149.79,3,0,MZA 5610 - LT 29,ZONA V,1588
6419,-70.2629654,-18.00127231,MCF/LWAL+DNO/HEX:2/RES,1,220,298.96,7,2,MZA 5610 - LT 30,ZONA V,1589
6420,-70.26292804,-18.00132901,MUR/HEX:1,1,220,147.66,3,0,MZA 5610 - LT 31,ZONA V,1590
6421,-70.26288185,-18.00138539,MUR/HEX:2,1,220,330.14,8,2,MZA 5610 - LT 32,ZONA V,1591
6422,-70.26325249,-18.00136968,MCF/LWAL+DNO/HEX:1/RES,1,220,154.53,4,1,MZA 5611 - LT 1,ZONA V,1592
6423,-70.26329242,-18.00131124,MCF/LWAL+DNO/HEX:1/RES,1,220,154.14,4,1,MZA 5611 - LT 2,ZONA V,1593
6424,-70.26332942,-18.00125231,MCF/LWAL+DNO/HEX:2/RES,1,220,299.96,7,2,MZA 5611 - LT 3,ZONA V,1594
6425,-70.26337991,-18.00120171,MCF/LWAL+DNO/HEX:2/RES,1,220,298.34,7,2,MZA 5611 - LT 4,ZONA V,1595
6426,-70.2634047,-18.00113782,MUR/HEX:1,1,220,151.84,4,1,MZA 5611 - LT 5,ZONA V,1596

6427,-70.26344257,-18.00108056,MUR/HEX:1,1,220,149.12,3,0,MZA 5611 - LT 6,ZONA V,1597
6428,-70.2634799,-18.00102346,MCF/LWAL+DNO/HEX:1/RES,1,220,150.54,3,0,MZA 5611 - LT 7,ZONA V,1598
6429,-70.26351814,-18.00096633,MCF/LWAL+DNO/HEX:2/RES,1,220,302.06,7,2,MZA 5611 - LT 8,ZONA V,1599
6430,-70.26355554,-18.000909,MUR/HEX:1,1,220,148.32,3,0,MZA 5611 - LT 9,ZONA V,1600
6431,-70.2635932,-18.00085195,MUR/HEX:1,1,220,150.62,3,0,MZA 5611 - LT 10,ZONA V,1601
6432,-70.26363042,-18.00079475,MCF/LWAL+DNO/HEX:2/RES,1,220,296.68,7,2,MZA 5611 - LT 11,ZONA V,1602
6433,-70.26366931,-18.00073803,MCF/LWAL+DNO/HEX:2/RES,1,220,305.04,7,2,MZA 5611 - LT 12,ZONA V,1603
6434,-70.26370652,-18.00067969,MCF/LWAL+DNO/HEX:1/RES,1,220,150.54,3,0,MZA 5611 - LT 13,ZONA V,1604
6435,-70.26386642,-18.0007744,MCF/LWAL+DNO/HEX:2/RES,1,220,294.92,7,2,MZA 5611 - LT 14,ZONA V,1605
6436,-70.26382838,-18.00083232,MCF/LWAL+DNO/HEX:2/RES,1,220,307.38,7,2,MZA 5611 - LT 15,ZONA V,1606
6437,-70.26379098,-18.00089085,MCF/LWAL+DNO/HEX:2/RES,1,220,296.76,7,2,MZA 5611 - LT 16,ZONA V,1607
6438,-70.26375267,-18.00094778,MCF/LWAL+DNO/HEX:1/RES,1,220,149.36,3,0,MZA 5611 - LT 17,ZONA V,1608
6439,-70.26371516,-18.00100471,MCF/LWAL+DNO/HEX:2/RES,1,220,292.3,7,2,MZA 5611 - LT 18,ZONA V,1609
6440,-70.26367751,-18.00106193,MUR/HEX:1,1,220,150.92,3,0,MZA 5611 - LT 19,ZONA V,1610
6441,-70.26363939,-18.00111961,MCF/LWAL+DNO/HEX:2/RES,1,220,297.24,7,2,MZA 5611 - LT 20,ZONA V,1611
6442,-70.2636016,-18.00117671,MCF/LWAL+DNO/HEX:2/RES,1,220,295.34,7,2,MZA 5611 - LT 21,ZONA V,1612
6443,-70.26356368,-18.001234,MCF/LWAL+DNO/HEX:2/RES,1,220,297.98,7,2,MZA 5611 - LT 22,ZONA V,1613
6444,-70.26352587,-18.00129118,MCF/LWAL+DNO/HEX:3/RES,1,220,439.83,10,3,MZA 5611 - LT 23,ZONA V,1614
6445,-70.26348819,-18.00134788,MCF/LWAL+DNO/HEX:2/RES,1,220,292.58,7,2,MZA 5611 - LT 24,ZONA V,1615
6446,-70.26344065,-18.0014,MCF/LWAL+DNO/HEX:2/RES,1,220,272.8,6,1,MZA 5611 - LT 25,ZONA V,1616
6447,-70.26381283,-18.00138696,MCF/LWAL+DNO/HEX:2/RES,1,220,299.58,7,2,MZA 5612 - LT 1,ZONA V,1617
6448,-70.26385114,-18.00132873,MCF/LWAL+DNO/HEX:3/RES,1,220,467.16,11,3,MZA 5612 - LT 2,ZONA V,1618
6449,-70.2638892,-18.00127075,MCF/LWAL+DNO/HEX:2/RES,1,220,297.22,7,2,MZA 5612 - LT 3,ZONA V,1619
6450,-70.26392654,-18.00121381,MUR/HEX:1,1,220,150.98,3,0,MZA 5612 - LT 4,ZONA V,1620
6451,-70.26396465,-18.00118499,MCF/LWAL+DNO/HEX:2/RES,1,220,302.34,7,2,MZA 5612 - LT 5,ZONA V,1621
6452,-70.26400236,-18.00109928,MCF/LWAL+DNO/HEX:2/RES,1,220,298.42,7,2,MZA 5612 - LT 6,ZONA V,1622
6453,-70.26404023,-18.0010421,MUR/HEX:1,1,220,150.14,3,0,MZA 5612 - LT 7,ZONA V,1623
6454,-70.26407821,-18.00098487,MCF/LWAL+DNO/HEX:2/RES,1,220,299.14,7,2,MZA 5612 - LT 8,ZONA V,1624
6455,-70.26411619,-18.00092784,MUR/HEX:1,1,220,150.02,3,0,MZA 5612 - LT 9,ZONA V,1625
6456,-70.26427515,-18.00102358,MUR/HEX:1,1,220,151.06,3,0,MZA 5612 - LT 10,ZONA V,1626
6457,-70.26423804,-18.00108164,MUR/HEX:1,1,220,151.69,4,1,MZA 5612 - LT 11,ZONA V,1627
6458,-70.26420012,-18.00113902,MCF/LWAL+DNO/HEX:2/RES,1,220,300.68,7,2,MZA 5612 - LT 12,ZONA V,1628
6459,-70.26416239,-18.00119588,MUR/HEX:1,1,220,148.72,3,0,MZA 5612 - LT 13,ZONA V,1629
6460,-70.26412461,-18.00125296,MUR/HEX:1,1,220,150.52,3,0,MZA 5612 - LT 14,ZONA V,1630
6461,-70.26408672,-18.00131053,MCF/LWAL+DNO/HEX:2/RES,1,220,301.22,7,2,MZA 5612 - LT 15,ZONA V,1631
6462,-70.26404905,-18.00136765,MCF/LWAL+DNO/HEX:1/RES,1,220,148.33,3,0,MZA 5612 - LT 16,ZONA V,1632
6463,-70.26401004,-18.00142501,MCF/LWAL+DNO/HEX:2/RES,1,220,307.58,7,2,MZA 5612 - LT 17,ZONA V,1633
6464,-70.26377368,-18.0014431,MCF/LWAL+DNO/HEX:1/RES,1,220,149.02,3,0,MZA 5612 - LT 18,ZONA V,1634
6465,-70.26452054,-18.00118147,MCF/LWAL+DNO/HEX:1/RES,1,220,150.32,3,0,MZA 5613 - LT 1,ZONA V,1635
6466,-70.26448308,-18.00123875,MUR/HEX:1,1,220,150.87,3,0,MZA 5613 - LT 2,ZONA V,1636
6467,-70.26444537,-18.00129612,MUR/HEX:1,1,220,150.73,3,0,MZA 5613 - LT 3,ZONA V,1637
6468,-70.26440784,-18.00135346,MCF/LWAL+DNO/HEX:1/RES,1,220,149.67,3,0,MZA 5613 - LT 4,ZONA V,1638
6469,-70.26436656,-18.00141666,MCF/LWAL+DNO/HEX:1/RES,1,220,183.19,4,1,MZA 5613 - LT 5,ZONA V,1639
6470,-70.253904,-17.99155257,MUR/HEX:2,1,220,356.94,8,2,MZA 5501 - LT 1A,ZONA VI,1
6471,-70.25384069,-17.99150481,MCF/LWAL+DNO/HEX:1/RES,1,220,161.52,4,1,MZA 5501 - LT 2,ZONA VI,2
6472,-70.25377975,-17.99145993,MUR/HEX:1,1,220,160.87,4,1,MZA 5501 - LT 3,ZONA VI,3
6473,-70.25371926,-17.9914162,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,158.26,4,1,MZA 5501 - LT 4,ZONA VI,4
6474,-70.25365734,-17.99136954,MUR/HEX:2,1,220,344.9,8,2,MZA 5501 - LT 5,ZONA VI,5
6475,-70.25359369,-17.99132348,MUR/HEX:1,1,220,162.75,4,1,MZA 5501 - LT 6,ZONA VI,6
6476,-70.25353109,-17.99127722,MUR/HEX:1,1,220,169.48,4,1,MZA 5501 - LT 7,ZONA VI,7
6477,-70.25346681,-17.99123022,MUR/HEX:1,1,220,169.09,4,1,MZA 5501 - LT 8,ZONA VI,8
6478,-70.25339186,-17.99118539,MUR/HEX:1,1,220,195.57,5,1,MZA 5501 - LT 9,ZONA VI,9
6479,-70.25402615,-17.9914196,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,116.36,3,0,MZA 5501 - LT 1B,ZONA VI,10
6480,-70.25398025,-17.99138593,MUR/HEX:1,1,220,116.37,3,0,MZA 5501 - LT 2,ZONA VI,11
6481,-70.25392922,-17.99134851,MUR/HEX:1,1,220,142.3,3,0,MZA 5501 - LT 3,ZONA VI,12
6482,-70.25387628,-17.99130557,MUR/HEX:1,1,220,140.79,3,0,MZA 5501 - LT 4,ZONA VI,13
6483,-70.25382056,-17.99126395,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,166.93,4,1,MZA 5501 - LT 5,ZONA VI,14
6484,-70.25377744,-17.99121614,MUR/HEX:1,1,220,141.68,3,0,MZA 5501 - LT 6,ZONA VI,15
6485,-70.25373544,-17.99117773,MUR/HEX:1,1,220,149.97,3,0,MZA 5501 - LT 7,ZONA VI,16
6486,-70.25369332,-17.99113998,MUR/HEX:1,1,220,156.1,4,1,MZA 5501 - LT 8,ZONA VI,17
6487,-70.25369152,-17.99100533,MUR/HEX:1,1,220,112.93,3,0,MZA 5501 - LT 9,ZONA VI,18
6488,-70.25364002,-17.99104603,MUR/HEX:1,1,220,123.71,3,0,MZA 5501 - LT 10,ZONA VI,19
6489,-70.2535874,-17.99108567,MUR/HEX:1,1,220,120.92,3,0,MZA 5501 - LT 11,ZONA VI,20
6490,-70.25353212,-17.99112432,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,133.84,3,0,MZA 5501 - LT 12,ZONA VI,21
6491,-70.2543723,-17.99168337,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.62,3,0,MZA 5502 - LT 1,ZONA VI,22
6492,-70.25432219,-17.99164508,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,115.99,3,0,MZA 5502 - LT 2,ZONA VI,23
6493,-70.25427208,-17.99160679,MUR/HEX:1,1,220,118.37,3,0,MZA 5502 - LT 3,ZONA VI,24
6494,-70.25422197,-17.9915685,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,120.75,3,0,MZA 5502 - LT 4,ZONA VI,25
6495,-70.25417186,-17.9915302,MUR/HEX:1,1,220,123.13,3,0,MZA 5502 - LT 5,ZONA VI,26
6496,-70.25411902,-17.99148983,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,139.24,3,0,MZA 5502 - LT 6,ZONA VI,27
6497,-70.25425932,-17.9918125,MUR/HEX:1,1,220,175.51,4,1,MZA 5502 - LT 9,ZONA VI,28

6498,-70.25419617,-17.99176602,MUR/HEX:1,1,220,167.87,4,1,MZA 5502 - LT 10,ZONA VI,29
6499,-70.25413421,-17.99171981,MUR/HEX:1,1,220,169.09,4,1,MZA 5502 - LT 11,ZONA VI,30
6500,-70.25407148,-17.99167484,MUR/HEX:1,1,220,166.4,4,1,MZA 5502 - LT 12,ZONA VI,31
6501,-70.25400985,-17.99162999,MUR/HEX:1,1,220,163.96,4,1,MZA 5502 - LT 13,ZONA VI,32
6502,-70.25479036,-17.99222153,MUR/HEX:2,1,220,370.74,9,2,MZA 5503 - LT 1A,ZONA VI,33
6503,-70.25472679,-17.9921684,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,161.97,4,1,MZA 5503 - LT 2,ZONA VI,34
6504,-70.25467074,-17.99213489,MUR/HEX:2,1,220,338.84,8,2,MZA 5503 - LT 3,ZONA VI,35
6505,-70.25460805,-17.99208036,MUR/HEX:1,1,220,159.73,4,1,MZA 5503 - LT 4,ZONA VI,36
6506,-70.2545496,-17.99203106,MUR/HEX:2,1,220,335.8,8,2,MZA 5503 - LT 5,ZONA VI,37
6507,-70.25448655,-17.99199009,MUR/HEX:1,1,220,161.2,4,1,MZA 5503 - LT 6,ZONA VI,38
6508,-70.25442253,-17.99194859,MUR/HEX:1,1,220,173.88,4,1,MZA 5503 - LT 7,ZONA VI,39
6509,-70.25436502,-17.99189736,MUR/HEX:1,1,220,180.32,4,1,MZA 5503 - LT 8,ZONA VI,40
6510,-70.25489872,-17.99209357,MUR/HEX:1,1,220,115.01,3,0,MZA 5503 - LT 1B,ZONA VI,41
6511,-70.2548426,-17.99204976,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,107.53,2,0,MZA 5503 - LT 2,ZONA VI,42
6512,-70.25478881,-17.99200778,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,109.19,3,0,MZA 5503 - LT 3,ZONA VI,43
6513,-70.25473502,-17.99196579,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,110.85,3,0,MZA 5503 - LT 4,ZONA VI,44
6514,-70.25468123,-17.9919238,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,112.5,3,0,MZA 5503 - LT 5,ZONA VI,45
6515,-70.25462744,-17.99188184,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,114.09,3,0,MZA 5503 - LT 6,ZONA VI,46
6516,-70.25457367,-17.99183983,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,115.91,3,0,MZA 5503 - LT 7,ZONA VI,47
6517,-70.25451987,-17.9917979,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,117.29,3,0,MZA 5503 - LT 8,ZONA VI,48
6518,-70.25446615,-17.99175594,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,119.08,3,0,MZA 5503 - LT 9,ZONA VI,49
6519,-70.25618155,-17.99304554,MUR/HEX:1,1,220,97.2,2,0,MZA 5504 - LT 1,ZONA VI,50
6520,-70.25613111,-17.99300875,MUR/HEX:1,1,220,108.47,3,0,MZA 5504 - LT 2,ZONA VI,51
6521,-70.25607713,-17.99296938,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,111.64,3,0,MZA 5504 - LT 3,ZONA VI,52
6522,-70.25602195,-17.99292914,MUR/HEX:2,1,220,226.66,5,1,MZA 5504 - LT 4,ZONA VI,53
6523,-70.2559696,-17.99289095,MUR/HEX:1,1,220,100.15,2,0,MZA 5504 - LT 5,ZONA VI,54
6524,-70.25592036,-17.99285504,MUR/HEX:1,1,220,100.63,2,0,MZA 5504 - LT 6,ZONA VI,55
6525,-70.2558727,-17.99282027,MUR/HEX:1,1,220,93.7,2,0,MZA 5504 - LT 7,ZONA VI,56
6526,-70.25582518,-17.99278561,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,100.07,2,0,MZA 5504 - LT 8,ZONA VI,57
6527,-70.2557787,-17.99275172,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,89.42,2,0,MZA 5504 - LT 9,ZONA VI,58
6528,-70.25573341,-17.99271868,MUR/HEX:1,1,220,95.25,2,0,MZA 5504 - LT 10,ZONA VI,59
6529,-70.25568226,-17.99268137,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.33,3,0,MZA 5504 - LT 11,ZONA VI,60
6530,-70.25562667,-17.99264083,MUR/HEX:1,1,220,113.33,3,0,MZA 5504 - LT 12,ZONA VI,61
6531,-70.25557108,-17.99260029,MUR/HEX:1,1,220,113.33,3,0,MZA 5504 - LT 13,ZONA VI,62
6532,-70.2555155,-17.99255975,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.33,3,0,MZA 5504 - LT 14,ZONA VI,63
6533,-70.25545991,-17.9925192,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.33,3,0,MZA 5504 - LT 15,ZONA VI,64
6534,-70.25540433,-17.99247866,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.33,3,0,MZA 5504 - LT 16,ZONA VI,65
6535,-70.25534874,-17.99243812,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.33,3,0,MZA 5504 - LT 17,ZONA VI,66
6536,-70.25529315,-17.99239757,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,113.33,3,0,MZA 5504 - LT 18,ZONA VI,67
6537,-70.25523757,-17.99235703,MUR/HEX:1,1,220,113.33,3,0,MZA 5504 - LT 19,ZONA VI,68
6538,-70.25518198,-17.99231649,MUR/HEX:1,1,220,113.33,3,0,MZA 5504 - LT 20,ZONA VI,69
6539,-70.25512639,-17.99227595,MUR/HEX:1,1,220,113.33,3,0,MZA 5504 - LT 21,ZONA VI,70
6540,-70.25507081,-17.9922354,MUR/HEX:1,1,220,113.33,3,0,MZA 5504 - LT 22,ZONA VI,71
6541,-70.25532972,-17.99262926,MUR/HEX:1,1,220,162.28,4,1,MZA 5504 - LT 1,ZONA VI,72
6542,-70.25526938,-17.99258832,MUR/HEX:2,1,220,327.9,8,2,MZA 5504 - LT 2,ZONA VI,73
6543,-70.2552111,-17.99254178,MUR/HEX:1,1,220,153.02,4,1,MZA 5504 - LT 3,ZONA VI,74
6544,-70.2551382,-17.99251237,MUR/HEX:1,1,220,159.51,4,1,MZA 5504 - LT 4,ZONA VI,75
6545,-70.25509632,-17.99245714,MUR/HEX:2,1,220,329.86,8,2,MZA 5504 - LT 5,ZONA VI,76
6546,-70.25503764,-17.99241387,MUR/HEX:2,1,220,318.44,7,2,MZA 5504 - LT 6,ZONA VI,77
6547,-70.2549739,-17.99236942,MUR/HEX:1,1,220,151.8,4,1,MZA 5504 - LT 7,ZONA VI,78
6548,-70.2560706,-17.99318443,MUR/HEX:1,1,220,172.81,4,1,MZA 5504 - LT 25,ZONA VI,79
6549,-70.25600814,-17.99313818,MUR/HEX:2,1,220,327.8,8,2,MZA 5504 - LT 26,ZONA VI,80
6550,-70.25595003,-17.99309515,MUR/HEX:1,1,220,153.61,4,1,MZA 5504 - LT 27,ZONA VI,81
6551,-70.25589507,-17.99305445,MCF/LWAL+DNO/HEX:1/RES,1,220,164.35,4,1,MZA 5504 - LT 28,ZONA VI,82
6552,-70.25583469,-17.99300261,MUR/HEX:2,1,220,316.7,7,2,MZA 5504 - LT 29,ZONA VI,83
6553,-70.25577818,-17.9929675,MUR/HEX:2,1,220,310.26,7,2,MZA 5504 - LT 30,ZONA VI,84
6554,-70.25572146,-17.99292694,MUR/HEX:2,1,220,317.4,7,2,MZA 5504 - LT 31,ZONA VI,85
6555,-70.2556638,-17.99288319,MUR/HEX:2,1,220,317.46,7,2,MZA 5504 - LT 32,ZONA VI,86
6556,-70.25638468,-17.99317319,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,120.4,3,0,MZA 5530 - LT 1,ZONA VI,87
6557,-70.25643903,-17.99310848,MUR/HEX:1,1,220,120.4,3,0,MZA 5530 - LT 2,ZONA VI,88
6558,-70.25648381,-17.99319617,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 3,ZONA VI,89
6559,-70.25653126,-17.99323266,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 4,ZONA VI,90
6560,-70.25657871,-17.99326915,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 5,ZONA VI,91
6561,-70.25662615,-17.99330564,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 6,ZONA VI,92
6562,-70.2566736,-17.99334214,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,118.44,3,0,MZA 5530 - LT 7,ZONA VI,93
6563,-70.25672104,-17.99337863,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 8,ZONA VI,94
6564,-70.25676849,-17.99341512,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,118.44,3,0,MZA 5530 - LT 9,ZONA VI,95
6565,-70.25681594,-17.99345161,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 10,ZONA VI,96
6566,-70.25686338,-17.9934881,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,118.44,3,0,MZA 5530 - LT 11,ZONA VI,97
6567,-70.25691083,-17.99352459,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 12,ZONA VI,98
6568,-70.25695828,-17.99356108,MUR/HEX:1,1,220,118.44,3,0,MZA 5530 - LT 13,ZONA VI,99

6569,-70.25700572,-17.99359757,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,118.44,3,0,MZA 5530 - LT 14,ZONA VI,100
6570,-70.25705341,-17.99363378,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,117.93,3,0,MZA 5530 - LT 15,ZONA VI,101
6571,-70.25710085,-17.99367027,MUR/HEX:1,1,220,117.93,3,0,MZA 5530 - LT 16,ZONA VI,102
6572,-70.25720059,-17.99369373,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,120.87,3,0,MZA 5530 - LT 17,ZONA VI,103
6573,-70.25714647,-17.99375816,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,121.92,3,0,MZA 5530 - LT 18,ZONA VI,104
6574,-70.25788671,-17.99427498,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,130.32,3,0,MZA 5530 - LT 1,ZONA VI,105
6575,-70.25783448,-17.99423489,MUR/HEX:1,1,220,129.99,3,0,MZA 5530 - LT 2,ZONA VI,106
6576,-70.2577813,-17.99419406,MUR/HEX:1,1,220,135.27,3,0,MZA 5530 - LT 3,ZONA VI,107
6577,-70.25772815,-17.99415318,MUR/HEX:1,1,220,130.09,3,0,MZA 5530 - LT 4,ZONA VI,108
6578,-70.25767578,-17.99411291,MUR/HEX:1,1,220,131.36,3,0,MZA 5530 - LT 5,ZONA VI,109
6579,-70.25762078,-17.99407061,MUR/HEX:2,1,220,286.46,7,2,MZA 5530 - LT 6,ZONA VI,110
6580,-70.25756335,-17.99402626,MUR/HEX:1,1,220,143.79,3,0,MZA 5530 - LT 7,ZONA VI,111
6581,-70.25750911,-17.99398457,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,126.44,3,0,MZA 5530 - LT 8,ZONA VI,112
6582,-70.25745811,-17.99394535,MUR/HEX:1,1,220,127.83,3,0,MZA 5530 - LT 9,ZONA VI,113
6583,-70.25740775,-17.99390673,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,123.18,3,0,MZA 5530 - LT 10,ZONA VI,114
6584,-70.2573577,-17.99381486,MUR/HEX:1,1,220,131.3,3,0,MZA 5530 - LT 11,ZONA VI,115
6585,-70.25730335,-17.99387957,MUR/HEX:1,1,220,131.3,3,0,MZA 5530 - LT 12,ZONA VI,116
6586,-70.25776884,-17.99441354,MUR/HEX:2,1,220,304.72,7,2,MZA 5530 - LT 1,ZONA VI,117
6587,-70.25771136,-17.99437066,MUR/HEX:2,1,220,278.22,6,1,MZA 5530 - LT 2,ZONA VI,118
6588,-70.25765562,-17.99432809,MUR/HEX:1,1,220,137.68,3,0,MZA 5530 - LT 3,ZONA VI,119
6589,-70.25761554,-17.99429697,MUR/HEX:1,1,220,69.25,2,0,MZA 5530 - LT 4A,ZONA VI,120
6590,-70.25758635,-17.99427647,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,69.25,2,0,MZA 5530 - LT 4B,ZONA VI,121
6591,-70.25754301,-17.99424048,MUR/HEX:1,1,220,120.11,3,0,MZA 5530 - LT 5,ZONA VI,122
6592,-70.25748403,-17.99419939,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,120.1,3,0,MZA 5530 - LT 5A,ZONA VI,123
6593,-70.25742742,-17.99415752,MUR/HEX:1,1,220,142.57,3,0,MZA 5530 - LT 6,ZONA VI,124
6594,-70.25737175,-17.99411818,MUR/HEX:1,1,220,140.89,3,0,MZA 5530 - LT 7,ZONA VI,125
6595,-70.25731369,-17.99406718,MUR/HEX:1,1,220,141.13,3,0,MZA 5530 - LT 8,ZONA VI,126
6596,-70.25725046,-17.99402764,MUR/HEX:2,1,220,280.88,6,1,MZA 5530 - LT 9,ZONA VI,127
6597,-70.25719161,-17.99397886,MUR/HEX:1,1,220,138.75,3,0,MZA 5530 - LT 10,ZONA VI,128
6598,-70.25712994,-17.99393942,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,139.39,3,0,MZA 5530 - LT 10A,ZONA VI,129
6599,-70.25706668,-17.99389461,MUR/HEX:1,1,220,139.39,3,0,MZA 5530 - LT 11,ZONA VI,130
6600,-70.25700746,-17.99384496,MUR/HEX:1,1,220,139.39,3,0,MZA 5530 - LT 12,ZONA VI,131
6601,-70.25694502,-17.99380063,MUR/HEX:1,1,220,147.28,3,0,MZA 5530 - LT 13,ZONA VI,132
6602,-70.25689056,-17.99375512,MUR/HEX:1,1,220,143.1,3,0,MZA 5530 - LT 14,ZONA VI,133
6603,-70.25683537,-17.99370995,MCF/LWAL+DNO/HEX:1/RES,1,220,141,3,0,MZA 5530 - LT 15,ZONA VI,134
6604,-70.25677476,-17.99366561,MUR/HEX:1,1,220,158.87,4,1,MZA 5530 - LT 16,ZONA VI,135
6605,-70.25671416,-17.99362818,MUR/HEX:1,1,220,158.87,4,1,MZA 5530 - LT 16A,ZONA VI,136
6606,-70.25665935,-17.99358235,MUR/HEX:1,1,220,146.38,3,0,MZA 5530 - LT 17,ZONA VI,137
6607,-70.25660565,-17.99353929,MUR/HEX:2,1,220,305.12,7,2,MZA 5530 - LT 18,ZONA VI,138
6608,-70.25654793,-17.99349348,MUR/HEX:1,1,220,152.25,4,1,MZA 5530 - LT 19,ZONA VI,139
6609,-70.25649639,-17.99345006,MUR/HEX:1,1,220,150.92,3,0,MZA 5530 - LT 20,ZONA VI,140
6610,-70.25643942,-17.99340394,MUR/HEX:1,1,220,150.16,3,0,MZA 5530 - LT 21,ZONA VI,141
6611,-70.25638284,-17.99336202,MUR/HEX:1,1,220,151.05,3,0,MZA 5530 - LT 22,ZONA VI,142
6612,-70.25632127,-17.99331399,MUR/HEX:1,1,220,150.21,3,0,MZA 5530 - LT 23,ZONA VI,143
6613,-70.25626922,-17.99326802,MUR/HEX:2,1,220,300.48,7,2,MZA 5530 - LT 24,ZONA VI,144
6614,-70.26410954,-17.99886293,MUR/HEX:1,1,220,126,3,0,MZA 5601 - LT 1,ZONA VI,145
6615,-70.26415752,-17.99889466,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 2,ZONA VI,146
6616,-70.26420427,-17.99892592,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 3,ZONA VI,147
6617,-70.26425055,-17.99895743,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 4,ZONA VI,148
6618,-70.26429628,-17.9989891,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 5,ZONA VI,149
6619,-70.26434331,-17.99902079,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 6,ZONA VI,150
6620,-70.26438945,-17.99905214,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 7,ZONA VI,151
6621,-70.26443502,-17.99908324,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 8,ZONA VI,152
6622,-70.26448097,-17.9991176,MUR/HEX:1,1,220,120,3,0,MZA 5601 - LT 9,ZONA VI,153
6623,-70.26086368,-17.99676633,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 1,ZONA VI,154
6624,-70.26092489,-17.99681123,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 2,ZONA VI,155
6625,-70.26098609,-17.99685613,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 3,ZONA VI,156
6626,-70.2610473,-17.99690103,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 4,ZONA VI,157
6627,-70.26110851,-17.99694593,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 5,ZONA VI,158
6628,-70.26116972,-17.99699083,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 6,ZONA VI,159
6629,-70.26123093,-17.99703573,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 7,ZONA VI,160
6630,-70.26129214,-17.99708063,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 8,ZONA VI,161
6631,-70.26135334,-17.99712553,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 9,ZONA VI,162
6632,-70.26141455,-17.99717042,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 10,ZONA VI,163
6633,-70.26147576,-17.99721532,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 11,ZONA VI,164
6634,-70.26153697,-17.99726022,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 12,ZONA VI,165
6635,-70.26159818,-17.99730512,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 13,ZONA VI,166
6636,-70.26165939,-17.99735002,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 14,ZONA VI,167
6637,-70.2617206,-17.99739492,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 15,ZONA VI,168
6638,-70.2617818,-17.99743982,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 16,ZONA VI,169
6639,-70.26184301,-17.99748472,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 17,ZONA VI,170

6640,-70.26190422,-17.99752962,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 18,ZONA VI,171
6641,-70.26196543,-17.99757452,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 19,ZONA VI,172
6642,-70.26202664,-17.99761941,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 20,ZONA VI,173
6643,-70.26208785,-17.99766431,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 21,ZONA VI,174
6644,-70.26214906,-17.99770921,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 22,ZONA VI,175
6645,-70.26221027,-17.99775411,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 23,ZONA VI,176
6646,-70.26227148,-17.99779901,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 24,ZONA VI,177
6647,-70.26233268,-17.99784391,MUR/HEX:1,1,220,166.73,4,1,MZA 5620 - LT 25,ZONA VI,178
6648,-70.25931231,-17.99560611,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 1,ZONA VI,179
6649,-70.2593731,-17.99565151,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 2,ZONA VI,180
6650,-70.25942934,-17.99569352,MUR/HEX:1,1,220,141.75,3,0,MZA 5621 - LT 3,ZONA VI,181
6651,-70.25948558,-17.99573553,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 4,ZONA VI,182
6652,-70.25954638,-17.99578093,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 5,ZONA VI,183
6653,-70.25960718,-17.99582634,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 6,ZONA VI,184
6654,-70.25966797,-17.99587175,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 7,ZONA VI,185
6655,-70.25972449,-17.99591396,MUR/HEX:1,1,220,143.25,3,0,MZA 5621 - LT 8,ZONA VI,186
6656,-70.2597775,-17.99595356,MUR/HEX:1,1,220,147.52,3,0,MZA 5621 - LT 9,ZONA VI,187
6657,-70.2598348,-17.99599635,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 10,ZONA VI,188
6658,-70.25989559,-17.99604176,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 11,ZONA VI,189
6659,-70.25995639,-17.99608717,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 12,ZONA VI,190
6660,-70.26001423,-17.99613037,MUR/HEX:1,1,220,150.53,3,0,MZA 5621 - LT 13,ZONA VI,191
6661,-70.26007208,-17.99617357,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 14,ZONA VI,192
6662,-70.26013063,-17.99621731,MUR/HEX:1,1,220,154.45,4,1,MZA 5621 - LT 15,ZONA VI,193
6663,-70.26018693,-17.99625935,MUR/HEX:1,1,220,154.32,4,1,MZA 5621 - LT 16,ZONA VI,194
6664,-70.26024263,-17.99630096,MUR/HEX:1,1,220,151.22,3,0,MZA 5621 - LT 17,ZONA VI,195
6665,-70.26029859,-17.99634334,MUR/HEX:1,1,220,157.35,4,1,MZA 5621 - LT 18,ZONA VI,196
6666,-70.26035526,-17.99638567,MUR/HEX:1,1,220,153.49,4,1,MZA 5621 - LT 19,ZONA VI,197
6667,-70.26041041,-17.99642627,MUR/HEX:1,1,220,147.34,3,0,MZA 5621 - LT 20,ZONA VI,198
6668,-70.26046767,-17.99646903,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 21,ZONA VI,199
6669,-70.26052442,-17.99651142,MUR/HEX:1,1,220,144.54,3,0,MZA 5621 - LT 22,ZONA VI,200
6670,-70.26057809,-17.99655151,MUR/HEX:1,1,220,149.82,3,0,MZA 5621 - LT 23,ZONA VI,201
6671,-70.26063581,-17.99659461,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 24,ZONA VI,202
6672,-70.2606966,-17.99664002,MUR/HEX:1,1,220,166.73,4,1,MZA 5621 - LT 25,ZONA VI,203
6673,-70.25842131,-17.99407813,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.73,3,0,MZA 5623 - LT 1,ZONA VI,204
6674,-70.25853144,-17.99418147,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.73,3,0,MZA 5623 - LT 2,ZONA VI,205
6675,-70.25857971,-17.99412392,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.73,3,0,MZA 5623 - LT 3,ZONA VI,206
6676,-70.25862798,-17.99406636,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.73,3,0,MZA 5623 - LT 4,ZONA VI,207
6677,-70.25851785,-17.99396302,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.73,3,0,MZA 5623 - LT 5,ZONA VI,208
6678,-70.25846958,-17.99402058,MUR/HEX:1,1,220,132.73,3,0,MZA 5623 - LT 6,ZONA VI,209
6679,-70.25812165,-17.99379695,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5624 - LT 1,ZONA VI,210
6680,-70.25825243,-17.99391967,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5624 - LT 2,ZONA VI,211
6681,-70.2583007,-17.99386211,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5624 - LT 3,ZONA VI,212
6682,-70.25834898,-17.99380456,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5624 - LT 4,ZONA VI,213
6683,-70.2582182,-17.99368184,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5624 - LT 5,ZONA VI,214
6684,-70.25816992,-17.9937394,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5624 - LT 6,ZONA VI,215
6685,-70.2575516,-17.9936611,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.44,3,0,MZA 5625 - LT 1,ZONA VI,216
6686,-70.25760411,-17.99370165,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.72,3,0,MZA 5625 - LT 2,ZONA VI,217
6687,-70.25765663,-17.9937422,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.01,3,0,MZA 5625 - LT 3,ZONA VI,218
6688,-70.25770915,-17.99378275,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.29,3,0,MZA 5625 - LT 4,ZONA VI,219
6689,-70.25776166,-17.99382331,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.57,3,0,MZA 5625 - LT 5,ZONA VI,220
6690,-70.25781418,-17.99386386,MUR/HEX:2,1,220,265.7,6,1,MZA 5625 - LT 6,ZONA VI,221
6691,-70.25781167,-17.99350608,MUR/HEX:1,1,220,157.62,4,1,MZA 5626 - LT 1,ZONA VI,222
6692,-70.25794245,-17.9936288,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5626 - LT 2,ZONA VI,223
6693,-70.25799072,-17.99357124,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5626 - LT 3,ZONA VI,224
6694,-70.258039,-17.99351369,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5626 - LT 4,ZONA VI,225
6695,-70.25790822,-17.99339097,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5626 - LT 5,ZONA VI,226
6696,-70.25785994,-17.99344853,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5626 - LT 6,ZONA VI,227
6697,-70.25750169,-17.99321521,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5627 - LT 1,ZONA VI,228
6698,-70.25763247,-17.99333793,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5627 - LT 2,ZONA VI,229
6699,-70.25768074,-17.99328037,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5627 - LT 3,ZONA VI,230
6700,-70.25772902,-17.99322282,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5627 - LT 4,ZONA VI,231
6701,-70.25759824,-17.9931001,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5627 - LT 5,ZONA VI,232
6702,-70.25754996,-17.99315765,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5627 - LT 6,ZONA VI,233
6703,-70.25722984,-17.99341392,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.3,3,0,MZA 5628 - LT 1,ZONA VI,234
6704,-70.25728247,-17.99345433,MCF/LWAL+DNO/HEX:2/RES,1,220,262.6,6,1,MZA 5628 - LT 2,ZONA VI,235
6705,-70.2573351,-17.99349475,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.3,3,0,MZA 5628 - LT 3,ZONA VI,236
6706,-70.25738773,-17.99353516,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.3,3,0,MZA 5628 - LT 4,ZONA VI,237
6707,-70.25744037,-17.99357557,MUR/HEX:2,1,220,262.6,6,1,MZA 5628 - LT 5,ZONA VI,238
6708,-70.25690802,-17.99316682,MUR/HEX:1,1,220,131.3,3,0,MZA 5629 - LT 1,ZONA VI,239
6709,-70.25696066,-17.99320723,MUR/HEX:1,1,220,131.3,3,0,MZA 5629 - LT 2,ZONA VI,240
6710,-70.25701329,-17.99324765,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.3,3,0,MZA 5629 - LT 3,ZONA VI,241

6711,-70.25706592,-17.99328806,MUR/HEX:1,1,220,131.3,3,0,MZA 5629 - LT 4,ZONA VI,242
6712,-70.25711855,-17.99332847,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.3,3,0,MZA 5629 - LT 5,ZONA VI,243
6713,-70.2571545,-17.99320823,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,127.65,3,0,MZA 5629 - LT 6,ZONA VI,244
6714,-70.25702292,-17.99310719,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,127.65,3,0,MZA 5629 - LT 7,ZONA VI,245
6715,-70.2571974,-17.99291791,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5630 - LT 1,ZONA VI,246
6716,-70.257331,-17.99303782,MUR/HEX:1,1,220,157.62,4,1,MZA 5630 - LT 2,ZONA VI,247
6717,-70.25737792,-17.99297925,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5630 - LT 3,ZONA VI,248
6718,-70.25742485,-17.99292068,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5630 - LT 4,ZONA VI,249
6719,-70.25729125,-17.99280078,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5630 - LT 5,ZONA VI,250
6720,-70.25724433,-17.99285934,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5630 - LT 6,ZONA VI,251
6721,-70.25688173,-17.99263346,MUR/HEX:1,1,220,157.62,4,1,MZA 5631 - LT 1,ZONA VI,252
6722,-70.25701251,-17.99275618,MUR/HEX:1,1,220,157.62,4,1,MZA 5631 - LT 2,ZONA VI,253
6723,-70.25706079,-17.99269863,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5631 - LT 3,ZONA VI,254
6724,-70.25710906,-17.99264107,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5631 - LT 4,ZONA VI,255
6725,-70.25697828,-17.99251836,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5631 - LT 5,ZONA VI,256
6726,-70.25693001,-17.99257591,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,157.62,4,1,MZA 5631 - LT 6,ZONA VI,257
6727,-70.25658621,-17.99291972,MUR/HEX:1,1,220,131.3,3,0,MZA 5632 - LT 1,ZONA VI,258
6728,-70.25663885,-17.99296013,MUR/HEX:1,1,220,131.3,3,0,MZA 5632 - LT 2,ZONA VI,259
6729,-70.25669148,-17.99300054,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.3,3,0,MZA 5632 - LT 3,ZONA VI,260
6730,-70.25674411,-17.99304096,MUR/HEX:1,1,220,131.3,3,0,MZA 5632 - LT 4,ZONA VI,261
6731,-70.25679674,-17.99308137,MUR/HEX:1,1,220,131.3,3,0,MZA 5632 - LT 5,ZONA VI,262
6732,-70.25683269,-17.99296113,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,127.65,3,0,MZA 5632 - LT 6,ZONA VI,263
6733,-70.25670111,-17.99286009,MUR/HEX:1,1,220,127.65,3,0,MZA 5632 - LT 7,ZONA VI,264
6734,-70.25626484,-17.99287554,MUR/HEX:1,1,220,116.45,3,0,MZA 5633 - LT 1,ZONA VI,265
6735,-70.25630938,-17.99282162,MUR/HEX:1,1,220,116.45,3,0,MZA 5633 - LT 2,ZONA VI,266
6736,-70.25635392,-17.99276771,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,116.45,3,0,MZA 5633 - LT 3,ZONA VI,267
6737,-70.25639846,-17.9927138,MUR/HEX:1,1,220,116.45,3,0,MZA 5633 - LT 4,ZONA VI,268
6738,-70.25628501,-17.99262799,MUR/HEX:1,1,220,116.45,3,0,MZA 5633 - LT 5,ZONA VI,269
6739,-70.25624048,-17.9926819,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,116.45,3,0,MZA 5633 - LT 6,ZONA VI,270
6740,-70.25619594,-17.99273582,MUR/HEX:1,1,220,116.45,3,0,MZA 5633 - LT 7,ZONA VI,271
6741,-70.2561514,-17.99278973,MUR/HEX:2,1,220,232.9,5,1,MZA 5633 - LT 8,ZONA VI,272
6742,-70.25600406,-17.99267829,MUR/HEX:1,1,220,116.45,3,0,MZA 5634 - LT 1,ZONA VI,273
6743,-70.2560486,-17.99262437,MUR/HEX:1,1,220,116.45,3,0,MZA 5634 - LT 2,ZONA VI,274
6744,-70.25609314,-17.99257046,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,116.45,3,0,MZA 5634 - LT 3,ZONA VI,275
6745,-70.25613768,-17.99251654,MUR/HEX:1,1,220,116.45,3,0,MZA 5634 - LT 4,ZONA VI,276
6746,-70.25602423,-17.99243073,MUR/HEX:1,1,220,116.45,3,0,MZA 5634 - LT 5,ZONA VI,277
6747,-70.2559797,-17.99248465,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,116.45,3,0,MZA 5634 - LT 6,ZONA VI,278
6748,-70.25593516,-17.99253856,MUR/HEX:1,1,220,116.45,3,0,MZA 5634 - LT 7,ZONA VI,279
6749,-70.25589062,-17.99259248,MUR/HEX:1,1,220,116.45,3,0,MZA 5634 - LT 8,ZONA VI,280
6750,-70.25661397,-17.9926122,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 1,ZONA VI,281
6751,-70.25654634,-17.99255729,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 2,ZONA VI,282
6752,-70.25647872,-17.99250238,MUR/HEX:1,1,220,129.36,3,0,MZA 5635 - LT 3,ZONA VI,283
6753,-70.2564111,-17.99244746,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 4,ZONA VI,284
6754,-70.25634348,-17.99239255,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 5,ZONA VI,285
6755,-70.25627585,-17.99233763,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 6,ZONA VI,286
6756,-70.25620823,-17.99228272,MUR/HEX:1,1,220,129.36,3,0,MZA 5635 - LT 7,ZONA VI,287
6757,-70.25614061,-17.99222781,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 8,ZONA VI,288
6758,-70.25607298,-17.99217289,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5635 - LT 9,ZONA VI,289
6759,-70.25682083,-17.99232239,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 1,ZONA VI,290
6760,-70.25677153,-17.99242322,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 2,ZONA VI,291
6761,-70.25671056,-17.99236811,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 3,ZONA VI,292
6762,-70.25664958,-17.99231301,MUR/HEX:1,1,220,129.17,3,0,MZA 5636 - LT 4,ZONA VI,293
6763,-70.25658861,-17.9922579,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 5,ZONA VI,294
6764,-70.25652763,-17.99220279,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 6,ZONA VI,295
6765,-70.25646666,-17.99214769,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 7,ZONA VI,296
6766,-70.25640568,-17.99209258,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 8,ZONA VI,297
6767,-70.25634471,-17.99203747,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 9,ZONA VI,298
6768,-70.25628374,-17.99198236,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5636 - LT 10,ZONA VI,299
6769,-70.25637228,-17.99191701,MUR/HEX:1,1,220,129.17,3,0,MZA 5636 - LT 11,ZONA VI,300
6770,-70.25584752,-17.99133275,MUR/HEX:1,1,220,129.17,3,0,MZA 5637 - LT 1,ZONA VI,301
6771,-70.25579538,-17.99139561,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 2,ZONA VI,302
6772,-70.25570683,-17.99146097,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 3,ZONA VI,303
6773,-70.25576781,-17.99151608,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 4,ZONA VI,304
6774,-70.25582878,-17.99157119,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 5,ZONA VI,305
6775,-70.25588975,-17.99162629,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 6,ZONA VI,306
6776,-70.25595073,-17.9916814,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 7,ZONA VI,307
6777,-70.2560117,-17.99173651,MUR/HEX:1,1,220,129.17,3,0,MZA 5637 - LT 8,ZONA VI,308
6778,-70.25607268,-17.99179161,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 9,ZONA VI,309
6779,-70.25613365,-17.99184672,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 10,ZONA VI,310
6780,-70.25619462,-17.99190183,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 11,ZONA VI,311
6781,-70.25624392,-17.991801,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.17,3,0,MZA 5637 - LT 12,ZONA VI,312

6782,-70.25558908,-17.9916488,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,130.36,3,0,MZA 5638 - LT 1,ZONA VI,313
6783,-70.25550259,-17.99170969,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5638 - LT 2,ZONA VI,314
6784,-70.25557021,-17.99176461,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5638 - LT 3,ZONA VI,315
6785,-70.25563783,-17.99181952,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5638 - LT 4,ZONA VI,316
6786,-70.25570546,-17.99187443,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5638 - LT 5,ZONA VI,317
6787,-70.25577308,-17.99192935,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5638 - LT 6,ZONA VI,318
6788,-70.2558407,-17.99198426,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.36,3,0,MZA 5638 - LT 7,ZONA VI,319
6789,-70.25590832,-17.99203918,MUR/HEX:2,1,220,258.72,6,1,MZA 5638 - LT 8,ZONA VI,320
6790,-70.25597595,-17.99209409,MUR/HEX:2,1,220,258.72,6,1,MZA 5638 - LT 9,ZONA VI,321
6791,-70.25523024,-17.99209561,MUR/HEX:1,1,220,109.42,3,0,MZA 5640 - LT 1,ZONA VI,322
6792,-70.25527209,-17.99204496,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,109.42,3,0,MZA 5640 - LT 2,ZONA VI,323
6793,-70.25531394,-17.9919943,MUR/HEX:1,1,220,109.42,3,0,MZA 5640 - LT 3,ZONA VI,324
6794,-70.25535579,-17.99194364,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,109.42,3,0,MZA 5640 - LT 4,ZONA VI,325
6795,-70.25539763,-17.99189298,MUR/HEX:1,1,220,109.42,3,0,MZA 5640 - LT 5,ZONA VI,326
6796,-70.25551108,-17.99197879,MUR/HEX:1,1,220,109.42,3,0,MZA 5640 - LT 6,ZONA VI,327
6797,-70.25546923,-17.99202945,MUR/HEX:1,1,220,109.42,3,0,MZA 5640 - LT 7,ZONA VI,328
6798,-70.25542738,-17.99208011,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,109.42,3,0,MZA 5640 - LT 8,ZONA VI,329
6799,-70.25538553,-17.99213076,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,109.42,3,0,MZA 5640 - LT 9,ZONA VI,330
6800,-70.25534369,-17.99218142,MUR/HEX:1,1,220,109.42,3,0,MZA 5640 - LT 10,ZONA VI,331
6801,-70.25443356,-17.99148638,MUR/HEX:1,1,220,114.05,3,0,MZA 5642 - LT 1,ZONA VI,332
6802,-70.25432674,-17.99139579,MUR/HEX:2,1,220,251.62,6,1,MZA 5642 - LT 2,ZONA VI,333
6803,-70.25438414,-17.99135563,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,96.79,2,0,MZA 5642 - LT 3,ZONA VI,334
6804,-70.25443297,-17.99131981,MUR/HEX:1,1,220,96.55,2,0,MZA 5642 - LT 4,ZONA VI,335
6805,-70.25448374,-17.99128049,MUR/HEX:1,1,220,109.97,3,0,MZA 5642 - LT 5,ZONA VI,336
6806,-70.25453878,-17.99123961,MUR/HEX:1,1,220,109.42,3,0,MZA 5642 - LT 6,ZONA VI,337
6807,-70.2545926,-17.99119963,MUR/HEX:1,1,220,105.08,2,0,MZA 5642 - LT 7,ZONA VI,338
6808,-70.25464261,-17.99116113,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,97.8,2,0,MZA 5642 - LT 8,ZONA VI,339
6809,-70.25475361,-17.9912486,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,88.45,2,0,MZA 5642 - LT 9,ZONA VI,340
6810,-70.25470604,-17.99128544,MUR/HEX:1,1,220,105.08,2,0,MZA 5642 - LT 10,ZONA VI,341
6811,-70.25465223,-17.99132541,MUR/HEX:1,1,220,109.42,3,0,MZA 5642 - LT 11,ZONA VI,342
6812,-70.25459718,-17.9913663,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,109.97,3,0,MZA 5642 - LT 12,ZONA VI,343
6813,-70.25454352,-17.9914077,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,107.88,2,0,MZA 5642 - LT 13,ZONA VI,344
6814,-70.25448988,-17.99144698,MUR/HEX:1,1,220,104.36,2,0,MZA 5642 - LT 14,ZONA VI,345
6815,-70.25423243,-17.99124779,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,92.89,2,0,MZA 5643 - LT 1,ZONA VI,346
6816,-70.25416672,-17.99118085,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,84.94,2,0,MZA 5643 - LT 2,ZONA VI,347
6817,-70.25410103,-17.99111391,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,76.99,2,0,MZA 5643 - LT 3,ZONA VI,348
6818,-70.2541682,-17.9910908,MUR/HEX:1,1,220,93.14,2,0,MZA 5643 - LT 4,ZONA VI,349
6819,-70.25421336,-17.99105621,MUR/HEX:1,1,220,93.14,2,0,MZA 5643 - LT 5,ZONA VI,350
6820,-70.25425852,-17.99102163,MUR/HEX:1,1,220,93.14,2,0,MZA 5643 - LT 6,ZONA VI,351
6821,-70.25430368,-17.99098705,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,93.14,2,0,MZA 5643 - LT 7,ZONA VI,352
6822,-70.25434884,-17.99095246,MUR/HEX:2,1,220,186.28,4,1,MZA 5643 - LT 8,ZONA VI,353
6823,-70.25439482,-17.99091785,MUR/HEX:1,1,220,95.08,2,0,MZA 5643 - LT 9,ZONA VI,354
6824,-70.25449871,-17.99101428,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,98.96,2,0,MZA 5643 - LT 10,ZONA VI,355
6825,-70.2544518,-17.99104962,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,93.14,2,0,MZA 5643 - LT 11,ZONA VI,356
6826,-70.25440664,-17.99108421,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,93.14,2,0,MZA 5643 - LT 12,ZONA VI,357
6827,-70.25436148,-17.99111879,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,93.14,2,0,MZA 5643 - LT 13,ZONA VI,358
6828,-70.25431632,-17.99115338,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,93.14,2,0,MZA 5643 - LT 14,ZONA VI,359
6829,-70.25427116,-17.99118796,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,93.14,2,0,MZA 5643 - LT 15,ZONA VI,360
6830,-70.25388779,-17.99087042,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,101.79,2,0,MZA 5644 - LT 1,ZONA VI,361
6831,-70.25393625,-17.99083555,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,94.51,2,0,MZA 5644 - LT 2,ZONA VI,362
6832,-70.25398127,-17.9908028,MUR/HEX:1,1,220,91.22,2,0,MZA 5644 - LT 3,ZONA VI,363
6833,-70.25402566,-17.99076923,MUR/HEX:1,1,220,94.9,2,0,MZA 5644 - LT 4,ZONA VI,364
6834,-70.25407104,-17.99073492,MUR/HEX:1,1,220,94.42,2,0,MZA 5644 - LT 5,ZONA VI,365
6835,-70.25411996,-17.99069923,MUR/HEX:2,1,220,211.44,5,1,MZA 5644 - LT 6,ZONA VI,366
6836,-70.25421567,-17.99080294,MUR/HEX:1,1,220,114.64,3,0,MZA 5644 - LT 7,ZONA VI,367
6837,-70.25416446,-17.99084045,MUR/HEX:2,1,220,185.92,4,1,MZA 5644 - LT 8,ZONA VI,368
6838,-70.25411908,-17.99087478,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,92.51,2,0,MZA 5644 - LT 9,ZONA VI,369
6839,-70.25407468,-17.99090837,MUR/HEX:1,1,220,88.08,2,0,MZA 5644 - LT 10,ZONA VI,370
6840,-70.25402937,-17.99094111,MUR/HEX:1,1,220,92.81,2,0,MZA 5644 - LT 11,ZONA VI,371
6841,-70.25398185,-17.9909753,MUR/HEX:2,1,220,198.08,5,1,MZA 5644 - LT 12,ZONA VI,372
6842,-70.25429745,-17.99075903,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,140.08,3,0,MZA 5644 - LT 1,ZONA VI,373
6843,-70.25422577,-17.99063583,MUR/HEX:1,1,220,105.22,2,0,MZA 5644 - LT 2,ZONA VI,374
6844,-70.25417976,-17.99067044,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,127.78,3,0,MZA 5644 - LT 3,ZONA VI,375
6845,-70.25546521,-17.99146449,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 1,ZONA VI,376
6846,-70.2554268,-17.99142311,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 2,ZONA VI,377
6847,-70.25538838,-17.99138173,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 3,ZONA VI,378
6848,-70.25534997,-17.99134035,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 4,ZONA VI,379
6849,-70.25531156,-17.99129896,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 5,ZONA VI,380
6850,-70.25527315,-17.99125758,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 6,ZONA VI,381
6851,-70.25523474,-17.9912162,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 7,ZONA VI,382
6852,-70.25519633,-17.99117482,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 8,ZONA VI,383

6853,-70.25515792,-17.99113343,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 9,ZONA VI,384
6854,-70.2551195,-17.99109205,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 10,ZONA VI,385
6855,-70.25508109,-17.99105067,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 11,ZONA VI,386
6856,-70.25504268,-17.99100929,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 12,ZONA VI,387
6857,-70.25500427,-17.9909679,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 13,ZONA VI,388
6858,-70.25496586,-17.99092652,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 14,ZONA VI,389
6859,-70.25492745,-17.99088514,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 15,ZONA VI,390
6860,-70.25488904,-17.99084375,MUR/HEX:1,1,220,91.82,2,0,MZA 5645 - LT 16,ZONA VI,391
6861,-70.25485063,-17.99080237,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 17,ZONA VI,392
6862,-70.25481222,-17.99076099,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 18,ZONA VI,393
6863,-70.2547738,-17.99071961,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 19,ZONA VI,394
6864,-70.25473539,-17.99067822,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.82,2,0,MZA 5645 - LT 20,ZONA VI,395
6865,-70.25463746,-17.9907848,MUR/HEX:1,1,220,111,3,0,MZA 5645 - LT 27,ZONA VI,396
6866,-70.25468207,-17.99083367,MUR/HEX:1,1,220,122.24,3,0,MZA 5645 - LT 28,ZONA VI,397
6867,-70.25472869,-17.9908847,MUR/HEX:1,1,220,123.13,3,0,MZA 5645 - LT 29,ZONA VI,398
6868,-70.2547753,-17.99093573,MUR/HEX:1,1,220,124.01,3,0,MZA 5645 - LT 30,ZONA VI,399
6869,-70.25482192,-17.99098675,MUR/HEX:2,1,220,249.8,6,1,MZA 5645 - LT 31,ZONA VI,400
6870,-70.25486854,-17.99103778,MUR/HEX:1,1,220,125.78,3,0,MZA 5645 - LT 32,ZONA VI,401
6871,-70.25547742,-17.9911748,MUR/HEX:1,1,220,91.95,2,0,MZA 5646 - LT 1,ZONA VI,402
6872,-70.25551519,-17.99121672,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5646 - LT 2,ZONA VI,403
6873,-70.25555296,-17.99125863,MUR/HEX:1,1,220,91.95,2,0,MZA 5646 - LT 3,ZONA VI,404
6874,-70.25559074,-17.99130055,MUR/HEX:2,1,220,183.9,4,1,MZA 5646 - LT 4,ZONA VI,405
6875,-70.25562851,-17.99134246,MUR/HEX:2,1,220,183.9,4,1,MZA 5646 - LT 5,ZONA VI,406
6876,-70.25566231,-17.99123456,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5646 - LT 6,ZONA VI,407
6877,-70.25569781,-17.99119086,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5646 - LT 7,ZONA VI,408
6878,-70.25560338,-17.99108607,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5646 - LT 8,ZONA VI,409
6879,-70.25556787,-17.99112977,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5646 - LT 9,ZONA VI,410
6880,-70.25525002,-17.99092247,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 1,ZONA VI,411
6881,-70.25528779,-17.99096438,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 2,ZONA VI,412
6882,-70.25532556,-17.9910063,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 3,ZONA VI,413
6883,-70.25536334,-17.99104821,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 4,ZONA VI,414
6884,-70.25540111,-17.99109013,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 5,ZONA VI,415
6885,-70.25543491,-17.99098222,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 6,ZONA VI,416
6886,-70.25547041,-17.99093853,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 7,ZONA VI,417
6887,-70.25537598,-17.99083374,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5647 - LT 8,ZONA VI,418
6888,-70.25534047,-17.99087743,MUR/HEX:1,1,220,91.95,2,0,MZA 5647 - LT 9,ZONA VI,419
6889,-70.25502262,-17.99067013,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 1,ZONA VI,420
6890,-70.25506039,-17.99071205,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 2,ZONA VI,421
6891,-70.25509816,-17.99075396,MUR/HEX:1,1,220,91.95,2,0,MZA 5648 - LT 3,ZONA VI,422
6892,-70.25513594,-17.99079588,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 4,ZONA VI,423
6893,-70.25517371,-17.99083779,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 5,ZONA VI,424
6894,-70.25520751,-17.99072989,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 6,ZONA VI,425
6895,-70.25524301,-17.99068619,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 7,ZONA VI,426
6896,-70.25514858,-17.9905814,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 8,ZONA VI,427
6897,-70.25511307,-17.9906251,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5648 - LT 9,ZONA VI,428
6898,-70.25417116,-17.9897253,MUR/HEX:1,1,220,132.56,3,0,MZA 5649 - LT 1,ZONA VI,429
6899,-70.25422562,-17.98978573,MUR/HEX:1,1,220,132.56,3,0,MZA 5649 - LT 2,ZONA VI,430
6900,-70.25428008,-17.98984616,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 3,ZONA VI,431
6901,-70.25433453,-17.98990659,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 4,ZONA VI,432
6902,-70.25438899,-17.98996702,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 5,ZONA VI,433
6903,-70.25444345,-17.99002745,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 6,ZONA VI,434
6904,-70.25449791,-17.99008788,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 7,ZONA VI,435
6905,-70.25455236,-17.99014831,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 8,ZONA VI,436
6906,-70.25460682,-17.99020874,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 9,ZONA VI,437
6907,-70.25466128,-17.99026917,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.56,3,0,MZA 5649 - LT 10,ZONA VI,438
6908,-70.25471573,-17.9903296,MUR/HEX:2,1,220,265.12,6,1,MZA 5649 - LT 11,ZONA VI,439
6909,-70.25477019,-17.99039002,MUR/HEX:2,1,220,265.12,6,1,MZA 5649 - LT 12,ZONA VI,440
6910,-70.25482465,-17.99045045,MUR/HEX:2,1,220,265.12,6,1,MZA 5649 - LT 13,ZONA VI,441
6911,-70.25487076,-17.99050163,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5649 - LT 14,ZONA VI,442
6912,-70.25490854,-17.99054354,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5649 - LT 15,ZONA VI,443
6913,-70.25494631,-17.99058546,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,91.95,2,0,MZA 5649 - LT 16,ZONA VI,444
6914,-70.25497067,-17.99046707,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,110.34,3,0,MZA 5649 - LT 17,ZONA VI,445
6915,-70.25500617,-17.99042338,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,110.34,3,0,MZA 5649 - LT 18,ZONA VI,446
6916,-70.25315893,-17.98916607,MUR/HEX:1,1,220,148.23,3,0,MZA 5650 - LT 1,ZONA VI,447
6917,-70.25322836,-17.98924233,MUR/HEX:1,1,220,131.5,3,0,MZA 5650 - LT 2,ZONA VI,448
6918,-70.25329224,-17.98931233,MUR/HEX:1,1,220,129.49,3,0,MZA 5650 - LT 3,ZONA VI,449
6919,-70.25335586,-17.98938199,MUR/HEX:1,1,220,133.76,3,0,MZA 5650 - LT 4,ZONA VI,450
6920,-70.25341925,-17.98945137,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,131.8,3,0,MZA 5650 - LT 5,ZONA VI,451
6921,-70.25348188,-17.98951994,MUR/HEX:2,1,220,267.66,6,1,MZA 5650 - LT 6,ZONA VI,452
6922,-70.25354121,-17.98958488,MUR/HEX:1,1,220,120.68,3,0,MZA 5650 - LT 7,ZONA VI,453
6923,-70.25359715,-17.98964611,MUR/HEX:1,1,220,121.95,3,0,MZA 5650 - LT 8,ZONA VI,454

6924,-70.25365247,-17.98970666,MUR/HEX:1,1,220,120.48,3,0,MZA 5650 - LT 9,ZONA VI,455
6925,-70.25370747,-17.98976687,MUR/HEX:1,1,220,123.09,3,0,MZA 5650 - LT 10,ZONA VI,456
6926,-70.2537631,-17.98982777,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,125.74,3,0,MZA 5650 - LT 11,ZONA VI,457
6927,-70.25381904,-17.989889,MUR/HEX:1,1,220,127.01,3,0,MZA 5650 - LT 12,ZONA VI,458
6928,-70.25387343,-17.98994853,MUR/HEX:1,1,220,121.13,3,0,MZA 5650 - LT 13,ZONA VI,459
6929,-70.25392626,-17.99000636,MUR/HEX:2,1,220,244.54,6,1,MZA 5650 - LT 14,ZONA VI,460
6930,-70.25397909,-17.99006419,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,123.4,3,0,MZA 5650 - LT 15,ZONA VI,461
6931,-70.25403192,-17.99012202,MUR/HEX:1,1,220,124.54,3,0,MZA 5650 - LT 16,ZONA VI,462
6932,-70.25408476,-17.99017985,MUR/HEX:1,1,220,125.68,3,0,MZA 5650 - LT 17,ZONA VI,463
6933,-70.25413759,-17.99023768,MUR/HEX:1,1,220,126.82,3,0,MZA 5650 - LT 18,ZONA VI,464
6934,-70.25419042,-17.99029551,MUR/HEX:1,1,220,127.95,3,0,MZA 5650 - LT 19,ZONA VI,465
6935,-70.25424325,-17.99035334,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,129.09,3,0,MZA 5650 - LT 20,ZONA VI,466
6936,-70.25429453,-17.99040947,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,122.54,3,0,MZA 5650 - LT 21,ZONA VI,467
6937,-70.25434425,-17.9904639,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,123.54,3,0,MZA 5650 - LT 22,ZONA VI,468
6938,-70.25439398,-17.99051833,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,124.55,3,0,MZA 5650 - LT 23,ZONA VI,469
6939,-70.2544437,-17.99057276,MUR/HEX:1,1,220,125.56,3,0,MZA 5650 - LT 24,ZONA VI,470
6940,-70.25449548,-17.9906294,MUR/HEX:1,1,220,136.91,3,0,MZA 5650 - LT 25,ZONA VI,471
6941,-70.25454987,-17.99068883,MUR/HEX:1,1,220,140.78,3,0,MZA 5650 - LT 26,ZONA VI,472
6942,-70.25464927,-17.99058543,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 21,ZONA VI,473
6943,-70.25459389,-17.99052577,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 22,ZONA VI,474
6944,-70.25453851,-17.99046611,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 23,ZONA VI,475
6945,-70.25448314,-17.99040645,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 24,ZONA VI,476
6946,-70.25442776,-17.99034679,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 25,ZONA VI,477
6947,-70.25437239,-17.99028713,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 26,ZONA VI,478
6948,-70.25431701,-17.99022747,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 27,ZONA VI,479
6949,-70.25426164,-17.99016781,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 28,ZONA VI,480
6950,-70.25420626,-17.99010815,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 29,ZONA VI,481
6951,-70.25415088,-17.99004849,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 30,ZONA VI,482
6952,-70.25409551,-17.98998883,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 31,ZONA VI,483
6953,-70.25404013,-17.98992917,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 32,ZONA VI,484
6954,-70.25398476,-17.98986951,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 33,ZONA VI,485
6955,-70.25392938,-17.98980985,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 34,ZONA VI,486
6956,-70.25387401,-17.98975019,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 35,ZONA VI,487
6957,-70.25381863,-17.98969053,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 36,ZONA VI,488
6958,-70.25376326,-17.98963087,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 37,ZONA VI,489
6959,-70.25370788,-17.98957121,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 38,ZONA VI,490
6960,-70.25365251,-17.98951155,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 39,ZONA VI,491
6961,-70.25359713,-17.98945189,MUR/HEX:1,1,220,132.38,3,0,MZA 5650 - LT 40,ZONA VI,492
6962,-70.25354176,-17.98939223,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 41,ZONA VI,493
6963,-70.25348638,-17.98933257,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 42,ZONA VI,494
6964,-70.25343101,-17.98927291,MUR+ADO/LWAL+DNO/HEX:1/RES,1,220,132.38,3,0,MZA 5650 - LT 43,ZONA VI,495
6965,-70.26430541,-17.99860306,MUR/HEX:1,1,220,140,3,0,MZA 5651 - LT 1,ZONA VI,496
6966,-70.26435488,-17.99863578,MUR/HEX:1,1,220,121,3,0,MZA 5651 - LT 2,ZONA VI,497
6967,-70.26440028,-17.99866751,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 3,ZONA VI,498
6968,-70.26444663,-17.99869935,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 4,ZONA VI,499
6969,-70.26449352,-17.99873118,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 5,ZONA VI,500
6970,-70.26453881,-17.99876233,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 6,ZONA VI,501
6971,-70.2645848,-17.99879383,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 7,ZONA VI,502
6972,-70.2646325,-17.9988247,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 8,ZONA VI,503
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6974,-70.26472156,-17.99863985,MUR/HEX:1,1,220,120,3,0,MZA 5651 - LT 10,ZONA VI,505
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Anexo 5. MODELO DE AMENAZA: RUPTURAS SÍSMICAS



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| rup_id | multiplicity | mag | centroid_lon | centroid_lat | centroid_depth | trt | strike | dip | rake |
|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 0 | 10 | 5.55 | -69.47639 | -17.83908 | 145.30200 | Subduction IntraSlab | 326.91910 | 30.46528 | 50 |
| 1 | 8 | 5.55 | -69.50143 | -17.80219 | 144.98550 | Subduction IntraSlab | 326.92750 | 30.60641 | 50 |
| 2 | 8 | 5.55 | -69.52647 | -17.76531 | 144.66900 | Subduction IntraSlab | 326.93810 | 30.75416 | 50 |
| 3 | 13 | 5.55 | -69.55149 | -17.72842 | 144.35240 | Subduction IntraSlab | 326.94580 | 30.90281 | 50 |
| 4 | 15 | 5.55 | -69.5765 | -17.69153 | 144.03590 | Subduction IntraSlab | 326.95490 | 31.05007 | 50 |
| 5 | 3 | 5.55 | -69.6015 | -17.65463 | 143.71940 | Subduction IntraSlab | 326.96000 | 31.19831 | 50 |
| 6 | 16 | 5.55 | -69.6265 | -17.61774 | 143.40290 | Subduction IntraSlab | 326.96780 | 31.34186 | 50 |
| 7 | 16 | 5.55 | -69.65148 | -17.58084 | 143.08640 | Subduction IntraSlab | 326.97650 | 31.48480 | 50 |
| 8 | 9 | 5.55 | -69.67645 | -17.54393 | 142.76990 | Subduction IntraSlab | 326.98140 | 31.63391 | 50 |
| 9 | 12 | 5.55 | -69.70142 | -17.50702 | 142.45340 | Subduction IntraSlab | 326.98930 | 31.78395 | 50 |
| 10 | 12 | 5.55 | -69.72636 | -17.47011 | 142.13680 | Subduction IntraSlab | 326.99900 | 31.93290 | 50 |
| 11 | 7 | 5.55 | -69.7513 | -17.4332 | 141.82030 | Subduction IntraSlab | 327.00560 | 32.07759 | 50 |
| 12 | 5 | 5.55 | -69.77624 | -17.39628 | 141.50380 | Subduction IntraSlab | 328.25860 | 32.22314 | 50 |
| 13 | 7 | 5.55 | -69.79955 | -17.35841 | 141.67990 | Subduction IntraSlab | 329.70880 | 32.35138 | 50 |
| 14 | 6 | 5.55 | -69.82249 | -17.32033 | 141.96300 | Subduction IntraSlab | 329.91720 | 32.42113 | 50 |
| 15 | 6 | 5.55 | -69.84544 | -17.28224 | 142.24600 | Subduction IntraSlab | 329.92540 | 32.45493 | 50 |
| 16 | 9 | 5.55 | -69.8704 | -17.59694 | 146.24550 | Subduction IntraSlab | 326.81200 | 31.35038 | 50 |
| 17 | 11 | 5.55 | -69.61215 | -17.56007 | 145.93740 | Subduction IntraSlab | 326.82120 | 31.49914 | 50 |
| 18 | 13 | 5.55 | -69.63726 | -17.5232 | 145.62930 | Subduction IntraSlab | 326.82730 | 31.64337 | 50 |
| 19 | 16 | 5.55 | -69.66235 | -17.48632 | 145.32130 | Subduction IntraSlab | 326.83630 | 31.78750 | 50 |
| 20 | 9 | 5.55 | -69.68744 | -17.44944 | 145.01320 | Subduction IntraSlab | 326.84300 | 31.93232 | 50 |
| 21 | 11 | 5.55 | -69.71252 | -17.41256 | 144.70510 | Subduction IntraSlab | 326.85900 | 32.07922 | 50 |
| 22 | 19 | 5.65 | -69.47639 | -17.83908 | 145.30200 | Subduction IntraSlab | 326.91910 | 30.46528 | 50 |
| 23 | 4 | 5.65 | -69.50143 | -17.80219 | 144.98550 | Subduction IntraSlab | 326.92750 | 30.60641 | 50 |
| 24 | 6 | 5.65 | -69.52647 | -17.76531 | 144.66900 | Subduction IntraSlab | 326.93810 | 30.75416 | 50 |
| 25 | 10 | 5.65 | -69.55149 | -17.72842 | 144.35240 | Subduction IntraSlab | 326.94580 | 30.90281 | 50 |
| 26 | 9 | 5.65 | -69.5765 | -17.69153 | 144.03590 | Subduction IntraSlab | 326.95490 | 31.05007 | 50 |
| 27 | 8 | 5.65 | -69.6015 | -17.65463 | 143.71940 | Subduction IntraSlab | 326.96000 | 31.19831 | 50 |
| 28 | 8 | 5.65 | -69.6265 | -17.61774 | 143.40290 | Subduction IntraSlab | 326.96780 | 31.34186 | 50 |
| 29 | 14 | 5.65 | -69.65148 | -17.58084 | 143.08640 | Subduction IntraSlab | 326.97650 | 31.48480 | 50 |
| 30 | 8 | 5.65 | -69.67645 | -17.54393 | 142.76990 | Subduction IntraSlab | 326.98140 | 31.63391 | 50 |
| 31 | 8 | 5.65 | -69.70142 | -17.50702 | 142.45340 | Subduction IntraSlab | 326.98930 | 31.78395 | 50 |
| 32 | 12 | 5.65 | -69.72636 | -17.47011 | 142.13680 | Subduction IntraSlab | 326.99900 | 31.93290 | 50 |
| 33 | 9 | 5.65 | -69.7513 | -17.4332 | 141.82030 | Subduction IntraSlab | 327.00560 | 32.07759 | 50 |
| 34 | 11 | 5.65 | -69.77624 | -17.39628 | 141.50380 | Subduction IntraSlab | 328.25860 | 32.22314 | 50 |
| 35 | 11 | 5.65 | -69.79955 | -17.35841 | 141.67990 | Subduction IntraSlab | 329.70880 | 32.35138 | 50 |
| 36 | 14 | 5.65 | -69.82249 | -17.32033 | 141.96300 | Subduction IntraSlab | 329.91720 | 32.42113 | 50 |
| 37 | 13 | 5.65 | -69.84544 | -17.28224 | 142.24600 | Subduction IntraSlab | 329.92540 | 32.45493 | 50 |
| 38 | 9 | 5.65 | -69.8704 | -17.59694 | 146.24550 | Subduction IntraSlab | 326.81200 | 31.35038 | 50 |
| 39 | 12 | 5.65 | -69.61215 | -17.56007 | 145.93740 | Subduction IntraSlab | 326.82120 | 31.49914 | 50 |
| 40 | 12 | 5.65 | -69.63726 | -17.5232 | 145.62930 | Subduction IntraSlab | 326.82730 | 31.64337 | 50 |
| 41 | 9 | 5.65 | -69.66235 | -17.48632 | 145.32130 | Subduction IntraSlab | 326.83630 | 31.78750 | 50 |
| 42 | 7 | 5.65 | -69.68744 | -17.44944 | 145.01320 | Subduction IntraSlab | 326.84300 | 31.93232 | 50 |
| 43 | 5 | 5.65 | -69.71252 | -17.41256 | 144.70510 | Subduction IntraSlab | 326.85900 | 32.07922 | 50 |
| 44 | 7 | 5.75 | -69.47639 | -17.83908 | 145.30200 | Subduction IntraSlab | 326.91910 | 30.46528 | 50 |
| 45 | 13 | 5.75 | -69.50143 | -17.80219 | 144.98550 | Subduction IntraSlab | 326.92750 | 30.60641 | 50 |
| 46 | 6 | 5.75 | -69.52647 | -17.76531 | 144.66900 | Subduction IntraSlab | 326.93810 | 30.75416 | 50 |
| 47 | 7 | 5.75 | -69.55149 | -17.72842 | 144.35240 | Subduction IntraSlab | 326.94580 | 30.90281 | 50 |
| 48 | 6 | 5.75 | -69.5765 | -17.69153 | 144.03590 | Subduction IntraSlab | 326.95490 | 31.05007 | 50 |
| 49 | 4 | 5.75 | -69.6015 | -17.65463 | 143.71940 | Subduction IntraSlab | 326.96000 | 31.19831 | 50 |
| 50 | 5 | 5.75 | -69.6265 | -17.61774 | 143.40290 | Subduction IntraSlab | 326.96780 | 31.34186 | 50 |
| 51 | 11 | 5.75 | -69.63181 | -17.57045 | 144.51190 | Subduction IntraSlab | 326.89880 | 31.49197 | 50 |
| 52 | 4 | 5.75 | -69.65685 | -17.53357 | 144.19960 | Subduction IntraSlab | 326.90440 | 31.63864 | 50 |
| 53 | 9 | 5.75 | -69.68188 | -17.49667 | 143.88730 | Subduction IntraSlab | 326.91280 | 31.78572 | 50 |
| 54 | 9 | 5.75 | -69.7069 | -17.45978 | 143.57500 | Subduction IntraSlab | 326.92100 | 31.93261 | 50 |
| 55 | 12 | 5.75 | -69.73191 | -17.42288 | 143.26270 | Subduction IntraSlab | 326.93230 | 32.07840 | 50 |
| 56 | 8 | 5.75 | -69.7569 | -17.38597 | 142.95040 | Subduction IntraSlab | 328.17290 | 32.22990 | 50 |
| 57 | 7 | 5.75 | -69.7803 | -17.34812 | 143.12420 | Subduction IntraSlab | 329.60350 | 32.36240 | 50 |
| 58 | 9 | 5.75 | -69.80334 | -17.31007 | 143.40350 | Subduction IntraSlab | 329.81050 | 32.43133 | 50 |
| 59 | 9 | 5.75 | -69.82636 | -17.27201 | 143.68270 | Subduction IntraSlab | 329.81750 | 32.46327 | 50 |
| 60 | 8 | 5.75 | -69.8704 | -17.59694 | 146.24550 | Subduction IntraSlab | 326.81200 | 31.35038 | 50 |
| 61 | 7 | 5.75 | -69.59249 | -17.54969 | 147.36290 | Subduction IntraSlab | 326.74410 | 31.49780 | 50 |
| 62 | 9 | 5.75 | -69.61767 | -17.51283 | 147.05910 | Subduction IntraSlab | 326.75090 | 31.64286 | 50 |
| 63 | 10 | 5.75 | -69.64283 | -17.47597 | 146.75520 | Subduction IntraSlab | 326.75920 | 31.78882 | 50 |
| 64 | 10 | 5.75 | -69.66798 | -17.4391 | 146.45140 | Subduction IntraSlab | 326.76440 | 31.93614 | 50 |
| 65 | 2 | 5.75 | -69.69313 | -17.40223 | 146.14750 | Subduction IntraSlab | 326.78650 | 32.08375 | 50 |
| 66 | 7 | 5.85 | -69.4388 | -17.89439 | 145.77680 | Subduction IntraSlab | 326.91130 | 30.25219 | 50 |
| 67 | 6 | 5.85 | -69.46386 | -17.85752 | 145.46030 | Subduction IntraSlab | 326.91670 | 30.39422 | 50 |
| 68 | 4 | 5.85 | -69.48891 | -17.82064 | 145.14370 | Subduction IntraSlab | 326.92500 | 30.53631 | 50 |
| 69 | 2 | 5.85 | -69.51395 | -17.78375 | 144.82720 | Subduction IntraSlab | 326.93140 | 30.68078 | 50 |
| 70 | 7 | 5.85 | -69.53899 | -17.74686 | 144.51070 | Subduction IntraSlab | 326.94290 | 30.82800 | 50 |
| 71 | 7 | 5.85 | -69.564 | -17.70998 | 144.19420 | Subduction IntraSlab | 326.94970 | 30.97656 | 50 |
| 72 | 5 | 5.85 | -69.589 | -17.67308 | 143.87770 | Subduction IntraSlab | 326.95740 | 31.12410 | 50 |
| 73 | 6 | 5.85 | -69.614 | -17.63619 | 143.56120 | Subduction IntraSlab | 326.96430 | 31.26926 | 50 |
| 74 | 4 | 5.85 | -69.63898 | -17.59929 | 143.24470 | Subduction IntraSlab | 326.97180 | 31.41392 | 50 |
| 75 | 6 | 5.85 | -69.66396 | -17.56238 | 142.92810 | Subduction IntraSlab | 326.97860 | 31.55966 | 50 |
| 76 | 3 | 5.85 | -69.68893 | -17.52548 | 142.61160 | Subduction IntraSlab | 326.98620 | 31.70865 | 50 |
| 77 | 4 | 5.85 | -69.71389 | -17.48857 | 142.29510 | Subduction IntraSlab | 326.99370 | 31.85839 | 50 |
| 78 | 5 | 5.85 | -69.73884 | -17.45166 | 141.97860 | Subduction IntraSlab | 327.00230 | 32.00444 | 50 |
| 79 | 9 | 5.85 | -69.76377 | -17.41474 | 141.66210 | Subduction IntraSlab | 327.83950 | 32.15123 | 50 |
| 80 | 7 | 5.85 | -69.7879 | -17.37734 | 141.59190 | Subduction IntraSlab | 328.80850 | 32.28346 | 50 |
| 81 | 8 | 5.85 | -69.81102 | -17.33937 | 141.82150 | Subduction IntraSlab | 329.78040 | 32.38016 | 50 |
| 82 | 5 | 5.85 | -69.83397 | -17.30128 | 142.10450 | Subduction IntraSlab | 329.92030 | 32.43800 | 50 |
| 83 | 9 | 5.85 | -69.8569 | -17.2632 | 142.38750 | Subduction IntraSlab | 329.92730 | 32.47120 | 50 |
| 84 | 9 | 5.85 | -69.87984 | -17.22511 | 142.67060 | Subduction IntraSlab | 329.93210 | 32.50372 | 50 |
| 85 | 13 | 5.85 | -69.47388 | -17.76282 | 147.63180 | Subduction IntraSlab | 326.77640 | 30.68909 | 50 |
| 86 | 9 | 5.85 | -69.49904 | -17.72596 | 147.32380 | Subduction IntraSlab | 326.78750 | 30.83222 | 50 |
| 87 | 5 | 5.85 | -69.52419 | -17.6891 | 147.01570 | Subduction IntraSlab | 326.79400 | 30.97601 | 50 |
| 88 | 10 | 5.85 | -69.54933 | -17.65224 | 146.70760 | Subduction IntraSlab | 326.80150 | 31.12368 | 50 |
| 89 | 7 | 5.85 | -69.57447 | -17.61538 | 146.39950 | Subduction IntraSlab | 326.80870 | 31.27424 | 50 |
| 90 | 8 | 5.85 | -69.59959 | -17.57851 | 146.09150 | Subduction IntraSlab | 326.81550 | 31.42386 | 50 |
| 91 | 8 | 5.85 | -69.6247 | -17.54164 | 145.78340 | Subduction IntraSlab | 326.82480 | 31.57126 | 50 |
| 92 | 8 | 5.85 | -69.64981 | -17.50478 | 145.47530 | Subduction IntraSlab | 326.83170 | 31.71528 | 50 |
| 93 | 7 | 5.85 | -69.6749 | -17.46788 | 145.16720 | Subduction IntraSlab | 326.83940 | 31.86005 | 50 |
| 94 | 9 | 5.85 | -69.69998 | -17.431 | 144.85920 | Subduction IntraSlab | 326.85280 | 32.00585 | 50 |
| 95 | 5 | 5.85 | -69.72505 | -17.39411 | 144.55110 | Subduction IntraSlab | 327.67310 | 32.15955 | 50 |
| 96 | 6 | 5.85 | -69.74931 | -17.35675 | 144.48280 | Subduction IntraSlab | 328.62270 | 32.29995 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 97 | 12 | 5.85 | -69.77261 | -17.31882 | 144.70620 | Subduction IntraSlab | 329.56920 | 32.40097 | 50 |
| 98 | 2 | 5.95 | -69.4388 | -17.89439 | 145.77680 | Subduction IntraSlab | 326.91130 | 30.25219 | 50 |
| 99 | 9 | 5.95 | -69.46386 | -17.85752 | 145.46030 | Subduction IntraSlab | 326.91670 | 30.39422 | 50 |
| 100 | 12 | 5.95 | -69.48891 | -17.82064 | 145.14370 | Subduction IntraSlab | 326.92500 | 30.53631 | 50 |
| 101 | 5 | 5.95 | -69.51395 | -17.78375 | 144.82720 | Subduction IntraSlab | 326.93140 | 30.68078 | 50 |
| 102 | 2 | 5.95 | -69.53899 | -17.74686 | 144.51070 | Subduction IntraSlab | 326.94290 | 30.82800 | 50 |
| 103 | 2 | 5.95 | -69.5441 | -17.69954 | 145.60490 | Subduction IntraSlab | 326.87180 | 30.97629 | 50 |
| 104 | 8 | 5.95 | -69.56917 | -17.66266 | 145.29260 | Subduction IntraSlab | 326.87950 | 31.12389 | 50 |
| 105 | 12 | 5.95 | -69.59424 | -17.62578 | 144.98030 | Subduction IntraSlab | 326.88650 | 31.27175 | 50 |
| 106 | 6 | 5.95 | -69.61929 | -17.5889 | 144.66810 | Subduction IntraSlab | 326.89370 | 31.41889 | 50 |
| 107 | 2 | 5.95 | -69.64433 | -17.55201 | 144.35580 | Subduction IntraSlab | 326.90170 | 31.56546 | 50 |
| 108 | 3 | 5.95 | -69.66936 | -17.51512 | 144.04350 | Subduction IntraSlab | 326.90890 | 31.71197 | 50 |
| 109 | 6 | 5.95 | -69.6944 | -17.47823 | 143.73120 | Subduction IntraSlab | 326.91650 | 31.85922 | 50 |
| 110 | 3 | 5.95 | -69.71941 | -17.44133 | 143.41890 | Subduction IntraSlab | 326.92760 | 32.00514 | 50 |
| 111 | 3 | 5.95 | -69.74441 | -17.40442 | 143.10660 | Subduction IntraSlab | 327.75630 | 32.15539 | 50 |
| 112 | 11 | 5.95 | -69.7686 | -17.36705 | 143.03730 | Subduction IntraSlab | 328.71560 | 32.29171 | 50 |
| 113 | 3 | 5.95 | -69.79182 | -17.3291 | 143.26380 | Subduction IntraSlab | 329.67480 | 32.39056 | 50 |
| 114 | 7 | 5.95 | -69.81485 | -17.29104 | 143.54310 | Subduction IntraSlab | 329.81260 | 32.44731 | 50 |
| 115 | 5 | 5.95 | -69.83788 | -17.25298 | 143.82240 | Subduction IntraSlab | 329.82010 | 32.47957 | 50 |
| 116 | 3 | 5.95 | -69.86089 | -17.21491 | 144.10170 | Subduction IntraSlab | 329.82420 | 32.51257 | 50 |
| 117 | 5 | 5.95 | -69.47388 | -17.76282 | 147.63180 | Subduction IntraSlab | 326.77640 | 30.68909 | 50 |
| 118 | 4 | 5.95 | -69.49904 | -17.72596 | 147.32380 | Subduction IntraSlab | 326.78750 | 30.83222 | 50 |
| 119 | 6 | 5.95 | -69.5043 | -17.67867 | 148.42640 | Subduction IntraSlab | 326.71630 | 30.98279 | 50 |
| 120 | 10 | 5.95 | -69.5295 | -17.64182 | 148.12260 | Subduction IntraSlab | 326.72370 | 31.12899 | 50 |
| 121 | 3 | 5.95 | -69.55471 | -17.60497 | 147.81870 | Subduction IntraSlab | 326.73150 | 31.27640 | 50 |
| 122 | 3 | 5.95 | -69.5799 | -17.56812 | 147.51490 | Subduction IntraSlab | 326.73780 | 31.42371 | 50 |
| 123 | 5 | 5.95 | -69.60508 | -17.53126 | 147.21100 | Subduction IntraSlab | 326.74800 | 31.57040 | 50 |
| 124 | 8 | 5.95 | -69.63025 | -17.4944 | 146.90720 | Subduction IntraSlab | 326.75490 | 31.71579 | 50 |
| 125 | 7 | 5.95 | -69.65541 | -17.45753 | 146.60330 | Subduction IntraSlab | 326.76150 | 31.86262 | 50 |
| 126 | 7 | 5.95 | -69.68056 | -17.42067 | 146.29940 | Subduction IntraSlab | 326.77860 | 32.00972 | 50 |
| 127 | 3 | 5.95 | -69.70569 | -17.38379 | 145.99560 | Subduction IntraSlab | 327.58940 | 32.16476 | 50 |
| 128 | 4 | 5.95 | -69.73003 | -17.34645 | 145.92820 | Subduction IntraSlab | 328.52960 | 32.30527 | 50 |
| 129 | 6 | 5.95 | -69.75341 | -17.30854 | 146.14860 | Subduction IntraSlab | 329.46250 | 32.40709 | 50 |
| 130 | 9 | 5.55 | -70.57873 | -18.08931 | 71.59091 | Subduction IntraSlab | 307.81230 | 31.52002 | 50 |
| 131 | 14 | 5.55 | -70.61674 | -18.06126 | 71.59091 | Subduction IntraSlab | 307.82470 | 31.13154 | 50 |
| 132 | 16 | 5.55 | -70.65474 | -18.03321 | 71.59091 | Subduction IntraSlab | 307.83530 | 30.75164 | 50 |
| 133 | 5 | 5.55 | -70.69273 | -18.00515 | 71.59091 | Subduction IntraSlab | 307.84590 | 30.38087 | 50 |
| 134 | 14 | 5.55 | -70.73071 | -17.97708 | 71.59091 | Subduction IntraSlab | 307.85880 | 30.01958 | 50 |
| 135 | 6 | 5.55 | -70.76867 | -17.94901 | 71.59091 | Subduction IntraSlab | 307.87150 | 29.66520 | 50 |
| 136 | 11 | 5.55 | -70.80662 | -17.92092 | 71.59091 | Subduction IntraSlab | 307.88180 | 29.31580 | 50 |
| 137 | 11 | 5.55 | -70.84456 | -17.89283 | 71.59091 | Subduction IntraSlab | 307.89510 | 28.97176 | 50 |
| 138 | 5 | 5.55 | -70.88248 | -17.86473 | 71.59091 | Subduction IntraSlab | 307.90540 | 28.63808 | 50 |
| 139 | 10 | 5.55 | -70.9204 | -17.83663 | 71.59091 | Subduction IntraSlab | 307.91670 | 28.31428 | 50 |
| 140 | 6 | 5.55 | -70.95831 | -17.80851 | 71.59091 | Subduction IntraSlab | 307.92790 | 27.99565 | 50 |
| 141 | 10 | 5.55 | -70.9962 | -17.78039 | 71.59091 | Subduction IntraSlab | 307.93970 | 27.68203 | 50 |
| 142 | 11 | 5.55 | -71.04479 | -17.76203 | 70.79546 | Subduction IntraSlab | 307.73000 | 27.38456 | 50 |
| 143 | 14 | 5.55 | -71.08282 | -17.734 | 70.79546 | Subduction IntraSlab | 307.73910 | 27.08360 | 50 |
| 144 | 9 | 5.55 | -71.12083 | -17.70597 | 70.79546 | Subduction IntraSlab | 307.75160 | 26.79080 | 50 |
| 145 | 15 | 5.55 | -71.15884 | -17.67793 | 70.79546 | Subduction IntraSlab | 307.76360 | 26.50147 | 50 |
| 146 | 14 | 5.55 | -71.19682 | -17.64988 | 70.79546 | Subduction IntraSlab | 307.77600 | 26.21655 | 50 |
| 147 | 11 | 5.55 | -71.2348 | -17.62183 | 70.79546 | Subduction IntraSlab | 307.78710 | 25.93958 | 50 |
| 148 | 12 | 5.55 | -71.27277 | -17.59377 | 70.79546 | Subduction IntraSlab | 307.79600 | 25.66993 | 50 |
| 149 | 8 | 5.55 | -71.31073 | -17.5657 | 70.79546 | Subduction IntraSlab | 307.80770 | 25.40500 | 50 |
| 150 | 15 | 5.55 | -71.34867 | -17.53762 | 70.79546 | Subduction IntraSlab | 307.82020 | 25.14300 | 50 |
| 151 | 7 | 5.55 | -71.3866 | -17.50954 | 70.79546 | Subduction IntraSlab | 307.83260 | 24.88630 | 50 |
| 152 | 19 | 5.55 | -71.42452 | -17.48145 | 70.79546 | Subduction IntraSlab | 307.84340 | 24.63316 | 50 |
| 153 | 8 | 5.55 | -71.46243 | -17.45335 | 70.79546 | Subduction IntraSlab | 307.85350 | 24.38572 | 50 |
| 154 | 9 | 5.55 | -71.50034 | -17.42525 | 70.79546 | Subduction IntraSlab | 307.86680 | 24.14604 | 50 |
| 155 | 9 | 5.55 | -71.53822 | -17.39713 | 70.79546 | Subduction IntraSlab | 307.87710 | 23.90839 | 50 |
| 156 | 15 | 5.55 | -70.56112 | -18.07244 | 73.18182 | Subduction IntraSlab | 308.26110 | 31.50669 | 50 |
| 157 | 18 | 5.55 | -70.59881 | -18.04417 | 73.18182 | Subduction IntraSlab | 308.27420 | 31.11876 | 50 |
| 158 | 12 | 5.55 | -70.63649 | -18.0159 | 73.18182 | Subduction IntraSlab | 308.28400 | 30.73857 | 50 |
| 159 | 16 | 5.55 | -70.67416 | -17.98761 | 73.18182 | Subduction IntraSlab | 308.29640 | 30.36507 | 50 |
| 160 | 12 | 5.55 | -70.71182 | -17.95932 | 73.18182 | Subduction IntraSlab | 308.30910 | 30.00102 | 50 |
| 161 | 10 | 5.55 | -70.74947 | -17.93102 | 73.18182 | Subduction IntraSlab | 308.31970 | 29.64684 | 50 |
| 162 | 12 | 5.55 | -70.7871 | -17.90272 | 73.18182 | Subduction IntraSlab | 308.33040 | 29.29892 | 50 |
| 163 | 11 | 5.55 | -70.82472 | -17.87441 | 73.18182 | Subduction IntraSlab | 308.34380 | 28.95729 | 50 |
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| 165 | 15 | 5.55 | -70.89993 | -17.81776 | 73.18182 | Subduction IntraSlab | 308.36540 | 28.29899 | 50 |
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| 167 | 7 | 5.55 | -70.97509 | -17.76109 | 73.18182 | Subduction IntraSlab | 308.38800 | 27.66367 | 50 |
| 168 | 19 | 5.55 | -71.02337 | -17.7425 | 72.38637 | Subduction IntraSlab | 308.17760 | 27.36418 | 50 |
| 169 | 8 | 5.55 | -71.06107 | -17.71426 | 72.38637 | Subduction IntraSlab | 308.18620 | 27.06569 | 50 |
| 170 | 6 | 5.55 | -71.09877 | -17.68601 | 72.38637 | Subduction IntraSlab | 308.19920 | 26.77066 | 50 |
| 171 | 8 | 5.55 | -71.13645 | -17.65775 | 72.38637 | Subduction IntraSlab | 308.21260 | 26.48017 | 50 |
| 172 | 8 | 5.55 | -71.17413 | -17.62948 | 72.38637 | Subduction IntraSlab | 308.22090 | 26.20216 | 50 |
| 173 | 9 | 5.55 | -71.21179 | -17.60121 | 72.38637 | Subduction IntraSlab | 308.23220 | 25.92791 | 50 |
| 174 | 13 | 5.55 | -71.24944 | -17.57293 | 72.38637 | Subduction IntraSlab | 308.24400 | 25.65374 | 50 |
| 175 | 8 | 5.55 | -71.28708 | -17.54464 | 72.38637 | Subduction IntraSlab | 308.25450 | 25.38663 | 50 |
| 176 | 15 | 5.55 | -71.32471 | -17.51634 | 72.38637 | Subduction IntraSlab | 308.26720 | 25.12479 | 50 |
| 177 | 6 | 5.55 | -71.36232 | -17.48804 | 72.38637 | Subduction IntraSlab | 308.27950 | 24.86649 | 50 |
| 178 | 14 | 5.55 | -71.39993 | -17.45973 | 72.38637 | Subduction IntraSlab | 308.28930 | 24.61537 | 50 |
| 179 | 14 | 5.55 | -71.43752 | -17.43141 | 72.38637 | Subduction IntraSlab | 308.29960 | 24.36992 | 50 |
| 180 | 12 | 5.55 | -71.4751 | -17.40309 | 72.38637 | Subduction IntraSlab | 308.31190 | 24.12626 | 50 |
| 181 | 13 | 5.55 | -71.51266 | -17.37476 | 72.38637 | Subduction IntraSlab | 308.32350 | 23.88783 | 50 |
| 182 | 19 | 5.55 | -70.54351 | -18.05556 | 74.77273 | Subduction IntraSlab | 308.71170 | 31.48942 | 50 |
| 183 | 15 | 5.55 | -70.58089 | -18.02707 | 74.77273 | Subduction IntraSlab | 308.72600 | 31.10090 | 50 |
| 184 | 8 | 5.55 | -70.61825 | -17.99858 | 74.77273 | Subduction IntraSlab | 308.73620 | 30.72206 | 50 |
| 185 | 10 | 5.55 | -70.6556 | -17.97007 | 74.77273 | Subduction IntraSlab | 308.74830 | 30.35168 | 50 |
| 186 | 13 | 5.55 | -70.69294 | -17.94156 | 74.77273 | Subduction IntraSlab | 308.76010 | 29.98766 | 50 |
| 187 | 4 | 5.55 | -70.73027 | -17.91304 | 74.77273 | Subduction IntraSlab | 308.77010 | 29.62945 | 50 |
| 188 | 13 | 5.55 | -70.76759 | -17.88452 | 74.77273 | Subduction IntraSlab | 308.78180 | 29.28035 | 50 |
| 189 | 8 | 5.55 | -70.80489 | -17.85599 | 74.77273 | Subduction IntraSlab | 308.79430 | 28.94034 | 50 |
| 190 | 9 | 5.55 | -70.84219 | -17.82745 | 74.77273 | Subduction IntraSlab | 308.80540 | 28.60630 | 50 |
| 191 | 16 | 5.55 | -70.87946 | -17.7989 | 74.77273 | Subduction IntraSlab | 308.81560 | 28.27946 | 50 |
| 192 | 9 | 5.55 | -70.91673 | -17.77035 | 74.77273 | Subduction IntraSlab | 308.82830 | 27.95998 | 50 |
| 193 | 20 | 5.55 | -70.95399 | -17.74178 | 74.77273 | Subduction IntraSlab | 308.83940 | 27.64627 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 194 | 8 | 5.55 | -71.00195 | -17.72298 | 73.97727 | Subduction IntraSlab | 308.62510 | 27.35380 | 50 |
| 195 | 12 | 5.55 | -71.03933 | -17.69451 | 73.97727 | Subduction IntraSlab | 308.63570 | 27.05113 | 50 |
| 196 | 9 | 5.55 | -71.07671 | -17.66604 | 73.97727 | Subduction IntraSlab | 308.64720 | 26.75455 | 50 |
| 197 | 9 | 5.55 | -71.11408 | -17.63756 | 73.97727 | Subduction IntraSlab | 308.66010 | 26.47098 | 50 |
| 198 | 6 | 5.55 | -71.15144 | -17.60908 | 73.97727 | Subduction IntraSlab | 308.66890 | 26.18909 | 50 |
| 199 | 14 | 5.55 | -71.18878 | -17.58058 | 73.97727 | Subduction IntraSlab | 308.68230 | 25.90687 | 50 |
| 200 | 9 | 5.55 | -71.22611 | -17.55208 | 73.97727 | Subduction IntraSlab | 308.69450 | 25.63367 | 50 |
| 201 | 9 | 5.55 | -71.26344 | -17.52357 | 73.97727 | Subduction IntraSlab | 308.70250 | 25.36992 | 50 |
| 202 | 16 | 5.55 | -71.30075 | -17.49506 | 73.97727 | Subduction IntraSlab | 308.71480 | 25.11405 | 50 |
| 203 | 14 | 5.55 | -71.33804 | -17.46654 | 73.97727 | Subduction IntraSlab | 308.72750 | 24.86192 | 50 |
| 204 | 10 | 5.55 | -71.37533 | -17.43801 | 73.97727 | Subduction IntraSlab | 308.73730 | 24.60699 | 50 |
| 205 | 15 | 5.55 | -71.41261 | -17.40948 | 73.97727 | Subduction IntraSlab | 308.74920 | 24.35581 | 50 |
| 206 | 9 | 5.55 | -71.44987 | -17.38093 | 73.97727 | Subduction IntraSlab | 308.76020 | 24.11364 | 50 |
| 207 | 13 | 5.55 | -71.48712 | -17.35238 | 73.97727 | Subduction IntraSlab | 308.77240 | 23.87356 | 50 |
| 208 | 8 | 5.55 | -70.5259 | -18.03869 | 76.36364 | Subduction IntraSlab | 309.16540 | 31.47104 | 50 |
| 209 | 8 | 5.55 | -70.56297 | -18.00998 | 76.36364 | Subduction IntraSlab | 309.17870 | 31.08102 | 50 |
| 210 | 14 | 5.55 | -70.60001 | -17.98126 | 76.36364 | Subduction IntraSlab | 309.18930 | 30.70035 | 50 |
| 211 | 10 | 5.55 | -70.63705 | -17.95253 | 76.36364 | Subduction IntraSlab | 309.20090 | 30.33051 | 50 |
| 212 | 11 | 5.55 | -70.67406 | -17.9238 | 76.36364 | Subduction IntraSlab | 309.21340 | 29.96732 | 50 |
| 213 | 15 | 5.55 | -70.71107 | -17.89506 | 76.36364 | Subduction IntraSlab | 309.22360 | 29.61060 | 50 |
| 214 | 9 | 5.55 | -70.74808 | -17.86632 | 76.36364 | Subduction IntraSlab | 309.23500 | 29.26265 | 50 |
| 215 | 10 | 5.55 | -70.78506 | -17.83756 | 76.36364 | Subduction IntraSlab | 309.24800 | 28.92093 | 50 |
| 216 | 7 | 5.55 | -70.82204 | -17.8088 | 76.36364 | Subduction IntraSlab | 309.25750 | 28.58789 | 50 |
| 217 | 8 | 5.55 | -70.859 | -17.78003 | 76.36364 | Subduction IntraSlab | 309.26820 | 28.26080 | 50 |
| 218 | 9 | 5.55 | -70.89595 | -17.75126 | 76.36364 | Subduction IntraSlab | 309.27960 | 27.93929 | 50 |
| 219 | 10 | 5.55 | -70.93289 | -17.72248 | 76.36364 | Subduction IntraSlab | 309.29070 | 27.62721 | 50 |
| 220 | 14 | 5.55 | -70.98052 | -17.70345 | 75.56818 | Subduction IntraSlab | 309.07640 | 27.32577 | 50 |
| 221 | 8 | 5.55 | -71.0176 | -17.67477 | 75.56818 | Subduction IntraSlab | 309.08720 | 27.02798 | 50 |
| 222 | 13 | 5.55 | -71.05466 | -17.64608 | 75.56818 | Subduction IntraSlab | 309.09720 | 26.73573 | 50 |
| 223 | 12 | 5.55 | -71.09171 | -17.61738 | 75.56818 | Subduction IntraSlab | 309.10810 | 26.44653 | 50 |
| 224 | 8 | 5.55 | -71.12875 | -17.58867 | 75.56818 | Subduction IntraSlab | 309.12170 | 26.16113 | 50 |
| 225 | 9 | 5.55 | -71.16578 | -17.55996 | 75.56818 | Subduction IntraSlab | 309.13500 | 25.88235 | 50 |
| 226 | 12 | 5.55 | -71.2028 | -17.53123 | 75.56818 | Subduction IntraSlab | 309.14500 | 25.61084 | 50 |
| 227 | 15 | 5.55 | -71.2398 | -17.50251 | 75.56818 | Subduction IntraSlab | 309.15370 | 25.34029 | 50 |
| 228 | 9 | 5.55 | -71.27679 | -17.47378 | 75.56818 | Subduction IntraSlab | 309.16390 | 25.07269 | 50 |
| 229 | 8 | 5.55 | -71.31377 | -17.44503 | 75.56818 | Subduction IntraSlab | 309.17490 | 24.81721 | 50 |
| 230 | 10 | 5.55 | -71.35075 | -17.41629 | 75.56818 | Subduction IntraSlab | 309.18840 | 24.57364 | 50 |
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| 232 | 10 | 5.55 | -71.42464 | -17.35877 | 75.56818 | Subduction IntraSlab | 309.21070 | 24.08578 | 50 |
| 233 | 9 | 5.55 | -71.46158 | -17.33 | 75.56818 | Subduction IntraSlab | 309.22090 | 23.85103 | 50 |
| 234 | 12 | 5.55 | -70.5083 | -18.02181 | 77.95454 | Subduction IntraSlab | 309.62190 | 31.46800 | 50 |
| 235 | 15 | 5.55 | -70.54504 | -17.99288 | 77.95454 | Subduction IntraSlab | 309.63350 | 31.07088 | 50 |
| 236 | 8 | 5.55 | -70.58177 | -17.96394 | 77.95454 | Subduction IntraSlab | 309.64400 | 30.68722 | 50 |
| 237 | 11 | 5.55 | -70.61849 | -17.93499 | 77.95454 | Subduction IntraSlab | 309.65560 | 30.31399 | 50 |
| 238 | 9 | 5.55 | -70.6552 | -17.90604 | 77.95454 | Subduction IntraSlab | 309.66840 | 29.94992 | 50 |
| 239 | 10 | 5.55 | -70.69189 | -17.87708 | 77.95454 | Subduction IntraSlab | 309.67840 | 29.59439 | 50 |
| 240 | 14 | 5.55 | -70.72857 | -17.84811 | 77.95454 | Subduction IntraSlab | 309.68900 | 29.24766 | 50 |
| 241 | 3 | 5.55 | -70.76524 | -17.81913 | 77.95454 | Subduction IntraSlab | 309.70300 | 28.90804 | 50 |
| 242 | 9 | 5.55 | -70.8019 | -17.79015 | 77.95454 | Subduction IntraSlab | 309.71150 | 28.57412 | 50 |
| 243 | 12 | 5.55 | -70.83855 | -17.76116 | 77.95454 | Subduction IntraSlab | 309.72320 | 28.24360 | 50 |
| 244 | 11 | 5.55 | -70.87518 | -17.73217 | 77.95454 | Subduction IntraSlab | 309.73400 | 27.92139 | 50 |
| 245 | 6 | 5.55 | -70.9118 | -17.70317 | 77.95454 | Subduction IntraSlab | 309.74370 | 27.60849 | 50 |
| 246 | 12 | 5.55 | -70.95911 | -17.68392 | 77.15909 | Subduction IntraSlab | 309.53130 | 27.31361 | 50 |
| 247 | 12 | 5.55 | -70.99587 | -17.65502 | 77.15909 | Subduction IntraSlab | 309.54100 | 27.00838 | 50 |
| 248 | 10 | 5.55 | -71.03262 | -17.62611 | 77.15909 | Subduction IntraSlab | 309.54970 | 26.71556 | 50 |
| 249 | 14 | 5.55 | -71.06935 | -17.59719 | 77.15909 | Subduction IntraSlab | 309.56130 | 26.42878 | 50 |
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| 251 | 14 | 5.55 | -71.14278 | -17.53933 | 77.15909 | Subduction IntraSlab | 309.58740 | 25.86792 | 50 |
| 252 | 6 | 5.55 | -71.17948 | -17.51039 | 77.15909 | Subduction IntraSlab | 309.59630 | 25.59686 | 50 |
| 253 | 15 | 5.55 | -71.21616 | -17.48144 | 77.15909 | Subduction IntraSlab | 309.60700 | 25.33162 | 50 |
| 254 | 14 | 5.55 | -71.25285 | -17.45249 | 77.15909 | Subduction IntraSlab | 309.61740 | 25.07318 | 50 |
| 255 | 14 | 5.55 | -71.28951 | -17.42353 | 77.15909 | Subduction IntraSlab | 309.62640 | 24.81547 | 50 |
| 256 | 13 | 5.55 | -71.32616 | -17.39456 | 77.15909 | Subduction IntraSlab | 309.63590 | 24.55707 | 50 |
| 257 | 8 | 5.55 | -71.3628 | -17.36559 | 77.15909 | Subduction IntraSlab | 309.65340 | 24.30843 | 50 |
| 258 | 8 | 5.55 | -71.39943 | -17.33661 | 77.15909 | Subduction IntraSlab | 309.66190 | 24.06796 | 50 |
| 259 | 16 | 5.55 | -71.43605 | -17.30762 | 77.15909 | Subduction IntraSlab | 309.67110 | 23.82749 | 50 |
| 260 | 16 | 5.55 | -70.49071 | -18.00493 | 79.54546 | Subduction IntraSlab | 310.07910 | 31.45151 | 50 |
| 261 | 6 | 5.55 | -70.52713 | -17.97578 | 79.54546 | Subduction IntraSlab | 310.09090 | 31.06025 | 50 |
| 262 | 10 | 5.55 | -70.56354 | -17.94662 | 79.54546 | Subduction IntraSlab | 310.10250 | 30.67798 | 50 |
| 263 | 8 | 5.55 | -70.59994 | -17.91745 | 79.54546 | Subduction IntraSlab | 310.11260 | 30.30264 | 50 |
| 264 | 14 | 5.55 | -70.63633 | -17.88827 | 79.54546 | Subduction IntraSlab | 310.12260 | 29.93783 | 50 |
| 265 | 13 | 5.55 | -70.67271 | -17.85909 | 79.54546 | Subduction IntraSlab | 310.13470 | 29.58103 | 50 |
| 266 | 14 | 5.55 | -70.70907 | -17.8299 | 79.54546 | Subduction IntraSlab | 310.14510 | 29.23134 | 50 |
| 267 | 9 | 5.55 | -70.74542 | -17.80071 | 79.54546 | Subduction IntraSlab | 310.15820 | 28.89300 | 50 |
| 268 | 13 | 5.55 | -70.78176 | -17.7715 | 79.54546 | Subduction IntraSlab | 310.16950 | 28.55891 | 50 |
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| 270 | 12 | 5.55 | -70.85441 | -17.71308 | 79.54546 | Subduction IntraSlab | 310.19070 | 27.91095 | 50 |
| 271 | 6 | 5.55 | -70.89071 | -17.68386 | 79.54546 | Subduction IntraSlab | 310.20010 | 27.59506 | 50 |
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| 275 | 10 | 5.55 | -71.04699 | -17.577 | 78.75000 | Subduction IntraSlab | 310.01770 | 26.40461 | 50 |
| 276 | 10 | 5.55 | -71.0834 | -17.54785 | 78.75000 | Subduction IntraSlab | 310.02890 | 26.12578 | 50 |
| 277 | 12 | 5.55 | -71.11979 | -17.5187 | 78.75000 | Subduction IntraSlab | 310.04040 | 25.84964 | 50 |
| 278 | 11 | 5.55 | -71.15617 | -17.48954 | 78.75000 | Subduction IntraSlab | 310.05030 | 25.57702 | 50 |
| 279 | 12 | 5.55 | -71.19254 | -17.46037 | 78.75000 | Subduction IntraSlab | 310.05950 | 25.31177 | 50 |
| 280 | 15 | 5.55 | -71.2289 | -17.4312 | 78.75000 | Subduction IntraSlab | 310.07230 | 25.04722 | 50 |
| 281 | 13 | 5.55 | -71.26524 | -17.40202 | 78.75000 | Subduction IntraSlab | 310.08300 | 24.78598 | 50 |
| 282 | 13 | 5.55 | -71.30158 | -17.37283 | 78.75000 | Subduction IntraSlab | 310.09440 | 24.53507 | 50 |
| 283 | 15 | 5.55 | -71.33791 | -17.34364 | 78.75000 | Subduction IntraSlab | 310.10580 | 24.28922 | 50 |
| 284 | 18 | 5.55 | -71.37422 | -17.31444 | 78.75000 | Subduction IntraSlab | 310.11500 | 24.04762 | 50 |
| 285 | 16 | 5.55 | -71.41052 | -17.28523 | 78.75000 | Subduction IntraSlab | 310.12650 | 23.81129 | 50 |
| 286 | 8 | 5.55 | -70.47311 | -17.98805 | 81.13636 | Subduction IntraSlab | 310.53700 | 31.43650 | 50 |
| 287 | 6 | 5.55 | -70.50922 | -17.95868 | 81.13636 | Subduction IntraSlab | 310.54960 | 31.04667 | 50 |
| 288 | 15 | 5.55 | -70.54531 | -17.92929 | 81.13636 | Subduction IntraSlab | 310.56250 | 30.66751 | 50 |
| 289 | 12 | 5.55 | -70.58139 | -17.8999 | 81.13636 | Subduction IntraSlab | 310.57160 | 30.29487 | 50 |
| 290 | 10 | 5.55 | -70.61746 | -17.87051 | 81.13636 | Subduction IntraSlab | 310.57940 | 29.93005 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 293 | 11 | 5.55 | -70.72561 | -17.78228 | 81.13636 | Subduction IntraSlab | 310.61510 | 28.87803 | 50 |
| 294 | 12 | 5.55 | -70.76163 | -17.75285 | 81.13636 | Subduction IntraSlab | 310.62930 | 28.54322 | 50 |
| 295 | 12 | 5.55 | -70.79764 | -17.72342 | 81.13636 | Subduction IntraSlab | 310.63720 | 28.21842 | 50 |
| 296 | 6 | 5.55 | -70.83364 | -17.69398 | 81.13636 | Subduction IntraSlab | 310.64850 | 27.89983 | 50 |
| 297 | 14 | 5.55 | -70.86963 | -17.66454 | 81.13636 | Subduction IntraSlab | 310.65830 | 27.58450 | 50 |
| 298 | 5 | 5.55 | -70.90561 | -17.63509 | 81.13636 | Subduction IntraSlab | 310.66920 | 27.27670 | 50 |
| 299 | 15 | 5.55 | -70.95242 | -17.61551 | 80.34091 | Subduction IntraSlab | 310.45260 | 26.98496 | 50 |
| 300 | 10 | 5.55 | -70.98854 | -17.58616 | 80.34091 | Subduction IntraSlab | 310.46380 | 26.68911 | 50 |
| 301 | 7 | 5.55 | -71.02464 | -17.5568 | 80.34091 | Subduction IntraSlab | 310.47520 | 26.39450 | 50 |
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| 303 | 12 | 5.55 | -71.0968 | -17.49806 | 80.34091 | Subduction IntraSlab | 310.49600 | 25.82823 | 50 |
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| 306 | 7 | 5.55 | -71.20496 | -17.4099 | 80.34091 | Subduction IntraSlab | 310.52820 | 25.03058 | 50 |
| 307 | 11 | 5.55 | -71.24099 | -17.3805 | 80.34091 | Subduction IntraSlab | 310.53970 | 24.77633 | 50 |
| 308 | 11 | 5.55 | -71.27702 | -17.3511 | 80.34091 | Subduction IntraSlab | 310.54970 | 24.52635 | 50 |
| 309 | 15 | 5.55 | -71.31302 | -17.32169 | 80.34091 | Subduction IntraSlab | 310.56150 | 24.27953 | 50 |
| 310 | 15 | 5.55 | -71.34901 | -17.29227 | 80.34091 | Subduction IntraSlab | 310.57170 | 24.03452 | 50 |
| 311 | 9 | 5.55 | -71.38499 | -17.26284 | 80.34091 | Subduction IntraSlab | 310.58180 | 23.79550 | 50 |
| 312 | 12 | 5.55 | -70.45552 | -17.97117 | 82.72727 | Subduction IntraSlab | 310.99740 | 31.43143 | 50 |
| 313 | 9 | 5.55 | -70.49131 | -17.94157 | 82.72727 | Subduction IntraSlab | 311.00920 | 31.04196 | 50 |
| 314 | 14 | 5.55 | -70.52708 | -17.91197 | 82.72727 | Subduction IntraSlab | 311.02190 | 30.66071 | 50 |
| 315 | 11 | 5.55 | -70.56285 | -17.88235 | 82.72727 | Subduction IntraSlab | 311.03240 | 30.28942 | 50 |
| 316 | 7 | 5.55 | -70.5986 | -17.85274 | 82.72727 | Subduction IntraSlab | 311.04030 | 29.92400 | 50 |
| 317 | 8 | 5.55 | -70.63435 | -17.82311 | 82.72727 | Subduction IntraSlab | 311.05390 | 29.56706 | 50 |
| 318 | 15 | 5.55 | -70.67007 | -17.79348 | 82.72727 | Subduction IntraSlab | 311.06360 | 29.21825 | 50 |
| 319 | 7 | 5.55 | -70.7058 | -17.76384 | 82.72727 | Subduction IntraSlab | 311.07490 | 28.87309 | 50 |
| 320 | 16 | 5.55 | -70.7415 | -17.7342 | 82.72727 | Subduction IntraSlab | 311.08800 | 28.53641 | 50 |
| 321 | 10 | 5.55 | -70.7772 | -17.70455 | 82.72727 | Subduction IntraSlab | 311.09600 | 28.20833 | 50 |
| 322 | 12 | 5.55 | -70.81288 | -17.67489 | 82.72727 | Subduction IntraSlab | 311.10820 | 27.88689 | 50 |
| 323 | 6 | 5.55 | -70.84855 | -17.64523 | 82.72727 | Subduction IntraSlab | 311.11900 | 27.57669 | 50 |
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| 326 | 7 | 5.55 | -70.96651 | -17.56618 | 81.93182 | Subduction IntraSlab | 310.92210 | 26.66997 | 50 |
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| 328 | 10 | 5.55 | -71.03806 | -17.50702 | 81.93182 | Subduction IntraSlab | 310.94350 | 26.10102 | 50 |
| 329 | 14 | 5.55 | -71.07382 | -17.47742 | 81.93182 | Subduction IntraSlab | 310.95400 | 25.82521 | 50 |
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| 334 | 12 | 5.55 | -71.25245 | -17.32936 | 81.93182 | Subduction IntraSlab | 311.00670 | 24.50264 | 50 |
| 335 | 20 | 5.55 | -71.28813 | -17.29973 | 81.93182 | Subduction IntraSlab | 311.01800 | 24.25625 | 50 |
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| 351 | 11 | 5.55 | -70.909 | -17.576 | 83.52273 | Subduction IntraSlab | 311.37160 | 26.96232 | 50 |
| 352 | 8 | 5.55 | -70.94448 | -17.5462 | 83.52273 | Subduction IntraSlab | 311.38080 | 26.66715 | 50 |
| 353 | 11 | 5.55 | -70.97995 | -17.51641 | 83.52273 | Subduction IntraSlab | 311.39040 | 26.38058 | 50 |
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| 367 | 8 | 5.55 | -70.52578 | -17.84726 | 85.90909 | Subduction IntraSlab | 311.95860 | 30.26892 | 50 |
| 368 | 12 | 5.55 | -70.5609 | -17.81719 | 85.90909 | Subduction IntraSlab | 311.96830 | 29.90532 | 50 |
| 369 | 4 | 5.55 | -70.596 | -17.78713 | 85.90909 | Subduction IntraSlab | 311.97690 | 29.54831 | 50 |
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| 371 | 13 | 5.55 | -70.66618 | -17.72697 | 85.90909 | Subduction IntraSlab | 312.00040 | 28.85107 | 50 |
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| 377 | 8 | 5.55 | -70.8873 | -17.54624 | 85.11363 | Subduction IntraSlab | 311.83160 | 26.94703 | 50 |
| 378 | 7 | 5.55 | -70.92245 | -17.52622 | 85.11363 | Subduction IntraSlab | 311.84320 | 26.65156 | 50 |
| 379 | 11 | 5.55 | -70.95761 | -17.4962 | 85.11363 | Subduction IntraSlab | 311.85340 | 26.35695 | 50 |
| 380 | 13 | 5.55 | -70.99274 | -17.46618 | 85.11363 | Subduction IntraSlab | 311.86580 | 26.07153 | 50 |
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| 383 | 15 | 5.55 | -71.09809 | -17.37606 | 85.11363 | Subduction IntraSlab | 311.89630 | 25.25668 | 50 |
| 384 | 14 | 5.55 | -71.13318 | -17.34601 | 85.11363 | Subduction IntraSlab | 311.90450 | 24.99461 | 50 |
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| 387 | 11 | 5.55 | -71.23839 | -17.25581 | 85.11363 | Subduction IntraSlab | 311.93540 | 24.23439 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 389 | 17 | 5.55 | -71.30847 | -17.19566 | 85.11363 | Subduction IntraSlab | 311.95950 | 23.75313 | 50 |
| 390 | 13 | 5.55 | -70.40276 | -17.92052 | 87.50000 | Subduction IntraSlab | 312.39180 | 31.41593 | 50 |
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| 392 | 14 | 5.55 | -70.47243 | -17.85998 | 87.50000 | Subduction IntraSlab | 312.41080 | 30.64141 | 50 |
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| 394 | 7 | 5.55 | -70.54205 | -17.79942 | 87.50000 | Subduction IntraSlab | 312.43200 | 29.89763 | 50 |
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| 402 | 14 | 5.55 | -70.82005 | -17.55693 | 87.50000 | Subduction IntraSlab | 312.51760 | 27.23727 | 50 |
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| 404 | 11 | 5.55 | -70.90044 | -17.50624 | 86.70454 | Subduction IntraSlab | 312.30690 | 26.64445 | 50 |
| 405 | 15 | 5.55 | -70.93527 | -17.476 | 86.70454 | Subduction IntraSlab | 312.31770 | 26.35776 | 50 |
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| 420 | 15 | 5.55 | -70.5232 | -17.78164 | 89.09091 | Subduction IntraSlab | 312.89820 | 29.89695 | 50 |
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| 422 | 7 | 5.55 | -70.59214 | -17.72062 | 89.09091 | Subduction IntraSlab | 312.92190 | 29.18538 | 50 |
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| 425 | 9 | 5.55 | -70.69546 | -17.62903 | 89.09091 | Subduction IntraSlab | 312.95310 | 28.17563 | 50 |
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| 427 | 10 | 5.55 | -70.76428 | -17.56794 | 89.09091 | Subduction IntraSlab | 312.97180 | 27.54091 | 50 |
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| 455 | 9 | 5.55 | -70.81136 | -17.48705 | 90.68182 | Subduction IntraSlab | 313.45820 | 26.92356 | 50 |
| 456 | 13 | 5.55 | -70.85642 | -17.46626 | 89.88637 | Subduction IntraSlab | 313.23540 | 26.62586 | 50 |
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| 469 | 8 | 5.55 | -70.38393 | -17.83891 | 92.27273 | Subduction IntraSlab | 313.80560 | 31.02486 | 50 |
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| 473 | 5 | 5.55 | -70.51936 | -17.71513 | 92.27273 | Subduction IntraSlab | 313.84860 | 29.53806 | 50 |
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| 482 | 9 | 5.55 | -70.83442 | -17.44627 | 91.47727 | Subduction IntraSlab | 313.70360 | 26.62899 | 50 |
| 483 | 10 | 5.55 | -70.8683 | -17.41537 | 91.47727 | Subduction IntraSlab | 313.71530 | 26.34048 | 50 |
| 484 | 8 | 5.55 | -70.90218 | -17.38446 | 91.47727 | Subduction IntraSlab | 313.72570 | 26.05642 | 50 |



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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 487 | 10 | 5.55 | -71.00372 | -17.2917 | 91.47727 | Subduction IntraSlab | 313.75550 | 25.23642 | 50 |
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| 494 | 11 | 5.55 | -70.36604 | -17.8218 | 93.86364 | Subduction IntraSlab | 314.27590 | 31.02852 | 50 |
| 495 | 14 | 5.55 | -70.3996 | -17.79064 | 93.86364 | Subduction IntraSlab | 314.28760 | 30.64125 | 50 |
| 496 | 9 | 5.55 | -70.43315 | -17.75948 | 93.86364 | Subduction IntraSlab | 314.29630 | 30.26548 | 50 |
| 497 | 10 | 5.55 | -70.46669 | -17.72831 | 93.86364 | Subduction IntraSlab | 314.30560 | 29.90042 | 50 |
| 498 | 7 | 5.55 | -70.50021 | -17.69713 | 93.86364 | Subduction IntraSlab | 314.31850 | 29.53965 | 50 |
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| 500 | 14 | 5.55 | -70.56723 | -17.63476 | 93.86364 | Subduction IntraSlab | 314.33760 | 28.84027 | 50 |
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| 503 | 6 | 5.55 | -70.66766 | -17.54116 | 93.86364 | Subduction IntraSlab | 314.37060 | 27.84786 | 50 |
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| 533 | 12 | 5.55 | -70.82368 | -17.37494 | 94.65909 | Subduction IntraSlab | 314.65280 | 26.32627 | 50 |
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| 560 | 12 | 5.55 | -70.86722 | -17.29157 | 96.25000 | Subduction IntraSlab | 315.14330 | 25.76639 | 50 |
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| 581 | 10 | 5.55 | -70.70299 | -17.38817 | 98.63636 | Subduction IntraSlab | 315.81270 | 26.92151 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 583 | 12 | 5.55 | -70.77908 | -17.3345 | 97.84091 | Subduction IntraSlab | 315.60000 | 26.33005 | 50 |
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| 645 | 9 | 5.55 | -70.35377 | -17.62158 | 103.40910 | Subduction IntraSlab | 317.15440 | 29.94524 | 50 |
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| 653 | 15 | 5.55 | -70.60648 | -17.36137 | 103.40910 | Subduction IntraSlab | 317.23250 | 27.25574 | 50 |
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| 655 | 8 | 5.55 | -70.66955 | -17.29626 | 103.40910 | Subduction IntraSlab | 317.24970 | 26.64672 | 50 |
| 656 | 17 | 5.55 | -70.7122 | -17.27382 | 102.61360 | Subduction IntraSlab | 317.02180 | 26.34989 | 50 |
| 657 | 11 | 5.55 | -70.74387 | -17.24136 | 102.61360 | Subduction IntraSlab | 317.03080 | 26.06382 | 50 |
| 658 | 14 | 5.55 | -70.77552 | -17.2089 | 102.61360 | Subduction IntraSlab | 317.03990 | 25.78230 | 50 |
| 659 | 10 | 5.55 | -70.80717 | -17.17644 | 102.61360 | Subduction IntraSlab | 317.04820 | 25.50443 | 50 |
| 660 | 16 | 5.55 | -70.8388 | -17.14397 | 102.61360 | Subduction IntraSlab | 317.05800 | 25.23312 | 50 |
| 661 | 13 | 5.55 | -70.87041 | -17.1115 | 102.61360 | Subduction IntraSlab | 317.06610 | 24.96756 | 50 |
| 662 | 13 | 5.55 | -70.90202 | -17.07902 | 102.61360 | Subduction IntraSlab | 317.07600 | 24.70564 | 50 |
| 663 | 14 | 5.55 | -70.93362 | -17.04653 | 102.61360 | Subduction IntraSlab | 317.08720 | 24.45011 | 50 |
| 664 | 11 | 5.55 | -70.96521 | -17.01404 | 102.61360 | Subduction IntraSlab | 317.09520 | 24.20345 | 50 |
| 665 | 7 | 5.55 | -70.20959 | -17.73466 | 105.00000 | Subduction IntraSlab | 317.59550 | 31.49629 | 50 |
| 666 | 10 | 5.55 | -70.24095 | -17.70195 | 105.00000 | Subduction IntraSlab | 317.60220 | 31.09785 | 50 |
| 667 | 13 | 5.55 | -70.2723 | -17.66923 | 105.00000 | Subduction IntraSlab | 317.61210 | 30.71194 | 50 |
| 668 | 15 | 5.55 | -70.30363 | -17.63651 | 105.00000 | Subduction IntraSlab | 317.62280 | 30.33223 | 50 |
| 669 | 16 | 5.55 | -70.33496 | -17.60378 | 105.00000 | Subduction IntraSlab | 317.63380 | 29.96032 | 50 |
| 670 | 14 | 5.55 | -70.36627 | -17.57105 | 105.00000 | Subduction IntraSlab | 317.64200 | 29.59901 | 50 |
| 671 | 10 | 5.55 | -70.39758 | -17.53832 | 105.00000 | Subduction IntraSlab | 317.65330 | 29.24395 | 50 |
| 672 | 14 | 5.55 | -70.42886 | -17.50558 | 105.00000 | Subduction IntraSlab | 317.66220 | 28.89383 | 50 |
| 673 | 12 | 5.55 | -70.46014 | -17.47283 | 105.00000 | Subduction IntraSlab | 317.66900 | 28.55207 | 50 |
| 674 | 19 | 5.55 | -70.49141 | -17.44008 | 105.00000 | Subduction IntraSlab | 317.67860 | 28.21976 | 50 |
| 675 | 16 | 5.55 | -70.52267 | -17.40732 | 105.00000 | Subduction IntraSlab | 317.68740 | 27.89309 | 50 |
| 676 | 14 | 5.55 | -70.55392 | -17.37456 | 105.00000 | Subduction IntraSlab | 317.69920 | 27.57310 | 50 |
| 677 | 8 | 5.55 | -70.58515 | -17.3418 | 105.00000 | Subduction IntraSlab | 317.70860 | 27.26156 | 50 |
| 678 | 12 | 5.55 | -70.61638 | -17.30903 | 105.00000 | Subduction IntraSlab | 317.71680 | 26.95579 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 679 | 13 | 5.55 | -70.64759 | -17.27625 | 105.00000 | Subduction IntraSlab | 317.72750 | 26.65539 | 50 |
| 680 | 11 | 5.55 | -70.68993 | -17.25359 | 104.20450 | Subduction IntraSlab | 317.49670 | 26.35322 | 50 |
| 681 | 7 | 5.55 | -70.72128 | -17.22091 | 104.20450 | Subduction IntraSlab | 317.50510 | 26.06780 | 50 |
| 682 | 9 | 5.55 | -70.75262 | -17.18823 | 104.20450 | Subduction IntraSlab | 317.51580 | 25.78766 | 50 |
| 683 | 18 | 5.55 | -70.78394 | -17.15555 | 104.20450 | Subduction IntraSlab | 317.52400 | 25.51210 | 50 |
| 684 | 11 | 5.55 | -70.81525 | -17.12286 | 104.20450 | Subduction IntraSlab | 317.53540 | 25.24208 | 50 |
| 685 | 14 | 5.55 | -70.84656 | -17.09016 | 104.20450 | Subduction IntraSlab | 317.54430 | 24.97474 | 50 |
| 686 | 7 | 5.55 | -70.87785 | -17.05746 | 104.20450 | Subduction IntraSlab | 317.55180 | 24.71622 | 50 |
| 687 | 19 | 5.55 | -70.90913 | -17.02476 | 104.20450 | Subduction IntraSlab | 317.56030 | 24.46334 | 50 |
| 688 | 14 | 5.55 | -70.19205 | -17.71775 | 106.59090 | Subduction IntraSlab | 318.07490 | 31.51715 | 50 |
| 689 | 12 | 5.55 | -70.22309 | -17.68482 | 106.59090 | Subduction IntraSlab | 318.08050 | 31.11799 | 50 |
| 690 | 10 | 5.55 | -70.25413 | -17.65188 | 106.59090 | Subduction IntraSlab | 318.09000 | 30.72803 | 50 |
| 691 | 15 | 5.55 | -70.28515 | -17.61894 | 106.59090 | Subduction IntraSlab | 318.10240 | 30.34969 | 50 |
| 692 | 11 | 5.55 | -70.31615 | -17.58599 | 106.59090 | Subduction IntraSlab | 318.11340 | 29.97841 | 50 |
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| 694 | 12 | 5.55 | -70.37814 | -17.52008 | 106.59090 | Subduction IntraSlab | 318.13100 | 29.25477 | 50 |
| 695 | 8 | 5.55 | -70.40911 | -17.48712 | 106.59090 | Subduction IntraSlab | 318.13960 | 28.90906 | 50 |
| 696 | 11 | 5.55 | -70.44008 | -17.45415 | 106.59090 | Subduction IntraSlab | 318.14710 | 28.56932 | 50 |
| 697 | 11 | 5.55 | -70.47103 | -17.42118 | 106.59090 | Subduction IntraSlab | 318.15560 | 28.23597 | 50 |
| 698 | 9 | 5.55 | -70.50198 | -17.3882 | 106.59090 | Subduction IntraSlab | 318.16700 | 27.90822 | 50 |
| 699 | 13 | 5.55 | -70.53291 | -17.35521 | 106.59090 | Subduction IntraSlab | 318.17780 | 27.58558 | 50 |
| 700 | 11 | 5.55 | -70.56383 | -17.32223 | 106.59090 | Subduction IntraSlab | 318.18640 | 27.27262 | 50 |
| 701 | 9 | 5.55 | -70.59473 | -17.28923 | 106.59090 | Subduction IntraSlab | 318.19530 | 26.96845 | 50 |
| 702 | 9 | 5.55 | -70.62563 | -17.25624 | 106.59090 | Subduction IntraSlab | 318.20450 | 26.66865 | 50 |
| 703 | 15 | 5.55 | -70.66765 | -17.23335 | 105.79550 | Subduction IntraSlab | 317.97580 | 26.36827 | 50 |
| 704 | 10 | 5.55 | -70.69868 | -17.20046 | 105.79550 | Subduction IntraSlab | 317.98100 | 26.08053 | 50 |
| 705 | 15 | 5.55 | -70.72971 | -17.16756 | 105.79550 | Subduction IntraSlab | 317.99150 | 25.80030 | 50 |
| 706 | 12 | 5.55 | -70.76072 | -17.13465 | 105.79550 | Subduction IntraSlab | 318.00320 | 25.52152 | 50 |
| 707 | 11 | 5.55 | -70.79172 | -17.10174 | 105.79550 | Subduction IntraSlab | 318.01200 | 25.24919 | 50 |
| 708 | 16 | 5.55 | -70.82271 | -17.06882 | 105.79550 | Subduction IntraSlab | 318.01910 | 24.98339 | 50 |
| 709 | 12 | 5.55 | -70.85369 | -17.0359 | 105.79550 | Subduction IntraSlab | 318.02960 | 24.72795 | 50 |
| 710 | 4 | 5.55 | -70.88466 | -17.00298 | 105.79550 | Subduction IntraSlab | 318.03750 | 24.46669 | 50 |
| 711 | 13 | 5.55 | -70.17451 | -17.70085 | 108.18180 | Subduction IntraSlab | 318.55410 | 31.54659 | 50 |
| 712 | 9 | 5.55 | -70.20524 | -17.66769 | 108.18180 | Subduction IntraSlab | 318.56070 | 31.14773 | 50 |
| 713 | 9 | 5.55 | -70.23595 | -17.63453 | 108.18180 | Subduction IntraSlab | 318.57180 | 30.75290 | 50 |
| 714 | 16 | 5.55 | -70.26666 | -17.60136 | 108.18180 | Subduction IntraSlab | 318.58220 | 30.36862 | 50 |
| 715 | 10 | 5.55 | -70.29736 | -17.56819 | 108.18180 | Subduction IntraSlab | 318.59250 | 29.99680 | 50 |
| 716 | 6 | 5.55 | -70.32803 | -17.53502 | 108.18180 | Subduction IntraSlab | 318.60060 | 29.63221 | 50 |
| 717 | 13 | 5.55 | -70.35871 | -17.50184 | 108.18180 | Subduction IntraSlab | 318.60840 | 29.27488 | 50 |
| 718 | 8 | 5.55 | -70.38937 | -17.46865 | 108.18180 | Subduction IntraSlab | 318.61860 | 28.92651 | 50 |
| 719 | 14 | 5.55 | -70.42001 | -17.43546 | 108.18180 | Subduction IntraSlab | 318.62800 | 28.58606 | 50 |
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| 721 | 14 | 5.55 | -70.48129 | -17.36907 | 108.18180 | Subduction IntraSlab | 318.64640 | 27.92494 | 50 |
| 722 | 13 | 5.55 | -70.51189 | -17.33586 | 108.18180 | Subduction IntraSlab | 318.65670 | 27.60459 | 50 |
| 723 | 9 | 5.55 | -70.5425 | -17.30265 | 108.18180 | Subduction IntraSlab | 318.66490 | 27.29120 | 50 |
| 724 | 11 | 5.55 | -70.5731 | -17.26944 | 108.18180 | Subduction IntraSlab | 318.67440 | 26.98484 | 50 |
| 725 | 11 | 5.55 | -70.60368 | -17.23622 | 108.18180 | Subduction IntraSlab | 318.68180 | 26.68453 | 50 |
| 726 | 16 | 5.55 | -70.64539 | -17.21312 | 107.38640 | Subduction IntraSlab | 318.45370 | 26.37786 | 50 |
| 727 | 9 | 5.55 | -70.6761 | -17.18 | 107.38640 | Subduction IntraSlab | 318.45950 | 26.08647 | 50 |
| 728 | 12 | 5.55 | -70.70681 | -17.14688 | 107.38640 | Subduction IntraSlab | 318.46850 | 25.80271 | 50 |
| 729 | 10 | 5.55 | -70.7375 | -17.11375 | 107.38640 | Subduction IntraSlab | 318.48310 | 25.52859 | 50 |
| 730 | 8 | 5.55 | -70.76819 | -17.08062 | 107.38640 | Subduction IntraSlab | 318.48870 | 25.25980 | 50 |
| 731 | 9 | 5.55 | -70.79887 | -17.04748 | 107.38640 | Subduction IntraSlab | 318.49600 | 24.99279 | 50 |
| 732 | 9 | 5.55 | -70.82953 | -17.01434 | 107.38640 | Subduction IntraSlab | 318.50720 | 24.73262 | 50 |
| 733 | 11 | 5.55 | -70.15697 | -17.68394 | 109.77270 | Subduction IntraSlab | 319.03460 | 31.56441 | 50 |
| 734 | 11 | 5.55 | -70.18739 | -17.65056 | 109.77270 | Subduction IntraSlab | 319.04200 | 31.16424 | 50 |
| 735 | 5 | 5.55 | -70.21779 | -17.61717 | 109.77270 | Subduction IntraSlab | 319.05300 | 30.77581 | 50 |
| 736 | 7 | 5.55 | -70.24818 | -17.58379 | 109.77270 | Subduction IntraSlab | 319.06330 | 30.39285 | 50 |
| 737 | 15 | 5.55 | -70.27856 | -17.55039 | 109.77270 | Subduction IntraSlab | 319.07140 | 30.01792 | 50 |
| 738 | 16 | 5.55 | -70.30892 | -17.51699 | 109.77270 | Subduction IntraSlab | 319.07960 | 29.65370 | 50 |
| 739 | 12 | 5.55 | -70.33928 | -17.48359 | 109.77270 | Subduction IntraSlab | 319.08860 | 29.29639 | 50 |
| 740 | 13 | 5.55 | -70.36963 | -17.45018 | 109.77270 | Subduction IntraSlab | 319.09840 | 28.94593 | 50 |
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| 743 | 5 | 5.55 | -70.46059 | -17.34993 | 109.77270 | Subduction IntraSlab | 319.12600 | 27.94113 | 50 |
| 744 | 18 | 5.55 | -70.49089 | -17.31651 | 109.77270 | Subduction IntraSlab | 319.13650 | 27.62225 | 50 |
| 745 | 11 | 5.55 | -70.52119 | -17.28308 | 109.77270 | Subduction IntraSlab | 319.14320 | 27.30824 | 50 |
| 746 | 6 | 5.55 | -70.55146 | -17.24964 | 109.77270 | Subduction IntraSlab | 319.15230 | 27.00052 | 50 |
| 747 | 16 | 5.55 | -70.58173 | -17.2162 | 109.77270 | Subduction IntraSlab | 319.16100 | 26.70022 | 50 |
| 748 | 11 | 5.55 | -70.62312 | -17.19288 | 108.97730 | Subduction IntraSlab | 318.93120 | 26.40259 | 50 |
| 749 | 10 | 5.55 | -70.65352 | -17.15954 | 108.97730 | Subduction IntraSlab | 318.93890 | 26.11688 | 50 |
| 750 | 5 | 5.55 | -70.68391 | -17.1262 | 108.97730 | Subduction IntraSlab | 318.94920 | 25.83522 | 50 |
| 751 | 14 | 5.55 | -70.71429 | -17.09285 | 108.97730 | Subduction IntraSlab | 318.96090 | 25.55699 | 50 |
| 752 | 9 | 5.55 | -70.74467 | -17.0595 | 108.97730 | Subduction IntraSlab | 318.96570 | 25.28066 | 50 |
| 753 | 5 | 5.55 | -70.77503 | -17.02614 | 108.97730 | Subduction IntraSlab | 318.97540 | 25.01264 | 50 |
| 754 | 9 | 5.55 | -70.80537 | -16.99278 | 108.97730 | Subduction IntraSlab | 318.98490 | 24.75260 | 50 |
| 755 | 17 | 5.55 | -70.13945 | -17.66703 | 111.36360 | Subduction IntraSlab | 319.51600 | 31.58543 | 50 |
| 756 | 13 | 5.55 | -70.16954 | -17.63342 | 111.36360 | Subduction IntraSlab | 319.52360 | 31.18396 | 50 |
| 757 | 9 | 5.55 | -70.19963 | -17.59982 | 111.36360 | Subduction IntraSlab | 319.53250 | 30.79266 | 50 |
| 758 | 12 | 5.55 | -70.22971 | -17.56621 | 111.36360 | Subduction IntraSlab | 319.54510 | 30.41132 | 50 |
| 759 | 8 | 5.55 | -70.25977 | -17.53259 | 111.36360 | Subduction IntraSlab | 319.55210 | 30.03583 | 50 |
| 760 | 9 | 5.55 | -70.28982 | -17.49897 | 111.36360 | Subduction IntraSlab | 319.56010 | 29.66889 | 50 |
| 761 | 12 | 5.55 | -70.31985 | -17.46535 | 111.36360 | Subduction IntraSlab | 319.57150 | 29.31141 | 50 |
| 762 | 10 | 5.55 | -70.34988 | -17.43172 | 111.36360 | Subduction IntraSlab | 319.57880 | 28.96137 | 50 |
| 763 | 13 | 5.55 | -70.37991 | -17.39808 | 111.36360 | Subduction IntraSlab | 319.58830 | 28.61942 | 50 |
| 764 | 9 | 5.55 | -70.40991 | -17.36444 | 111.36360 | Subduction IntraSlab | 319.59670 | 28.28378 | 50 |
| 765 | 5 | 5.55 | -70.43991 | -17.3308 | 111.36360 | Subduction IntraSlab | 319.60580 | 27.95494 | 50 |
| 766 | 7 | 5.55 | -70.46989 | -17.29715 | 111.36360 | Subduction IntraSlab | 319.61660 | 27.63465 | 50 |
| 767 | 14 | 5.55 | -70.49987 | -17.2635 | 111.36360 | Subduction IntraSlab | 319.62310 | 27.32033 | 50 |
| 768 | 17 | 5.55 | -70.52984 | -17.22984 | 111.36360 | Subduction IntraSlab | 319.63210 | 27.01109 | 50 |
| 769 | 5 | 5.55 | -70.55979 | -17.19618 | 111.36360 | Subduction IntraSlab | 319.64220 | 26.70866 | 50 |
| 770 | 16 | 5.55 | -70.58973 | -17.16252 | 111.36360 | Subduction IntraSlab | 319.65140 | 26.41368 | 50 |
| 771 | 14 | 5.55 | -70.63094 | -17.13908 | 110.56820 | Subduction IntraSlab | 319.42050 | 26.11778 | 50 |
| 772 | 17 | 5.55 | -70.66103 | -17.10551 | 110.56820 | Subduction IntraSlab | 319.42800 | 25.83084 | 50 |
| 773 | 12 | 5.55 | -70.69109 | -17.07194 | 110.56820 | Subduction IntraSlab | 319.43680 | 25.55766 | 50 |
| 774 | 9 | 5.55 | -70.72115 | -17.03837 | 110.56820 | Subduction IntraSlab | 319.44620 | 25.29081 | 50 |
| 775 | 12 | 5.55 | -70.7512 | -17.00479 | 110.56820 | Subduction IntraSlab | 319.45620 | 25.02141 | 50 |



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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 777 | 11 | 5.55 | -70.12192 | -17.65012 | 112.95450 | Subduction IntraSlab | 319.99730 | 31.60984 | 50 |
| 778 | 8 | 5.55 | -70.1517 | -17.61629 | 112.95450 | Subduction IntraSlab | 320.00570 | 31.20799 | 50 |
| 779 | 12 | 5.55 | -70.18147 | -17.58246 | 112.95450 | Subduction IntraSlab | 320.01480 | 30.81398 | 50 |
| 780 | 9 | 5.55 | -70.21123 | -17.54863 | 112.95450 | Subduction IntraSlab | 320.02610 | 30.43173 | 50 |
| 781 | 9 | 5.55 | -70.24097 | -17.51479 | 112.95450 | Subduction IntraSlab | 320.03350 | 30.05795 | 50 |
| 782 | 7 | 5.55 | -70.27071 | -17.48095 | 112.95450 | Subduction IntraSlab | 320.04190 | 29.69108 | 50 |
| 783 | 9 | 5.55 | -70.30044 | -17.4471 | 112.95450 | Subduction IntraSlab | 320.05240 | 29.33360 | 50 |
| 784 | 13 | 5.55 | -70.33015 | -17.41325 | 112.95450 | Subduction IntraSlab | 320.05970 | 28.98472 | 50 |
| 785 | 13 | 5.55 | -70.35986 | -17.37939 | 112.95450 | Subduction IntraSlab | 320.06980 | 28.64225 | 50 |
| 786 | 13 | 5.55 | -70.38955 | -17.34553 | 112.95450 | Subduction IntraSlab | 320.07920 | 28.30536 | 50 |
| 787 | 9 | 5.55 | -70.41923 | -17.31166 | 112.95450 | Subduction IntraSlab | 320.08580 | 27.97503 | 50 |
| 788 | 17 | 5.55 | -70.4489 | -17.27779 | 112.95450 | Subduction IntraSlab | 320.09490 | 27.65281 | 50 |
| 789 | 12 | 5.55 | -70.47856 | -17.24392 | 112.95450 | Subduction IntraSlab | 320.10430 | 27.33775 | 50 |
| 790 | 11 | 5.55 | -70.50821 | -17.21004 | 112.95450 | Subduction IntraSlab | 320.11430 | 27.03001 | 50 |
| 791 | 6 | 5.55 | -70.53785 | -17.17616 | 112.95450 | Subduction IntraSlab | 320.12440 | 26.72795 | 50 |
| 792 | 12 | 5.55 | -70.56747 | -17.14227 | 112.95450 | Subduction IntraSlab | 320.13230 | 26.43081 | 50 |
| 793 | 11 | 5.55 | -70.60838 | -17.11861 | 112.15910 | Subduction IntraSlab | 319.89790 | 26.13134 | 50 |
| 794 | 6 | 5.55 | -70.63814 | -17.08483 | 112.15910 | Subduction IntraSlab | 319.90700 | 25.85168 | 50 |
| 795 | 12 | 5.55 | -70.66789 | -17.05103 | 112.15910 | Subduction IntraSlab | 319.91650 | 25.57338 | 50 |
| 796 | 7 | 5.55 | -70.69764 | -17.01724 | 112.15910 | Subduction IntraSlab | 319.92570 | 25.29967 | 50 |
| 797 | 12 | 5.55 | -70.72736 | -16.98344 | 112.15910 | Subduction IntraSlab | 319.93750 | 25.03525 | 50 |
| 798 | 15 | 5.55 | -70.10439 | -17.6332 | 114.54550 | Subduction IntraSlab | 320.48060 | 31.63760 | 50 |
| 799 | 13 | 5.55 | -70.13386 | -17.59915 | 114.54550 | Subduction IntraSlab | 320.48800 | 31.23518 | 50 |
| 800 | 6 | 5.55 | -70.16331 | -17.5651 | 114.54550 | Subduction IntraSlab | 320.49680 | 30.84443 | 50 |
| 801 | 8 | 5.55 | -70.19276 | -17.53105 | 114.54550 | Subduction IntraSlab | 320.50650 | 30.46317 | 50 |
| 802 | 12 | 5.55 | -70.22219 | -17.49698 | 114.54550 | Subduction IntraSlab | 320.51580 | 30.08706 | 50 |
| 803 | 15 | 5.55 | -70.25161 | -17.46292 | 114.54550 | Subduction IntraSlab | 320.52550 | 29.71617 | 50 |
| 804 | 14 | 5.55 | -70.28102 | -17.42885 | 114.54550 | Subduction IntraSlab | 320.53190 | 29.35591 | 50 |
| 805 | 7 | 5.55 | -70.31042 | -17.39478 | 114.54550 | Subduction IntraSlab | 320.53990 | 29.00560 | 50 |
| 806 | 12 | 5.55 | -70.33981 | -17.3607 | 114.54550 | Subduction IntraSlab | 320.55250 | 28.66196 | 50 |
| 807 | 12 | 5.55 | -70.36919 | -17.32661 | 114.54550 | Subduction IntraSlab | 320.56150 | 28.32611 | 50 |
| 808 | 16 | 5.55 | -70.39855 | -17.29253 | 114.54550 | Subduction IntraSlab | 320.56580 | 27.99735 | 50 |
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| 812 | 13 | 5.55 | -70.51591 | -17.15613 | 114.54550 | Subduction IntraSlab | 320.60550 | 26.75361 | 50 |
| 813 | 10 | 5.55 | -70.54523 | -17.12202 | 114.54550 | Subduction IntraSlab | 320.61330 | 26.45739 | 50 |
| 814 | 11 | 5.55 | -70.58581 | -17.09814 | 113.75000 | Subduction IntraSlab | 320.37650 | 26.15377 | 50 |
| 815 | 10 | 5.55 | -70.61526 | -17.06414 | 113.75000 | Subduction IntraSlab | 320.38750 | 25.86913 | 50 |
| 816 | 9 | 5.55 | -70.6447 | -17.03012 | 113.75000 | Subduction IntraSlab | 320.39730 | 25.58912 | 50 |
| 817 | 10 | 5.55 | -70.67413 | -16.99611 | 113.75000 | Subduction IntraSlab | 320.40490 | 25.31653 | 50 |
| 818 | 16 | 5.55 | -70.08688 | -17.61629 | 116.13640 | Subduction IntraSlab | 320.96350 | 31.66949 | 50 |
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| 823 | 8 | 5.55 | -70.23251 | -17.44489 | 116.13640 | Subduction IntraSlab | 321.00840 | 29.74733 | 50 |
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| 828 | 16 | 5.55 | -70.37788 | -17.27338 | 116.13640 | Subduction IntraSlab | 321.04780 | 28.02305 | 50 |
| 829 | 15 | 5.55 | -70.40693 | -17.23907 | 116.13640 | Subduction IntraSlab | 321.05750 | 27.70161 | 50 |
| 830 | 10 | 5.55 | -70.43596 | -17.20475 | 116.13640 | Subduction IntraSlab | 321.06720 | 27.38688 | 50 |
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| 835 | 7 | 5.55 | -70.59238 | -17.04345 | 115.34090 | Subduction IntraSlab | 320.86800 | 25.88979 | 50 |
| 836 | 13 | 5.55 | -70.62151 | -17.00921 | 115.34090 | Subduction IntraSlab | 320.87730 | 25.61041 | 50 |
| 837 | 14 | 5.55 | -70.65063 | -16.97498 | 115.34090 | Subduction IntraSlab | 320.88560 | 25.33397 | 50 |
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| 839 | 10 | 5.55 | -70.09819 | -17.56488 | 117.72730 | Subduction IntraSlab | 321.45390 | 31.29770 | 50 |
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| 842 | 10 | 5.55 | -70.18463 | -17.46137 | 117.72730 | Subduction IntraSlab | 321.48100 | 30.14320 | 50 |
| 843 | 12 | 5.55 | -70.21342 | -17.42686 | 117.72730 | Subduction IntraSlab | 321.48970 | 29.77624 | 50 |
| 844 | 9 | 5.55 | -70.2422 | -17.39234 | 117.72730 | Subduction IntraSlab | 321.49790 | 29.41672 | 50 |
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| 850 | 8 | 5.55 | -70.41467 | -17.18517 | 117.72730 | Subduction IntraSlab | 321.54890 | 27.40893 | 50 |
| 851 | 5 | 5.55 | -70.44337 | -17.15062 | 117.72730 | Subduction IntraSlab | 321.55830 | 27.10013 | 50 |
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| 855 | 8 | 5.55 | -70.56952 | -17.02275 | 116.93180 | Subduction IntraSlab | 321.34870 | 25.90594 | 50 |
| 856 | 9 | 5.55 | -70.59833 | -16.9883 | 116.93180 | Subduction IntraSlab | 321.35900 | 25.62943 | 50 |
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| 861 | 8 | 5.55 | -70.16586 | -17.44356 | 119.31820 | Subduction IntraSlab | 321.96320 | 30.17423 | 50 |
| 862 | 8 | 5.55 | -70.19434 | -17.40883 | 119.31820 | Subduction IntraSlab | 321.97260 | 29.80313 | 50 |
| 863 | 10 | 5.55 | -70.2228 | -17.37409 | 119.31820 | Subduction IntraSlab | 321.98180 | 29.44077 | 50 |
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| 865 | 10 | 5.55 | -70.2797 | -17.3046 | 119.31820 | Subduction IntraSlab | 321.99380 | 28.74192 | 50 |
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| 870 | 19 | 5.55 | -70.42176 | -17.13081 | 119.31820 | Subduction IntraSlab | 322.03940 | 27.12470 | 50 |
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| 872 | 12 | 5.55 | -70.47852 | -17.06127 | 119.31820 | Subduction IntraSlab | 322.05650 | 26.52482 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 874 | 9 | 5.55 | -70.54665 | -17.00205 | 118.52270 | Subduction IntraSlab | 321.83190 | 25.94230 | 50 |
| 875 | 10 | 5.55 | -70.57515 | -16.96738 | 118.52270 | Subduction IntraSlab | 321.83820 | 25.66238 | 50 |
| 876 | 14 | 5.55 | -70.03433 | -17.56553 | 120.90910 | Subduction IntraSlab | 322.41330 | 31.77017 | 50 |
| 877 | 15 | 5.55 | -70.06253 | -17.53059 | 120.90910 | Subduction IntraSlab | 322.42230 | 31.36388 | 50 |
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| 879 | 10 | 5.55 | -70.11891 | -17.4607 | 120.90910 | Subduction IntraSlab | 322.43580 | 30.57938 | 50 |
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| 881 | 7 | 5.55 | -70.17525 | -17.39079 | 120.90910 | Subduction IntraSlab | 322.45630 | 29.83494 | 50 |
| 882 | 11 | 5.55 | -70.2034 | -17.35583 | 120.90910 | Subduction IntraSlab | 322.46400 | 29.47506 | 50 |
| 883 | 14 | 5.55 | -70.23154 | -17.32087 | 120.90910 | Subduction IntraSlab | 322.47260 | 29.12013 | 50 |
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| 885 | 6 | 5.55 | -70.28779 | -17.25093 | 120.90910 | Subduction IntraSlab | 322.48530 | 28.43198 | 50 |
| 886 | 10 | 5.55 | -70.3159 | -17.21595 | 120.90910 | Subduction IntraSlab | 322.49860 | 28.10157 | 50 |
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| 889 | 9 | 5.55 | -70.40016 | -17.111 | 120.90910 | Subduction IntraSlab | 322.52100 | 27.15259 | 50 |
| 890 | 11 | 5.55 | -70.42823 | -17.076 | 120.90910 | Subduction IntraSlab | 322.52860 | 26.84795 | 50 |
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| 893 | 9 | 5.55 | -70.5238 | -16.98136 | 120.11360 | Subduction IntraSlab | 322.31360 | 25.95774 | 50 |
| 894 | 8 | 5.55 | -70.01682 | -17.54861 | 122.50000 | Subduction IntraSlab | 322.89640 | 31.80653 | 50 |
| 895 | 9 | 5.55 | -70.04471 | -17.51345 | 122.50000 | Subduction IntraSlab | 322.90470 | 31.40259 | 50 |
| 896 | 10 | 5.55 | -70.07259 | -17.47828 | 122.50000 | Subduction IntraSlab | 322.91150 | 31.00624 | 50 |
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| 898 | 7 | 5.55 | -70.12832 | -17.40794 | 122.50000 | Subduction IntraSlab | 322.93000 | 30.23570 | 50 |
| 899 | 10 | 5.55 | -70.15617 | -17.37276 | 122.50000 | Subduction IntraSlab | 322.93820 | 29.86557 | 50 |
| 900 | 16 | 5.55 | -70.18401 | -17.33757 | 122.50000 | Subduction IntraSlab | 322.94400 | 29.50574 | 50 |
| 901 | 13 | 5.55 | -70.21183 | -17.30239 | 122.50000 | Subduction IntraSlab | 322.95540 | 29.15394 | 50 |
| 902 | 13 | 5.55 | -70.23965 | -17.26719 | 122.50000 | Subduction IntraSlab | 322.96260 | 28.80707 | 50 |
| 903 | 10 | 5.55 | -70.26745 | -17.232 | 122.50000 | Subduction IntraSlab | 322.96980 | 28.46428 | 50 |
| 904 | 11 | 5.55 | -70.29524 | -17.1968 | 122.50000 | Subduction IntraSlab | 322.98020 | 28.13107 | 50 |
| 905 | 17 | 5.55 | -70.32303 | -17.1616 | 122.50000 | Subduction IntraSlab | 322.98470 | 27.80668 | 50 |
| 906 | 12 | 5.55 | -70.35081 | -17.12639 | 122.50000 | Subduction IntraSlab | 322.99300 | 27.48948 | 50 |
| 907 | 18 | 5.55 | -70.37857 | -17.09118 | 122.50000 | Subduction IntraSlab | 323.00350 | 27.18019 | 50 |
| 908 | 14 | 5.55 | -70.40632 | -17.05597 | 122.50000 | Subduction IntraSlab | 323.01350 | 26.87491 | 50 |
| 909 | 17 | 5.55 | -70.43406 | -17.02075 | 122.50000 | Subduction IntraSlab | 323.02230 | 26.57561 | 50 |
| 910 | 6 | 5.55 | -70.47306 | -16.99577 | 121.70450 | Subduction IntraSlab | 322.78510 | 26.27013 | 50 |
| 911 | 9 | 5.55 | -69.99931 | -17.53169 | 124.09090 | Subduction IntraSlab | 323.37950 | 31.84699 | 50 |
| 912 | 8 | 5.55 | -70.02689 | -17.4963 | 124.09090 | Subduction IntraSlab | 323.38640 | 31.44087 | 50 |
| 913 | 9 | 5.55 | -70.05446 | -17.46091 | 124.09090 | Subduction IntraSlab | 323.39430 | 31.04257 | 50 |
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| 915 | 14 | 5.55 | -70.10956 | -17.39012 | 124.09090 | Subduction IntraSlab | 323.41450 | 30.27598 | 50 |
| 916 | 8 | 5.55 | -70.13708 | -17.35472 | 124.09090 | Subduction IntraSlab | 323.42050 | 29.90176 | 50 |
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| 924 | 11 | 5.55 | -70.35698 | -17.07136 | 124.09090 | Subduction IntraSlab | 323.48580 | 27.20684 | 50 |
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| 933 | 13 | 5.55 | -70.11801 | -17.33668 | 125.68180 | Subduction IntraSlab | 323.90390 | 29.94596 | 50 |
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| 939 | 7 | 5.55 | -70.28111 | -17.12285 | 125.68180 | Subduction IntraSlab | 323.95210 | 27.87757 | 50 |
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| 945 | 15 | 5.55 | -69.99126 | -17.46201 | 127.27270 | Subduction IntraSlab | 324.35570 | 31.52962 | 50 |
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| 953 | 14 | 5.55 | -70.20646 | -17.17521 | 127.27270 | Subduction IntraSlab | 324.41710 | 28.57389 | 50 |
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| 955 | 9 | 5.55 | -70.26015 | -17.10347 | 127.27270 | Subduction IntraSlab | 324.43480 | 27.91072 | 50 |
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| 957 | 9 | 5.55 | -70.3138 | -17.03172 | 127.27270 | Subduction IntraSlab | 324.44850 | 27.27989 | 50 |
| 958 | 16 | 5.55 | -70.34062 | -16.99584 | 127.27270 | Subduction IntraSlab | 324.45900 | 26.97395 | 50 |
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| 963 | 5 | 5.55 | -70.05328 | -17.33666 | 128.86360 | Subduction IntraSlab | 324.85960 | 30.39647 | 50 |
| 964 | 7 | 5.55 | -70.07988 | -17.30059 | 128.86360 | Subduction IntraSlab | 324.86700 | 30.02265 | 50 |
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| 966 | 13 | 5.55 | -70.13303 | -17.22844 | 128.86360 | Subduction IntraSlab | 324.88810 | 29.29827 | 50 |
| 967 | 18 | 5.55 | -70.15958 | -17.19236 | 128.86360 | Subduction IntraSlab | 324.89070 | 28.94966 | 50 |
| 968 | 8 | 5.55 | -70.18613 | -17.15627 | 128.86360 | Subduction IntraSlab | 324.89920 | 28.60872 | 50 |
| 969 | 10 | 5.55 | -70.21268 | -17.12018 | 128.86360 | Subduction IntraSlab | 324.90800 | 28.27334 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 972 | 9 | 5.55 | -70.29223 | -17.01119 | 128.86360 | Subduction IntraSlab | 324.93010 | 27.31087 | 50 |
| 973 | 12 | 5.55 | -69.92933 | -17.46399 | 130.45450 | Subduction IntraSlab | 325.31180 | 32.02153 | 50 |
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| 975 | 17 | 5.55 | -69.98196 | -17.39142 | 130.45450 | Subduction IntraSlab | 325.32970 | 31.21203 | 50 |
| 976 | 7 | 5.55 | -70.00825 | -17.35513 | 130.45450 | Subduction IntraSlab | 325.33650 | 30.82354 | 50 |
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| 983 | 9 | 5.55 | -70.19204 | -17.10102 | 130.45450 | Subduction IntraSlab | 325.39050 | 28.31099 | 50 |
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| 985 | 17 | 5.55 | -70.24446 | -17.02839 | 130.45450 | Subduction IntraSlab | 325.40620 | 27.66313 | 50 |
| 986 | 10 | 5.55 | -69.91184 | -17.44705 | 132.04550 | Subduction IntraSlab | 325.79440 | 32.07447 | 50 |
| 987 | 8 | 5.55 | -69.93784 | -17.41055 | 132.04550 | Subduction IntraSlab | 325.80410 | 31.66539 | 50 |
| 988 | 17 | 5.55 | -69.96384 | -17.37404 | 132.04550 | Subduction IntraSlab | 325.81230 | 31.26079 | 50 |
| 989 | 7 | 5.55 | -69.98982 | -17.33753 | 132.04550 | Subduction IntraSlab | 325.81920 | 30.86642 | 50 |
| 990 | 14 | 5.55 | -70.01579 | -17.30102 | 132.04550 | Subduction IntraSlab | 325.82580 | 30.48225 | 50 |
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| 994 | 12 | 5.55 | -70.11958 | -17.15493 | 132.04550 | Subduction IntraSlab | 325.85800 | 29.03278 | 50 |
| 995 | 8 | 5.55 | -70.1455 | -17.1184 | 132.04550 | Subduction IntraSlab | 325.86470 | 28.68969 | 50 |
| 996 | 15 | 5.55 | -70.17142 | -17.08186 | 132.04550 | Subduction IntraSlab | 325.87120 | 28.35585 | 50 |
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| 1000 | 10 | 5.55 | -69.94572 | -17.35666 | 133.63640 | Subduction IntraSlab | 326.29430 | 31.30951 | 50 |
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| 1018 | 16 | 5.55 | -69.85939 | -17.39626 | 136.81820 | Subduction IntraSlab | 327.24160 | 32.23677 | 50 |
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| 1021 | 13 | 5.55 | -69.93455 | -17.28472 | 136.81820 | Subduction IntraSlab | 327.26260 | 31.02305 | 50 |
| 1022 | 15 | 5.55 | -69.95958 | -17.24754 | 136.81820 | Subduction IntraSlab | 327.27090 | 30.63770 | 50 |
| 1023 | 9 | 5.55 | -69.9846 | -17.21035 | 136.81820 | Subduction IntraSlab | 327.27990 | 30.26084 | 50 |
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| 1066 | 4 | 5.65 | -70.63649 | -18.0159 | 73.18182 | Subduction IntraSlab | 308.28400 | 30.73857 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 1067 | 8 | 5.65 | -70.67416 | -17.98761 | 73.18182 | Subduction IntraSlab | 308.29640 | 30.36507 | 50 |
| 1068 | 6 | 5.65 | -70.71182 | -17.95932 | 73.18182 | Subduction IntraSlab | 308.30910 | 30.00102 | 50 |
| 1069 | 10 | 5.65 | -70.74947 | -17.93102 | 73.18182 | Subduction IntraSlab | 308.31970 | 29.64684 | 50 |
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| 1071 | 13 | 5.65 | -70.82472 | -17.87441 | 73.18182 | Subduction IntraSlab | 308.34380 | 28.95729 | 50 |
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| 1073 | 5 | 5.65 | -70.89993 | -17.81776 | 73.18182 | Subduction IntraSlab | 308.36540 | 28.29899 | 50 |
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| 1134 | 8 | 5.65 | -71.19114 | -17.52081 | 76.36364 | Subduction IntraSlab | 309.37050 | 25.60386 | 50 |
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| 1138 | 9 | 5.65 | -71.33846 | -17.40542 | 76.36364 | Subduction IntraSlab | 309.41370 | 24.56536 | 50 |
| 1139 | 7 | 5.65 | -71.37525 | -17.37656 | 76.36364 | Subduction IntraSlab | 309.42720 | 24.31936 | 50 |
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| 1142 | 9 | 5.65 | -71.48558 | -17.28993 | 76.36364 | Subduction IntraSlab | 309.45840 | 23.60542 | 50 |
| 1143 | 14 | 5.65 | -70.5083 | -18.02181 | 77.95454 | Subduction IntraSlab | 309.62190 | 31.46080 | 50 |
| 1144 | 7 | 5.65 | -70.54504 | -17.99288 | 77.95454 | Subduction IntraSlab | 309.63350 | 31.07088 | 50 |
| 1145 | 11 | 5.65 | -70.58177 | -17.96394 | 77.95454 | Subduction IntraSlab | 309.64400 | 30.68722 | 50 |
| 1146 | 11 | 5.65 | -70.61849 | -17.93499 | 77.95454 | Subduction IntraSlab | 309.65560 | 30.31399 | 50 |
| 1147 | 11 | 5.65 | -70.6552 | -17.90604 | 77.95454 | Subduction IntraSlab | 309.66840 | 29.94992 | 50 |
| 1148 | 12 | 5.65 | -70.69189 | -17.87708 | 77.95454 | Subduction IntraSlab | 309.67840 | 29.59439 | 50 |
| 1149 | 5 | 5.65 | -70.72857 | -17.84811 | 77.95454 | Subduction IntraSlab | 309.68900 | 29.24766 | 50 |
| 1150 | 10 | 5.65 | -70.76524 | -17.81913 | 77.95454 | Subduction IntraSlab | 309.70300 | 28.90804 | 50 |
| 1151 | 14 | 5.65 | -70.8019 | -17.79015 | 77.95454 | Subduction IntraSlab | 309.71150 | 28.57412 | 50 |
| 1152 | 12 | 5.65 | -70.83855 | -17.76116 | 77.95454 | Subduction IntraSlab | 309.72320 | 28.24360 | 50 |
| 1153 | 9 | 5.65 | -70.87518 | -17.73217 | 77.95454 | Subduction IntraSlab | 309.73400 | 27.92139 | 50 |
| 1154 | 4 | 5.65 | -70.9118 | -17.70317 | 77.95454 | Subduction IntraSlab | 309.74370 | 27.60849 | 50 |
| 1155 | 14 | 5.65 | -70.94841 | -17.67416 | 77.95454 | Subduction IntraSlab | 309.75830 | 27.30069 | 50 |
| 1156 | 12 | 5.65 | -70.98501 | -17.64514 | 77.95454 | Subduction IntraSlab | 309.76840 | 26.99945 | 50 |
| 1157 | 5 | 5.65 | -71.0216 | -17.61612 | 77.95454 | Subduction IntraSlab | 309.77740 | 26.70495 | 50 |
| 1158 | 12 | 5.65 | -71.05817 | -17.58709 | 77.95454 | Subduction IntraSlab | 309.78930 | 26.41671 | 50 |
| 1159 | 6 | 5.65 | -71.09473 | -17.55805 | 77.95454 | Subduction IntraSlab | 309.80240 | 26.13524 | 50 |
| 1160 | 8 | 5.65 | -71.13129 | -17.52901 | 77.95454 | Subduction IntraSlab | 309.81370 | 25.85879 | 50 |
| 1161 | 8 | 5.65 | -71.16782 | -17.49996 | 77.95454 | Subduction IntraSlab | 309.82310 | 25.58695 | 50 |
| 1162 | 15 | 5.65 | -71.20435 | -17.47091 | 77.95454 | Subduction IntraSlab | 309.83310 | 25.32170 | 50 |
| 1163 | 9 | 5.65 | -71.24088 | -17.44184 | 77.95454 | Subduction IntraSlab | 309.84470 | 25.06021 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1164 | 10 | 5.65 | -71.27737 | -17.41277 | 77.95454 | Subduction IntraSlab | 309.85460 | 24.80074 | 50 |
| 1165 | 11 | 5.65 | -71.31387 | -17.3837 | 77.95454 | Subduction IntraSlab | 309.86670 | 24.54608 | 50 |
| 1166 | 9 | 5.65 | -71.35036 | -17.35461 | 77.95454 | Subduction IntraSlab | 309.87940 | 24.29883 | 50 |
| 1167 | 9 | 5.65 | -71.38683 | -17.32552 | 77.95454 | Subduction IntraSlab | 309.88830 | 24.05780 | 50 |
| 1168 | 8 | 5.65 | -71.42329 | -17.29643 | 77.95454 | Subduction IntraSlab | 309.89870 | 23.81940 | 50 |
| 1169 | 16 | 5.65 | -71.45973 | -17.26732 | 77.95454 | Subduction IntraSlab | 309.91160 | 23.58583 | 50 |
| 1170 | 9 | 5.65 | -70.49071 | -18.00493 | 79.54546 | Subduction IntraSlab | 310.07910 | 31.45151 | 50 |
| 1171 | 6 | 5.65 | -70.52713 | -17.97578 | 79.54546 | Subduction IntraSlab | 310.09090 | 31.06025 | 50 |
| 1172 | 6 | 5.65 | -70.56354 | -17.94662 | 79.54546 | Subduction IntraSlab | 310.10250 | 30.67798 | 50 |
| 1173 | 12 | 5.65 | -70.59994 | -17.91745 | 79.54546 | Subduction IntraSlab | 310.11260 | 30.30264 | 50 |
| 1174 | 12 | 5.65 | -70.63633 | -17.88827 | 79.54546 | Subduction IntraSlab | 310.12260 | 29.93783 | 50 |
| 1175 | 14 | 5.65 | -70.67271 | -17.85909 | 79.54546 | Subduction IntraSlab | 310.13470 | 29.58103 | 50 |
| 1176 | 10 | 5.65 | -70.70907 | -17.8299 | 79.54546 | Subduction IntraSlab | 310.14510 | 29.23134 | 50 |
| 1177 | 8 | 5.65 | -70.74542 | -17.80071 | 79.54546 | Subduction IntraSlab | 310.15820 | 28.93000 | 50 |
| 1178 | 7 | 5.65 | -70.78176 | -17.7715 | 79.54546 | Subduction IntraSlab | 310.16950 | 28.55891 | 50 |
| 1179 | 5 | 5.65 | -70.81809 | -17.74229 | 79.54546 | Subduction IntraSlab | 310.17960 | 28.23040 | 50 |
| 1180 | 12 | 5.65 | -70.85441 | -17.71308 | 79.54546 | Subduction IntraSlab | 310.19070 | 27.91095 | 50 |
| 1181 | 10 | 5.65 | -70.89071 | -17.68386 | 79.54546 | Subduction IntraSlab | 310.20010 | 27.59506 | 50 |
| 1182 | 7 | 5.65 | -70.92701 | -17.65463 | 79.54546 | Subduction IntraSlab | 310.21300 | 27.28687 | 50 |
| 1183 | 15 | 5.65 | -70.96329 | -17.62539 | 79.54546 | Subduction IntraSlab | 310.22420 | 26.98773 | 50 |
| 1184 | 8 | 5.65 | -70.99956 | -17.59615 | 79.54546 | Subduction IntraSlab | 310.23440 | 26.69172 | 50 |
| 1185 | 8 | 5.65 | -71.03581 | -17.56669 | 79.54546 | Subduction IntraSlab | 310.24620 | 26.39956 | 50 |
| 1186 | 6 | 5.65 | -71.07206 | -17.53764 | 79.54546 | Subduction IntraSlab | 310.25610 | 26.11552 | 50 |
| 1187 | 12 | 5.65 | -71.1083 | -17.50838 | 79.54546 | Subduction IntraSlab | 310.26800 | 25.83895 | 50 |
| 1188 | 19 | 5.65 | -71.14452 | -17.47911 | 79.54546 | Subduction IntraSlab | 310.27850 | 25.56733 | 50 |
| 1189 | 15 | 5.65 | -71.18073 | -17.44983 | 79.54546 | Subduction IntraSlab | 310.28680 | 25.30129 | 50 |
| 1190 | 7 | 5.65 | -71.21693 | -17.42055 | 79.54546 | Subduction IntraSlab | 310.30010 | 25.03891 | 50 |
| 1191 | 10 | 5.65 | -71.25312 | -17.39126 | 79.54546 | Subduction IntraSlab | 310.31120 | 24.78116 | 50 |
| 1192 | 8 | 5.65 | -71.2893 | -17.36197 | 79.54546 | Subduction IntraSlab | 310.32190 | 24.53071 | 50 |
| 1193 | 5 | 5.65 | -71.32546 | -17.33266 | 79.54546 | Subduction IntraSlab | 310.33340 | 24.28438 | 50 |
| 1194 | 12 | 5.65 | -71.36162 | -17.30335 | 79.54546 | Subduction IntraSlab | 310.34310 | 24.04107 | 50 |
| 1195 | 16 | 5.65 | -71.39776 | -17.27404 | 79.54546 | Subduction IntraSlab | 310.35400 | 23.80340 | 50 |
| 1196 | 10 | 5.65 | -71.43389 | -17.24472 | 79.54546 | Subduction IntraSlab | 310.36600 | 23.57102 | 50 |
| 1197 | 14 | 5.65 | -70.47311 | -17.98805 | 81.13636 | Subduction IntraSlab | 310.53700 | 31.43650 | 50 |
| 1198 | 4 | 5.65 | -70.50922 | -17.95868 | 81.13636 | Subduction IntraSlab | 310.54960 | 31.04667 | 50 |
| 1199 | 8 | 5.65 | -70.54531 | -17.92929 | 81.13636 | Subduction IntraSlab | 310.56250 | 30.66751 | 50 |
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| 1201 | 4 | 5.65 | -70.61746 | -17.87051 | 81.13636 | Subduction IntraSlab | 310.57940 | 29.93005 | 50 |
| 1202 | 5 | 5.65 | -70.65353 | -17.8411 | 81.13636 | Subduction IntraSlab | 310.59390 | 29.57193 | 50 |
| 1203 | 13 | 5.65 | -70.68957 | -17.81169 | 81.13636 | Subduction IntraSlab | 310.60330 | 29.22089 | 50 |
| 1204 | 14 | 5.65 | -70.72561 | -17.78228 | 81.13636 | Subduction IntraSlab | 310.61510 | 28.87803 | 50 |
| 1205 | 9 | 5.65 | -70.76163 | -17.75285 | 81.13636 | Subduction IntraSlab | 310.62930 | 28.54322 | 50 |
| 1206 | 5 | 5.65 | -70.79764 | -17.72342 | 81.13636 | Subduction IntraSlab | 310.63720 | 28.21842 | 50 |
| 1207 | 14 | 5.65 | -70.83364 | -17.69398 | 81.13636 | Subduction IntraSlab | 310.64850 | 27.89983 | 50 |
| 1208 | 11 | 5.65 | -70.86963 | -17.66454 | 81.13636 | Subduction IntraSlab | 310.65830 | 27.58450 | 50 |
| 1209 | 7 | 5.65 | -70.90561 | -17.63509 | 81.13636 | Subduction IntraSlab | 310.66920 | 27.27670 | 50 |
| 1210 | 8 | 5.65 | -70.94157 | -17.60563 | 81.13636 | Subduction IntraSlab | 310.68200 | 26.97604 | 50 |
| 1211 | 11 | 5.65 | -70.97752 | -17.57617 | 81.13636 | Subduction IntraSlab | 310.69270 | 26.67955 | 50 |
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| 1213 | 11 | 5.65 | -71.04939 | -17.51723 | 81.13636 | Subduction IntraSlab | 310.71340 | 26.10313 | 50 |
| 1214 | 14 | 5.65 | -71.08531 | -17.48774 | 81.13636 | Subduction IntraSlab | 310.72480 | 25.82672 | 50 |
| 1215 | 5 | 5.65 | -71.12122 | -17.45825 | 81.13636 | Subduction IntraSlab | 310.73580 | 25.55379 | 50 |
| 1216 | 21 | 5.65 | -71.15711 | -17.42876 | 81.13636 | Subduction IntraSlab | 310.74380 | 25.28383 | 50 |
| 1217 | 8 | 5.65 | -71.193 | -17.39926 | 81.13636 | Subduction IntraSlab | 310.75670 | 25.02220 | 50 |
| 1218 | 8 | 5.65 | -71.22887 | -17.36975 | 81.13636 | Subduction IntraSlab | 310.76860 | 24.76681 | 50 |
| 1219 | 9 | 5.65 | -71.26473 | -17.34023 | 81.13636 | Subduction IntraSlab | 310.77800 | 24.51451 | 50 |
| 1220 | 8 | 5.65 | -71.30058 | -17.31071 | 81.13636 | Subduction IntraSlab | 310.78960 | 24.26790 | 50 |
| 1221 | 7 | 5.65 | -71.33642 | -17.28118 | 81.13636 | Subduction IntraSlab | 310.79930 | 24.02714 | 50 |
| 1222 | 10 | 5.65 | -71.37224 | -17.25165 | 81.13636 | Subduction IntraSlab | 310.81000 | 23.79092 | 50 |
| 1223 | 11 | 5.65 | -71.40806 | -17.22211 | 81.13636 | Subduction IntraSlab | 310.82250 | 23.55683 | 50 |
| 1224 | 5 | 5.65 | -70.45552 | -17.97117 | 82.72727 | Subduction IntraSlab | 310.99740 | 31.43143 | 50 |
| 1225 | 14 | 5.65 | -70.49131 | -17.94157 | 82.72727 | Subduction IntraSlab | 311.00920 | 31.04196 | 50 |
| 1226 | 5 | 5.65 | -70.52708 | -17.91197 | 82.72727 | Subduction IntraSlab | 311.02190 | 30.66071 | 50 |
| 1227 | 8 | 5.65 | -70.56285 | -17.88235 | 82.72727 | Subduction IntraSlab | 311.03240 | 30.28942 | 50 |
| 1228 | 11 | 5.65 | -70.5986 | -17.85274 | 82.72727 | Subduction IntraSlab | 311.04030 | 29.92400 | 50 |
| 1229 | 11 | 5.65 | -70.63435 | -17.82311 | 82.72727 | Subduction IntraSlab | 311.05390 | 29.56706 | 50 |
| 1230 | 9 | 5.65 | -70.67007 | -17.79348 | 82.72727 | Subduction IntraSlab | 311.06360 | 29.21825 | 50 |
| 1231 | 9 | 5.65 | -70.7058 | -17.76384 | 82.72727 | Subduction IntraSlab | 311.07490 | 28.87309 | 50 |
| 1232 | 17 | 5.65 | -70.7415 | -17.7342 | 82.72727 | Subduction IntraSlab | 311.08800 | 28.53641 | 50 |
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| 1235 | 10 | 5.65 | -70.84855 | -17.64523 | 82.72727 | Subduction IntraSlab | 311.11900 | 27.57669 | 50 |
| 1236 | 13 | 5.65 | -70.88421 | -17.61555 | 82.72727 | Subduction IntraSlab | 311.12810 | 27.26810 | 50 |
| 1237 | 3 | 5.65 | -70.91986 | -17.58588 | 82.72727 | Subduction IntraSlab | 311.14150 | 26.96471 | 50 |
| 1238 | 9 | 5.65 | -70.95549 | -17.55619 | 82.72727 | Subduction IntraSlab | 311.15130 | 26.66856 | 50 |
| 1239 | 9 | 5.65 | -70.99112 | -17.5265 | 82.72727 | Subduction IntraSlab | 311.16080 | 26.38074 | 50 |
| 1240 | 5 | 5.65 | -71.02673 | -17.49681 | 82.72727 | Subduction IntraSlab | 311.17380 | 26.09848 | 50 |
| 1241 | 8 | 5.65 | -71.06233 | -17.4671 | 82.72727 | Subduction IntraSlab | 311.18390 | 25.81922 | 50 |
| 1242 | 9 | 5.65 | -71.09792 | -17.4374 | 82.72727 | Subduction IntraSlab | 311.19490 | 25.54562 | 50 |
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| 1244 | 11 | 5.65 | -71.16907 | -17.37796 | 82.72727 | Subduction IntraSlab | 311.21520 | 25.01281 | 50 |
| 1245 | 10 | 5.65 | -71.20462 | -17.34823 | 82.72727 | Subduction IntraSlab | 311.22730 | 24.75523 | 50 |
| 1246 | 15 | 5.65 | -71.24017 | -17.31849 | 82.72727 | Subduction IntraSlab | 311.23610 | 24.50366 | 50 |
| 1247 | 9 | 5.65 | -71.2757 | -17.28875 | 82.72727 | Subduction IntraSlab | 311.24580 | 24.25800 | 50 |
| 1248 | 7 | 5.65 | -71.31122 | -17.25901 | 82.72727 | Subduction IntraSlab | 311.25650 | 24.01732 | 50 |
| 1249 | 8 | 5.65 | -71.34673 | -17.22925 | 82.72727 | Subduction IntraSlab | 311.26880 | 23.77849 | 50 |
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| 1252 | 10 | 5.65 | -70.4734 | -17.92447 | 84.31818 | Subduction IntraSlab | 311.47110 | 31.03857 | 50 |
| 1253 | 18 | 5.65 | -70.50887 | -17.89464 | 84.31818 | Subduction IntraSlab | 311.48160 | 30.65670 | 50 |
| 1254 | 15 | 5.65 | -70.54431 | -17.86481 | 84.31818 | Subduction IntraSlab | 311.49470 | 30.28188 | 50 |
| 1255 | 11 | 5.65 | -70.57975 | -17.83497 | 84.31818 | Subduction IntraSlab | 311.50410 | 29.91508 | 50 |
| 1256 | 10 | 5.65 | -70.61517 | -17.80512 | 84.31818 | Subduction IntraSlab | 311.51400 | 29.55932 | 50 |
| 1257 | 10 | 5.65 | -70.65059 | -17.77527 | 84.31818 | Subduction IntraSlab | 311.52610 | 29.20848 | 50 |
| 1258 | 9 | 5.65 | -70.68599 | -17.74541 | 84.31818 | Subduction IntraSlab | 311.53750 | 28.86240 | 50 |
| 1259 | 9 | 5.65 | -70.72137 | -17.71554 | 84.31818 | Subduction IntraSlab | 311.54770 | 28.52752 | 50 |
| 1260 | 7 | 5.65 | -70.75675 | -17.68567 | 84.31818 | Subduction IntraSlab | 311.55700 | 28.20000 | 50 |



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REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1262 | 10 | 5.65 | -70.82748 | -17.62591 | 84.31818 | Subduction IntraSlab | 311.58090 | 27.56402 | 50 |
| 1263 | 11 | 5.65 | -70.86282 | -17.59602 | 84.31818 | Subduction IntraSlab | 311.58990 | 27.25605 | 50 |
| 1264 | 10 | 5.65 | -70.89815 | -17.56612 | 84.31818 | Subduction IntraSlab | 311.60140 | 26.95469 | 50 |
| 1265 | 9 | 5.65 | -70.93347 | -17.53621 | 84.31818 | Subduction IntraSlab | 311.61180 | 26.65936 | 50 |
| 1266 | 13 | 5.65 | -70.96878 | -17.5063 | 84.31818 | Subduction IntraSlab | 311.62170 | 26.36878 | 50 |
| 1267 | 8 | 5.65 | -71.00407 | -17.47639 | 84.31818 | Subduction IntraSlab | 311.63490 | 26.08374 | 50 |
| 1268 | 14 | 5.65 | -71.03936 | -17.44646 | 84.31818 | Subduction IntraSlab | 311.64460 | 25.80457 | 50 |
| 1269 | 5 | 5.65 | -71.07463 | -17.41653 | 84.31818 | Subduction IntraSlab | 311.65510 | 25.53312 | 50 |
| 1270 | 7 | 5.65 | -71.10989 | -17.3866 | 84.31818 | Subduction IntraSlab | 311.66530 | 25.26687 | 50 |
| 1271 | 9 | 5.65 | -71.14514 | -17.35666 | 84.31818 | Subduction IntraSlab | 311.67470 | 25.00322 | 50 |
| 1272 | 20 | 5.65 | -71.18038 | -17.32671 | 84.31818 | Subduction IntraSlab | 311.68660 | 24.74599 | 50 |
| 1273 | 17 | 5.65 | -71.21561 | -17.29675 | 84.31818 | Subduction IntraSlab | 311.69660 | 24.49506 | 50 |
| 1274 | 11 | 5.65 | -71.25082 | -17.26679 | 84.31818 | Subduction IntraSlab | 311.70450 | 24.24708 | 50 |
| 1275 | 13 | 5.65 | -71.28603 | -17.23683 | 84.31818 | Subduction IntraSlab | 311.71750 | 24.00213 | 50 |
| 1276 | 9 | 5.65 | -71.32122 | -17.20686 | 84.31818 | Subduction IntraSlab | 311.72920 | 23.76189 | 50 |
| 1277 | 7 | 5.65 | -70.42035 | -17.9374 | 85.90909 | Subduction IntraSlab | 311.92550 | 31.41893 | 50 |
| 1278 | 13 | 5.65 | -70.4555 | -17.90736 | 85.90909 | Subduction IntraSlab | 311.93540 | 31.02881 | 50 |
| 1279 | 14 | 5.65 | -70.49065 | -17.87731 | 85.90909 | Subduction IntraSlab | 311.94430 | 30.64486 | 50 |
| 1280 | 9 | 5.65 | -70.52578 | -17.84726 | 85.90909 | Subduction IntraSlab | 311.95860 | 30.26892 | 50 |
| 1281 | 10 | 5.65 | -70.5609 | -17.81719 | 85.90909 | Subduction IntraSlab | 311.96830 | 29.90532 | 50 |
| 1282 | 9 | 5.65 | -70.596 | -17.78713 | 85.90909 | Subduction IntraSlab | 311.97690 | 29.54831 | 50 |
| 1283 | 9 | 5.65 | -70.6311 | -17.75705 | 85.90909 | Subduction IntraSlab | 311.99020 | 29.19509 | 50 |
| 1284 | 8 | 5.65 | -70.66618 | -17.72697 | 85.90909 | Subduction IntraSlab | 312.00040 | 28.85107 | 50 |
| 1285 | 9 | 5.65 | -70.70126 | -17.69688 | 85.90909 | Subduction IntraSlab | 312.00920 | 28.51842 | 50 |
| 1286 | 10 | 5.65 | -70.73632 | -17.66679 | 85.90909 | Subduction IntraSlab | 312.02150 | 28.19148 | 50 |
| 1287 | 7 | 5.65 | -70.77137 | -17.63669 | 85.90909 | Subduction IntraSlab | 312.03150 | 27.86622 | 50 |
| 1288 | 7 | 5.65 | -70.8064 | -17.60659 | 85.90909 | Subduction IntraSlab | 312.04240 | 27.54892 | 50 |
| 1289 | 8 | 5.65 | -70.84143 | -17.57647 | 85.90909 | Subduction IntraSlab | 312.05280 | 27.24374 | 50 |
| 1290 | 6 | 5.65 | -70.87645 | -17.54636 | 85.90909 | Subduction IntraSlab | 312.06340 | 26.94418 | 50 |
| 1291 | 8 | 5.65 | -70.91145 | -17.51623 | 85.90909 | Subduction IntraSlab | 312.07490 | 26.64801 | 50 |
| 1292 | 10 | 5.65 | -70.94644 | -17.4861 | 85.90909 | Subduction IntraSlab | 312.08540 | 26.35735 | 50 |
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| 1295 | 14 | 5.65 | -71.05135 | -17.39567 | 85.90909 | Subduction IntraSlab | 312.11640 | 25.51953 | 50 |
| 1296 | 7 | 5.65 | -71.08629 | -17.36551 | 85.90909 | Subduction IntraSlab | 312.12820 | 25.25162 | 50 |
| 1297 | 12 | 5.65 | -71.12122 | -17.33535 | 85.90909 | Subduction IntraSlab | 312.13560 | 24.99135 | 50 |
| 1298 | 8 | 5.65 | -71.15615 | -17.30519 | 85.90909 | Subduction IntraSlab | 312.14690 | 24.73602 | 50 |
| 1299 | 9 | 5.65 | -71.19106 | -17.27501 | 85.90909 | Subduction IntraSlab | 312.15910 | 24.48268 | 50 |
| 1300 | 12 | 5.65 | -71.22596 | -17.24483 | 85.90909 | Subduction IntraSlab | 312.16760 | 24.23339 | 50 |
| 1301 | 4 | 5.65 | -71.26085 | -17.21465 | 85.90909 | Subduction IntraSlab | 312.17970 | 23.98944 | 50 |
| 1302 | 10 | 5.65 | -71.29572 | -17.18445 | 85.90909 | Subduction IntraSlab | 312.18990 | 23.75079 | 50 |
| 1303 | 9 | 5.65 | -70.40276 | -17.92052 | 87.50000 | Subduction IntraSlab | 312.39180 | 31.41593 | 50 |
| 1304 | 13 | 5.65 | -70.4376 | -17.89025 | 87.50000 | Subduction IntraSlab | 312.40070 | 31.02548 | 50 |
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| 1336 | 13 | 5.65 | -70.62659 | -17.69009 | 89.09091 | Subduction IntraSlab | 312.92970 | 28.84233 | 50 |
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| 1355 | 9 | 5.65 | -70.36761 | -17.88674 | 90.68182 | Subduction IntraSlab | 313.32590 | 31.41990 | 50 |
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| 1357 | 10 | 5.65 | -70.43601 | -17.82531 | 90.68182 | Subduction IntraSlab | 313.34670 | 30.63990 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1359 | 10 | 5.65 | -70.50436 | -17.76387 | 90.68182 | Subduction IntraSlab | 313.36650 | 29.89914 | 50 |
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| 1362 | 7 | 5.65 | -70.6068 | -17.67165 | 90.68182 | Subduction IntraSlab | 313.39730 | 28.84242 | 50 |
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| 1366 | 10 | 5.65 | -70.74323 | -17.54861 | 90.68182 | Subduction IntraSlab | 313.44100 | 27.54086 | 50 |
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| 1381 | 10 | 5.65 | -70.35004 | -17.86985 | 92.27273 | Subduction IntraSlab | 313.79670 | 31.41857 | 50 |
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| 1405 | 8 | 5.65 | -71.16017 | -17.12589 | 92.27273 | Subduction IntraSlab | 314.03990 | 23.96303 | 50 |
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| 1452 | 10 | 5.65 | -70.94479 | -17.23896 | 95.45454 | Subduction IntraSlab | 314.92950 | 25.21842 | 50 |
| 1453 | 6 | 5.65 | -70.97783 | -17.20747 | 95.45454 | Subduction IntraSlab | 314.93980 | 24.95784 | 50 |
| 1454 | 7 | 5.65 | -71.01086 | -17.17599 | 95.45454 | Subduction IntraSlab | 314.94680 | 24.70228 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1458 | 10 | 5.65 | -70.29735 | -17.81916 | 97.04546 | Subduction IntraSlab | 315.21120 | 31.43566 | 50 |
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UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1630 | 5 | 5.65 | -70.23595 | -17.63453 | 108.18180 | Subduction IntraSlab | 318.57180 | 30.75290 | 50 |
| 1631 | 10 | 5.65 | -70.26666 | -17.60136 | 108.18180 | Subduction IntraSlab | 318.58220 | 30.36862 | 50 |
| 1632 | 11 | 5.65 | -70.29736 | -17.56819 | 108.18180 | Subduction IntraSlab | 318.59250 | 29.99680 | 50 |
| 1633 | 15 | 5.65 | -70.32803 | -17.53502 | 108.18180 | Subduction IntraSlab | 318.60060 | 29.63221 | 50 |
| 1634 | 5 | 5.65 | -70.35871 | -17.50184 | 108.18180 | Subduction IntraSlab | 318.60840 | 29.27488 | 50 |
| 1635 | 11 | 5.65 | -70.38937 | -17.46865 | 108.18180 | Subduction IntraSlab | 318.61860 | 28.92651 | 50 |
| 1636 | 9 | 5.65 | -70.42001 | -17.43546 | 108.18180 | Subduction IntraSlab | 318.62800 | 28.58606 | 50 |
| 1637 | 4 | 5.65 | -70.45065 | -17.40227 | 108.18180 | Subduction IntraSlab | 318.63470 | 28.25201 | 50 |
| 1638 | 11 | 5.65 | -70.48129 | -17.36907 | 108.18180 | Subduction IntraSlab | 318.64640 | 27.92494 | 50 |
| 1639 | 16 | 5.65 | -70.51189 | -17.33586 | 108.18180 | Subduction IntraSlab | 318.65670 | 27.60459 | 50 |
| 1640 | 12 | 5.65 | -70.5425 | -17.30265 | 108.18180 | Subduction IntraSlab | 318.66490 | 27.29120 | 50 |
| 1641 | 8 | 5.65 | -70.5731 | -17.26944 | 108.18180 | Subduction IntraSlab | 318.67440 | 26.98484 | 50 |
| 1642 | 9 | 5.65 | -70.60368 | -17.23622 | 108.18180 | Subduction IntraSlab | 318.68180 | 26.68453 | 50 |
| 1643 | 13 | 5.65 | -70.63425 | -17.203 | 108.18180 | Subduction IntraSlab | 318.69230 | 26.39022 | 50 |
| 1644 | 9 | 5.65 | -70.66481 | -17.16977 | 108.18180 | Subduction IntraSlab | 318.69910 | 26.10167 | 50 |
| 1645 | 4 | 5.65 | -70.69537 | -17.13654 | 108.18180 | Subduction IntraSlab | 318.70870 | 25.81895 | 50 |
| 1646 | 11 | 5.65 | -70.7259 | -17.1033 | 108.18180 | Subduction IntraSlab | 318.72180 | 25.54213 | 50 |
| 1647 | 13 | 5.65 | -70.75643 | -17.07006 | 108.18180 | Subduction IntraSlab | 318.72710 | 25.27022 | 50 |
| 1648 | 11 | 5.65 | -70.78695 | -17.03681 | 108.18180 | Subduction IntraSlab | 318.73550 | 25.00271 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| rup_id | multiplicity | mag | centroid_lon | centroid_lat | centroid_depth | trt | strike | dip | rake |
|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 1649 | 7 | 5.65 | -70.81745 | -17.00356 | 108.18180 | Subduction IntraSlab | 318.74590 | 24.74261 | 50 |
| 1650 | 7 | 5.65 | -70.84795 | -16.9703 | 108.18180 | Subduction IntraSlab | 318.75430 | 24.49009 | 50 |
| 1651 | 5 | 5.65 | -70.15697 | -17.68394 | 109.77270 | Subduction IntraSlab | 319.03460 | 31.56441 | 50 |
| 1652 | 8 | 5.65 | -70.18739 | -17.65056 | 109.77270 | Subduction IntraSlab | 319.04200 | 31.16424 | 50 |
| 1653 | 10 | 5.65 | -70.21779 | -17.61717 | 109.77270 | Subduction IntraSlab | 319.05300 | 30.77581 | 50 |
| 1654 | 7 | 5.65 | -70.24818 | -17.58379 | 109.77270 | Subduction IntraSlab | 319.06330 | 30.39285 | 50 |
| 1655 | 10 | 5.65 | -70.27856 | -17.55039 | 109.77270 | Subduction IntraSlab | 319.07140 | 30.01792 | 50 |
| 1656 | 12 | 5.65 | -70.30892 | -17.51699 | 109.77270 | Subduction IntraSlab | 319.07960 | 29.65370 | 50 |
| 1657 | 13 | 5.65 | -70.33928 | -17.48359 | 109.77270 | Subduction IntraSlab | 319.08860 | 29.29639 | 50 |
| 1658 | 12 | 5.65 | -70.36963 | -17.45018 | 109.77270 | Subduction IntraSlab | 319.09840 | 28.94593 | 50 |
| 1659 | 9 | 5.65 | -70.39996 | -17.41677 | 109.77270 | Subduction IntraSlab | 319.10870 | 28.60332 | 50 |
| 1660 | 7 | 5.65 | -70.43028 | -17.38336 | 109.77270 | Subduction IntraSlab | 319.11550 | 28.26770 | 50 |
| 1661 | 9 | 5.65 | -70.46059 | -17.34993 | 109.77270 | Subduction IntraSlab | 319.12600 | 27.94113 | 50 |
| 1662 | 10 | 5.65 | -70.49089 | -17.31651 | 109.77270 | Subduction IntraSlab | 319.13650 | 27.62225 | 50 |
| 1663 | 11 | 5.65 | -70.52119 | -17.28308 | 109.77270 | Subduction IntraSlab | 319.14320 | 27.30824 | 50 |
| 1664 | 7 | 5.65 | -70.55146 | -17.24964 | 109.77270 | Subduction IntraSlab | 319.15230 | 27.00052 | 50 |
| 1665 | 9 | 5.65 | -70.58173 | -17.2162 | 109.77270 | Subduction IntraSlab | 319.16100 | 26.70022 | 50 |
| 1666 | 7 | 5.65 | -70.61199 | -17.18276 | 109.77270 | Subduction IntraSlab | 319.17090 | 26.40669 | 50 |
| 1667 | 13 | 5.65 | -70.64223 | -17.14931 | 109.77270 | Subduction IntraSlab | 319.17950 | 26.11733 | 50 |
| 1668 | 7 | 5.65 | -70.67247 | -17.11585 | 109.77270 | Subduction IntraSlab | 319.18840 | 25.83303 | 50 |
| 1669 | 8 | 5.65 | -70.7027 | -17.0824 | 109.77270 | Subduction IntraSlab | 319.19870 | 25.55667 | 50 |
| 1670 | 13 | 5.65 | -70.73291 | -17.04893 | 109.77270 | Subduction IntraSlab | 319.20580 | 25.28573 | 50 |
| 1671 | 8 | 5.65 | -70.76311 | -17.01546 | 109.77270 | Subduction IntraSlab | 319.21560 | 25.01702 | 50 |
| 1672 | 8 | 5.65 | -70.7933 | -16.98199 | 109.77270 | Subduction IntraSlab | 319.22410 | 24.75340 | 50 |
| 1673 | 9 | 5.65 | -70.13945 | -17.66703 | 111.36360 | Subduction IntraSlab | 319.51600 | 31.58543 | 50 |
| 1674 | 12 | 5.65 | -70.16954 | -17.63342 | 111.36360 | Subduction IntraSlab | 319.52360 | 31.18396 | 50 |
| 1675 | 14 | 5.65 | -70.19963 | -17.59982 | 111.36360 | Subduction IntraSlab | 319.53250 | 30.79266 | 50 |
| 1676 | 7 | 5.65 | -70.22971 | -17.56621 | 111.36360 | Subduction IntraSlab | 319.54510 | 30.41132 | 50 |
| 1677 | 9 | 5.65 | -70.25977 | -17.53259 | 111.36360 | Subduction IntraSlab | 319.55210 | 30.03583 | 50 |
| 1678 | 13 | 5.65 | -70.28982 | -17.49897 | 111.36360 | Subduction IntraSlab | 319.56010 | 29.66889 | 50 |
| 1679 | 8 | 5.65 | -70.31985 | -17.46535 | 111.36360 | Subduction IntraSlab | 319.57150 | 29.31141 | 50 |
| 1680 | 9 | 5.65 | -70.34988 | -17.43172 | 111.36360 | Subduction IntraSlab | 319.57880 | 28.96137 | 50 |
| 1681 | 9 | 5.65 | -70.37991 | -17.39808 | 111.36360 | Subduction IntraSlab | 319.58830 | 28.61942 | 50 |
| 1682 | 12 | 5.65 | -70.40991 | -17.36444 | 111.36360 | Subduction IntraSlab | 319.59670 | 28.28378 | 50 |
| 1683 | 14 | 5.65 | -70.43991 | -17.3308 | 111.36360 | Subduction IntraSlab | 319.60580 | 27.95494 | 50 |
| 1684 | 6 | 5.65 | -70.46989 | -17.29715 | 111.36360 | Subduction IntraSlab | 319.61660 | 27.63465 | 50 |
| 1685 | 8 | 5.65 | -70.49987 | -17.2635 | 111.36360 | Subduction IntraSlab | 319.62310 | 27.32033 | 50 |
| 1686 | 11 | 5.65 | -70.52984 | -17.22984 | 111.36360 | Subduction IntraSlab | 319.63210 | 27.01109 | 50 |
| 1687 | 9 | 5.65 | -70.55979 | -17.19618 | 111.36360 | Subduction IntraSlab | 319.64220 | 26.70866 | 50 |
| 1688 | 3 | 5.65 | -70.58973 | -17.16252 | 111.36360 | Subduction IntraSlab | 319.65140 | 26.41368 | 50 |
| 1689 | 18 | 5.65 | -70.61966 | -17.12884 | 111.36360 | Subduction IntraSlab | 319.65900 | 26.12456 | 50 |
| 1690 | 7 | 5.65 | -70.64958 | -17.09517 | 111.36360 | Subduction IntraSlab | 319.66730 | 25.84125 | 50 |
| 1691 | 13 | 5.65 | -70.6795 | -17.06149 | 111.36360 | Subduction IntraSlab | 319.67650 | 25.56551 | 50 |
| 1692 | 11 | 5.65 | -70.7094 | -17.02781 | 111.36360 | Subduction IntraSlab | 319.68580 | 25.29523 | 50 |
| 1693 | 11 | 5.65 | -70.73928 | -16.99412 | 111.36360 | Subduction IntraSlab | 319.69670 | 25.02833 | 50 |
| 1694 | 7 | 5.65 | -70.76916 | -16.96042 | 111.36360 | Subduction IntraSlab | 319.70030 | 24.76658 | 50 |
| 1695 | 13 | 5.65 | -70.12192 | -17.65012 | 112.95450 | Subduction IntraSlab | 319.99730 | 31.60984 | 50 |
| 1696 | 13 | 5.65 | -70.1517 | -17.61629 | 112.95450 | Subduction IntraSlab | 320.00570 | 31.20799 | 50 |
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| 1698 | 9 | 5.65 | -70.21123 | -17.54863 | 112.95450 | Subduction IntraSlab | 320.02610 | 30.43173 | 50 |
| 1699 | 4 | 5.65 | -70.24097 | -17.51479 | 112.95450 | Subduction IntraSlab | 320.03350 | 30.05795 | 50 |
| 1700 | 14 | 5.65 | -70.27071 | -17.48095 | 112.95450 | Subduction IntraSlab | 320.04190 | 29.69108 | 50 |
| 1701 | 10 | 5.65 | -70.30044 | -17.4471 | 112.95450 | Subduction IntraSlab | 320.05240 | 29.33360 | 50 |
| 1702 | 12 | 5.65 | -70.33015 | -17.41325 | 112.95450 | Subduction IntraSlab | 320.05970 | 28.98472 | 50 |
| 1703 | 14 | 5.65 | -70.35986 | -17.37939 | 112.95450 | Subduction IntraSlab | 320.06980 | 28.64225 | 50 |
| 1704 | 11 | 5.65 | -70.38955 | -17.34553 | 112.95450 | Subduction IntraSlab | 320.07920 | 28.30536 | 50 |
| 1705 | 8 | 5.65 | -70.41923 | -17.31166 | 112.95450 | Subduction IntraSlab | 320.08580 | 27.97503 | 50 |
| 1706 | 12 | 5.65 | -70.4489 | -17.27779 | 112.95450 | Subduction IntraSlab | 320.09490 | 27.65281 | 50 |
| 1707 | 8 | 5.65 | -70.47856 | -17.24392 | 112.95450 | Subduction IntraSlab | 320.10430 | 27.33775 | 50 |
| 1708 | 5 | 5.65 | -70.50821 | -17.21004 | 112.95450 | Subduction IntraSlab | 320.11430 | 27.03001 | 50 |
| 1709 | 11 | 5.65 | -70.53785 | -17.17616 | 112.95450 | Subduction IntraSlab | 320.12440 | 26.72795 | 50 |
| 1710 | 7 | 5.65 | -70.56747 | -17.14227 | 112.95450 | Subduction IntraSlab | 320.13230 | 26.43081 | 50 |
| 1711 | 5 | 5.65 | -70.59709 | -17.10838 | 112.95450 | Subduction IntraSlab | 320.13700 | 26.14255 | 50 |
| 1712 | 8 | 5.65 | -70.6267 | -17.07448 | 112.95450 | Subduction IntraSlab | 320.14710 | 25.86040 | 50 |
| 1713 | 9 | 5.65 | -70.6563 | -17.04058 | 112.95450 | Subduction IntraSlab | 320.15670 | 25.58124 | 50 |
| 1714 | 8 | 5.65 | -70.68588 | -17.00668 | 112.95450 | Subduction IntraSlab | 320.16510 | 25.30809 | 50 |
| 1715 | 6 | 5.65 | -70.71545 | -16.97276 | 112.95450 | Subduction IntraSlab | 320.17670 | 25.04264 | 50 |
| 1716 | 15 | 5.65 | -70.10439 | -17.6332 | 114.54550 | Subduction IntraSlab | 320.48060 | 31.63760 | 50 |
| 1717 | 7 | 5.65 | -70.13386 | -17.59915 | 114.54550 | Subduction IntraSlab | 320.48800 | 31.23518 | 50 |
| 1718 | 20 | 5.65 | -70.16331 | -17.5651 | 114.54550 | Subduction IntraSlab | 320.49680 | 30.84443 | 50 |
| 1719 | 6 | 5.65 | -70.19276 | -17.53105 | 114.54550 | Subduction IntraSlab | 320.50650 | 30.46317 | 50 |
| 1720 | 8 | 5.65 | -70.22219 | -17.49698 | 114.54550 | Subduction IntraSlab | 320.51580 | 30.08706 | 50 |
| 1721 | 10 | 5.65 | -70.25161 | -17.46292 | 114.54550 | Subduction IntraSlab | 320.52550 | 29.71617 | 50 |
| 1722 | 11 | 5.65 | -70.28102 | -17.42885 | 114.54550 | Subduction IntraSlab | 320.53190 | 29.35591 | 50 |
| 1723 | 8 | 5.65 | -70.31042 | -17.39478 | 114.54550 | Subduction IntraSlab | 320.53990 | 29.00560 | 50 |
| 1724 | 9 | 5.65 | -70.33981 | -17.3607 | 114.54550 | Subduction IntraSlab | 320.55250 | 28.66196 | 50 |
| 1725 | 7 | 5.65 | -70.36919 | -17.32661 | 114.54550 | Subduction IntraSlab | 320.56150 | 28.32611 | 50 |
| 1726 | 13 | 5.65 | -70.39855 | -17.29253 | 114.54550 | Subduction IntraSlab | 320.56880 | 27.99735 | 50 |
| 1727 | 6 | 5.65 | -70.42791 | -17.25843 | 114.54550 | Subduction IntraSlab | 320.57500 | 27.67501 | 50 |
| 1728 | 8 | 5.65 | -70.45726 | -17.22434 | 114.54550 | Subduction IntraSlab | 320.58560 | 27.36116 | 50 |
| 1729 | 8 | 5.65 | -70.4866 | -17.19024 | 114.54550 | Subduction IntraSlab | 320.59580 | 27.05443 | 50 |
| 1730 | 13 | 5.65 | -70.51591 | -17.15613 | 114.54550 | Subduction IntraSlab | 320.60550 | 26.75361 | 50 |
| 1731 | 14 | 5.65 | -70.54523 | -17.12202 | 114.54550 | Subduction IntraSlab | 320.61330 | 26.45739 | 50 |
| 1732 | 16 | 5.65 | -70.57453 | -17.08791 | 114.54550 | Subduction IntraSlab | 320.61790 | 26.16503 | 50 |
| 1733 | 10 | 5.65 | -70.60382 | -17.05379 | 114.54550 | Subduction IntraSlab | 320.62750 | 25.87945 | 50 |
| 1734 | 3 | 5.65 | -70.6331 | -17.01967 | 114.54550 | Subduction IntraSlab | 320.63710 | 25.59976 | 50 |
| 1735 | 12 | 5.65 | -70.66238 | -16.98554 | 114.54550 | Subduction IntraSlab | 320.64510 | 25.32524 | 50 |
| 1736 | 14 | 5.65 | -70.69164 | -16.95141 | 114.54550 | Subduction IntraSlab | 320.65510 | 25.05839 | 50 |
| 1737 | 7 | 5.65 | -70.72093 | -16.91729 | 116.13640 | Subduction IntraSlab | 320.96350 | 31.66949 | 50 |
| 1738 | 14 | 5.65 | -70.75022 | -16.88316 | 116.13640 | Subduction IntraSlab | 320.97110 | 31.26787 | 50 |
| 1739 | 12 | 5.65 | -70.77951 | -16.84904 | 116.13640 | Subduction IntraSlab | 320.97800 | 30.87323 | 50 |
| 1740 | 9 | 5.65 | -70.80880 | -16.81492 | 116.13640 | Subduction IntraSlab | 320.98770 | 30.48775 | 50 |
| 1741 | 5 | 5.65 | -70.83809 | -16.78080 | 116.13640 | Subduction IntraSlab | 320.99900 | 30.11353 | 50 |
| 1742 | 8 | 5.65 | -70.86738 | -16.74668 | 116.13640 | Subduction IntraSlab | 321.00840 | 29.74733 | 50 |
| 1743 | 5 | 5.65 | -70.89667 | -16.71256 | 116.13640 | Subduction IntraSlab | 321.01400 | 29.38616 | 50 |
| 1744 | 8 | 5.65 | -70.92596 | -16.67844 | 116.13640 | Subduction IntraSlab | 321.02180 | 29.03154 | 50 |
| 1745 | 13 | 5.65 | -70.95525 | -16.64432 | 116.13640 | Subduction IntraSlab | 321.03320 | 28.68773 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1747 | 8 | 5.65 | -70.37788 | -17.27338 | 116.13640 | Subduction IntraSlab | 321.04780 | 28.02305 | 50 |
| 1748 | 8 | 5.65 | -70.40693 | -17.23907 | 116.13640 | Subduction IntraSlab | 321.05750 | 27.70161 | 50 |
| 1749 | 7 | 5.65 | -70.43596 | -17.20475 | 116.13640 | Subduction IntraSlab | 321.06720 | 27.38688 | 50 |
| 1750 | 11 | 5.65 | -70.46498 | -17.17043 | 116.13640 | Subduction IntraSlab | 321.07660 | 27.07573 | 50 |
| 1751 | 10 | 5.65 | -70.49399 | -17.1361 | 116.13640 | Subduction IntraSlab | 321.08530 | 26.77232 | 50 |
| 1752 | 13 | 5.65 | -70.52299 | -17.10177 | 116.13640 | Subduction IntraSlab | 321.09470 | 26.47634 | 50 |
| 1753 | 9 | 5.65 | -70.55197 | -17.06744 | 116.13640 | Subduction IntraSlab | 321.10080 | 26.18334 | 50 |
| 1754 | 16 | 5.65 | -70.58096 | -17.0331 | 116.13640 | Subduction IntraSlab | 321.10820 | 25.89786 | 50 |
| 1755 | 6 | 5.65 | -70.60992 | -16.99875 | 116.13640 | Subduction IntraSlab | 321.11800 | 25.61991 | 50 |
| 1756 | 5 | 5.65 | -70.63888 | -16.96441 | 116.13640 | Subduction IntraSlab | 321.12620 | 25.34655 | 50 |
| 1757 | 12 | 5.65 | -70.66935 | -17.59937 | 117.72730 | Subduction IntraSlab | 321.44570 | 31.70138 | 50 |
| 1758 | 14 | 5.65 | -70.09819 | -17.56488 | 117.72730 | Subduction IntraSlab | 321.45390 | 31.29770 | 50 |
| 1759 | 14 | 5.65 | -70.12701 | -17.53038 | 117.72730 | Subduction IntraSlab | 321.46120 | 30.90273 | 50 |
| 1760 | 7 | 5.65 | -70.15583 | -17.49588 | 117.72730 | Subduction IntraSlab | 321.47040 | 30.51749 | 50 |
| 1761 | 10 | 5.65 | -70.18463 | -17.46137 | 117.72730 | Subduction IntraSlab | 321.48100 | 30.14320 | 50 |
| 1762 | 12 | 5.65 | -70.21342 | -17.42686 | 117.72730 | Subduction IntraSlab | 321.48970 | 29.77624 | 50 |
| 1763 | 13 | 5.65 | -70.2422 | -17.39234 | 117.72730 | Subduction IntraSlab | 321.49790 | 29.41672 | 50 |
| 1764 | 5 | 5.65 | -70.27097 | -17.35782 | 117.72730 | Subduction IntraSlab | 321.50510 | 29.06543 | 50 |
| 1765 | 8 | 5.65 | -70.29974 | -17.3233 | 117.72730 | Subduction IntraSlab | 321.51290 | 28.72136 | 50 |
| 1766 | 11 | 5.65 | -70.32848 | -17.28877 | 117.72730 | Subduction IntraSlab | 321.52400 | 28.38339 | 50 |
| 1767 | 6 | 5.65 | -70.35722 | -17.25424 | 117.72730 | Subduction IntraSlab | 321.53250 | 28.05084 | 50 |
| 1768 | 12 | 5.65 | -70.38595 | -17.21971 | 117.72730 | Subduction IntraSlab | 321.53930 | 27.72515 | 50 |
| 1769 | 5 | 5.65 | -70.41467 | -17.18517 | 117.72730 | Subduction IntraSlab | 321.54890 | 27.40893 | 50 |
| 1770 | 12 | 5.65 | -70.44337 | -17.15062 | 117.72730 | Subduction IntraSlab | 321.55830 | 27.10013 | 50 |
| 1771 | 7 | 5.65 | -70.47206 | -17.11607 | 117.72730 | Subduction IntraSlab | 321.56460 | 26.79657 | 50 |
| 1772 | 12 | 5.65 | -70.50075 | -17.08152 | 117.72730 | Subduction IntraSlab | 321.57520 | 26.50080 | 50 |
| 1773 | 11 | 5.65 | -70.52942 | -17.04696 | 117.72730 | Subduction IntraSlab | 321.58360 | 26.21041 | 50 |
| 1774 | 11 | 5.65 | -70.55808 | -17.0124 | 117.72730 | Subduction IntraSlab | 321.59010 | 25.92410 | 50 |
| 1775 | 10 | 5.65 | -70.58674 | -16.97784 | 117.72730 | Subduction IntraSlab | 321.59840 | 25.64589 | 50 |
| 1776 | 13 | 5.65 | -70.05184 | -17.58245 | 119.31820 | Subduction IntraSlab | 321.92920 | 31.73662 | 50 |
| 1777 | 8 | 5.65 | -70.08036 | -17.54774 | 119.31820 | Subduction IntraSlab | 321.93730 | 31.33258 | 50 |
| 1778 | 11 | 5.65 | -70.10887 | -17.51302 | 119.31820 | Subduction IntraSlab | 321.94410 | 30.93849 | 50 |
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| 1780 | 13 | 5.65 | -70.16586 | -17.44356 | 119.31820 | Subduction IntraSlab | 321.96320 | 30.17423 | 50 |
| 1781 | 11 | 5.65 | -70.19434 | -17.40883 | 119.31820 | Subduction IntraSlab | 321.97260 | 29.80313 | 50 |
| 1782 | 7 | 5.65 | -70.2228 | -17.37409 | 119.31820 | Subduction IntraSlab | 321.98180 | 29.44077 | 50 |
| 1783 | 4 | 5.65 | -70.25125 | -17.33935 | 119.31820 | Subduction IntraSlab | 321.98850 | 29.08773 | 50 |
| 1784 | 11 | 5.65 | -70.2797 | -17.3046 | 119.31820 | Subduction IntraSlab | 321.99380 | 28.74192 | 50 |
| 1785 | 6 | 5.65 | -70.30814 | -17.26985 | 119.31820 | Subduction IntraSlab | 322.00480 | 28.40624 | 50 |
| 1786 | 9 | 5.65 | -70.33656 | -17.2351 | 119.31820 | Subduction IntraSlab | 322.01680 | 28.07701 | 50 |
| 1787 | 5 | 5.65 | -70.36497 | -17.20034 | 119.31820 | Subduction IntraSlab | 322.02210 | 27.75171 | 50 |
| 1788 | 12 | 5.65 | -70.39337 | -17.16558 | 119.31820 | Subduction IntraSlab | 322.03070 | 27.43459 | 50 |
| 1789 | 15 | 5.65 | -70.42176 | -17.13081 | 119.31820 | Subduction IntraSlab | 322.03940 | 27.12470 | 50 |
| 1790 | 6 | 5.65 | -70.45014 | -17.09604 | 119.31820 | Subduction IntraSlab | 322.04490 | 26.82070 | 50 |
| 1791 | 12 | 5.65 | -70.47852 | -17.06127 | 119.31820 | Subduction IntraSlab | 322.05650 | 26.52482 | 50 |
| 1792 | 15 | 5.65 | -70.50687 | -17.02649 | 119.31820 | Subduction IntraSlab | 322.06500 | 26.23583 | 50 |
| 1793 | 7 | 5.65 | -70.53522 | -16.9917 | 119.31820 | Subduction IntraSlab | 322.07260 | 25.95001 | 50 |
| 1794 | 6 | 5.65 | -70.56356 | -16.95692 | 119.31820 | Subduction IntraSlab | 322.07890 | 25.66835 | 50 |
| 1795 | 11 | 5.65 | -70.03433 | -17.56553 | 120.90910 | Subduction IntraSlab | 322.41330 | 31.77017 | 50 |
| 1796 | 11 | 5.65 | -70.06253 | -17.53059 | 120.90910 | Subduction IntraSlab | 322.42230 | 31.36388 | 50 |
| 1797 | 10 | 5.65 | -70.09073 | -17.49565 | 120.90910 | Subduction IntraSlab | 322.42740 | 30.96766 | 50 |
| 1798 | 8 | 5.65 | -70.11891 | -17.4607 | 120.90910 | Subduction IntraSlab | 322.43580 | 30.57938 | 50 |
| 1799 | 14 | 5.65 | -70.14709 | -17.42575 | 120.90910 | Subduction IntraSlab | 322.44630 | 30.20084 | 50 |
| 1800 | 10 | 5.65 | -70.17525 | -17.39079 | 120.90910 | Subduction IntraSlab | 322.45630 | 29.83494 | 50 |
| 1801 | 5 | 5.65 | -70.2034 | -17.35583 | 120.90910 | Subduction IntraSlab | 322.46400 | 29.47506 | 50 |
| 1802 | 9 | 5.65 | -70.23154 | -17.32087 | 120.90910 | Subduction IntraSlab | 322.47260 | 29.12013 | 50 |
| 1803 | 6 | 5.65 | -70.25967 | -17.2859 | 120.90910 | Subduction IntraSlab | 322.47740 | 28.77215 | 50 |
| 1804 | 11 | 5.65 | -70.28779 | -17.25093 | 120.90910 | Subduction IntraSlab | 322.48530 | 28.43198 | 50 |
| 1805 | 8 | 5.65 | -70.3159 | -17.21595 | 120.90910 | Subduction IntraSlab | 322.49860 | 28.10157 | 50 |
| 1806 | 9 | 5.65 | -70.34399 | -17.18097 | 120.90910 | Subduction IntraSlab | 322.50410 | 27.77946 | 50 |
| 1807 | 8 | 5.65 | -70.37209 | -17.14598 | 120.90910 | Subduction IntraSlab | 322.51230 | 27.46274 | 50 |
| 1808 | 12 | 5.65 | -70.40016 | -17.111 | 120.90910 | Subduction IntraSlab | 322.52100 | 27.15259 | 50 |
| 1809 | 7 | 5.65 | -70.42823 | -17.076 | 120.90910 | Subduction IntraSlab | 322.52860 | 26.84795 | 50 |
| 1810 | 9 | 5.65 | -70.45628 | -17.04101 | 120.90910 | Subduction IntraSlab | 322.54000 | 26.54778 | 50 |
| 1811 | 8 | 5.65 | -70.48433 | -17.00601 | 120.90910 | Subduction IntraSlab | 322.54500 | 26.25567 | 50 |
| 1812 | 10 | 5.65 | -70.51237 | -16.971 | 120.90910 | Subduction IntraSlab | 322.55260 | 25.97105 | 50 |
| 1813 | 9 | 5.65 | -70.01682 | -17.54861 | 122.50000 | Subduction IntraSlab | 322.89640 | 31.80653 | 50 |
| 1814 | 9 | 5.65 | -70.04471 | -17.51345 | 122.50000 | Subduction IntraSlab | 322.90470 | 31.40259 | 50 |
| 1815 | 1 | 5.65 | -70.07259 | -17.47828 | 122.50000 | Subduction IntraSlab | 322.91150 | 31.00624 | 50 |
| 1816 | 7 | 5.65 | -70.10046 | -17.44311 | 122.50000 | Subduction IntraSlab | 322.91970 | 30.61687 | 50 |
| 1817 | 10 | 5.65 | -70.12832 | -17.40794 | 122.50000 | Subduction IntraSlab | 322.93000 | 30.23570 | 50 |
| 1818 | 8 | 5.65 | -70.15617 | -17.37276 | 122.50000 | Subduction IntraSlab | 322.93820 | 29.86557 | 50 |
| 1819 | 11 | 5.65 | -70.18401 | -17.33757 | 122.50000 | Subduction IntraSlab | 322.94400 | 29.50574 | 50 |
| 1820 | 10 | 5.65 | -70.21183 | -17.30239 | 122.50000 | Subduction IntraSlab | 322.95540 | 29.15394 | 50 |
| 1821 | 17 | 5.65 | -70.23965 | -17.26719 | 122.50000 | Subduction IntraSlab | 322.96260 | 28.80707 | 50 |
| 1822 | 11 | 5.65 | -70.26745 | -17.232 | 122.50000 | Subduction IntraSlab | 322.96980 | 28.46428 | 50 |
| 1823 | 10 | 5.65 | -70.29524 | -17.1968 | 122.50000 | Subduction IntraSlab | 322.98020 | 28.13107 | 50 |
| 1824 | 7 | 5.65 | -70.32303 | -17.1616 | 122.50000 | Subduction IntraSlab | 322.98470 | 27.80668 | 50 |
| 1825 | 9 | 5.65 | -70.35081 | -17.12639 | 122.50000 | Subduction IntraSlab | 322.99300 | 27.48948 | 50 |
| 1826 | 7 | 5.65 | -70.37857 | -17.09118 | 122.50000 | Subduction IntraSlab | 323.00350 | 27.18019 | 50 |
| 1827 | 12 | 5.65 | -70.40632 | -17.05597 | 122.50000 | Subduction IntraSlab | 323.01350 | 26.87491 | 50 |
| 1828 | 16 | 5.65 | -70.43406 | -17.02075 | 122.50000 | Subduction IntraSlab | 323.02230 | 26.57561 | 50 |
| 1829 | 6 | 5.65 | -70.46179 | -16.98553 | 122.50000 | Subduction IntraSlab | 323.02610 | 26.28301 | 50 |
| 1830 | 9 | 5.65 | -69.99931 | -17.53169 | 124.09090 | Subduction IntraSlab | 323.37950 | 31.84699 | 50 |
| 1831 | 5 | 5.65 | -70.02689 | -17.4963 | 124.09090 | Subduction IntraSlab | 323.38640 | 31.44087 | 50 |
| 1832 | 12 | 5.65 | -70.05446 | -17.46091 | 124.09090 | Subduction IntraSlab | 323.39430 | 31.04257 | 50 |
| 1833 | 6 | 5.65 | -70.08201 | -17.42552 | 124.09090 | Subduction IntraSlab | 323.40330 | 30.65512 | 50 |
| 1834 | 9 | 5.65 | -70.10956 | -17.39012 | 124.09090 | Subduction IntraSlab | 323.41450 | 30.27598 | 50 |
| 1835 | 8 | 5.65 | -70.13708 | -17.35472 | 124.09090 | Subduction IntraSlab | 323.42050 | 29.90176 | 50 |
| 1836 | 11 | 5.65 | -70.16461 | -17.31931 | 124.09090 | Subduction IntraSlab | 323.42600 | 29.53681 | 50 |
| 1837 | 12 | 5.65 | -70.19212 | -17.2839 | 124.09090 | Subduction IntraSlab | 323.43800 | 29.18024 | 50 |
| 1838 | 11 | 5.65 | -70.21963 | -17.24849 | 124.09090 | Subduction IntraSlab | 323.44560 | 28.83285 | 50 |
| 1839 | 7 | 5.65 | -70.24712 | -17.21307 | 124.09090 | Subduction IntraSlab | 323.45290 | 28.49747 | 50 |
| 1840 | 9 | 5.65 | -70.2746 | -17.17765 | 124.09090 | Subduction IntraSlab | 323.46290 | 28.16937 | 50 |
| 1841 | 14 | 5.65 | -70.30206 | -17.14223 | 124.09090 | Subduction IntraSlab | 323.46800 | 27.84267 | 50 |
| 1842 | 9 | 5.65 | -70.32953 | -17.1068 | 124.09090 | Subduction IntraSlab | 323.47450 | 27.52015 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 1843 | 4 | 5.65 | -70.35698 | -17.07136 | 124.09090 | Subduction IntraSlab | 323.48580 | 27.20684 | 50 |
| 1844 | 16 | 5.65 | -70.38441 | -17.03593 | 124.09090 | Subduction IntraSlab | 323.49620 | 26.90146 | 50 |
| 1845 | 6 | 5.65 | -70.41184 | -17.00049 | 124.09090 | Subduction IntraSlab | 323.50250 | 26.60279 | 50 |
| 1846 | 9 | 5.65 | -70.43926 | -16.96504 | 124.09090 | Subduction IntraSlab | 323.50920 | 26.31113 | 50 |
| 1847 | 9 | 5.65 | -69.98181 | -17.51477 | 125.68180 | Subduction IntraSlab | 323.86330 | 31.89379 | 50 |
| 1848 | 18 | 5.65 | -70.00907 | -17.47916 | 125.68180 | Subduction IntraSlab | 323.87130 | 31.48356 | 50 |
| 1849 | 5 | 5.65 | -70.03632 | -17.44354 | 125.68180 | Subduction IntraSlab | 323.87790 | 31.08327 | 50 |
| 1850 | 9 | 5.65 | -70.06357 | -17.40792 | 125.68180 | Subduction IntraSlab | 323.88570 | 30.69335 | 50 |
| 1851 | 10 | 5.65 | -70.0908 | -17.3723 | 125.68180 | Subduction IntraSlab | 323.89720 | 30.31534 | 50 |
| 1852 | 7 | 5.65 | -70.11801 | -17.33668 | 125.68180 | Subduction IntraSlab | 323.90390 | 29.94596 | 50 |
| 1853 | 9 | 5.65 | -70.14523 | -17.30105 | 125.68180 | Subduction IntraSlab | 323.91140 | 29.58090 | 50 |
| 1854 | 6 | 5.65 | -70.17242 | -17.26542 | 125.68180 | Subduction IntraSlab | 323.92130 | 29.22396 | 50 |
| 1855 | 8 | 5.65 | -70.19961 | -17.22978 | 125.68180 | Subduction IntraSlab | 323.92690 | 28.87651 | 50 |
| 1856 | 9 | 5.65 | -70.22678 | -17.19414 | 125.68180 | Subduction IntraSlab | 323.93450 | 28.53614 | 50 |
| 1857 | 6 | 5.65 | -70.25395 | -17.1585 | 125.68180 | Subduction IntraSlab | 323.94460 | 28.20321 | 50 |
| 1858 | 12 | 5.65 | -70.28111 | -17.12285 | 125.68180 | Subduction IntraSlab | 323.95210 | 27.87757 | 50 |
| 1859 | 11 | 5.65 | -70.30825 | -17.0872 | 125.68180 | Subduction IntraSlab | 323.95750 | 27.55753 | 50 |
| 1860 | 7 | 5.65 | -70.33539 | -17.05154 | 125.68180 | Subduction IntraSlab | 323.96710 | 27.24472 | 50 |
| 1861 | 8 | 5.65 | -70.36251 | -17.01588 | 125.68180 | Subduction IntraSlab | 323.97740 | 26.93978 | 50 |
| 1862 | 7 | 5.65 | -70.38963 | -16.98022 | 125.68180 | Subduction IntraSlab | 323.98380 | 26.63928 | 50 |
| 1863 | 12 | 5.65 | -69.96432 | -17.49784 | 127.27270 | Subduction IntraSlab | 324.34530 | 31.93712 | 50 |
| 1864 | 11 | 5.65 | -69.99126 | -17.46201 | 127.27270 | Subduction IntraSlab | 324.35570 | 31.52962 | 50 |
| 1865 | 3 | 5.65 | -70.0182 | -17.42617 | 127.27270 | Subduction IntraSlab | 324.36270 | 31.12934 | 50 |
| 1866 | 9 | 5.65 | -70.04512 | -17.39033 | 127.27270 | Subduction IntraSlab | 324.36970 | 30.73728 | 50 |
| 1867 | 10 | 5.65 | -70.07204 | -17.35448 | 127.27270 | Subduction IntraSlab | 324.37840 | 30.35639 | 50 |
| 1868 | 13 | 5.65 | -70.09895 | -17.31864 | 127.27270 | Subduction IntraSlab | 324.38560 | 29.98533 | 50 |
| 1869 | 6 | 5.65 | -70.12584 | -17.28279 | 127.27270 | Subduction IntraSlab | 324.39590 | 29.62110 | 50 |
| 1870 | 7 | 5.65 | -70.15272 | -17.24693 | 127.27270 | Subduction IntraSlab | 324.40470 | 29.26493 | 50 |
| 1871 | 14 | 5.65 | -70.1796 | -17.21107 | 127.27270 | Subduction IntraSlab | 324.40880 | 28.91653 | 50 |
| 1872 | 6 | 5.65 | -70.20646 | -17.17521 | 127.27270 | Subduction IntraSlab | 324.41710 | 28.57389 | 50 |
| 1873 | 5 | 5.65 | -70.23331 | -17.13934 | 127.27270 | Subduction IntraSlab | 324.42530 | 28.23717 | 50 |
| 1874 | 10 | 5.65 | -70.26015 | -17.10347 | 127.27270 | Subduction IntraSlab | 324.43480 | 27.91072 | 50 |
| 1875 | 7 | 5.65 | -70.28699 | -17.0676 | 127.27270 | Subduction IntraSlab | 324.44200 | 27.59284 | 50 |
| 1876 | 8 | 5.65 | -70.3138 | -17.03172 | 127.27270 | Subduction IntraSlab | 324.44850 | 27.27989 | 50 |
| 1877 | 12 | 5.65 | -70.34062 | -16.99584 | 127.27270 | Subduction IntraSlab | 324.45900 | 26.97395 | 50 |
| 1878 | 10 | 5.65 | -69.94682 | -17.48091 | 128.86360 | Subduction IntraSlab | 324.82820 | 31.97438 | 50 |
| 1879 | 8 | 5.65 | -69.97345 | -17.44486 | 128.86360 | Subduction IntraSlab | 324.83740 | 31.56674 | 50 |
| 1880 | 6 | 5.65 | -70.00008 | -17.4098 | 128.86360 | Subduction IntraSlab | 324.84670 | 31.16981 | 50 |
| 1881 | 12 | 5.65 | -70.02669 | -17.37273 | 128.86360 | Subduction IntraSlab | 324.85420 | 30.77990 | 50 |
| 1882 | 7 | 5.65 | -70.05328 | -17.33666 | 128.86360 | Subduction IntraSlab | 324.85960 | 30.39647 | 50 |
| 1883 | 8 | 5.65 | -70.07988 | -17.30059 | 128.86360 | Subduction IntraSlab | 324.86700 | 30.02265 | 50 |
| 1884 | 14 | 5.65 | -70.10646 | -17.26452 | 128.86360 | Subduction IntraSlab | 324.87920 | 29.65675 | 50 |
| 1885 | 2 | 5.65 | -70.13303 | -17.22844 | 128.86360 | Subduction IntraSlab | 324.88810 | 29.29827 | 50 |
| 1886 | 6 | 5.65 | -70.15958 | -17.19236 | 128.86360 | Subduction IntraSlab | 324.89070 | 28.94966 | 50 |
| 1887 | 7 | 5.65 | -70.18613 | -17.15627 | 128.86360 | Subduction IntraSlab | 324.89920 | 28.60872 | 50 |
| 1888 | 10 | 5.65 | -70.21268 | -17.12018 | 128.86360 | Subduction IntraSlab | 324.90800 | 28.27334 | 50 |
| 1889 | 10 | 5.65 | -70.2392 | -17.08409 | 128.86360 | Subduction IntraSlab | 324.91690 | 27.94499 | 50 |
| 1890 | 8 | 5.65 | -70.26572 | -17.04799 | 128.86360 | Subduction IntraSlab | 324.92510 | 27.62408 | 50 |
| 1891 | 14 | 5.65 | -70.29223 | -17.0119 | 128.86360 | Subduction IntraSlab | 324.93010 | 27.31087 | 50 |
| 1892 | 8 | 5.65 | -69.92933 | -17.46399 | 130.45450 | Subduction IntraSlab | 325.31180 | 32.02153 | 50 |
| 1893 | 5 | 5.65 | -69.95564 | -17.4277 | 130.45450 | Subduction IntraSlab | 325.32060 | 31.61090 | 50 |
| 1894 | 11 | 5.65 | -69.98196 | -17.39142 | 130.45450 | Subduction IntraSlab | 325.32970 | 31.21203 | 50 |
| 1895 | 11 | 5.65 | -70.00825 | -17.35513 | 130.45450 | Subduction IntraSlab | 325.33650 | 30.82354 | 50 |
| 1896 | 16 | 5.65 | -70.03454 | -17.31884 | 130.45450 | Subduction IntraSlab | 325.34210 | 30.43958 | 50 |
| 1897 | 14 | 5.65 | -70.06081 | -17.28255 | 130.45450 | Subduction IntraSlab | 325.35100 | 30.06380 | 50 |
| 1898 | 8 | 5.65 | -70.08708 | -17.24625 | 130.45450 | Subduction IntraSlab | 325.36140 | 29.69837 | 50 |
| 1899 | 10 | 5.65 | -70.11333 | -17.20995 | 130.45450 | Subduction IntraSlab | 325.36830 | 29.34221 | 50 |
| 1900 | 8 | 5.65 | -70.13958 | -17.17364 | 130.45450 | Subduction IntraSlab | 325.37430 | 28.99170 | 50 |
| 1901 | 11 | 5.65 | -70.16582 | -17.13734 | 130.45450 | Subduction IntraSlab | 325.38220 | 28.64592 | 50 |
| 1902 | 7 | 5.65 | -70.19204 | -17.10102 | 130.45450 | Subduction IntraSlab | 325.39050 | 28.31099 | 50 |
| 1903 | 5 | 5.65 | -70.21825 | -17.06471 | 130.45450 | Subduction IntraSlab | 325.39910 | 27.98500 | 50 |
| 1904 | 10 | 5.65 | -70.24446 | -17.02839 | 130.45450 | Subduction IntraSlab | 325.40620 | 27.66313 | 50 |
| 1905 | 7 | 5.65 | -69.91184 | -17.44705 | 132.04550 | Subduction IntraSlab | 325.79440 | 32.07447 | 50 |
| 1906 | 12 | 5.65 | -69.93784 | -17.41055 | 132.04550 | Subduction IntraSlab | 325.80410 | 31.66539 | 50 |
| 1907 | 10 | 5.65 | -69.96384 | -17.37404 | 132.04550 | Subduction IntraSlab | 325.81230 | 31.26079 | 50 |
| 1908 | 8 | 5.65 | -69.98982 | -17.33753 | 132.04550 | Subduction IntraSlab | 325.81920 | 30.86642 | 50 |
| 1909 | 14 | 5.65 | -70.01579 | -17.30102 | 132.04550 | Subduction IntraSlab | 325.82580 | 30.48225 | 50 |
| 1910 | 14 | 5.65 | -70.04176 | -17.2645 | 132.04550 | Subduction IntraSlab | 325.83480 | 30.10667 | 50 |
| 1911 | 9 | 5.65 | -70.0677 | -17.22798 | 132.04550 | Subduction IntraSlab | 325.84180 | 29.74161 | 50 |
| 1912 | 10 | 5.65 | -70.09365 | -17.19146 | 132.04550 | Subduction IntraSlab | 325.84730 | 29.38390 | 50 |
| 1913 | 9 | 5.65 | -70.11958 | -17.15493 | 132.04550 | Subduction IntraSlab | 325.85800 | 29.03278 | 50 |
| 1914 | 12 | 5.65 | -70.1455 | -17.1184 | 132.04550 | Subduction IntraSlab | 325.86470 | 28.68969 | 50 |
| 1915 | 11 | 5.65 | -70.17142 | -17.08186 | 132.04550 | Subduction IntraSlab | 325.87120 | 28.35585 | 50 |
| 1916 | 13 | 5.65 | -70.19732 | -17.04532 | 132.04550 | Subduction IntraSlab | 325.88150 | 28.02818 | 50 |
| 1917 | 5 | 5.65 | -69.89436 | -17.43012 | 133.63640 | Subduction IntraSlab | 326.27690 | 32.12187 | 50 |
| 1918 | 7 | 5.65 | -69.92004 | -17.39339 | 133.63640 | Subduction IntraSlab | 326.28540 | 31.71104 | 50 |
| 1919 | 13 | 5.65 | -69.94572 | -17.35666 | 133.63640 | Subduction IntraSlab | 326.29430 | 31.30951 | 50 |
| 1920 | 14 | 5.65 | -69.97139 | -17.31993 | 133.63640 | Subduction IntraSlab | 326.30270 | 30.91497 | 50 |
| 1921 | 7 | 5.65 | -69.99705 | -17.28319 | 133.63640 | Subduction IntraSlab | 326.30790 | 30.53090 | 50 |
| 1922 | 10 | 5.65 | -70.0227 | -17.24645 | 133.63640 | Subduction IntraSlab | 326.31630 | 30.15587 | 50 |
| 1923 | 11 | 5.65 | -70.04834 | -17.20971 | 133.63640 | Subduction IntraSlab | 326.32240 | 29.78846 | 50 |
| 1924 | 9 | 5.65 | -70.07397 | -17.17296 | 133.63640 | Subduction IntraSlab | 326.32840 | 29.42947 | 50 |
| 1925 | 17 | 5.65 | -70.09959 | -17.13621 | 133.63640 | Subduction IntraSlab | 326.33870 | 29.07947 | 50 |
| 1926 | 14 | 5.65 | -70.12519 | -17.09946 | 133.63640 | Subduction IntraSlab | 326.34620 | 28.73685 | 50 |
| 1927 | 9 | 5.65 | -70.15079 | -17.0627 | 133.63640 | Subduction IntraSlab | 326.35320 | 28.39839 | 50 |
| 1928 | 11 | 5.65 | -69.87687 | -17.41319 | 135.22730 | Subduction IntraSlab | 326.75920 | 32.17728 | 50 |
| 1929 | 7 | 5.65 | -69.90224 | -17.37624 | 135.22730 | Subduction IntraSlab | 326.76650 | 31.76309 | 50 |
| 1930 | 13 | 5.65 | -69.92761 | -17.33928 | 135.22730 | Subduction IntraSlab | 326.77500 | 31.36215 | 50 |
| 1931 | 11 | 5.65 | -69.95296 | -17.30233 | 135.22730 | Subduction IntraSlab | 326.78370 | 30.97091 | 50 |
| 1932 | 15 | 5.65 | -69.97831 | -17.26537 | 135.22730 | Subduction IntraSlab | 326.78920 | 30.58706 | 50 |
| 1933 | 10 | 5.65 | -70.00365 | -17.2284 | 135.22730 | Subduction IntraSlab | 326.79760 | 30.21048 | 50 |
| 1934 | 9 | 5.65 | -70.02897 | -17.19143 | 135.22730 | Subduction IntraSlab | 326.80260 | 29.84093 | 50 |
| 1935 | 10 | 5.65 | -70.05429 | -17.15446 | 135.22730 | Subduction IntraSlab | 326.81010 | 29.48024 | 50 |
| 1936 | 11 | 5.65 | -70.07959 | -17.11749 | 135.22730 | Subduction IntraSlab | 326.81950 | 29.12905 | 50 |
| 1937 | 14 | 5.65 | -69.85939 | -17.39626 | 136.81820 | Subduction IntraSlab | 327.24160 | 32.23677 | 50 |
| 1938 | 8 | 5.65 | -69.88445 | -17.35908 | 136.81820 | Subduction IntraSlab | 327.24850 | 31.82300 | 50 |
| 1939 | 12 | 5.65 | -69.90951 | -17.3219 | 136.81820 | Subduction IntraSlab | 327.25490 | 31.41797 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 1940 | 15 | 5.65 | -69.93455 | -17.28472 | 136.81820 | Subduction IntraSlab | 327.26260 | 31.02305 | 50 |
| 1941 | 9 | 5.65 | -69.95958 | -17.24754 | 136.81820 | Subduction IntraSlab | 327.27090 | 30.63770 | 50 |
| 1942 | 19 | 5.65 | -69.9846 | -17.21035 | 136.81820 | Subduction IntraSlab | 327.27990 | 30.26084 | 50 |
| 1943 | 19 | 5.65 | -70.00961 | -17.17316 | 136.81820 | Subduction IntraSlab | 327.28360 | 29.88989 | 50 |
| 1944 | 10 | 5.65 | -70.03461 | -17.13597 | 136.81820 | Subduction IntraSlab | 327.29030 | 29.52748 | 50 |
| 1945 | 4 | 5.65 | -69.84192 | -17.37932 | 138.40910 | Subduction IntraSlab | 327.72420 | 32.28894 | 50 |
| 1946 | 12 | 5.65 | -69.86666 | -17.34192 | 138.40910 | Subduction IntraSlab | 327.73100 | 31.87402 | 50 |
| 1947 | 7 | 5.65 | -69.8914 | -17.30452 | 138.40910 | Subduction IntraSlab | 327.73490 | 31.46881 | 50 |
| 1948 | 6 | 5.65 | -69.91613 | -17.26711 | 138.40910 | Subduction IntraSlab | 327.74170 | 31.07319 | 50 |
| 1949 | 14 | 5.65 | -69.94085 | -17.22971 | 138.40910 | Subduction IntraSlab | 327.75030 | 30.68667 | 50 |
| 1950 | 11 | 5.65 | -69.96555 | -17.1923 | 138.40910 | Subduction IntraSlab | 327.76070 | 30.30954 | 50 |
| 1951 | 9 | 5.65 | -69.99025 | -17.15488 | 138.40910 | Subduction IntraSlab | 327.76680 | 29.93840 | 50 |
| 1952 | 9 | 5.75 | -70.56992 | -18.08088 | 72.38637 | Subduction IntraSlab | 308.03640 | 31.51304 | 50 |
| 1953 | 13 | 5.75 | -70.60777 | -18.05272 | 72.38637 | Subduction IntraSlab | 308.04940 | 31.12512 | 50 |
| 1954 | 7 | 5.75 | -70.65474 | -18.03321 | 71.59091 | Subduction IntraSlab | 307.83530 | 30.75164 | 50 |
| 1955 | 11 | 5.75 | -70.69273 | -18.00515 | 71.59091 | Subduction IntraSlab | 307.84590 | 30.38087 | 50 |
| 1956 | 5 | 5.75 | -70.73071 | -17.97708 | 71.59091 | Subduction IntraSlab | 307.85880 | 30.01958 | 50 |
| 1957 | 8 | 5.75 | -70.76867 | -17.94901 | 71.59091 | Subduction IntraSlab | 307.87150 | 29.66520 | 50 |
| 1958 | 6 | 5.75 | -70.80662 | -17.92092 | 71.59091 | Subduction IntraSlab | 307.88180 | 29.31580 | 50 |
| 1959 | 8 | 5.75 | -70.84456 | -17.89283 | 71.59091 | Subduction IntraSlab | 307.89510 | 28.97176 | 50 |
| 1960 | 6 | 5.75 | -70.88248 | -17.86473 | 71.59091 | Subduction IntraSlab | 307.90540 | 28.63808 | 50 |
| 1961 | 9 | 5.75 | -70.9204 | -17.83663 | 71.59091 | Subduction IntraSlab | 307.91670 | 28.31428 | 50 |
| 1962 | 13 | 5.75 | -70.95831 | -17.80851 | 71.59091 | Subduction IntraSlab | 307.92790 | 27.99565 | 50 |
| 1963 | 7 | 5.75 | -70.9962 | -17.78039 | 71.59091 | Subduction IntraSlab | 307.93970 | 27.68203 | 50 |
| 1964 | 10 | 5.75 | -71.03408 | -17.75226 | 71.59091 | Subduction IntraSlab | 307.95360 | 27.37438 | 50 |
| 1965 | 11 | 5.75 | -71.07195 | -17.72413 | 71.59091 | Subduction IntraSlab | 307.96240 | 27.07465 | 50 |
| 1966 | 8 | 5.75 | -71.1098 | -17.69599 | 71.59091 | Subduction IntraSlab | 307.97520 | 26.78074 | 50 |
| 1967 | 2 | 5.75 | -71.14764 | -17.66784 | 71.59091 | Subduction IntraSlab | 307.98790 | 26.49083 | 50 |
| 1968 | 10 | 5.75 | -71.18548 | -17.63968 | 71.59091 | Subduction IntraSlab | 307.99830 | 26.20936 | 50 |
| 1969 | 6 | 5.75 | -71.2233 | -17.61152 | 71.59091 | Subduction IntraSlab | 308.00950 | 25.93375 | 50 |
| 1970 | 6 | 5.75 | -71.26111 | -17.58335 | 71.59091 | Subduction IntraSlab | 308.01980 | 25.66184 | 50 |
| 1971 | 11 | 5.75 | -71.2989 | -17.55517 | 71.59091 | Subduction IntraSlab | 308.03090 | 25.39582 | 50 |
| 1972 | 7 | 5.75 | -71.33669 | -17.52698 | 71.59091 | Subduction IntraSlab | 308.04350 | 25.13390 | 50 |
| 1973 | 8 | 5.75 | -71.37447 | -17.49879 | 71.59091 | Subduction IntraSlab | 308.05590 | 24.87641 | 50 |
| 1974 | 3 | 5.75 | -71.41222 | -17.47059 | 71.59091 | Subduction IntraSlab | 308.06620 | 24.62427 | 50 |
| 1975 | 3 | 5.75 | -71.44997 | -17.44238 | 71.59091 | Subduction IntraSlab | 308.07640 | 24.37782 | 50 |
| 1976 | 4 | 5.75 | -71.48772 | -17.41417 | 71.59091 | Subduction IntraSlab | 308.08910 | 24.13616 | 50 |
| 1977 | 11 | 5.75 | -71.52544 | -17.38595 | 71.59091 | Subduction IntraSlab | 308.10020 | 23.89812 | 50 |
| 1978 | 8 | 5.75 | -70.55231 | -18.064 | 73.97727 | Subduction IntraSlab | 308.48630 | 31.49774 | 50 |
| 1979 | 8 | 5.75 | -70.58984 | -18.03562 | 73.97727 | Subduction IntraSlab | 308.49980 | 31.10903 | 50 |
| 1980 | 9 | 5.75 | -70.67416 | -17.98761 | 73.18182 | Subduction IntraSlab | 308.29640 | 30.36507 | 50 |
| 1981 | 8 | 5.75 | -70.71182 | -17.95932 | 73.18182 | Subduction IntraSlab | 308.30910 | 30.00102 | 50 |
| 1982 | 9 | 5.75 | -70.74947 | -17.93102 | 73.18182 | Subduction IntraSlab | 308.31970 | 29.64684 | 50 |
| 1983 | 7 | 5.75 | -70.7871 | -17.90272 | 73.18182 | Subduction IntraSlab | 308.33040 | 29.29892 | 50 |
| 1984 | 9 | 5.75 | -70.82472 | -17.87441 | 73.18182 | Subduction IntraSlab | 308.34380 | 28.95729 | 50 |
| 1985 | 9 | 5.75 | -70.86234 | -17.84609 | 73.18182 | Subduction IntraSlab | 308.35480 | 28.62492 | 50 |
| 1986 | 6 | 5.75 | -70.89993 | -17.81776 | 73.18182 | Subduction IntraSlab | 308.36540 | 28.29899 | 50 |
| 1987 | 9 | 5.75 | -70.93752 | -17.78943 | 73.18182 | Subduction IntraSlab | 308.37720 | 27.97704 | 50 |
| 1988 | 6 | 5.75 | -70.97509 | -17.76109 | 73.18182 | Subduction IntraSlab | 308.38800 | 27.66367 | 50 |
| 1989 | 6 | 5.75 | -71.01266 | -17.73274 | 73.18182 | Subduction IntraSlab | 308.40120 | 27.35900 | 50 |
| 1990 | 7 | 5.75 | -71.0502 | -17.70439 | 73.18182 | Subduction IntraSlab | 308.41070 | 27.05841 | 50 |
| 1991 | 4 | 5.75 | -71.08775 | -17.67602 | 73.18182 | Subduction IntraSlab | 308.42300 | 26.76261 | 50 |
| 1992 | 10 | 5.75 | -71.12527 | -17.64766 | 73.18182 | Subduction IntraSlab | 308.43620 | 26.47558 | 50 |
| 1993 | 2 | 5.75 | -71.16279 | -17.61928 | 73.18182 | Subduction IntraSlab | 308.44470 | 26.19563 | 50 |
| 1994 | 8 | 5.75 | -71.20029 | -17.59089 | 73.18182 | Subduction IntraSlab | 308.45710 | 25.91740 | 50 |
| 1995 | 7 | 5.75 | -71.23778 | -17.5625 | 73.18182 | Subduction IntraSlab | 308.46910 | 25.64371 | 50 |
| 1996 | 8 | 5.75 | -71.27526 | -17.53411 | 73.18182 | Subduction IntraSlab | 308.47830 | 25.37828 | 50 |
| 1997 | 9 | 5.75 | -71.31273 | -17.5057 | 73.18182 | Subduction IntraSlab | 308.49080 | 25.11942 | 50 |
| 1998 | 7 | 5.75 | -71.35018 | -17.47729 | 73.18182 | Subduction IntraSlab | 308.50330 | 24.86421 | 50 |
| 1999 | 11 | 5.75 | -71.38763 | -17.44887 | 73.18182 | Subduction IntraSlab | 308.51320 | 24.61118 | 50 |
| 2000 | 8 | 5.75 | -71.42506 | -17.42044 | 73.18182 | Subduction IntraSlab | 308.52420 | 24.36287 | 50 |
| 2001 | 1 | 5.75 | -71.46249 | -17.39201 | 73.18182 | Subduction IntraSlab | 308.53590 | 24.11996 | 50 |
| 2002 | 8 | 5.75 | -71.49989 | -17.36357 | 73.18182 | Subduction IntraSlab | 308.54780 | 23.88070 | 50 |
| 2003 | 9 | 5.75 | -70.53471 | -18.04713 | 75.56818 | Subduction IntraSlab | 308.93850 | 31.48039 | 50 |
| 2004 | 7 | 5.75 | -70.57192 | -18.01853 | 75.56818 | Subduction IntraSlab | 308.95210 | 31.09145 | 50 |
| 2005 | 9 | 5.75 | -70.60912 | -17.98992 | 75.56818 | Subduction IntraSlab | 308.96230 | 30.71300 | 50 |
| 2006 | 12 | 5.75 | -70.6556 | -17.97007 | 74.77273 | Subduction IntraSlab | 308.74830 | 30.35168 | 50 |
| 2007 | 6 | 5.75 | -70.69294 | -17.94156 | 74.77273 | Subduction IntraSlab | 308.76010 | 29.98766 | 50 |
| 2008 | 9 | 5.75 | -70.73027 | -17.91304 | 74.77273 | Subduction IntraSlab | 308.77010 | 29.62945 | 50 |
| 2009 | 6 | 5.75 | -70.76759 | -17.88452 | 74.77273 | Subduction IntraSlab | 308.78180 | 29.28035 | 50 |
| 2010 | 8 | 5.75 | -70.80489 | -17.85599 | 74.77273 | Subduction IntraSlab | 308.79430 | 28.94034 | 50 |
| 2011 | 7 | 5.75 | -70.84219 | -17.82745 | 74.77273 | Subduction IntraSlab | 308.80540 | 28.60630 | 50 |
| 2012 | 8 | 5.75 | -70.87946 | -17.7989 | 74.77273 | Subduction IntraSlab | 308.81560 | 28.27946 | 50 |
| 2013 | 7 | 5.75 | -70.91673 | -17.77035 | 74.77273 | Subduction IntraSlab | 308.82830 | 27.95998 | 50 |
| 2014 | 12 | 5.75 | -70.95399 | -17.74178 | 74.77273 | Subduction IntraSlab | 308.83940 | 27.64627 | 50 |
| 2015 | 9 | 5.75 | -70.99123 | -17.71322 | 74.77273 | Subduction IntraSlab | 308.85060 | 27.33980 | 50 |
| 2016 | 8 | 5.75 | -71.02847 | -17.68464 | 74.77273 | Subduction IntraSlab | 308.86120 | 27.03957 | 50 |
| 2017 | 11 | 5.75 | -71.06569 | -17.65606 | 74.77273 | Subduction IntraSlab | 308.87200 | 26.74515 | 50 |
| 2018 | 6 | 5.75 | -71.1029 | -17.62747 | 74.77273 | Subduction IntraSlab | 308.88390 | 26.45877 | 50 |
| 2019 | 9 | 5.75 | -71.1401 | -17.59887 | 74.77273 | Subduction IntraSlab | 308.89510 | 26.17512 | 50 |
| 2020 | 5 | 5.75 | -71.17728 | -17.57027 | 74.77273 | Subduction IntraSlab | 308.90840 | 25.89462 | 50 |
| 2021 | 3 | 5.75 | -71.21445 | -17.54166 | 74.77273 | Subduction IntraSlab | 308.91960 | 25.62226 | 50 |
| 2022 | 10 | 5.75 | -71.25162 | -17.51304 | 74.77273 | Subduction IntraSlab | 308.92790 | 25.35512 | 50 |
| 2023 | 6 | 5.75 | -71.28877 | -17.48442 | 74.77273 | Subduction IntraSlab | 308.93920 | 25.09339 | 50 |
| 2024 | 10 | 5.75 | -71.32591 | -17.45579 | 74.77273 | Subduction IntraSlab | 308.95100 | 24.83958 | 50 |
| 2025 | 8 | 5.75 | -71.36304 | -17.42715 | 74.77273 | Subduction IntraSlab | 308.96260 | 24.59033 | 50 |
| 2026 | 4 | 5.75 | -71.40015 | -17.3985 | 74.77273 | Subduction IntraSlab | 308.97510 | 24.34305 | 50 |
| 2027 | 6 | 5.75 | -71.43726 | -17.36985 | 74.77273 | Subduction IntraSlab | 308.98530 | 24.09972 | 50 |
| 2028 | 9 | 5.75 | -71.47435 | -17.34119 | 74.77273 | Subduction IntraSlab | 308.99650 | 23.86230 | 50 |
| 2029 | 8 | 5.75 | -70.5171 | -18.03025 | 77.15909 | Subduction IntraSlab | 309.39350 | 31.46714 | 50 |
| 2030 | 8 | 5.75 | -70.554 | -18.00143 | 77.15909 | Subduction IntraSlab | 309.40600 | 31.07711 | 50 |
| 2031 | 6 | 5.75 | -70.59089 | -17.9726 | 77.15909 | Subduction IntraSlab | 309.41670 | 30.69344 | 50 |
| 2032 | 8 | 5.75 | -70.63705 | -17.95253 | 76.36364 | Subduction IntraSlab | 309.20090 | 30.33051 | 50 |
| 2033 | 9 | 5.75 | -70.67406 | -17.9238 | 76.36364 | Subduction IntraSlab | 309.21340 | 29.96732 | 50 |
| 2034 | 7 | 5.75 | -70.71107 | -17.89506 | 76.36364 | Subduction IntraSlab | 309.22360 | 29.61060 | 50 |
| 2035 | 9 | 5.75 | -70.74808 | -17.86632 | 76.36364 | Subduction IntraSlab | 309.23500 | 29.26265 | 50 |
| 2036 | 7 | 5.75 | -70.78506 | -17.83756 | 76.36364 | Subduction IntraSlab | 309.24800 | 28.92093 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 2037 | 4 | 5.75 | -70.82204 | -17.8088 | 76.36364 | Subduction IntraSlab | 309.25750 | 28.58789 | 50 |
| 2038 | 7 | 5.75 | -70.859 | -17.78003 | 76.36364 | Subduction IntraSlab | 309.26820 | 28.26080 | 50 |
| 2039 | 9 | 5.75 | -70.89595 | -17.75126 | 76.36364 | Subduction IntraSlab | 309.27960 | 27.93929 | 50 |
| 2040 | 7 | 5.75 | -70.93289 | -17.72248 | 76.36364 | Subduction IntraSlab | 309.29070 | 27.62721 | 50 |
| 2041 | 5 | 5.75 | -70.96982 | -17.69369 | 76.36364 | Subduction IntraSlab | 309.30370 | 27.31969 | 50 |
| 2042 | 11 | 5.75 | -71.00674 | -17.66489 | 76.36364 | Subduction IntraSlab | 309.31390 | 27.01819 | 50 |
| 2043 | 5 | 5.75 | -71.04364 | -17.63609 | 76.36364 | Subduction IntraSlab | 309.32320 | 26.72565 | 50 |
| 2044 | 11 | 5.75 | -71.08054 | -17.60728 | 76.36364 | Subduction IntraSlab | 309.33460 | 26.43767 | 50 |
| 2045 | 7 | 5.75 | -71.11742 | -17.57846 | 76.36364 | Subduction IntraSlab | 309.34880 | 26.15291 | 50 |
| 2046 | 6 | 5.75 | -71.15428 | -17.54964 | 76.36364 | Subduction IntraSlab | 309.36110 | 25.87514 | 50 |
| 2047 | 8 | 5.75 | -71.19114 | -17.52081 | 76.36364 | Subduction IntraSlab | 309.37050 | 25.60386 | 50 |
| 2048 | 7 | 5.75 | -71.22798 | -17.49198 | 76.36364 | Subduction IntraSlab | 309.38020 | 25.33596 | 50 |
| 2049 | 10 | 5.75 | -71.26482 | -17.46313 | 76.36364 | Subduction IntraSlab | 309.39040 | 25.07294 | 50 |
| 2050 | 5 | 5.75 | -71.30164 | -17.43428 | 76.36364 | Subduction IntraSlab | 309.40050 | 24.81634 | 50 |
| 2051 | 6 | 5.75 | -71.33846 | -17.40542 | 76.36364 | Subduction IntraSlab | 309.41370 | 24.56536 | 50 |
| 2052 | 7 | 5.75 | -71.37525 | -17.37656 | 76.36364 | Subduction IntraSlab | 309.42720 | 24.31936 | 50 |
| 2053 | 5 | 5.75 | -71.41204 | -17.34769 | 76.36364 | Subduction IntraSlab | 309.43620 | 24.07688 | 50 |
| 2054 | 11 | 5.75 | -71.44881 | -17.31881 | 76.36364 | Subduction IntraSlab | 309.44580 | 23.83927 | 50 |
| 2055 | 5 | 5.75 | -71.48558 | -17.28993 | 76.36364 | Subduction IntraSlab | 309.45840 | 23.60542 | 50 |
| 2056 | 5 | 5.75 | -70.4995 | -18.01337 | 78.75000 | Subduction IntraSlab | 309.85010 | 31.45511 | 50 |
| 2057 | 14 | 5.75 | -70.53609 | -17.98433 | 78.75000 | Subduction IntraSlab | 309.86200 | 31.06434 | 50 |
| 2058 | 14 | 5.75 | -70.57265 | -17.95528 | 78.75000 | Subduction IntraSlab | 309.87320 | 30.68361 | 50 |
| 2059 | 7 | 5.75 | -70.61849 | -17.93499 | 77.95454 | Subduction IntraSlab | 309.65560 | 30.31399 | 50 |
| 2060 | 9 | 5.75 | -70.6552 | -17.90604 | 77.95454 | Subduction IntraSlab | 309.66840 | 29.94992 | 50 |
| 2061 | 3 | 5.75 | -70.69189 | -17.87708 | 77.95454 | Subduction IntraSlab | 309.67840 | 29.59439 | 50 |
| 2062 | 6 | 5.75 | -70.72857 | -17.84811 | 77.95454 | Subduction IntraSlab | 309.68900 | 29.24766 | 50 |
| 2063 | 9 | 5.75 | -70.76524 | -17.81913 | 77.95454 | Subduction IntraSlab | 309.70300 | 28.90804 | 50 |
| 2064 | 9 | 5.75 | -70.8019 | -17.79015 | 77.95454 | Subduction IntraSlab | 309.71150 | 28.57412 | 50 |
| 2065 | 9 | 5.75 | -70.83855 | -17.76116 | 77.95454 | Subduction IntraSlab | 309.72320 | 28.24360 | 50 |
| 2066 | 12 | 5.75 | -70.87518 | -17.73217 | 77.95454 | Subduction IntraSlab | 309.73400 | 27.92139 | 50 |
| 2067 | 8 | 5.75 | -70.9118 | -17.70317 | 77.95454 | Subduction IntraSlab | 309.74370 | 27.60849 | 50 |
| 2068 | 2 | 5.75 | -70.94841 | -17.67416 | 77.95454 | Subduction IntraSlab | 309.75830 | 27.30069 | 50 |
| 2069 | 6 | 5.75 | -70.98501 | -17.64514 | 77.95454 | Subduction IntraSlab | 309.76840 | 26.99945 | 50 |
| 2070 | 5 | 5.75 | -71.0216 | -17.61612 | 77.95454 | Subduction IntraSlab | 309.77740 | 26.70495 | 50 |
| 2071 | 5 | 5.75 | -71.05817 | -17.58709 | 77.95454 | Subduction IntraSlab | 309.78930 | 26.41671 | 50 |
| 2072 | 9 | 5.75 | -71.09473 | -17.55805 | 77.95454 | Subduction IntraSlab | 309.80240 | 26.13524 | 50 |
| 2073 | 2 | 5.75 | -71.13129 | -17.52901 | 77.95454 | Subduction IntraSlab | 309.81370 | 25.85879 | 50 |
| 2074 | 6 | 5.75 | -71.16782 | -17.49996 | 77.95454 | Subduction IntraSlab | 309.82310 | 25.58695 | 50 |
| 2075 | 1 | 5.75 | -71.20435 | -17.47091 | 77.95454 | Subduction IntraSlab | 309.83310 | 25.32170 | 50 |
| 2076 | 4 | 5.75 | -71.24088 | -17.44184 | 77.95454 | Subduction IntraSlab | 309.84470 | 25.06021 | 50 |
| 2077 | 8 | 5.75 | -71.27737 | -17.41277 | 77.95454 | Subduction IntraSlab | 309.85460 | 24.80074 | 50 |
| 2078 | 11 | 5.75 | -71.31387 | -17.3837 | 77.95454 | Subduction IntraSlab | 309.86670 | 24.54608 | 50 |
| 2079 | 11 | 5.75 | -71.35036 | -17.35461 | 77.95454 | Subduction IntraSlab | 309.87940 | 24.29883 | 50 |
| 2080 | 10 | 5.75 | -71.38683 | -17.32552 | 77.95454 | Subduction IntraSlab | 309.88830 | 24.05780 | 50 |
| 2081 | 9 | 5.75 | -71.42329 | -17.29643 | 77.95454 | Subduction IntraSlab | 309.89870 | 23.81940 | 50 |
| 2082 | 8 | 5.75 | -71.45973 | -17.26732 | 77.95454 | Subduction IntraSlab | 309.91160 | 23.58583 | 50 |
| 2083 | 5 | 5.75 | -70.4819 | -17.99649 | 80.34091 | Subduction IntraSlab | 310.30790 | 31.44412 | 50 |
| 2084 | 6 | 5.75 | -70.51817 | -17.96723 | 80.34091 | Subduction IntraSlab | 310.31990 | 31.05422 | 50 |
| 2085 | 6 | 5.75 | -70.55442 | -17.93796 | 80.34091 | Subduction IntraSlab | 310.33210 | 30.67155 | 50 |
| 2086 | 5 | 5.75 | -70.59994 | -17.91745 | 79.54546 | Subduction IntraSlab | 310.11260 | 30.30264 | 50 |
| 2087 | 8 | 5.75 | -70.63633 | -17.88827 | 79.54546 | Subduction IntraSlab | 310.12260 | 29.93783 | 50 |
| 2088 | 6 | 5.75 | -70.67271 | -17.85909 | 79.54546 | Subduction IntraSlab | 310.13470 | 29.58103 | 50 |
| 2089 | 8 | 5.75 | -70.70907 | -17.8299 | 79.54546 | Subduction IntraSlab | 310.14510 | 29.23134 | 50 |
| 2090 | 9 | 5.75 | -70.74542 | -17.80071 | 79.54546 | Subduction IntraSlab | 310.15820 | 28.93000 | 50 |
| 2091 | 11 | 5.75 | -70.78176 | -17.7715 | 79.54546 | Subduction IntraSlab | 310.16950 | 28.58991 | 50 |
| 2092 | 8 | 5.75 | -70.81809 | -17.74229 | 79.54546 | Subduction IntraSlab | 310.17960 | 28.23040 | 50 |
| 2093 | 5 | 5.75 | -70.85441 | -17.71308 | 79.54546 | Subduction IntraSlab | 310.19070 | 27.91095 | 50 |
| 2094 | 7 | 5.75 | -70.89071 | -17.68386 | 79.54546 | Subduction IntraSlab | 310.20010 | 27.59506 | 50 |
| 2095 | 6 | 5.75 | -70.92701 | -17.65463 | 79.54546 | Subduction IntraSlab | 310.21300 | 27.28687 | 50 |
| 2096 | 7 | 5.75 | -70.96329 | -17.62539 | 79.54546 | Subduction IntraSlab | 310.22420 | 26.98773 | 50 |
| 2097 | 8 | 5.75 | -70.99956 | -17.59615 | 79.54546 | Subduction IntraSlab | 310.23440 | 26.69172 | 50 |
| 2098 | 5 | 5.75 | -71.03581 | -17.5669 | 79.54546 | Subduction IntraSlab | 310.24620 | 26.39956 | 50 |
| 2099 | 8 | 5.75 | -71.07206 | -17.53764 | 79.54546 | Subduction IntraSlab | 310.25610 | 26.11552 | 50 |
| 2100 | 10 | 5.75 | -71.1083 | -17.50838 | 79.54546 | Subduction IntraSlab | 310.26800 | 25.83895 | 50 |
| 2101 | 5 | 5.75 | -71.14452 | -17.47911 | 79.54546 | Subduction IntraSlab | 310.27850 | 25.56733 | 50 |
| 2102 | 9 | 5.75 | -71.18073 | -17.44983 | 79.54546 | Subduction IntraSlab | 310.28680 | 25.30129 | 50 |
| 2103 | 9 | 5.75 | -71.21693 | -17.42055 | 79.54546 | Subduction IntraSlab | 310.30010 | 25.03891 | 50 |
| 2104 | 9 | 5.75 | -71.25312 | -17.39126 | 79.54546 | Subduction IntraSlab | 310.31120 | 24.78116 | 50 |
| 2105 | 6 | 5.75 | -71.2893 | -17.36197 | 79.54546 | Subduction IntraSlab | 310.32190 | 24.53071 | 50 |
| 2106 | 9 | 5.75 | -71.32546 | -17.33266 | 79.54546 | Subduction IntraSlab | 310.33340 | 24.28438 | 50 |
| 2107 | 8 | 5.75 | -71.36162 | -17.30335 | 79.54546 | Subduction IntraSlab | 310.34310 | 24.04107 | 50 |
| 2108 | 11 | 5.75 | -71.39776 | -17.27404 | 79.54546 | Subduction IntraSlab | 310.35400 | 23.80340 | 50 |
| 2109 | 12 | 5.75 | -71.43389 | -17.24472 | 79.54546 | Subduction IntraSlab | 310.36600 | 23.57102 | 50 |
| 2110 | 8 | 5.75 | -70.46431 | -17.97961 | 81.93182 | Subduction IntraSlab | 310.76710 | 31.43553 | 50 |
| 2111 | 6 | 5.75 | -70.50026 | -17.95012 | 81.93182 | Subduction IntraSlab | 310.77920 | 31.04505 | 50 |
| 2112 | 11 | 5.75 | -70.53619 | -17.92063 | 81.93182 | Subduction IntraSlab | 310.79180 | 30.66594 | 50 |
| 2113 | 6 | 5.75 | -70.58139 | -17.8999 | 81.13636 | Subduction IntraSlab | 310.57160 | 30.29487 | 50 |
| 2114 | 7 | 5.75 | -70.61746 | -17.87051 | 81.13636 | Subduction IntraSlab | 310.57940 | 29.93005 | 50 |
| 2115 | 7 | 5.75 | -70.65353 | -17.8411 | 81.13636 | Subduction IntraSlab | 310.59390 | 29.57193 | 50 |
| 2116 | 6 | 5.75 | -70.68957 | -17.81169 | 81.13636 | Subduction IntraSlab | 310.60330 | 29.22089 | 50 |
| 2117 | 7 | 5.75 | -70.72561 | -17.78228 | 81.13636 | Subduction IntraSlab | 310.61510 | 28.87803 | 50 |
| 2118 | 6 | 5.75 | -70.76163 | -17.75285 | 81.13636 | Subduction IntraSlab | 310.62930 | 28.54322 | 50 |
| 2119 | 12 | 5.75 | -70.79764 | -17.72342 | 81.13636 | Subduction IntraSlab | 310.63720 | 28.21842 | 50 |
| 2120 | 7 | 5.75 | -70.83364 | -17.69398 | 81.13636 | Subduction IntraSlab | 310.64850 | 27.89983 | 50 |
| 2121 | 14 | 5.75 | -70.86963 | -17.66454 | 81.13636 | Subduction IntraSlab | 310.65830 | 27.58450 | 50 |
| 2122 | 10 | 5.75 | -70.90561 | -17.63509 | 81.13636 | Subduction IntraSlab | 310.66920 | 27.27670 | 50 |
| 2123 | 5 | 5.75 | -70.94157 | -17.60563 | 81.13636 | Subduction IntraSlab | 310.68200 | 26.97604 | 50 |
| 2124 | 3 | 5.75 | -70.97752 | -17.57617 | 81.13636 | Subduction IntraSlab | 310.69270 | 26.67955 | 50 |
| 2125 | 7 | 5.75 | -71.01347 | -17.5467 | 81.13636 | Subduction IntraSlab | 310.70310 | 26.38771 | 50 |
| 2126 | 4 | 5.75 | -71.04939 | -17.51723 | 81.13636 | Subduction IntraSlab | 310.71340 | 26.10313 | 50 |
| 2127 | 6 | 5.75 | -71.08531 | -17.48774 | 81.13636 | Subduction IntraSlab | 310.72480 | 25.82672 | 50 |
| 2128 | 13 | 5.75 | -71.12122 | -17.45825 | 81.13636 | Subduction IntraSlab | 310.73580 | 25.55379 | 50 |
| 2129 | 5 | 5.75 | -71.15711 | -17.42876 | 81.13636 | Subduction IntraSlab | 310.74380 | 25.28383 | 50 |
| 2130 | 10 | 5.75 | -71.193 | -17.39926 | 81.13636 | Subduction IntraSlab | 310.75670 | 25.02220 | 50 |
| 2131 | 7 | 5.75 | -71.22887 | -17.36975 | 81.13636 | Subduction IntraSlab | 310.76860 | 24.76681 | 50 |
| 2132 | 11 | 5.75 | -71.26473 | -17.34023 | 81.13636 | Subduction IntraSlab | 310.77800 | 24.51451 | 50 |
| 2133 | 12 | 5.75 | -71.30058 | -17.31071 | 81.13636 | Subduction IntraSlab | 310.78960 | 24.26790 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| rup_id | multiplicity | mag | centroid_lon | centroid_lat | centroid_depth | trt | strike | dip | rake |
|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 2134 | 6 | 5.75 | -71.33642 | -17.28118 | 81.13636 | Subduction IntraSlab | 310.79930 | 24.02714 | 50 |
| 2135 | 9 | 5.75 | -71.37224 | -17.25165 | 81.13636 | Subduction IntraSlab | 310.81000 | 23.79092 | 50 |
| 2136 | 4 | 5.75 | -71.40806 | -17.22211 | 81.13636 | Subduction IntraSlab | 310.82250 | 23.55683 | 50 |
| 2137 | 7 | 5.75 | -70.44672 | -17.96273 | 83.52273 | Subduction IntraSlab | 311.22860 | 31.43030 | 50 |
| 2138 | 7 | 5.75 | -70.48235 | -17.93302 | 83.52273 | Subduction IntraSlab | 311.24010 | 31.03975 | 50 |
| 2139 | 8 | 5.75 | -70.51797 | -17.90331 | 83.52273 | Subduction IntraSlab | 311.25150 | 30.65735 | 50 |
| 2140 | 21 | 5.75 | -70.55358 | -17.87358 | 83.52273 | Subduction IntraSlab | 311.26330 | 30.28425 | 50 |
| 2141 | 7 | 5.75 | -70.5986 | -17.85274 | 82.72727 | Subduction IntraSlab | 311.04030 | 29.92400 | 50 |
| 2142 | 9 | 5.75 | -70.63435 | -17.82311 | 82.72727 | Subduction IntraSlab | 311.05390 | 29.56706 | 50 |
| 2143 | 11 | 5.75 | -70.67007 | -17.79348 | 82.72727 | Subduction IntraSlab | 311.06360 | 29.21825 | 50 |
| 2144 | 5 | 5.75 | -70.7058 | -17.76384 | 82.72727 | Subduction IntraSlab | 311.07490 | 28.87309 | 50 |
| 2145 | 4 | 5.75 | -70.7415 | -17.7342 | 82.72727 | Subduction IntraSlab | 311.08800 | 28.53641 | 50 |
| 2146 | 7 | 5.75 | -70.7772 | -17.70455 | 82.72727 | Subduction IntraSlab | 311.09600 | 28.20833 | 50 |
| 2147 | 8 | 5.75 | -70.81288 | -17.67489 | 82.72727 | Subduction IntraSlab | 311.10820 | 27.88689 | 50 |
| 2148 | 6 | 5.75 | -70.84855 | -17.64523 | 82.72727 | Subduction IntraSlab | 311.11900 | 27.57669 | 50 |
| 2149 | 6 | 5.75 | -70.88421 | -17.61555 | 82.72727 | Subduction IntraSlab | 311.12810 | 27.26810 | 50 |
| 2150 | 11 | 5.75 | -70.91986 | -17.58588 | 82.72727 | Subduction IntraSlab | 311.14150 | 26.96471 | 50 |
| 2151 | 3 | 5.75 | -70.95549 | -17.55619 | 82.72727 | Subduction IntraSlab | 311.15130 | 26.66856 | 50 |
| 2152 | 6 | 5.75 | -70.99112 | -17.5265 | 82.72727 | Subduction IntraSlab | 311.16080 | 26.38074 | 50 |
| 2153 | 9 | 5.75 | -71.02673 | -17.49681 | 82.72727 | Subduction IntraSlab | 311.17380 | 26.09848 | 50 |
| 2154 | 3 | 5.75 | -71.06233 | -17.4671 | 82.72727 | Subduction IntraSlab | 311.18390 | 25.81922 | 50 |
| 2155 | 6 | 5.75 | -71.09792 | -17.4374 | 82.72727 | Subduction IntraSlab | 311.19490 | 25.54562 | 50 |
| 2156 | 9 | 5.75 | -71.1335 | -17.40768 | 82.72727 | Subduction IntraSlab | 311.20390 | 25.27694 | 50 |
| 2157 | 7 | 5.75 | -71.16907 | -17.37796 | 82.72727 | Subduction IntraSlab | 311.21520 | 25.01281 | 50 |
| 2158 | 5 | 5.75 | -71.20462 | -17.34823 | 82.72727 | Subduction IntraSlab | 311.22730 | 24.75523 | 50 |
| 2159 | 7 | 5.75 | -71.24017 | -17.31849 | 82.72727 | Subduction IntraSlab | 311.23610 | 24.50366 | 50 |
| 2160 | 4 | 5.75 | -71.2757 | -17.28875 | 82.72727 | Subduction IntraSlab | 311.24580 | 24.25800 | 50 |
| 2161 | 9 | 5.75 | -71.31122 | -17.25901 | 82.72727 | Subduction IntraSlab | 311.25650 | 24.01732 | 50 |
| 2162 | 9 | 5.75 | -71.34673 | -17.22925 | 82.72727 | Subduction IntraSlab | 311.26880 | 23.77849 | 50 |
| 2163 | 10 | 5.75 | -71.38223 | -17.19949 | 82.72727 | Subduction IntraSlab | 311.27950 | 23.54423 | 50 |
| 2164 | 6 | 5.75 | -70.42914 | -17.94585 | 85.11363 | Subduction IntraSlab | 311.69270 | 31.42382 | 50 |
| 2165 | 9 | 5.75 | -70.46445 | -17.91591 | 85.11363 | Subduction IntraSlab | 311.70300 | 31.03315 | 50 |
| 2166 | 6 | 5.75 | -70.49976 | -17.88598 | 85.11363 | Subduction IntraSlab | 311.71300 | 30.65084 | 50 |
| 2167 | 6 | 5.75 | -70.53504 | -17.85603 | 85.11363 | Subduction IntraSlab | 311.72640 | 30.27591 | 50 |
| 2168 | 9 | 5.75 | -70.57975 | -17.83497 | 84.31818 | Subduction IntraSlab | 311.50410 | 29.91508 | 50 |
| 2169 | 6 | 5.75 | -70.61517 | -17.80512 | 84.31818 | Subduction IntraSlab | 311.51400 | 29.55932 | 50 |
| 2170 | 3 | 5.75 | -70.65059 | -17.77527 | 84.31818 | Subduction IntraSlab | 311.52610 | 29.20848 | 50 |
| 2171 | 8 | 5.75 | -70.68599 | -17.74541 | 84.31818 | Subduction IntraSlab | 311.53750 | 28.86240 | 50 |
| 2172 | 6 | 5.75 | -70.72137 | -17.71554 | 84.31818 | Subduction IntraSlab | 311.54770 | 28.52752 | 50 |
| 2173 | 10 | 5.75 | -70.75675 | -17.68567 | 84.31818 | Subduction IntraSlab | 311.55700 | 28.20000 | 50 |
| 2174 | 13 | 5.75 | -70.79212 | -17.65579 | 84.31818 | Subduction IntraSlab | 311.56880 | 27.87787 | 50 |
| 2175 | 13 | 5.75 | -70.82748 | -17.62591 | 84.31818 | Subduction IntraSlab | 311.58090 | 27.56402 | 50 |
| 2176 | 7 | 5.75 | -70.86282 | -17.59602 | 84.31818 | Subduction IntraSlab | 311.58990 | 27.25605 | 50 |
| 2177 | 6 | 5.75 | -70.89815 | -17.56612 | 84.31818 | Subduction IntraSlab | 311.60140 | 26.95469 | 50 |
| 2178 | 12 | 5.75 | -70.93347 | -17.53621 | 84.31818 | Subduction IntraSlab | 311.61180 | 26.65936 | 50 |
| 2179 | 4 | 5.75 | -70.96878 | -17.5063 | 84.31818 | Subduction IntraSlab | 311.62170 | 26.36878 | 50 |
| 2180 | 10 | 5.75 | -71.00407 | -17.47639 | 84.31818 | Subduction IntraSlab | 311.63490 | 26.08374 | 50 |
| 2181 | 4 | 5.75 | -71.03936 | -17.44646 | 84.31818 | Subduction IntraSlab | 311.64460 | 25.80457 | 50 |
| 2182 | 4 | 5.75 | -71.07463 | -17.41653 | 84.31818 | Subduction IntraSlab | 311.65510 | 25.53312 | 50 |
| 2183 | 7 | 5.75 | -71.10989 | -17.3866 | 84.31818 | Subduction IntraSlab | 311.66530 | 25.26687 | 50 |
| 2184 | 11 | 5.75 | -71.14514 | -17.35666 | 84.31818 | Subduction IntraSlab | 311.67470 | 25.00322 | 50 |
| 2185 | 8 | 5.75 | -71.18038 | -17.32671 | 84.31818 | Subduction IntraSlab | 311.68660 | 24.74599 | 50 |
| 2186 | 11 | 5.75 | -71.21561 | -17.29675 | 84.31818 | Subduction IntraSlab | 311.69660 | 24.49506 | 50 |
| 2187 | 11 | 5.75 | -71.25082 | -17.26679 | 84.31818 | Subduction IntraSlab | 311.70450 | 24.24708 | 50 |
| 2188 | 6 | 5.75 | -71.28603 | -17.23683 | 84.31818 | Subduction IntraSlab | 311.71750 | 24.00213 | 50 |
| 2189 | 9 | 5.75 | -71.32122 | -17.20686 | 84.31818 | Subduction IntraSlab | 311.72920 | 23.76189 | 50 |
| 2190 | 6 | 5.75 | -70.41155 | -17.92896 | 86.70454 | Subduction IntraSlab | 312.15830 | 31.41997 | 50 |
| 2191 | 6 | 5.75 | -70.44655 | -17.89881 | 86.70454 | Subduction IntraSlab | 312.16780 | 31.02877 | 50 |
| 2192 | 6 | 5.75 | -70.48154 | -17.86865 | 86.70454 | Subduction IntraSlab | 312.17740 | 30.64448 | 50 |
| 2193 | 4 | 5.75 | -70.51651 | -17.83848 | 86.70454 | Subduction IntraSlab | 312.19040 | 30.26813 | 50 |
| 2194 | 7 | 5.75 | -70.5609 | -17.81719 | 85.90909 | Subduction IntraSlab | 311.96830 | 29.90532 | 50 |
| 2195 | 8 | 5.75 | -70.596 | -17.78713 | 85.90909 | Subduction IntraSlab | 311.97690 | 29.54831 | 50 |
| 2196 | 8 | 5.75 | -70.6311 | -17.75705 | 85.90909 | Subduction IntraSlab | 311.99020 | 29.19509 | 50 |
| 2197 | 11 | 5.75 | -70.66618 | -17.72697 | 85.90909 | Subduction IntraSlab | 312.00040 | 28.85107 | 50 |
| 2198 | 7 | 5.75 | -70.70126 | -17.69688 | 85.90909 | Subduction IntraSlab | 312.00920 | 28.51842 | 50 |
| 2199 | 8 | 5.75 | -70.73632 | -17.66679 | 85.90909 | Subduction IntraSlab | 312.02150 | 28.19148 | 50 |
| 2200 | 7 | 5.75 | -70.77137 | -17.63669 | 85.90909 | Subduction IntraSlab | 312.03150 | 27.86622 | 50 |
| 2201 | 13 | 5.75 | -70.8064 | -17.60659 | 85.90909 | Subduction IntraSlab | 312.04240 | 27.54892 | 50 |
| 2202 | 10 | 5.75 | -70.84143 | -17.57647 | 85.90909 | Subduction IntraSlab | 312.05280 | 27.24374 | 50 |
| 2203 | 8 | 5.75 | -70.87645 | -17.54636 | 85.90909 | Subduction IntraSlab | 312.06340 | 26.94418 | 50 |
| 2204 | 11 | 5.75 | -70.91145 | -17.51623 | 85.90909 | Subduction IntraSlab | 312.07490 | 26.64801 | 50 |
| 2205 | 8 | 5.75 | -70.94644 | -17.4861 | 85.90909 | Subduction IntraSlab | 312.08540 | 26.35735 | 50 |
| 2206 | 4 | 5.75 | -70.98142 | -17.45596 | 85.90909 | Subduction IntraSlab | 312.09670 | 26.07171 | 50 |
| 2207 | 6 | 5.75 | -71.01639 | -17.42582 | 85.90909 | Subduction IntraSlab | 312.10570 | 25.79277 | 50 |
| 2208 | 7 | 5.75 | -71.05135 | -17.39567 | 85.90909 | Subduction IntraSlab | 312.11640 | 25.51953 | 50 |
| 2209 | 9 | 5.75 | -71.08629 | -17.36551 | 85.90909 | Subduction IntraSlab | 312.12820 | 25.25162 | 50 |
| 2210 | 6 | 5.75 | -71.12122 | -17.33535 | 85.90909 | Subduction IntraSlab | 312.13560 | 24.99135 | 50 |
| 2211 | 6 | 5.75 | -71.15615 | -17.30519 | 85.90909 | Subduction IntraSlab | 312.14690 | 24.73602 | 50 |
| 2212 | 9 | 5.75 | -71.19106 | -17.27501 | 85.90909 | Subduction IntraSlab | 312.15910 | 24.48268 | 50 |
| 2213 | 6 | 5.75 | -71.22596 | -17.24483 | 85.90909 | Subduction IntraSlab | 312.16760 | 24.23339 | 50 |
| 2214 | 12 | 5.75 | -71.26085 | -17.21465 | 85.90909 | Subduction IntraSlab | 312.17970 | 23.98944 | 50 |
| 2215 | 4 | 5.75 | -71.29572 | -17.18445 | 85.90909 | Subduction IntraSlab | 312.18990 | 23.75079 | 50 |
| 2216 | 7 | 5.75 | -70.39397 | -17.91207 | 88.29546 | Subduction IntraSlab | 312.62440 | 31.41592 | 50 |
| 2217 | 10 | 5.75 | -70.42865 | -17.8817 | 88.29546 | Subduction IntraSlab | 312.63400 | 31.02413 | 50 |
| 2218 | 8 | 5.75 | -70.46332 | -17.85131 | 88.29546 | Subduction IntraSlab | 312.64440 | 30.64013 | 50 |
| 2219 | 7 | 5.75 | -70.49798 | -17.82093 | 88.29546 | Subduction IntraSlab | 312.65540 | 30.26495 | 50 |
| 2220 | 8 | 5.75 | -70.54205 | -17.79942 | 87.50000 | Subduction IntraSlab | 312.43200 | 29.89763 | 50 |
| 2221 | 5 | 5.75 | -70.57684 | -17.76913 | 87.50000 | Subduction IntraSlab | 312.44220 | 29.53756 | 50 |
| 2222 | 20 | 5.75 | -70.61162 | -17.73883 | 87.50000 | Subduction IntraSlab | 312.45540 | 29.18933 | 50 |
| 2223 | 10 | 5.75 | -70.64639 | -17.70853 | 87.50000 | Subduction IntraSlab | 312.46360 | 28.84933 | 50 |
| 2224 | 13 | 5.75 | -70.68114 | -17.67822 | 87.50000 | Subduction IntraSlab | 312.47350 | 28.51205 | 50 |
| 2225 | 10 | 5.75 | -70.71589 | -17.64791 | 87.50000 | Subduction IntraSlab | 312.48760 | 28.18146 | 50 |
| 2226 | 14 | 5.75 | -70.75062 | -17.61759 | 87.50000 | Subduction IntraSlab | 312.49530 | 27.85895 | 50 |
| 2227 | 8 | 5.75 | -70.78534 | -17.58726 | 87.50000 | Subduction IntraSlab | 312.50510 | 27.54387 | 50 |
| 2228 | 8 | 5.75 | -70.82005 | -17.55693 | 87.50000 | Subduction IntraSlab | 312.51760 | 27.23727 | 50 |
| 2229 | 8 | 5.75 | -70.85475 | -17.52659 | 87.50000 | Subduction IntraSlab | 312.52780 | 26.93577 | 50 |
| 2230 | 3 | 5.75 | -70.88943 | -17.49625 | 87.50000 | Subduction IntraSlab | 312.53780 | 26.63937 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

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| 2231 | 9 | 5.75 | -70.92411 | -17.46589 | 87.50000 | Subduction IntraSlab | 312.55120 | 26.34840 | 50 |
| 2232 | 12 | 5.75 | -70.95877 | -17.43554 | 87.50000 | Subduction IntraSlab | 312.56020 | 26.06182 | 50 |
| 2233 | 9 | 5.75 | -70.99342 | -17.40517 | 87.50000 | Subduction IntraSlab | 312.56750 | 25.78290 | 50 |
| 2234 | 9 | 5.75 | -71.02807 | -17.37481 | 87.50000 | Subduction IntraSlab | 312.58080 | 25.51032 | 50 |
| 2235 | 5 | 5.75 | -71.0627 | -17.34443 | 87.50000 | Subduction IntraSlab | 312.59200 | 25.24349 | 50 |
| 2236 | 9 | 5.75 | -71.09731 | -17.31405 | 87.50000 | Subduction IntraSlab | 312.59850 | 24.98304 | 50 |
| 2237 | 4 | 5.75 | -71.13192 | -17.28366 | 87.50000 | Subduction IntraSlab | 312.60950 | 24.72571 | 50 |
| 2238 | 3 | 5.75 | -71.16651 | -17.25327 | 87.50000 | Subduction IntraSlab | 312.62240 | 24.47177 | 50 |
| 2239 | 4 | 5.75 | -71.20111 | -17.22287 | 87.50000 | Subduction IntraSlab | 312.63150 | 24.22374 | 50 |
| 2240 | 9 | 5.75 | -71.23567 | -17.19246 | 87.50000 | Subduction IntraSlab | 312.64200 | 23.98120 | 50 |
| 2241 | 8 | 5.75 | -71.27023 | -17.16205 | 87.50000 | Subduction IntraSlab | 312.65340 | 23.74217 | 50 |
| 2242 | 5 | 5.75 | -70.3764 | -17.89518 | 89.88637 | Subduction IntraSlab | 313.09180 | 31.42062 | 50 |
| 2243 | 5 | 5.75 | -70.41076 | -17.86459 | 89.88637 | Subduction IntraSlab | 313.10180 | 31.02544 | 50 |
| 2244 | 5 | 5.75 | -70.44511 | -17.83398 | 89.88637 | Subduction IntraSlab | 313.11230 | 30.64118 | 50 |
| 2245 | 8 | 5.75 | -70.47945 | -17.80337 | 89.88637 | Subduction IntraSlab | 313.12230 | 30.26572 | 50 |
| 2246 | 11 | 5.75 | -70.5232 | -17.78164 | 89.09091 | Subduction IntraSlab | 312.89820 | 29.89695 | 50 |
| 2247 | 6 | 5.75 | -70.55768 | -17.75113 | 89.09091 | Subduction IntraSlab | 312.90920 | 29.53627 | 50 |
| 2248 | 10 | 5.75 | -70.59214 | -17.72062 | 89.09091 | Subduction IntraSlab | 312.92190 | 29.18538 | 50 |
| 2249 | 6 | 5.75 | -70.62659 | -17.69009 | 89.09091 | Subduction IntraSlab | 312.92970 | 28.84233 | 50 |
| 2250 | 5 | 5.75 | -70.66103 | -17.65956 | 89.09091 | Subduction IntraSlab | 312.94010 | 28.50447 | 50 |
| 2251 | 4 | 5.75 | -70.69546 | -17.62903 | 89.09091 | Subduction IntraSlab | 312.95310 | 28.17563 | 50 |
| 2252 | 10 | 5.75 | -70.72987 | -17.59849 | 89.09091 | Subduction IntraSlab | 312.95980 | 27.85712 | 50 |
| 2253 | 7 | 5.75 | -70.76428 | -17.56794 | 89.09091 | Subduction IntraSlab | 312.97180 | 27.54091 | 50 |
| 2254 | 4 | 5.75 | -70.79868 | -17.53738 | 89.09091 | Subduction IntraSlab | 312.98460 | 27.22766 | 50 |
| 2255 | 6 | 5.75 | -70.83305 | -17.50682 | 89.09091 | Subduction IntraSlab | 312.99210 | 26.92535 | 50 |
| 2256 | 6 | 5.75 | -70.86742 | -17.47626 | 89.09091 | Subduction IntraSlab | 313.00200 | 26.63007 | 50 |
| 2257 | 6 | 5.75 | -70.90179 | -17.44569 | 89.09091 | Subduction IntraSlab | 313.01760 | 26.33772 | 50 |
| 2258 | 11 | 5.75 | -70.93613 | -17.41511 | 89.09091 | Subduction IntraSlab | 313.02530 | 26.05326 | 50 |
| 2259 | 9 | 5.75 | -70.97047 | -17.38453 | 89.09091 | Subduction IntraSlab | 313.03270 | 25.77634 | 50 |
| 2260 | 6 | 5.75 | -71.00479 | -17.35394 | 89.09091 | Subduction IntraSlab | 313.04670 | 25.50405 | 50 |
| 2261 | 3 | 5.75 | -71.0391 | -17.32334 | 89.09091 | Subduction IntraSlab | 313.05500 | 25.23726 | 50 |
| 2262 | 13 | 5.75 | -71.0734 | -17.29274 | 89.09091 | Subduction IntraSlab | 313.06300 | 24.97405 | 50 |
| 2263 | 3 | 5.75 | -71.1077 | -17.26213 | 89.09091 | Subduction IntraSlab | 313.07600 | 24.71465 | 50 |
| 2264 | 5 | 5.75 | -71.14198 | -17.23152 | 89.09091 | Subduction IntraSlab | 313.08690 | 24.46203 | 50 |
| 2265 | 4 | 5.75 | -71.17624 | -17.2009 | 89.09091 | Subduction IntraSlab | 313.09500 | 24.21498 | 50 |
| 2266 | 6 | 5.75 | -71.2105 | -17.17027 | 89.09091 | Subduction IntraSlab | 313.10630 | 23.97104 | 50 |
| 2267 | 5 | 5.75 | -71.24474 | -17.13964 | 89.09091 | Subduction IntraSlab | 313.11780 | 23.73247 | 50 |
| 2268 | 5 | 5.75 | -70.35883 | -17.87829 | 91.47727 | Subduction IntraSlab | 313.56100 | 31.41768 | 50 |
| 2269 | 5 | 5.75 | -70.39287 | -17.84747 | 91.47727 | Subduction IntraSlab | 313.57070 | 31.02371 | 50 |
| 2270 | 8 | 5.75 | -70.42691 | -17.81665 | 91.47727 | Subduction IntraSlab | 313.58120 | 30.63968 | 50 |
| 2271 | 4 | 5.75 | -70.46093 | -17.78581 | 91.47727 | Subduction IntraSlab | 313.59100 | 30.26475 | 50 |
| 2272 | 3 | 5.75 | -70.50436 | -17.76387 | 90.68182 | Subduction IntraSlab | 313.36650 | 29.89914 | 50 |
| 2273 | 13 | 5.75 | -70.53852 | -17.73313 | 90.68182 | Subduction IntraSlab | 313.37860 | 29.54035 | 50 |
| 2274 | 4 | 5.75 | -70.57266 | -17.70239 | 90.68182 | Subduction IntraSlab | 313.38940 | 29.18750 | 50 |
| 2275 | 10 | 5.75 | -70.6068 | -17.67165 | 90.68182 | Subduction IntraSlab | 313.39730 | 28.84242 | 50 |
| 2276 | 12 | 5.75 | -70.64092 | -17.6409 | 90.68182 | Subduction IntraSlab | 313.40700 | 28.50586 | 50 |
| 2277 | 5 | 5.75 | -70.67503 | -17.61014 | 90.68182 | Subduction IntraSlab | 313.41870 | 28.17833 | 50 |
| 2278 | 10 | 5.75 | -70.70914 | -17.57938 | 90.68182 | Subduction IntraSlab | 313.42830 | 27.85771 | 50 |
| 2279 | 3 | 5.75 | -70.74323 | -17.54861 | 90.68182 | Subduction IntraSlab | 313.44100 | 27.54086 | 50 |
| 2280 | 11 | 5.75 | -70.7773 | -17.51784 | 90.68182 | Subduction IntraSlab | 313.45120 | 27.22826 | 50 |
| 2281 | 18 | 5.75 | -70.81136 | -17.48705 | 90.68182 | Subduction IntraSlab | 313.45820 | 26.92356 | 50 |
| 2282 | 4 | 5.75 | -70.84542 | -17.45627 | 90.68182 | Subduction IntraSlab | 313.46930 | 26.62742 | 50 |
| 2283 | 9 | 5.75 | -70.87946 | -17.42548 | 90.68182 | Subduction IntraSlab | 313.48260 | 26.33844 | 50 |
| 2284 | 9 | 5.75 | -70.91349 | -17.39468 | 90.68182 | Subduction IntraSlab | 313.49180 | 26.05561 | 50 |
| 2285 | 3 | 5.75 | -70.94751 | -17.36387 | 90.68182 | Subduction IntraSlab | 313.50010 | 25.77724 | 50 |
| 2286 | 7 | 5.75 | -70.98152 | -17.33307 | 90.68182 | Subduction IntraSlab | 313.51210 | 25.50357 | 50 |
| 2287 | 4 | 5.75 | -71.01552 | -17.30225 | 90.68182 | Subduction IntraSlab | 313.52090 | 25.23524 | 50 |
| 2288 | 6 | 5.75 | -71.04951 | -17.27143 | 90.68182 | Subduction IntraSlab | 313.53030 | 24.97125 | 50 |
| 2289 | 11 | 5.75 | -71.08348 | -17.2406 | 90.68182 | Subduction IntraSlab | 313.54310 | 24.71270 | 50 |
| 2290 | 8 | 5.75 | -71.11744 | -17.20977 | 90.68182 | Subduction IntraSlab | 313.55230 | 24.46125 | 50 |
| 2291 | 11 | 5.75 | -71.15139 | -17.17893 | 90.68182 | Subduction IntraSlab | 313.56110 | 24.21323 | 50 |
| 2292 | 8 | 5.75 | -71.18533 | -17.14808 | 90.68182 | Subduction IntraSlab | 313.57200 | 23.96739 | 50 |
| 2293 | 8 | 5.75 | -71.21926 | -17.11723 | 90.68182 | Subduction IntraSlab | 313.58130 | 23.72886 | 50 |
| 2294 | 5 | 5.75 | -70.34126 | -17.8614 | 93.06818 | Subduction IntraSlab | 314.03070 | 31.42064 | 50 |
| 2295 | 6 | 5.75 | -70.37498 | -17.83036 | 93.06818 | Subduction IntraSlab | 314.04060 | 31.02775 | 50 |
| 2296 | 10 | 5.75 | -70.40871 | -17.79931 | 93.06818 | Subduction IntraSlab | 314.05160 | 30.64159 | 50 |
| 2297 | 10 | 5.75 | -70.44241 | -17.76826 | 93.06818 | Subduction IntraSlab | 314.06110 | 30.26575 | 50 |
| 2298 | 8 | 5.75 | -70.48553 | -17.74609 | 92.27273 | Subduction IntraSlab | 313.83550 | 29.89696 | 50 |
| 2299 | 7 | 5.75 | -70.51936 | -17.71513 | 92.27273 | Subduction IntraSlab | 313.84860 | 29.53806 | 50 |
| 2300 | 9 | 5.75 | -70.55319 | -17.68417 | 92.27273 | Subduction IntraSlab | 313.85750 | 29.18812 | 50 |
| 2301 | 10 | 5.75 | -70.58701 | -17.6532 | 92.27273 | Subduction IntraSlab | 313.86660 | 28.84488 | 50 |
| 2302 | 13 | 5.75 | -70.62082 | -17.62223 | 92.27273 | Subduction IntraSlab | 313.87500 | 28.50741 | 50 |
| 2303 | 9 | 5.75 | -70.65462 | -17.59126 | 92.27273 | Subduction IntraSlab | 313.88720 | 28.17537 | 50 |
| 2304 | 6 | 5.75 | -70.6884 | -17.56027 | 92.27273 | Subduction IntraSlab | 313.89930 | 27.85104 | 50 |
| 2305 | 7 | 5.75 | -70.72217 | -17.52928 | 92.27273 | Subduction IntraSlab | 313.90950 | 27.53706 | 50 |
| 2306 | 6 | 5.75 | -70.75593 | -17.49829 | 92.27273 | Subduction IntraSlab | 313.91840 | 27.22910 | 50 |
| 2307 | 5 | 5.75 | -70.78968 | -17.46728 | 92.27273 | Subduction IntraSlab | 313.92740 | 26.92342 | 50 |
| 2308 | 16 | 5.75 | -70.82342 | -17.43628 | 92.27273 | Subduction IntraSlab | 313.93790 | 26.62452 | 50 |
| 2309 | 6 | 5.75 | -70.85715 | -17.40526 | 92.27273 | Subduction IntraSlab | 313.94900 | 26.33522 | 50 |
| 2310 | 3 | 5.75 | -70.89086 | -17.37424 | 92.27273 | Subduction IntraSlab | 313.96000 | 26.05210 | 50 |
| 2311 | 9 | 5.75 | -70.92456 | -17.34322 | 92.27273 | Subduction IntraSlab | 313.96750 | 25.77471 | 50 |
| 2312 | 9 | 5.75 | -70.95826 | -17.31219 | 92.27273 | Subduction IntraSlab | 313.97880 | 25.50206 | 50 |
| 2313 | 8 | 5.75 | -70.99194 | -17.28115 | 92.27273 | Subduction IntraSlab | 313.99060 | 25.23162 | 50 |
| 2314 | 9 | 5.75 | -71.0256 | -17.25011 | 92.27273 | Subduction IntraSlab | 313.99960 | 24.96558 | 50 |
| 2315 | 7 | 5.75 | -71.05927 | -17.21906 | 92.27273 | Subduction IntraSlab | 314.00920 | 24.70632 | 50 |
| 2316 | 8 | 5.75 | -71.09291 | -17.18801 | 92.27273 | Subduction IntraSlab | 314.01750 | 24.45346 | 50 |
| 2317 | 4 | 5.75 | -71.12655 | -17.15695 | 92.27273 | Subduction IntraSlab | 314.02850 | 24.20542 | 50 |
| 2318 | 7 | 5.75 | -71.16017 | -17.12589 | 92.27273 | Subduction IntraSlab | 314.03990 | 23.96303 | 50 |
| 2319 | 9 | 5.75 | -71.19379 | -17.09482 | 92.27273 | Subduction IntraSlab | 314.04820 | 23.72516 | 50 |
| 2320 | 7 | 5.75 | -70.32369 | -17.84451 | 94.65909 | Subduction IntraSlab | 314.50140 | 31.42350 | 50 |
| 2321 | 6 | 5.75 | -70.3571 | -17.81324 | 94.65909 | Subduction IntraSlab | 314.51240 | 31.03070 | 50 |
| 2322 | 8 | 5.75 | -70.3905 | -17.78197 | 94.65909 | Subduction IntraSlab | 314.52340 | 30.64513 | 50 |
| 2323 | 11 | 5.75 | -70.4239 | -17.7507 | 94.65909 | Subduction IntraSlab | 314.53170 | 30.26828 | 50 |
| 2324 | 12 | 5.75 | -70.45728 | -17.71941 | 94.65909 | Subduction IntraSlab | 314.54110 | 29.89963 | 50 |
| 2325 | 3 | 5.75 | -70.50021 | -17.69713 | 93.86364 | Subduction IntraSlab | 314.31850 | 29.53965 | 50 |
| 2326 | 8 | 5.75 | -70.53373 | -17.66595 | 93.86364 | Subduction IntraSlab | 314.32800 | 29.18478 | 50 |
| 2327 | 6 | 5.75 | -70.56723 | -17.63476 | 93.86364 | Subduction IntraSlab | 314.33760 | 28.84027 | 50 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

REGISTRO DE RUPTURAS SISMICAS Y EVENTOS ESTOCASTICOS

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, ses_per_logic_tree_path=50000

| rup_id | multiplicity | mag | centroid_lon | centroid_lat | centroid_depth | trt | strike | dip | rake |
|--------|--------------|------|--------------|--------------|----------------|----------------------|-----------|----------|------|
| 2328 | 7 | 5.75 | -70.60072 | -17.60357 | 93.86364 | Subduction IntraSlab | 314.34490 | 28.50509 | 50 |
| 2329 | 4 | 5.75 | -70.6342 | -17.57236 | 93.86364 | Subduction IntraSlab | 314.35830 | 28.17384 | 50 |
| 2330 | 3 | 5.75 | -70.66766 | -17.54116 | 93.86364 | Subduction IntraSlab | 314.37060 | 27.84786 | 50 |
| 2331 | 2 | 5.75 | -70.70113 | -17.50995 | 93.86364 | Subduction IntraSlab | 314.37830 | 27.53153 | 50 |
| 2332 | 8 | 5.75 | -70.73457 | -17.47873 | 93.86364 | Subduction IntraSlab | 314.38790 | 27.22279 | 50 |
| 2333 | 11 | 5.75 | -70.768 | -17.44751 | 93.86364 | Subduction IntraSlab | 314.39830 | 26.91803 | 50 |
| 2334 | 11 | 5.75 | -70.80142 | -17.41628 | 93.86364 | Subduction IntraSlab | 314.40630 | 26.62085 | 50 |
| 2335 | 6 | 5.75 | -70.83483 | -17.38505 | 93.86364 | Subduction IntraSlab | 314.41770 | 26.33131 | 50 |
| 2336 | 8 | 5.75 | -70.86823 | -17.35381 | 93.86364 | Subduction IntraSlab | 314.42940 | 26.04672 | 50 |
| 2337 | 8 | 5.75 | -70.90162 | -17.32256 | 93.86364 | Subduction IntraSlab | 314.43650 | 25.76717 | 50 |
| 2338 | 6 | 5.75 | -70.935 | -17.29131 | 93.86364 | Subduction IntraSlab | 314.44800 | 25.49124 | 50 |
| 2339 | 8 | 5.75 | -70.96836 | -17.26006 | 93.86364 | Subduction IntraSlab | 314.46010 | 25.22117 | 50 |
| 2340 | 8 | 5.75 | -71.00172 | -17.22879 | 93.86364 | Subduction IntraSlab | 314.46990 | 24.95757 | 50 |
| 2341 | 8 | 5.75 | -71.03506 | -17.19753 | 93.86364 | Subduction IntraSlab | 314.47680 | 24.69665 | 50 |
| 2342 | 6 | 5.75 | -71.06839 | -17.16625 | 93.86364 | Subduction IntraSlab | 314.48450 | 24.44658 | 50 |
| 2343 | 6 | 5.75 | -71.10172 | -17.13498 | 93.86364 | Subduction IntraSlab | 314.49660 | 24.19789 | 50 |
| 2344 | 13 | 5.75 | -71.13503 | -17.10369 | 93.86364 | Subduction IntraSlab | 314.50890 | 23.95581 | 50 |
| 2345 | 10 | 5.75 | -71.16832 | -17.0724 | 93.86364 | Subduction IntraSlab | 314.51900 | 23.71724 | 50 |
| 2346 | 10 | 5.75 | -70.30613 | -17.82761 | 96.25000 | Subduction IntraSlab | 314.97370 | 31.43204 | 50 |
| 2347 | 10 | 5.75 | -70.33923 | -17.79613 | 96.25000 | Subduction IntraSlab | 314.98530 | 31.03799 | 50 |
| 2348 | 11 | 5.75 | -70.37231 | -17.76463 | 96.25000 | Subduction IntraSlab | 314.99570 | 30.65244 | 50 |
| 2349 | 5 | 5.75 | -70.40538 | -17.73313 | 96.25000 | Subduction IntraSlab | 315.00430 | 30.27529 | 50 |
| 2350 | 10 | 5.75 | -70.43845 | -17.70163 | 96.25000 | Subduction IntraSlab | 315.01360 | 29.90590 | 50 |
| 2351 | 8 | 5.75 | -70.48107 | -17.67912 | 95.45454 | Subduction IntraSlab | 314.78980 | 29.53989 | 50 |
| 2352 | 9 | 5.75 | -70.51427 | -17.64772 | 95.45454 | Subduction IntraSlab | 314.79970 | 29.18782 | 50 |
| 2353 | 6 | 5.75 | -70.54745 | -17.61631 | 95.45454 | Subduction IntraSlab | 314.80880 | 28.84439 | 50 |
| 2354 | 6 | 5.75 | -70.58063 | -17.58489 | 95.45454 | Subduction IntraSlab | 314.81730 | 28.50616 | 50 |
| 2355 | 1 | 5.75 | -70.61379 | -17.55347 | 95.45454 | Subduction IntraSlab | 314.82940 | 28.17444 | 50 |
| 2356 | 8 | 5.75 | -70.64694 | -17.52205 | 95.45454 | Subduction IntraSlab | 314.84190 | 27.85072 | 50 |
| 2357 | 9 | 5.75 | -70.68008 | -17.49061 | 95.45454 | Subduction IntraSlab | 314.84880 | 27.53475 | 50 |
| 2358 | 9 | 5.75 | -70.71321 | -17.45918 | 95.45454 | Subduction IntraSlab | 314.85950 | 27.22539 | 50 |
| 2359 | 5 | 5.75 | -70.74632 | -17.42773 | 95.45454 | Subduction IntraSlab | 314.86960 | 26.92258 | 50 |
| 2360 | 6 | 5.75 | -70.77943 | -17.39628 | 95.45454 | Subduction IntraSlab | 314.87690 | 26.62562 | 50 |
| 2361 | 9 | 5.75 | -70.81253 | -17.36483 | 95.45454 | Subduction IntraSlab | 314.88890 | 26.33373 | 50 |
| 2362 | 7 | 5.75 | -70.84561 | -17.33337 | 95.45454 | Subduction IntraSlab | 314.89920 | 26.04734 | 50 |
| 2363 | 6 | 5.75 | -70.87868 | -17.3019 | 95.45454 | Subduction IntraSlab | 314.90740 | 25.76463 | 50 |
| 2364 | 2 | 5.75 | -70.91174 | -17.27043 | 95.45454 | Subduction IntraSlab | 314.91880 | 25.48718 | 50 |
| 2365 | 14 | 5.75 | -70.94479 | -17.23896 | 95.45454 | Subduction IntraSlab | 314.92950 | 25.21842 | 50 |
| 2366 | 5 | 5.75 | -70.97783 | -17.20747 | 95.45454 | Subduction IntraSlab | 314.93980 | 24.95784 | 50 |
| 2367 | 11 | 5.75 | -71.01086 | -17.17599 | 95.45454 | Subduction IntraSlab | 314.94680 | 24.70228 | 50 |
| 2368 | 4 | 5.75 | -71.04388 | -17.14449 | 95.45454 | Subduction IntraSlab | 314.95530 | 24.44824 | 50 |
| 2369 | 9 | 5.75 | -71.07688 | -17.113 | 95.45454 | Subduction IntraSlab | 314.96770 | 24.19740 | 50 |
| 2370 | 9 | 5.75 | -71.10987 | -17.08149 | 95.45454 | Subduction IntraSlab | 314.97770 | 23.95318 | 50 |
| 2371 | 11 | 5.75 | -70.28857 | -17.81071 | 97.84091 | Subduction IntraSlab | 315.44860 | 31.44061 | 50 |
| 2372 | 9 | 5.75 | -70.32135 | -17.77901 | 97.84091 | Subduction IntraSlab | 315.45900 | 31.04483 | 50 |
| 2373 | 9 | 5.75 | -70.35412 | -17.74729 | 97.84091 | Subduction IntraSlab | 315.46830 | 30.66046 | 50 |
| 2374 | 7 | 5.75 | -70.38687 | -17.71557 | 97.84091 | Subduction IntraSlab | 315.47880 | 30.28213 | 50 |
| 2375 | 10 | 5.75 | -70.41962 | -17.68384 | 97.84091 | Subduction IntraSlab | 315.48820 | 29.90965 | 50 |
| 2376 | 8 | 5.75 | -70.46193 | -17.66112 | 97.04546 | Subduction IntraSlab | 315.26260 | 29.54450 | 50 |
| 2377 | 8 | 5.75 | -70.4948 | -17.62949 | 97.04546 | Subduction IntraSlab | 315.27200 | 29.19308 | 50 |
| 2378 | 6 | 5.75 | -70.52768 | -17.59786 | 97.04546 | Subduction IntraSlab | 315.28020 | 28.84855 | 50 |
| 2379 | 4 | 5.75 | -70.56053 | -17.56622 | 97.04546 | Subduction IntraSlab | 315.29060 | 28.50892 | 50 |
| 2380 | 12 | 5.75 | -70.59338 | -17.53458 | 97.04546 | Subduction IntraSlab | 315.30200 | 28.17548 | 50 |
| 2381 | 7 | 5.75 | -70.62622 | -17.50293 | 97.04546 | Subduction IntraSlab | 315.31260 | 27.85226 | 50 |
| 2382 | 10 | 5.75 | -70.65904 | -17.47128 | 97.04546 | Subduction IntraSlab | 315.32140 | 27.53658 | 50 |
| 2383 | 12 | 5.75 | -70.69186 | -17.43962 | 97.04546 | Subduction IntraSlab | 315.33230 | 27.22631 | 50 |
| 2384 | 8 | 5.75 | -70.72466 | -17.40796 | 97.04546 | Subduction IntraSlab | 315.34040 | 26.92341 | 50 |
| 2385 | 3 | 5.75 | -70.75745 | -17.37629 | 97.04546 | Subduction IntraSlab | 315.35060 | 26.62567 | 50 |
| 2386 | 7 | 5.75 | -70.79022 | -17.34461 | 97.04546 | Subduction IntraSlab | 315.36240 | 26.33242 | 50 |
| 2387 | 12 | 5.75 | -70.82299 | -17.31293 | 97.04546 | Subduction IntraSlab | 315.36980 | 26.04664 | 50 |
| 2388 | 4 | 5.75 | -70.85575 | -17.28124 | 97.04546 | Subduction IntraSlab | 315.37860 | 25.76444 | 50 |
| 2389 | 8 | 5.75 | -70.8885 | -17.24955 | 97.04546 | Subduction IntraSlab | 315.39110 | 25.49265 | 50 |
| 2390 | 13 | 5.75 | -70.92123 | -17.21785 | 97.04546 | Subduction IntraSlab | 315.40040 | 25.22435 | 50 |
| 2391 | 6 | 5.75 | -70.95395 | -17.18615 | 97.04546 | Subduction IntraSlab | 315.40990 | 24.95925 | 50 |
| 2392 | 9 | 5.75 | -70.98666 | -17.15444 | 97.04546 | Subduction IntraSlab | 315.41880 | 24.69994 | 50 |
| 2393 | 12 | 5.75 | -71.01936 | -17.12273 | 97.04546 | Subduction IntraSlab | 315.42650 | 24.44690 | 50 |
| 2394 | 9 | 5.75 | -71.05206 | -17.09101 | 97.04546 | Subduction IntraSlab | 315.43910 | 24.19859 | 50 |
| 2395 | 11 | 5.75 | -71.08473 | -17.05929 | 97.04546 | Subduction IntraSlab | 315.44890 | 23.95271 | 50 |
| 2396 | 13 | 5.75 | -70.27101 | -17.79382 | 99.43182 | Subduction IntraSlab | 315.92510 | 31.45374 | 50 |
| 2397 | 6 | 5.75 | -70.30347 | -17.76188 | 99.43182 | Subduction IntraSlab | 315.93360 | 31.05769 | 50 |
| 2398 | 6 | 5.75 | -70.33593 | -17.72995 | 99.43182 | Subduction IntraSlab | 315.94250 | 30.67029 | 50 |
| 2399 | 8 | 5.75 | -70.36837 | -17.698 | 99.43182 | Subduction IntraSlab | 315.95450 | 30.29216 | 50 |
| 2400 | 12 | 5.75 | -70.4008 | -17.66606 | 99.43182 | Subduction IntraSlab | 315.96360 | 29.92258 | 50 |
| 2401 | 12 | 5.75 | -70.44279 | -17.63411 | 98.63636 | Subduction IntraSlab | 315.73720 | 29.55320 | 50 |
| 2402 | 5 | 5.75 | -70.47535 | -17.61126 | 98.63636 | Subduction IntraSlab | 315.74640 | 29.19730 | 50 |
| 2403 | 9 | 5.75 | -70.5079 | -17.57941 | 98.63636 | Subduction IntraSlab | 315.75310 | 28.84921 | 50 |
| 2404 | 11 | 5.75 | -70.54045 | -17.54755 | 98.63636 | Subduction IntraSlab | 315.76330 | 28.51358 | 50 |
| 2405 | 11 | 5.75 | -70.57298 | -17.51568 | 98.63636 | Subduction IntraSlab | 315.77620 | 28.18598 | 50 |
| 2406 | 8 | 5.75 | -70.6055 | -17.48381 | 98.63636 | Subduction IntraSlab | 315.78490 | 27.86112 | 50 |
| 2407 | 7 | 5.75 | -70.63801 | -17.45194 | 98.63636 | Subduction IntraSlab | 315.79500 | 27.54146 | 50 |
| 2408 | 3 | 5.75 | -70.6705 | -17.42006 | 98.63636 | Subduction IntraSlab | 315.80640 | 27.22794 | 50 |
| 2409 | 9 | 5.75 | -70.70299 | -17.38817 | 98.63636 | Subduction IntraSlab | 315.81270 | 26.92151 | 50 |
| 2410 | 8 | 5.75 | -70.73547 | -17.35628 | 98.63636 | Subduction IntraSlab | 315.82310 | 26.62516 | 50 |
| 2411 | 11 | 5.75 | -70.76793 | -17.32439 | 98.63636 | Subduction IntraSlab | 315.83600 | 26.33444 | 50 |
| 2412 | 9 | 5.75 | -70.80038 | -17.29248 | 98.63636 | Subduction IntraSlab | 315.84370 | 26.04662 | 50 |
| 2413 | 10 | 5.75 | -70.83282 | -17.26058 | 98.63636 | Subduction IntraSlab | 315.85180 | 25.76556 | 50 |
| 2414 | 9 | 5.75 | -70.86525 | -17.22867 | 98.63636 | Subduction IntraSlab | 315.86430 | 25.49237 | 50 |
| 2415 | 7 | 5.75 | -70.89767 | -17.19675 | 98.63636 | Subduction IntraSlab | 315.87200 | 25.22557 | 50 |
| 2416 | 6 | 5.75 | -70.93008 | -17.16483 | 98.63636 | Subduction IntraSlab | 315.88180 | 24.96114 | 50 |
| 2417 | 7 | 5.75 | -70.96247 | -17.1329 | 98.63636 | Subduction IntraSlab | 315.89170 | 24.70011 | 50 |
| 2418 | 6 | 5.75 | -70.99486 | -17.10096 | 98.63636 | Subduction IntraSlab | 315.89780 | 24.44691 | 50 |
| 2419 | 10 | 5.75 | -71.02724 | -17.06903 | 98.63636 | Subduction IntraSlab | 315.91000 | 24.19785 | 50 |
| 2420 | 11 | 5.75 | -71.0596 | -17.03708 | 98.63636 | Subduction IntraSlab | 315.92180 | 23.95164 | 50 |
| 2421 | 1 | 5.75 | -70.25346 | -17.77692 | 101.02270 | Subduction IntraSlab | 316.40180 | 31.46438 | 50 |
| 2422 | 12 | 5.75 | -70.28561 | -17.74476 | 101.02270 | Subduction IntraSlab | 316.40910 | 31.06887 | 50 |
| 2423 | 8 | 5.75 | -70.31774 | -17.7126 | 101.02270 | Subduction IntraSlab | 316.41840 | 30.68153 | 50 |
| 2424 | 5 | 5.75 | -70.34987 | -17.68044 | 101.02270 | Subduction IntraSlab | 316.43010 | 30.30212 | 50 |

**Anexo 6. RESULTADOS DE RIESGO SÍSMICO: PÉRDIDA PROMEDIO
ANUAL (AAL)**



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

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| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|------------------------|-----------|-----------|---------------|
| 1 | MZA 1064 - LT 1 | 1 | ZONA I | MUR/HEX:1 | -70.24947 | -17.98536 | 11.244 |
| 2 | MZA 1064 - LT 2 | 2 | ZONA I | MUR/HEX:1 | -70.24942 | -17.98530 | 10.771 |
| 3 | MZA 1064 - LT 3 | 3 | ZONA I | MUR/HEX:1 | -70.24937 | -17.98525 | 10.573 |
| 4 | MZA 1064 - LT 4 | 4 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24932 | -17.98519 | 16.843 |
| 5 | MZA 1064 - LT 5 | 5 | ZONA I | MUR/HEX:1 | -70.24927 | -17.98514 | 10.843 |
| 6 | MZA 1064 - LT 6 | 6 | ZONA I | MUR/HEX:1 | -70.24922 | -17.98508 | 13.332 |
| 7 | MZA 1064 - LT 7 | 7 | ZONA I | MUR/HEX:1 | -70.24917 | -17.98502 | 12.685 |
| 8 | MZA 1064 - LT 8 | 8 | ZONA I | MUR/HEX:1 | -70.24913 | -17.98497 | 11.892 |
| 9 | MZA 1064 - LT 9 | 9 | ZONA I | MUR/HEX:1 | -70.24908 | -17.98491 | 10.689 |
| 10 | MZA 1064 - LT 10 | 10 | ZONA I | MUR/HEX:1 | -70.24903 | -17.98486 | 11.081 |
| 11 | MZA 1064 - LT 11 | 11 | ZONA I | MUR/HEX:1 | -70.24898 | -17.98480 | 11.088 |
| 12 | MZA 1064 - LT 12 | 12 | ZONA I | MUR/HEX:1 | -70.24893 | -17.98474 | 11.095 |
| 13 | MZA 1064 - LT 13 | 13 | ZONA I | MUR/HEX:1 | -70.24888 | -17.98469 | 13.000 |
| 14 | MZA 1064 - LT 14 | 14 | ZONA I | MUR/HEX:1 | -70.24884 | -17.98463 | 10.761 |
| 15 | MZA 1064 - LT 15 | 15 | ZONA I | MUR/HEX:1 | -70.24879 | -17.98458 | 9.335 |
| 16 | MZA 1064 - LT 16 | 16 | ZONA I | MUR/HEX:1 | -70.24874 | -17.98452 | 9.274 |
| 17 | MZA 1064 - LT 17 | 17 | ZONA I | MUR/HEX:1 | -70.24869 | -17.98447 | 9.138 |
| 18 | MZA 1064 - LT 18 | 18 | ZONA I | MUR/HEX:1 | -70.24864 | -17.98441 | 9.911 |
| 19 | MZA 1064 - LT 19 | 19 | ZONA I | MUR/HEX:1 | -70.24859 | -17.98436 | 10.304 |
| 20 | MZA 1064 - LT 20 | 20 | ZONA I | MUR/HEX:1 | -70.24855 | -17.98430 | 11.804 |
| 21 | MZA 1064 - LT 21 | 21 | ZONA I | MUR/HEX:1 | -70.24850 | -17.98425 | 10.726 |
| 22 | MZA 1064 - LT 22 | 22 | ZONA I | MUR/HEX:1 | -70.24845 | -17.98419 | 10.685 |
| 23 | MZA 1064 - LT 23 | 23 | ZONA I | MUR/HEX:1 | -70.24840 | -17.98413 | 10.090 |
| 24 | MZA 1064 - LT 24 | 24 | ZONA I | MUR/HEX:1 | -70.24835 | -17.98408 | 10.434 |
| 25 | MZA 1064 - LT 25 | 25 | ZONA I | MUR/HEX:1 | -70.24830 | -17.98402 | 10.470 |
| 26 | MZA 1064 - LT 26 | 26 | ZONA I | MUR/HEX:1 | -70.24826 | -17.98397 | 10.432 |
| 27 | MZA 1064 - LT 27 | 27 | ZONA I | MUR/HEX:1 | -70.24821 | -17.98391 | 9.449 |
| 28 | MZA 1064 - LT 28 | 28 | ZONA I | MUR/HEX:1 | -70.24816 | -17.98386 | 10.822 |
| 29 | MZA 1064 - LT 29 | 29 | ZONA I | MUR/HEX:1 | -70.24753 | -17.98313 | 10.813 |
| 30 | MZA 1064 - LT 30 | 30 | ZONA I | MUR/HEX:1 | -70.24748 | -17.98308 | 11.186 |
| 31 | MZA 1064 - LT 31 | 31 | ZONA I | MUR/HEX:1 | -70.24743 | -17.98302 | 10.272 |
| 32 | MZA 1064 - LT 32 | 32 | ZONA I | MUR/HEX:1 | -70.24738 | -17.98297 | 11.293 |
| 33 | MZA 1064 - LT 33 | 33 | ZONA I | MUR/HEX:1 | -70.24733 | -17.98292 | 10.729 |
| 34 | MZA 1064 - LT 34 | 34 | ZONA I | MUR/HEX:1 | -70.24728 | -17.98286 | 11.225 |
| 35 | MZA 1064 - LT 35 | 35 | ZONA I | MUR/HEX:1 | -70.24723 | -17.98281 | 10.496 |
| 36 | MZA 1066 - LT 1 | 36 | ZONA I | MUR/HEX:1 | -70.24677 | -17.98232 | 11.587 |
| 37 | MZA 1066 - LT 2 | 37 | ZONA I | MUR/HEX:1 | -70.24672 | -17.98226 | 11.640 |
| 38 | MZA 1066 - LT 3 | 38 | ZONA I | MUR/HEX:1 | -70.24667 | -17.98221 | 11.180 |
| 39 | MZA 1066 - LT 4 | 39 | ZONA I | MUR/HEX:1 | -70.24662 | -17.98215 | 11.776 |
| 40 | MZA 1066 - LT 5 | 40 | ZONA I | MUR/HEX:1 | -70.24657 | -17.98210 | 11.644 |
| 41 | MZA 1066 - LT 6 | 41 | ZONA I | MUR/HEX:1 | -70.24652 | -17.98204 | 11.704 |
| 42 | MZA 1066 - LT 7 | 42 | ZONA I | MUR/HEX:1 | -70.24647 | -17.98199 | 11.192 |
| 43 | MZA 1066 - LT 8 | 43 | ZONA I | MUR/HEX:1 | -70.24643 | -17.98193 | 11.079 |
| 44 | MZA 1066 - LT 9 | 44 | ZONA I | MUR/HEX:1 | -70.24638 | -17.98187 | 12.279 |
| 45 | MZA 1066 - LT 10 | 45 | ZONA I | MUR/HEX:1 | -70.24633 | -17.98182 | 11.575 |
| 46 | MZA 1066 - LT 11 | 46 | ZONA I | MUR/HEX:1 | -70.24628 | -17.98176 | 10.518 |
| 47 | MZA 1066 - LT 12 | 47 | ZONA I | MUR/HEX:1 | -70.24623 | -17.98171 | 11.639 |
| 48 | MZA 1066 - LT 13 | 48 | ZONA I | MUR/HEX:1 | -70.24618 | -17.98165 | 10.828 |
| 49 | MZA 1068 - LT 1 | 49 | ZONA I | MUR/HEX:1 | -70.24925 | -17.98579 | 10.070 |
| 50 | MZA 1068 - LT 2 | 50 | ZONA I | MUR/HEX:1 | -70.24921 | -17.98574 | 10.147 |
| 51 | MZA 1068 - LT 3 | 51 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24931 | -17.98569 | 21.684 |
| 52 | MZA 1068 - LT 4 | 52 | ZONA I | MUR/HEX:1 | -70.24937 | -17.98564 | 9.494 |
| 53 | MZA 1068 - LT 5 | 53 | ZONA I | MUR/HEX:1 | -70.24943 | -17.98560 | 9.926 |
| 54 | MZA 1068 - LT 6 | 54 | ZONA I | MUR/HEX:1 | -70.24952 | -17.98570 | 11.101 |
| 55 | MZA 1068 - LT 7 | 55 | ZONA I | MUR/HEX:1 | -70.24946 | -17.98575 | 10.895 |
| 56 | MZA 1068 - LT 8 | 56 | ZONA I | MUR/HEX:1 | -70.24941 | -17.98580 | 10.840 |
| 57 | MZA 1068 - LT 9 | 57 | ZONA I | MUR/HEX:1 | -70.24935 | -17.98590 | 10.537 |
| 58 | MZA 1068 - LT 10 | 58 | ZONA I | MUR/HEX:2 | -70.24930 | -17.98584 | 315.983 |
| 59 | MZA 1069 - LT 1 | 59 | ZONA I | CR/LFIN+DUC/HEX:2/RES | -70.24901 | -17.98552 | 38.659 |
| 60 | MZA 1069 - LT 2 | 60 | ZONA I | MUR/HEX:1 | -70.24897 | -17.98547 | 10.379 |
| 61 | MZA 1069 - LT 3 | 61 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24907 | -17.98542 | 15.043 |
| 62 | MZA 1069 - LT 4 | 62 | ZONA I | MUR/HEX:1 | -70.24913 | -17.98537 | 9.898 |
| 63 | MZA 1069 - LT 5 | 63 | ZONA I | MUR/HEX:1 | -70.24919 | -17.98533 | 10.275 |
| 64 | MZA 1069 - LT 6 | 64 | ZONA I | MUR/HEX:1 | -70.24928 | -17.98543 | 10.651 |
| 65 | MZA 1069 - LT 7 | 65 | ZONA I | MUR/HEX:1 | -70.24922 | -17.98548 | 10.092 |
| 66 | MZA 1069 - LT 8 | 66 | ZONA I | MUR/HEX:1 | -70.24917 | -17.98553 | 11.316 |
| 67 | MZA 1069 - LT 9 | 67 | ZONA I | MUR/HEX:1 | -70.24911 | -17.98563 | 10.988 |
| 68 | MZA 1069 - LT 10 | 68 | ZONA I | MUR/HEX:1 | -70.24906 | -17.98567 | 10.207 |
| 69 | MZA 1070 - LT 1 | 69 | ZONA I | MUR/HEX:1 | -70.24877 | -17.98525 | 9.350 |
| 70 | MZA 1070 - LT 2 | 70 | ZONA I | MUR/HEX:2 | -70.24873 | -17.98520 | 315.263 |
| 71 | MZA 1070 - LT 3 | 71 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24883 | -17.98515 | 14.746 |
| 72 | MZA 1070 - LT 4 | 72 | ZONA I | MUR/HEX:1 | -70.24889 | -17.98511 | 9.807 |
| 73 | MZA 1070 - LT 5 | 73 | ZONA I | MUR/HEX:1 | -70.24894 | -17.98506 | 10.687 |
| 74 | MZA 1070 - LT 6 | 74 | ZONA I | MUR/HEX:1 | -70.24904 | -17.98516 | 10.031 |
| 75 | MZA 1070 - LT 7 | 75 | ZONA I | MUR/HEX:1 | -70.24898 | -17.98521 | 10.847 |
| 76 | MZA 1070 - LT 8 | 76 | ZONA I | MUR/HEX:1 | -70.24893 | -17.98526 | 10.772 |
| 77 | MZA 1070 - LT 9 | 77 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24887 | -17.98536 | 14.925 |
| 78 | MZA 1070 - LT 10 | 78 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24882 | -17.98531 | 14.848 |
| 79 | MZA 1072 - LT 1 | 79 | ZONA I | MUR/HEX:1 | -70.24824 | -17.98470 | 9.750 |
| 80 | MZA 1072 - LT 2 | 80 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24829 | -17.98465 | 15.047 |
| 81 | MZA 1072 - LT 3 | 81 | ZONA I | MUR/HEX:1 | -70.24835 | -17.98461 | 9.926 |
| 82 | MZA 1072 - LT 4 | 82 | ZONA I | MUR/HEX:1 | -70.24840 | -17.98456 | 10.674 |
| 83 | MZA 1072 - LT 5 | 83 | ZONA I | MUR/HEX:1 | -70.24846 | -17.98452 | 12.277 |
| 84 | MZA 1072 - LT 6 | 84 | ZONA I | MUR/HEX:1 | -70.24856 | -17.98463 | 11.706 |
| 85 | MZA 1072 - LT 7 | 85 | ZONA I | MUR/HEX:1 | -70.24850 | -17.98468 | 10.362 |
| 86 | MZA 1072 - LT 8 | 86 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24845 | -17.98472 | 180.079 |
| 87 | MZA 1072 - LT 9 | 87 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24839 | -17.98476 | 13.741 |
| 88 | MZA 1072 - LT 10 | 88 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24834 | -17.98481 | 13.378 |
| 89 | MZA 1073 - LT 1 | 89 | ZONA I | MUR/HEX:1 | -70.24801 | -17.98441 | 10.152 |
| 90 | MZA 1073 - LT 2 | 90 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24806 | -17.98437 | 14.779 |
| 91 | MZA 1073 - LT 3 | 91 | ZONA I | MUR/HEX:1 | -70.24812 | -17.98432 | 9.773 |
| 92 | MZA 1073 - LT 4 | 92 | ZONA I | MUR/HEX:1 | -70.24817 | -17.98428 | 10.421 |
| 93 | MZA 1073 - LT 5 | 93 | ZONA I | MUR/HEX:1 | -70.24822 | -17.98423 | 9.706 |
| 94 | MZA 1073 - LT 6 | 94 | ZONA I | MUR/HEX:1 | -70.24832 | -17.98434 | 8.645 |
| 95 | MZA 1073 - LT 7 | 95 | ZONA I | MUR/HEX:1 | -70.24827 | -17.98439 | 10.219 |
| 96 | MZA 1073 - LT 8 | 96 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24821 | -17.98443 | 194.477 |
| 97 | MZA 1073 - LT 9 | 97 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24816 | -17.98448 | 15.125 |
| 98 | MZA 1073 - LT 10 | 98 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24811 | -17.98452 | 15.906 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|------------------------|-----------|-----------|---------------|
| 99 | MZA 1074 - LT 1 | 99 | ZONA I | MUR/HEX:1 | -70.24777 | -17.98413 | 10.660 |
| 100 | MZA 1074 - LT 2 | 100 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24782 | -17.98409 | 14.793 |
| 101 | MZA 1074 - LT 3 | 101 | ZONA I | MUR/HEX:1 | -70.24787 | -17.98404 | 11.040 |
| 102 | MZA 1074 - LT 4 | 102 | ZONA I | MUR/HEX:1 | -70.24793 | -17.98399 | 10.542 |
| 103 | MZA 1074 - LT 5 | 103 | ZONA I | MUR/HEX:1 | -70.24798 | -17.98395 | 10.192 |
| 104 | MZA 1074 - LT 6 | 104 | ZONA I | MUR/HEX:1 | -70.24807 | -17.98406 | 9.509 |
| 105 | MZA 1074 - LT 7 | 105 | ZONA I | MUR/HEX:1 | -70.24802 | -17.98411 | 10.286 |
| 106 | MZA 1074 - LT 8 | 106 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24797 | -17.98415 | 195.612 |
| 107 | MZA 1074 - LT 9 | 107 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24792 | -17.98420 | 14.849 |
| 108 | MZA 1074 - LT 10 | 108 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24786 | -17.98424 | 16.203 |
| 109 | MZA 1075 - LT 1 | 109 | ZONA I | MUR/HEX:1 | -70.24753 | -17.98385 | 9.980 |
| 110 | MZA 1075 - LT 2 | 110 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24758 | -17.98381 | 15.230 |
| 111 | MZA 1075 - LT 3 | 111 | ZONA I | MUR/HEX:1 | -70.24764 | -17.98376 | 11.188 |
| 112 | MZA 1075 - LT 4 | 112 | ZONA I | MUR/HEX:1 | -70.24769 | -17.98372 | 10.649 |
| 113 | MZA 1075 - LT 5 | 113 | ZONA I | MUR/HEX:1 | -70.24774 | -17.98367 | 10.315 |
| 114 | MZA 1075 - LT 6 | 114 | ZONA I | MUR/HEX:1 | -70.24784 | -17.98378 | 9.739 |
| 115 | MZA 1075 - LT 7 | 115 | ZONA I | MUR/HEX:1 | -70.24778 | -17.98383 | 9.941 |
| 116 | MZA 1075 - LT 8 | 116 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24773 | -17.98387 | 185.244 |
| 117 | MZA 1075 - LT 9 | 117 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24768 | -17.98392 | 15.331 |
| 118 | MZA 1075 - LT 10 | 118 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24762 | -17.98396 | 15.934 |
| 119 | MZA 1076 - LT 1 | 119 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24729 | -17.98357 | 191.971 |
| 120 | MZA 1076 - LT 2 | 120 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24735 | -17.98353 | 14.624 |
| 121 | MZA 1076 - LT 3 | 121 | ZONA I | MUR/HEX:1 | -70.24740 | -17.98348 | 9.875 |
| 122 | MZA 1076 - LT 4 | 122 | ZONA I | MUR/HEX:1 | -70.24745 | -17.98344 | 10.228 |
| 123 | MZA 1076 - LT 5 | 123 | ZONA I | MUR/HEX:1 | -70.24751 | -17.98339 | 9.643 |
| 124 | MZA 1076 - LT 6 | 124 | ZONA I | MUR/HEX:1 | -70.24760 | -17.98351 | 9.950 |
| 125 | MZA 1076 - LT 7 | 125 | ZONA I | MUR/HEX:1 | -70.24755 | -17.98355 | 10.628 |
| 126 | MZA 1076 - LT 8 | 126 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24750 | -17.98359 | 15.605 |
| 127 | MZA 1076 - LT 9 | 127 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24744 | -17.98364 | 15.047 |
| 128 | MZA 1076 - LT 10 | 128 | ZONA I | MUR/HEX:1 | -70.24739 | -17.98368 | 11.371 |
| 129 | MZA 1077 - LT 1 | 129 | ZONA I | MUR/HEX:1 | -70.24710 | -17.98330 | 10.569 |
| 130 | MZA 1077 - LT 2 | 130 | ZONA I | MUR/HEX:1 | -70.24706 | -17.98324 | 9.113 |
| 131 | MZA 1077 - LT 3 | 131 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24716 | -17.98320 | 13.864 |
| 132 | MZA 1077 - LT 4 | 132 | ZONA I | MUR/HEX:1 | -70.24723 | -17.98315 | 16.100 |
| 133 | MZA 1077 - LT 5 | 133 | ZONA I | MUR/HEX:1 | -70.24733 | -17.98325 | 17.173 |
| 134 | MZA 1077 - LT 6 | 134 | ZONA I | MUR/HEX:1 | -70.24726 | -17.98331 | 10.759 |
| 135 | MZA 1077 - LT 7 | 135 | ZONA I | MUR/HEX:1 | -70.24720 | -17.98341 | 10.137 |
| 136 | MZA 1077 - LT 8 | 136 | ZONA I | MUR/HEX:1 | -70.24715 | -17.98335 | 10.046 |
| 137 | MZA 1078 - LT 1 | 137 | ZONA I | MUR/HEX:1 | -70.24688 | -17.98303 | 10.137 |
| 138 | MZA 1078 - LT 2 | 138 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24683 | -17.98297 | 13.838 |
| 139 | MZA 1078 - LT 3 | 139 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24694 | -17.98294 | 14.550 |
| 140 | MZA 1078 - LT 4 | 140 | ZONA I | MUR/HEX:1 | -70.24700 | -17.98289 | 12.222 |
| 141 | MZA 1078 - LT 5 | 141 | ZONA I | MUR/HEX:1 | -70.24710 | -17.98299 | 13.821 |
| 142 | MZA 1078 - LT 6 | 142 | ZONA I | MUR/HEX:1 | -70.24703 | -17.98305 | 10.362 |
| 143 | MZA 1078 - LT 7 | 143 | ZONA I | MUR/HEX:1 | -70.24697 | -17.98314 | 9.677 |
| 144 | MZA 1078 - LT 8 | 144 | ZONA I | MUR/HEX:1 | -70.24693 | -17.98309 | 9.716 |
| 145 | MZA 1079 - LT 1 | 145 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24665 | -17.98276 | 14.346 |
| 146 | MZA 1079 - LT 2 | 146 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24661 | -17.98271 | 14.387 |
| 147 | MZA 1079 - LT 3 | 147 | ZONA I | MUR/HEX:1 | -70.24671 | -17.98267 | 9.930 |
| 148 | MZA 1079 - LT 4 | 148 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24677 | -17.98262 | 206.782 |
| 149 | MZA 1079 - LT 5 | 149 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24686 | -17.98274 | 16.969 |
| 150 | MZA 1079 - LT 6 | 150 | ZONA I | MUR/HEX:1 | -70.24680 | -17.98278 | 9.402 |
| 151 | MZA 1079 - LT 7 | 151 | ZONA I | MUR/HEX:1 | -70.24675 | -17.98288 | 10.516 |
| 152 | MZA 1079 - LT 8 | 152 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24670 | -17.98282 | 13.607 |
| 153 | MZA 1081 - LT 1 | 153 | ZONA I | MUR/HEX:1 | -70.24593 | -17.98153 | 12.949 |
| 154 | MZA 1081 - LT 2 | 154 | ZONA I | MUR/HEX:1 | -70.24587 | -17.98158 | 11.247 |
| 155 | MZA 1081 - LT 3 | 155 | ZONA I | MUR/HEX:1 | -70.24582 | -17.98163 | 11.659 |
| 156 | MZA 1081 - LT 4 | 156 | ZONA I | MUR/HEX:1 | -70.24576 | -17.98173 | 11.572 |
| 157 | MZA 1081 - LT 5 | 157 | ZONA I | MUR/HEX:1 | -70.24571 | -17.98167 | 11.241 |
| 158 | MZA 1081 - LT 6 | 158 | ZONA I | MUR/HEX:1 | -70.24566 | -17.98162 | 10.840 |
| 159 | MZA 1081 - LT 7 | 159 | ZONA I | MUR/HEX:1 | -70.24561 | -17.98156 | 10.899 |
| 160 | MZA 1081 - LT 8 | 160 | ZONA I | MUR/HEX:1 | -70.24556 | -17.98151 | 10.215 |
| 161 | MZA 1081 - LT 9 | 161 | ZONA I | MUR/HEX:1 | -70.24551 | -17.98146 | 10.754 |
| 162 | MZA 1081 - LT 10 | 162 | ZONA I | MUR/HEX:1 | -70.24546 | -17.98140 | 10.442 |
| 163 | MZA 1081 - LT 11 | 163 | ZONA I | MUR/HEX:1 | -70.24541 | -17.98135 | 10.629 |
| 164 | MZA 1081 - LT 12 | 164 | ZONA I | MUR/HEX:1 | -70.24536 | -17.98130 | 10.186 |
| 165 | MZA 1081 - LT 13 | 165 | ZONA I | MUR/HEX:1 | -70.24530 | -17.98124 | 11.330 |
| 166 | MZA 1081 - LT 14 | 166 | ZONA I | MUR/HEX:1 | -70.24525 | -17.98119 | 10.980 |
| 167 | MZA 1081 - LT 15 | 167 | ZONA I | MUR/HEX:1 | -70.24520 | -17.98113 | 11.047 |
| 168 | MZA 1081 - LT 16 | 168 | ZONA I | MUR/HEX:1 | -70.24515 | -17.98108 | 10.960 |
| 169 | MZA 1081 - LT 17 | 169 | ZONA I | MUR/HEX:1 | -70.24510 | -17.98102 | 10.618 |
| 170 | MZA 1081 - LT 18 | 170 | ZONA I | MUR/HEX:1 | -70.24505 | -17.98097 | 10.895 |
| 171 | MZA 1081 - LT 19 | 171 | ZONA I | MUR/HEX:1 | -70.24500 | -17.98092 | 10.764 |
| 172 | MZA 1081 - LT 20 | 172 | ZONA I | MUR/HEX:1 | -70.24495 | -17.98086 | 10.106 |
| 173 | MZA 1081 - LT 21 | 173 | ZONA I | MUR/HEX:1 | -70.24490 | -17.98081 | 10.505 |
| 174 | MZA 1081 - LT 22 | 174 | ZONA I | MUR/HEX:1 | -70.24485 | -17.98076 | 10.332 |
| 175 | MZA 1081 - LT 23 | 175 | ZONA I | MUR/HEX:1 | -70.24480 | -17.98070 | 10.504 |
| 176 | MZA 1081 - LT 24 | 176 | ZONA I | MUR/HEX:1 | -70.24475 | -17.98065 | 10.122 |
| 177 | MZA 1081 - LT 25 | 177 | ZONA I | MUR/HEX:1 | -70.24470 | -17.98060 | 10.713 |
| 178 | MZA 1083 - LT 1 | 178 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24886 | -17.98612 | 15.241 |
| 179 | MZA 1083 - LT 2 | 179 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24881 | -17.98607 | 14.974 |
| 180 | MZA 1083 - LT 3 | 180 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24892 | -17.98603 | 13.905 |
| 181 | MZA 1083 - LT 4 | 181 | ZONA I | MUR/HEX:1 | -70.24897 | -17.98598 | 9.917 |
| 182 | MZA 1083 - LT 5 | 182 | ZONA I | MUR/HEX:1 | -70.24903 | -17.98593 | 11.091 |
| 183 | MZA 1083 - LT 6 | 183 | ZONA I | MUR/HEX:1 | -70.24913 | -17.98604 | 11.010 |
| 184 | MZA 1083 - LT 7 | 184 | ZONA I | MUR/HEX:1 | -70.24907 | -17.98609 | 11.123 |
| 185 | MZA 1083 - LT 8 | 185 | ZONA I | MUR/HEX:1 | -70.24902 | -17.98613 | 9.715 |
| 186 | MZA 1083 - LT 9 | 186 | ZONA I | MUR/HEX:1 | -70.24895 | -17.98623 | 10.251 |
| 187 | MZA 1083 - LT 10 | 187 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24891 | -17.98618 | 189.192 |
| 188 | MZA 1084 - LT 1 | 188 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24862 | -17.98585 | 15.262 |
| 189 | MZA 1084 - LT 2 | 189 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24857 | -17.98580 | 16.893 |
| 190 | MZA 1084 - LT 3 | 190 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24868 | -17.98576 | 14.882 |
| 191 | MZA 1084 - LT 4 | 191 | ZONA I | MUR/HEX:1 | -70.24873 | -17.98571 | 11.112 |
| 192 | MZA 1084 - LT 5 | 192 | ZONA I | MUR/HEX:1 | -70.24879 | -17.98566 | 12.858 |
| 193 | MZA 1084 - LT 6 | 193 | ZONA I | MUR/HEX:1 | -70.24889 | -17.98577 | 12.447 |
| 194 | MZA 1084 - LT 7 | 194 | ZONA I | MUR/HEX:1 | -70.24883 | -17.98582 | 10.380 |
| 195 | MZA 1084 - LT 8 | 195 | ZONA I | MUR/HEX:1 | -70.24877 | -17.98586 | 10.418 |
| 196 | MZA 1084 - LT 9 | 196 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24871 | -17.98596 | 15.963 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|------------------------|-----------|-----------|---------------|
| 197 | MZA 1084 - LT 10 | 197 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24866 | -17.98591 | 14.901 |
| 198 | MZA 1085 - LT 1 | 198 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24838 | -17.98559 | 198.131 |
| 199 | MZA 1085 - LT 2 | 199 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24833 | -17.98553 | 192.842 |
| 200 | MZA 1085 - LT 3 | 200 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24844 | -17.98549 | 15.238 |
| 201 | MZA 1085 - LT 4 | 201 | ZONA I | MUR/HEX:1 | -70.24849 | -17.98544 | 9.972 |
| 202 | MZA 1085 - LT 5 | 202 | ZONA I | MUR/HEX:1 | -70.24856 | -17.98538 | 14.373 |
| 203 | MZA 1085 - LT 6 | 203 | ZONA I | MUR/HEX:1 | -70.24865 | -17.98549 | 12.147 |
| 204 | MZA 1085 - LT 7 | 204 | ZONA I | MUR/HEX:1 | -70.24859 | -17.98555 | 10.518 |
| 205 | MZA 1085 - LT 8 | 205 | ZONA I | MUR/HEX:1 | -70.24853 | -17.98559 | 10.397 |
| 206 | MZA 1085 - LT 9 | 206 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24847 | -17.98569 | 15.329 |
| 207 | MZA 1085 - LT 10 | 207 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24842 | -17.98564 | 14.881 |
| 208 | MZA 1086 - LT 1 | 208 | ZONA I | MUR/HEX:1 | -70.24813 | -17.98532 | 10.591 |
| 209 | MZA 1086 - LT 2 | 209 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24808 | -17.98526 | 14.362 |
| 210 | MZA 1086 - LT 3 | 210 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24818 | -17.98522 | 14.830 |
| 211 | MZA 1086 - LT 4 | 211 | ZONA I | MUR/HEX:1 | -70.24824 | -17.98518 | 9.792 |
| 212 | MZA 1086 - LT 5 | 212 | ZONA I | MUR/HEX:1 | -70.24829 | -17.98513 | 9.391 |
| 213 | MZA 1086 - LT 6 | 213 | ZONA I | MUR/HEX:1 | -70.24834 | -17.98509 | 9.934 |
| 214 | MZA 1086 - LT 7 | 214 | ZONA I | MUR/HEX:1 | -70.24844 | -17.98520 | 10.840 |
| 215 | MZA 1086 - LT 8 | 215 | ZONA I | MUR/HEX:1 | -70.24839 | -17.98524 | 10.151 |
| 216 | MZA 1086 - LT 9 | 216 | ZONA I | MUR/HEX:1 | -70.24833 | -17.98529 | 10.387 |
| 217 | MZA 1086 - LT 10 | 217 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24828 | -17.98533 | 14.738 |
| 218 | MZA 1086 - LT 11 | 218 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24822 | -17.98543 | 194.580 |
| 219 | MZA 1086 - LT 12 | 219 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24818 | -17.98537 | 15.106 |
| 220 | MZA 1087 - LT 1 | 220 | ZONA I | MUR/HEX:1 | -70.24789 | -17.98504 | 10.433 |
| 221 | MZA 1087 - LT 2 | 221 | ZONA I | MUR/HEX:2 | -70.24784 | -17.98498 | 305.057 |
| 222 | MZA 1087 - LT 3 | 222 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24795 | -17.98494 | 14.521 |
| 223 | MZA 1087 - LT 4 | 223 | ZONA I | MUR/HEX:1 | -70.24800 | -17.98490 | 10.730 |
| 224 | MZA 1087 - LT 5 | 224 | ZONA I | MUR/HEX:1 | -70.24805 | -17.98485 | 9.885 |
| 225 | MZA 1087 - LT 6 | 225 | ZONA I | MUR/HEX:1 | -70.24811 | -17.98481 | 10.116 |
| 226 | MZA 1087 - LT 7 | 226 | ZONA I | MUR/HEX:1 | -70.24820 | -17.98492 | 10.076 |
| 227 | MZA 1087 - LT 8 | 227 | ZONA I | MUR/HEX:1 | -70.24815 | -17.98497 | 9.581 |
| 228 | MZA 1087 - LT 9 | 228 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24809 | -17.98501 | 189.832 |
| 229 | MZA 1087 - LT 10 | 229 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24804 | -17.98506 | 13.343 |
| 230 | MZA 1087 - LT 11 | 230 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24799 | -17.98515 | 15.238 |
| 231 | MZA 1087 - LT 12 | 231 | ZONA I | MUR/HEX:1 | -70.24794 | -17.98509 | 9.884 |
| 232 | MZA 1088 - LT 1 | 232 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24765 | -17.98475 | 193.351 |
| 233 | MZA 1088 - LT 2 | 233 | ZONA I | MUR/HEX:1 | -70.24761 | -17.98470 | 10.578 |
| 234 | MZA 1088 - LT 3 | 234 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24771 | -17.98466 | 15.925 |
| 235 | MZA 1088 - LT 4 | 235 | ZONA I | MUR/HEX:1 | -70.24777 | -17.98461 | 11.093 |
| 236 | MZA 1088 - LT 5 | 236 | ZONA I | MUR/HEX:1 | -70.24782 | -17.98457 | 10.366 |
| 237 | MZA 1088 - LT 6 | 237 | ZONA I | MUR/HEX:1 | -70.24787 | -17.98453 | 10.471 |
| 238 | MZA 1088 - LT 7 | 238 | ZONA I | MUR/HEX:1 | -70.24797 | -17.98464 | 10.079 |
| 239 | MZA 1088 - LT 8 | 239 | ZONA I | MUR/HEX:1 | -70.24791 | -17.98468 | 10.337 |
| 240 | MZA 1088 - LT 9 | 240 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24786 | -17.98473 | 188.725 |
| 241 | MZA 1088 - LT 10 | 241 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24781 | -17.98477 | 13.653 |
| 242 | MZA 1088 - LT 11 | 242 | ZONA I | MUR/HEX:2 | -70.24775 | -17.98487 | 306.562 |
| 243 | MZA 1088 - LT 12 | 243 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24770 | -17.98481 | 14.292 |
| 244 | MZA 1089 - LT 1 | 244 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24741 | -17.98448 | 14.602 |
| 245 | MZA 1089 - LT 2 | 245 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24737 | -17.98442 | 14.294 |
| 246 | MZA 1089 - LT 3 | 246 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24747 | -17.98438 | 14.735 |
| 247 | MZA 1089 - LT 4 | 247 | ZONA I | MUR/HEX:1 | -70.24752 | -17.98433 | 9.718 |
| 248 | MZA 1089 - LT 5 | 248 | ZONA I | MUR/HEX:1 | -70.24758 | -17.98429 | 10.679 |
| 249 | MZA 1089 - LT 6 | 249 | ZONA I | MUR/HEX:1 | -70.24763 | -17.98424 | 10.021 |
| 250 | MZA 1089 - LT 7 | 250 | ZONA I | MUR/HEX:1 | -70.24772 | -17.98436 | 11.044 |
| 251 | MZA 1089 - LT 8 | 251 | ZONA I | MUR/HEX:1 | -70.24767 | -17.98440 | 10.719 |
| 252 | MZA 1089 - LT 9 | 252 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24762 | -17.98445 | 187.885 |
| 253 | MZA 1089 - LT 10 | 253 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24757 | -17.98449 | 15.237 |
| 254 | MZA 1089 - LT 11 | 254 | ZONA I | MUR/HEX:1 | -70.24751 | -17.98459 | 10.424 |
| 255 | MZA 1089 - LT 12 | 255 | ZONA I | MUR/HEX:1 | -70.24746 | -17.98453 | 9.833 |
| 256 | MZA 1090 - LT 1 | 256 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24718 | -17.98419 | 13.967 |
| 257 | MZA 1090 - LT 2 | 257 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24713 | -17.98414 | 14.978 |
| 258 | MZA 1090 - LT 3 | 258 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24723 | -17.98410 | 14.819 |
| 259 | MZA 1090 - LT 4 | 259 | ZONA I | MUR/HEX:1 | -70.24728 | -17.98405 | 10.211 |
| 260 | MZA 1090 - LT 5 | 260 | ZONA I | MUR/HEX:1 | -70.24734 | -17.98401 | 11.695 |
| 261 | MZA 1090 - LT 6 | 261 | ZONA I | MUR/HEX:1 | -70.24739 | -17.98397 | 8.757 |
| 262 | MZA 1090 - LT 7 | 262 | ZONA I | MUR/HEX:1 | -70.24749 | -17.98408 | 8.942 |
| 263 | MZA 1090 - LT 8 | 263 | ZONA I | MUR/HEX:1 | -70.24743 | -17.98412 | 11.378 |
| 264 | MZA 1090 - LT 9 | 264 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24738 | -17.98417 | 181.970 |
| 265 | MZA 1090 - LT 10 | 265 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24733 | -17.98421 | 14.515 |
| 266 | MZA 1090 - LT 11 | 266 | ZONA I | MUR/HEX:1 | -70.24727 | -17.98431 | 10.125 |
| 267 | MZA 1090 - LT 12 | 267 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24722 | -17.98425 | 14.651 |
| 268 | MZA 1091 - LT 1 | 268 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24705 | -17.98377 | 13.708 |
| 269 | MZA 1091 - LT 2 | 269 | ZONA I | MUR/HEX:1 | -70.24710 | -17.98373 | 9.165 |
| 270 | MZA 1091 - LT 3 | 270 | ZONA I | MUR/HEX:1 | -70.24715 | -17.98369 | 10.310 |
| 271 | MZA 1091 - LT 4 | 271 | ZONA I | MUR/HEX:1 | -70.24725 | -17.98380 | 10.765 |
| 272 | MZA 1091 - LT 5 | 272 | ZONA I | MUR/HEX:1 | -70.24720 | -17.98384 | 9.495 |
| 273 | MZA 1091 - LT 6 | 273 | ZONA I | MUR/HEX:1 | -70.24714 | -17.98389 | 10.256 |
| 274 | MZA 1091 - LT 7 | 274 | ZONA I | MUR/HEX:1 | -70.24709 | -17.98393 | 9.287 |
| 275 | MZA 1091 - LT 8 | 275 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24703 | -17.98403 | 15.445 |
| 276 | MZA 1091 - LT 9 | 276 | ZONA I | MUR/HEX:1 | -70.24699 | -17.98397 | 10.465 |
| 277 | MZA 1093 - LT 1 | 278 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24602 | -17.98284 | 14.217 |
| 278 | MZA 1093 - LT 2 | 279 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24597 | -17.98278 | 184.935 |
| 279 | MZA 1093 - LT 3 | 280 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24607 | -17.98274 | 12.978 |
| 280 | MZA 1093 - LT 4 | 281 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24613 | -17.98270 | 175.192 |
| 281 | MZA 1093 - LT 5 | 282 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24618 | -17.98265 | 14.056 |
| 282 | MZA 1093 - LT 6 | 283 | ZONA I | MUR/HEX:1 | -70.24623 | -17.98261 | 9.210 |
| 283 | MZA 1093 - LT 7 | 284 | ZONA I | MUR/HEX:1 | -70.24632 | -17.98272 | 10.228 |
| 284 | MZA 1093 - LT 8 | 285 | ZONA I | MUR/HEX:1 | -70.24627 | -17.98276 | 10.565 |
| 285 | MZA 1093 - LT 9 | 286 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24622 | -17.98281 | 14.462 |
| 286 | MZA 1093 - LT 10 | 287 | ZONA I | MUR/HEX:1 | -70.24617 | -17.98286 | 9.672 |
| 287 | MZA 1093 - LT 11 | 288 | ZONA I | MUR/HEX:1 | -70.24612 | -17.98295 | 9.877 |
| 288 | MZA 1093 - LT 12 | 289 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24607 | -17.98290 | 16.210 |
| 289 | MZA 1094 - LT 1 | 290 | ZONA I | MUR/HEX:1 | -70.24578 | -17.98257 | 9.698 |
| 290 | MZA 1094 - LT 2 | 291 | ZONA I | MUR/HEX:1 | -70.24573 | -17.98251 | 9.662 |
| 291 | MZA 1094 - LT 3 | 292 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24583 | -17.98247 | 12.986 |
| 292 | MZA 1094 - LT 4 | 293 | ZONA I | MUR/HEX:1 | -70.24588 | -17.98242 | 9.626 |
| 293 | MZA 1094 - LT 5 | 294 | ZONA I | MUR/HEX:1 | -70.24593 | -17.98238 | 9.367 |
| 294 | MZA 1094 - LT 6 | 295 | ZONA I | MUR/HEX:1 | -70.24599 | -17.98233 | 9.543 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|----------------------------|-----------|-----------|---------------|
| 295 | MZA 1094 - LT 7 | 296 | ZONA I | MUR/HEX:1 | -70.24608 | -17.98244 | 9.394 |
| 296 | MZA 1094 - LT 8 | 297 | ZONA I | MUR/HEX:1 | -70.24603 | -17.98249 | 10.236 |
| 297 | MZA 1094 - LT 9 | 298 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24598 | -17.98253 | 181.675 |
| 298 | MZA 1094 - LT 10 | 299 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24593 | -17.98258 | 14.792 |
| 299 | MZA 1094 - LT 11 | 300 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24587 | -17.98267 | 14.906 |
| 300 | MZA 1094 - LT 12 | 301 | ZONA I | MUR/HEX:1 | -70.24583 | -17.98262 | 9.942 |
| 301 | MZA 1096 - LT 1 | 302 | ZONA I | MUR/HEX:1 | -70.24525 | -17.98197 | 10.193 |
| 302 | MZA 1096 - LT 2 | 303 | ZONA I | MUR/HEX:1 | -70.24521 | -17.98192 | 10.001 |
| 303 | MZA 1096 - LT 3 | 304 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24531 | -17.98187 | 14.578 |
| 304 | MZA 1096 - LT 4 | 305 | ZONA I | MUR/HEX:1 | -70.24536 | -17.98183 | 10.450 |
| 305 | MZA 1096 - LT 5 | 306 | ZONA I | MUR/HEX:1 | -70.24541 | -17.98178 | 9.754 |
| 306 | MZA 1096 - LT 6 | 307 | ZONA I | MUR/HEX:1 | -70.24546 | -17.98174 | 9.353 |
| 307 | MZA 1096 - LT 7 | 308 | ZONA I | MUR/HEX:1 | -70.24556 | -17.98185 | 9.913 |
| 308 | MZA 1096 - LT 8 | 309 | ZONA I | MUR/HEX:1 | -70.24551 | -17.98189 | 10.097 |
| 309 | MZA 1096 - LT 9 | 310 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24546 | -17.98194 | 180.359 |
| 310 | MZA 1096 - LT 10 | 311 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24541 | -17.98198 | 15.122 |
| 311 | MZA 1096 - LT 11 | 312 | ZONA I | MUR/HEX:1 | -70.24535 | -17.98208 | 10.065 |
| 312 | MZA 1096 - LT 12 | 313 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24530 | -17.98202 | 184.026 |
| 313 | MZA 1097 - LT 1 | 314 | ZONA I | MUR/HEX:1 | -70.24494 | -17.98163 | 10.238 |
| 314 | MZA 1097 - LT 2 | 315 | ZONA I | MUR/HEX:1 | -70.24489 | -17.98158 | 9.959 |
| 315 | MZA 1097 - LT 3 | 316 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24500 | -17.98156 | 14.249 |
| 316 | MZA 1097 - LT 4 | 317 | ZONA I | MUR/HEX:1 | -70.24505 | -17.98152 | 10.220 |
| 317 | MZA 1097 - LT 5 | 318 | ZONA I | MUR/HEX:1 | -70.24509 | -17.98148 | 10.060 |
| 318 | MZA 1097 - LT 6 | 319 | ZONA I | MUR/HEX:1 | -70.24513 | -17.98145 | 10.308 |
| 319 | MZA 1097 - LT 7 | 320 | ZONA I | MUR/HEX:1 | -70.24517 | -17.98141 | 9.675 |
| 320 | MZA 1097 - LT 8 | 321 | ZONA I | MUR/HEX:1 | -70.24530 | -17.98154 | 10.219 |
| 321 | MZA 1097 - LT 9 | 322 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24526 | -17.98158 | 175.658 |
| 322 | MZA 1097 - LT 10 | 323 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24521 | -17.98162 | 14.456 |
| 323 | MZA 1097 - LT 11 | 324 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24517 | -17.98165 | 185.047 |
| 324 | MZA 1097 - LT 12 | 325 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24513 | -17.98169 | 14.214 |
| 325 | MZA 1097 - LT 13 | 326 | ZONA I | MUR/HEX:1 | -70.24509 | -17.98180 | 10.271 |
| 326 | MZA 1097 - LT 14 | 327 | ZONA I | MUR/HEX:1 | -70.24504 | -17.98174 | 9.636 |
| 327 | MZA 1097 - LT 15 | 328 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24499 | -17.98169 | 180.955 |
| 328 | MZA 1098 - LT 1 | 329 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24462 | -17.98128 | 13.974 |
| 329 | MZA 1098 - LT 2 | 330 | ZONA I | MUR/HEX:1 | -70.24457 | -17.98123 | 9.930 |
| 330 | MZA 1098 - LT 3 | 331 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24468 | -17.98120 | 14.406 |
| 331 | MZA 1098 - LT 4 | 332 | ZONA I | MUR/HEX:1 | -70.24472 | -17.98116 | 10.180 |
| 332 | MZA 1098 - LT 5 | 333 | ZONA I | MUR/HEX:1 | -70.24476 | -17.98113 | 10.165 |
| 333 | MZA 1098 - LT 6 | 334 | ZONA I | MUR/HEX:1 | -70.24481 | -17.98109 | 10.692 |
| 334 | MZA 1098 - LT 7 | 335 | ZONA I | MUR/HEX:1 | -70.24485 | -17.98106 | 9.717 |
| 335 | MZA 1098 - LT 8 | 336 | ZONA I | MUR/HEX:1 | -70.24497 | -17.98119 | 9.229 |
| 336 | MZA 1098 - LT 9 | 337 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24493 | -17.98123 | 181.663 |
| 337 | MZA 1098 - LT 10 | 338 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24489 | -17.98127 | 13.843 |
| 338 | MZA 1098 - LT 11 | 339 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24485 | -17.98130 | 175.505 |
| 339 | MZA 1098 - LT 12 | 340 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24480 | -17.98134 | 13.618 |
| 340 | MZA 1098 - LT 13 | 341 | ZONA I | MUR/HEX:1 | -70.24477 | -17.98144 | 9.352 |
| 341 | MZA 1098 - LT 14 | 342 | ZONA I | MUR/HEX:1 | -70.24472 | -17.98139 | 10.271 |
| 342 | MZA 1098 - LT 15 | 343 | ZONA I | MUR/HEX:1 | -70.24467 | -17.98133 | 9.995 |
| 343 | MZA 1099 - LT 1 | 344 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24430 | -17.98094 | 15.001 |
| 344 | MZA 1099 - LT 2 | 345 | ZONA I | MUR/HEX:1 | -70.24425 | -17.98089 | 11.021 |
| 345 | MZA 1099 - LT 3 | 346 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24436 | -17.98087 | 15.799 |
| 346 | MZA 1099 - LT 4 | 347 | ZONA I | MUR/HEX:1 | -70.24440 | -17.98083 | 10.157 |
| 347 | MZA 1099 - LT 5 | 348 | ZONA I | MUR/HEX:1 | -70.24445 | -17.98080 | 9.997 |
| 348 | MZA 1099 - LT 6 | 349 | ZONA I | MUR/HEX:1 | -70.24449 | -17.98076 | 9.689 |
| 349 | MZA 1099 - LT 7 | 350 | ZONA I | MUR/HEX:2 | -70.24453 | -17.98073 | 290.386 |
| 350 | MZA 1099 - LT 8 | 351 | ZONA I | MUR/HEX:1 | -70.24466 | -17.98086 | 10.242 |
| 351 | MZA 1099 - LT 9 | 352 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24461 | -17.98090 | 179.311 |
| 352 | MZA 1099 - LT 10 | 353 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24457 | -17.98093 | 193.799 |
| 353 | MZA 1099 - LT 11 | 354 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24453 | -17.98097 | 185.596 |
| 354 | MZA 1099 - LT 12 | 355 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24449 | -17.98100 | 189.075 |
| 355 | MZA 1099 - LT 13 | 356 | ZONA I | MUR/HEX:2 | -70.24445 | -17.98111 | 303.182 |
| 356 | MZA 1099 - LT 14 | 357 | ZONA I | MUR/HEX:2 | -70.24440 | -17.98105 | 303.798 |
| 357 | MZA 1099 - LT 15 | 358 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24435 | -17.98100 | 14.227 |
| 358 | MZA 1101 - LT 1 | 359 | ZONA I | MUR/HEX:2 | -70.24870 | -17.98642 | 641.841 |
| 359 | MZA 1101 - LT 2 | 360 | ZONA I | MUR/HEX:1 | -70.24864 | -17.98637 | 19.443 |
| 360 | MZA 1101 - LT 3 | 361 | ZONA I | MUR/HEX:1 | -70.24859 | -17.98631 | 18.911 |
| 361 | MZA 1101 - LT 4 | 362 | ZONA I | MUR/HEX:1 | -70.24854 | -17.98626 | 19.918 |
| 362 | MZA 1101 - LT 5 | 363 | ZONA I | MUR/HEX:1 | -70.24849 | -17.98620 | 19.140 |
| 363 | MZA 1101 - LT 6 | 364 | ZONA I | MUR/HEX:1 | -70.24845 | -17.98614 | 19.679 |
| 364 | MZA 1101 - LT 7 | 365 | ZONA I | MUR/HEX:2 | -70.24840 | -17.98609 | 627.702 |
| 365 | MZA 1101 - LT 8 | 366 | ZONA I | MUR/HEX:2 | -70.24835 | -17.98603 | 623.545 |
| 366 | MZA 1103 - LT 1 | 367 | ZONA I | MUR/HEX:1 | -70.24766 | -17.98525 | 19.437 |
| 367 | MZA 1103 - LT 2 | 368 | ZONA I | MUR/HEX:2 | -70.24761 | -17.98519 | 580.145 |
| 368 | MZA 1103 - LT 3 | 369 | ZONA I | MUR/HEX:1 | -70.24756 | -17.98513 | 18.792 |
| 369 | MZA 1103 - LT 4 | 370 | ZONA I | MUR/HEX:1 | -70.24751 | -17.98508 | 18.978 |
| 370 | MZA 1103 - LT 5 | 371 | ZONA I | MUR/HEX:1 | -70.24746 | -17.98502 | 18.398 |
| 371 | MZA 1103 - LT 6 | 372 | ZONA I | MUR/HEX:1 | -70.24742 | -17.98496 | 19.320 |
| 372 | MZA 1103 - LT 7 | 373 | ZONA I | MUR/HEX:2 | -70.24737 | -17.98491 | 534.455 |
| 373 | MZA 1103 - LT 8 | 374 | ZONA I | MUR/HEX:1 | -70.24732 | -17.98485 | 18.895 |
| 374 | MZA 1105 - LT 1 | 376 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24578 | -17.98305 | 118.303 |
| 375 | MZA 1105 - LT 2 | 377 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24583 | -17.98312 | 123.671 |
| 376 | MZA 1105 - LT 3 | 378 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24589 | -17.98318 | 122.845 |
| 377 | MZA 1105 - LT 4 | 379 | ZONA I | MUR/HEX:1 | -70.24594 | -17.98325 | 6.630 |
| 378 | MZA 1105 - LT 5 | 380 | ZONA I | MUR/HEX:1 | -70.24601 | -17.98331 | 6.943 |
| 379 | MZA 1105 - LT 6 | 381 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24606 | -17.98338 | 124.655 |
| 380 | MZA 1105 - LT 7 | 382 | ZONA I | MCF/LWAL+DNO/HEX:3/RES | -70.24612 | -17.98344 | 843.938 |
| 381 | MZA 1105 - LT 8 | 383 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24618 | -17.98350 | 125.087 |
| 382 | MZA 1105 - LT 9 | 384 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24624 | -17.98345 | 118.880 |
| 383 | MZA 1105 - LT 10 | 385 | ZONA I | MUR/HEX:2 | -70.24618 | -17.98338 | 199.624 |
| 384 | MZA 1105 - LT 11 | 386 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24612 | -17.98332 | 9.900 |
| 385 | MZA 1105 - LT 12 | 387 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24606 | -17.98326 | 119.284 |
| 386 | MZA 1105 - LT 13 | 388 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24600 | -17.98319 | 10.169 |
| 387 | MZA 1105 - LT 14 | 389 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24594 | -17.98313 | 124.122 |
| 388 | MZA 1105 - LT 15 | 390 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24589 | -17.98307 | 121.796 |
| 389 | MZA 1105 - LT 16 | 391 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24583 | -17.98300 | 120.118 |
| 390 | MZA 1105 - LT 17 | 392 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24577 | -17.98290 | 115.225 |
| 391 | MZA 1105 - LT 18 | 393 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24574 | -17.98294 | 133.696 |
| 392 | MZA 1105 - LT 19 | 394 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24569 | -17.98297 | 126.212 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|----------------------------|-----------|-----------|---------------|
| 393 | MZA 1105 - LT 1 | 395 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24627 | -17.98360 | 129.383 |
| 394 | MZA 1105 - LT 2 | 396 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24633 | -17.98368 | 10.301 |
| 395 | MZA 1105 - LT 3 | 397 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24639 | -17.98374 | 127.019 |
| 396 | MZA 1105 - LT 4 | 398 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24645 | -17.98381 | 128.570 |
| 397 | MZA 1105 - LT 5 | 399 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24651 | -17.98388 | 125.581 |
| 398 | MZA 1105 - LT 6 | 400 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24657 | -17.98395 | 129.981 |
| 399 | MZA 1105 - LT 7 | 401 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24663 | -17.98401 | 125.836 |
| 400 | MZA 1105 - LT 8 | 402 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24669 | -17.98407 | 128.286 |
| 401 | MZA 1105 - LT 9 | 403 | ZONA I | MCF/LWAL+DNO/HEX:3/RES | -70.24675 | -17.98414 | 876.248 |
| 402 | MZA 1105 - LT 10 | 404 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24681 | -17.98409 | 126.055 |
| 403 | MZA 1105 - LT 11 | 405 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24675 | -17.98402 | 126.729 |
| 404 | MZA 1105 - LT 12 | 406 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24669 | -17.98395 | 127.655 |
| 405 | MZA 1105 - LT 13 | 407 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24663 | -17.98389 | 129.364 |
| 406 | MZA 1105 - LT 14 | 408 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24657 | -17.98383 | 128.009 |
| 407 | MZA 1105 - LT 15 | 409 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24651 | -17.98375 | 131.693 |
| 408 | MZA 1105 - LT 16 | 410 | ZONA I | MUR/HEX:1 | -70.24645 | -17.98368 | 7.679 |
| 409 | MZA 1105 - LT 17 | 411 | ZONA I | MUR/HEX:1 | -70.24638 | -17.98362 | 7.553 |
| 410 | MZA 1105 - LT 18 | 412 | ZONA I | MUR/HEX:1 | -70.24632 | -17.98355 | 7.683 |
| 411 | MZA 1106 - LT 1 | 413 | ZONA I | MUR/HEX:1 | -70.24558 | -17.98279 | 14.719 |
| 412 | MZA 1106 - LT 2 | 414 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24553 | -17.98273 | 248.108 |
| 413 | MZA 1106 - LT 3 | 415 | ZONA I | MUR/HEX:1 | -70.24548 | -17.98268 | 16.418 |
| 414 | MZA 1106 - LT 4 | 416 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24543 | -17.98262 | 247.144 |
| 415 | MZA 1106 - LT 5 | 417 | ZONA I | MUR/HEX:1 | -70.24538 | -17.98256 | 14.571 |
| 416 | MZA 1106 - LT 6 | 418 | ZONA I | MUR/HEX:1 | -70.24533 | -17.98251 | 14.622 |
| 417 | MZA 1106 - LT 7 | 419 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24528 | -17.98245 | 20.271 |
| 418 | MZA 1106 - LT 8 | 420 | ZONA I | MUR/HEX:1 | -70.24523 | -17.98240 | 14.818 |
| 419 | MZA 1106 - LT 9 | 421 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24519 | -17.98234 | 20.847 |
| 420 | MZA 1106 - LT 10 | 422 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24514 | -17.98229 | 21.447 |
| 421 | MZA 1106 - LT 11 | 423 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24509 | -17.98223 | 21.048 |
| 422 | MZA 1106 - LT 12 | 424 | ZONA I | MUR/HEX:1 | -70.24504 | -17.98217 | 13.934 |
| 423 | MZA 1106 - LT 13 | 425 | ZONA I | MUR/HEX:2 | -70.24498 | -17.98211 | 406.798 |
| 424 | MZA 1106 - LT 14 | 426 | ZONA I | MUR/HEX:1 | -70.24563 | -17.98284 | 14.106 |
| 425 | MZA 1107 - LT 1 | 427 | ZONA I | MUR/HEX:1 | -70.24452 | -17.98220 | 13.681 |
| 426 | MZA 1107 - LT 2 | 428 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24458 | -17.98215 | 19.374 |
| 427 | MZA 1107 - LT 3 | 429 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24463 | -17.98210 | 20.465 |
| 428 | MZA 1107 - LT 4 | 430 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24469 | -17.98205 | 20.507 |
| 429 | MZA 1107 - LT 5 | 431 | ZONA I | MUR/HEX:1 | -70.24474 | -17.98201 | 13.176 |
| 430 | MZA 1107 - LT 6 | 432 | ZONA I | MUR/HEX:1 | -70.24480 | -17.98196 | 13.536 |
| 431 | MZA 1107 - LT 7 | 433 | ZONA I | MUR/HEX:1 | -70.24486 | -17.98191 | 14.068 |
| 432 | MZA 1107 - LT 8 | 434 | ZONA I | MUR/HEX:2 | -70.24473 | -17.98177 | 389.960 |
| 433 | MZA 1107 - LT 9 | 435 | ZONA I | MUR/HEX:2 | -70.24467 | -17.98182 | 374.850 |
| 434 | MZA 1107 - LT 10 | 436 | ZONA I | MUR/HEX:1 | -70.24462 | -17.98187 | 12.869 |
| 435 | MZA 1107 - LT 11 | 437 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24456 | -17.98192 | 20.084 |
| 436 | MZA 1107 - LT 12 | 438 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24451 | -17.98196 | 19.060 |
| 437 | MZA 1107 - LT 13 | 439 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24445 | -17.98201 | 18.988 |
| 438 | MZA 1107 - LT 14 | 440 | ZONA I | MUR/HEX:1 | -70.24439 | -17.98206 | 14.336 |
| 439 | MZA 1108 - LT 1 | 441 | ZONA I | MUR/HEX:1 | -70.24420 | -17.98185 | 13.012 |
| 440 | MZA 1108 - LT 2 | 442 | ZONA I | MUR/HEX:1 | -70.24426 | -17.98180 | 13.325 |
| 441 | MZA 1108 - LT 3 | 443 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24431 | -17.98175 | 19.953 |
| 442 | MZA 1108 - LT 4 | 444 | ZONA I | MUR/HEX:1 | -70.24436 | -17.98171 | 13.321 |
| 443 | MZA 1108 - LT 5 | 445 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24442 | -17.98166 | 239.008 |
| 444 | MZA 1108 - LT 6 | 446 | ZONA I | MUR/HEX:1 | -70.24448 | -17.98161 | 12.627 |
| 445 | MZA 1108 - LT 7 | 447 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24454 | -17.98156 | 21.339 |
| 446 | MZA 1108 - LT 8 | 448 | ZONA I | MUR/HEX:1 | -70.24441 | -17.98143 | 14.312 |
| 447 | MZA 1108 - LT 9 | 449 | ZONA I | MUR/HEX:2 | -70.24435 | -17.98148 | 390.047 |
| 448 | MZA 1108 - LT 10 | 450 | ZONA I | MUR/HEX:1 | -70.24429 | -17.98152 | 13.080 |
| 449 | MZA 1108 - LT 11 | 451 | ZONA I | MUR/HEX:1 | -70.24424 | -17.98157 | 14.225 |
| 450 | MZA 1108 - LT 12 | 452 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24418 | -17.98162 | 19.094 |
| 451 | MZA 1108 - LT 13 | 453 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24413 | -17.98167 | 18.129 |
| 452 | MZA 1108 - LT 14 | 454 | ZONA I | MUR/HEX:1 | -70.24407 | -17.98172 | 13.361 |
| 453 | MZA 1109 - LT 1 | 455 | ZONA I | MUR/HEX:2 | -70.24390 | -17.98153 | 473.651 |
| 454 | MZA 1109 - LT 2 | 456 | ZONA I | MUR/HEX:1 | -70.24395 | -17.98148 | 12.736 |
| 455 | MZA 1109 - LT 3 | 457 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24401 | -17.98143 | 18.379 |
| 456 | MZA 1109 - LT 4 | 458 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24407 | -17.98139 | 20.088 |
| 457 | MZA 1109 - LT 5 | 459 | ZONA I | MUR/HEX:1 | -70.24412 | -17.98134 | 12.940 |
| 458 | MZA 1109 - LT 6 | 460 | ZONA I | MUR/HEX:2 | -70.24418 | -17.98129 | 376.221 |
| 459 | MZA 1109 - LT 7 | 461 | ZONA I | MUR/HEX:1 | -70.24423 | -17.98124 | 13.568 |
| 460 | MZA 1109 - LT 8 | 462 | ZONA I | MUR/HEX:1 | -70.24407 | -17.98106 | 22.143 |
| 461 | MZA 1109 - LT 9 | 463 | ZONA I | MUR/HEX:1 | -70.24403 | -17.98111 | 15.779 |
| 462 | MZA 1109 - LT 10 | 464 | ZONA I | MUR/HEX:1 | -70.24398 | -17.98117 | 24.243 |
| 463 | MZA 1109 - LT 11 | 465 | ZONA I | MUR/HEX:1 | -70.24390 | -17.98125 | 27.565 |
| 464 | MZA 1109 - LT 12 | 466 | ZONA I | MUR/HEX:1 | -70.24384 | -17.98140 | 14.555 |
| 465 | MZA 1109 - LT 13 | 467 | ZONA I | MCF/LWAL+DNO/HEX:2/RES | -70.24378 | -17.98132 | 360.505 |
| 466 | MZA 1110 - LT 1 | 468 | ZONA I | MUR/HEX:2 | -70.24651 | -17.98431 | 527.260 |
| 467 | MZA 1110 - LT 2 | 469 | ZONA I | MUR/HEX:1 | -70.24646 | -17.98426 | 17.668 |
| 468 | MZA 1110 - LT 3 | 470 | ZONA I | MUR/HEX:1 | -70.24641 | -17.98420 | 16.940 |
| 469 | MZA 1110 - LT 4 | 471 | ZONA I | MUR/HEX:1 | -70.24636 | -17.98415 | 16.783 |
| 470 | MZA 1110 - LT 5 | 472 | ZONA I | MUR/HEX:1 | -70.24631 | -17.98409 | 16.122 |
| 471 | MZA 1110 - LT 6 | 473 | ZONA I | MUR/HEX:2 | -70.24627 | -17.98404 | 514.502 |
| 472 | MZA 1110 - LT 7 | 474 | ZONA I | MUR/HEX:1 | -70.24622 | -17.98398 | 16.392 |
| 473 | MZA 1110 - LT 8 | 475 | ZONA I | MUR/HEX:1 | -70.24617 | -17.98393 | 17.888 |
| 474 | MZA 1110 - LT 9 | 476 | ZONA I | MUR/HEX:1 | -70.24612 | -17.98387 | 14.927 |
| 475 | MZA 1110 - LT 10 | 477 | ZONA I | MUR/HEX:1 | -70.24607 | -17.98382 | 18.899 |
| 476 | MZA 1110 - LT 11 | 478 | ZONA I | MUR/HEX:1 | -70.24602 | -17.98376 | 15.683 |
| 477 | MZA 1111 - LT 1 | 479 | ZONA I | MUR/HEX:2 | -70.24595 | -17.98368 | 505.304 |
| 478 | MZA 1111 - LT 2 | 480 | ZONA I | MUR/HEX:1 | -70.24590 | -17.98362 | 16.968 |
| 479 | MZA 1111 - LT 3 | 481 | ZONA I | MUR/HEX:1 | -70.24585 | -17.98357 | 16.749 |
| 480 | MZA 1111 - LT 4 | 482 | ZONA I | MUR/HEX:1 | -70.24580 | -17.98352 | 17.445 |
| 481 | MZA 1111 - LT 5 | 483 | ZONA I | MUR/HEX:1 | -70.24575 | -17.98346 | 14.520 |
| 482 | MZA 1111 - LT 6 | 484 | ZONA I | MUR/HEX:1 | -70.24570 | -17.98341 | 16.304 |
| 483 | MZA 1111 - LT 7 | 485 | ZONA I | MUR/HEX:2 | -70.24565 | -17.98335 | 529.634 |
| 484 | MZA 1111 - LT 8 | 486 | ZONA I | MUR/HEX:1 | -70.24560 | -17.98329 | 15.029 |
| 485 | MZA 1111 - LT 9 | 487 | ZONA I | MUR/HEX:1 | -70.24555 | -17.98324 | 17.974 |
| 486 | MZA 1111 - LT 10 | 488 | ZONA I | MUR/HEX:1 | -70.24550 | -17.98318 | 14.687 |
| 487 | MZA 1111 - LT 11 | 489 | ZONA I | MUR/HEX:1 | -70.24545 | -17.98313 | 16.685 |
| 488 | MZA 1112 - LT 1 | 490 | ZONA I | MUR/HEX:1 | -70.24538 | -17.98304 | 16.556 |
| 489 | MZA 1112 - LT 2 | 491 | ZONA I | MUR/HEX:1 | -70.24533 | -17.98299 | 17.692 |
| 490 | MZA 1112 - LT 3 | 492 | ZONA I | MUR/HEX:1 | -70.24528 | -17.98293 | 16.317 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|-----------|-----------|-----------|---------------|
| 491 | MZA 1112 - LT 4 | 493 | ZONA I | MUR/HEX:1 | -70.24523 | -17.98288 | 17.471 |
| 492 | MZA 1112 - LT 5 | 494 | ZONA I | MUR/HEX:1 | -70.24518 | -17.98283 | 15.626 |
| 493 | MZA 1112 - LT 6 | 495 | ZONA I | MUR/HEX:1 | -70.24514 | -17.98277 | 15.542 |
| 494 | MZA 1112 - LT 7 | 496 | ZONA I | MUR/HEX:1 | -70.24509 | -17.98271 | 17.407 |
| 495 | MZA 1112 - LT 8 | 497 | ZONA I | MUR/HEX:1 | -70.24504 | -17.98266 | 17.596 |
| 496 | MZA 1112 - LT 9 | 498 | ZONA I | MUR/HEX:1 | -70.24499 | -17.98260 | 15.399 |
| 497 | MZA 1112 - LT 10 | 499 | ZONA I | MUR/HEX:1 | -70.24494 | -17.98255 | 15.117 |
| 498 | MZA 1112 - LT 11 | 500 | ZONA I | MUR/HEX:1 | -70.24489 | -17.98249 | 16.586 |
| 499 | MZA 1112 - LT 12 | 501 | ZONA I | MUR/HEX:1 | -70.24484 | -17.98244 | 16.738 |
| 500 | MZA 1112 - LT 13 | 502 | ZONA I | MUR/HEX:1 | -70.24480 | -17.98238 | 14.673 |
| 501 | MZA 1112 - LT 14 | 503 | ZONA I | MUR/HEX:1 | -70.24475 | -17.98232 | 18.706 |
| 502 | MZA 1113 - LT 1 | 504 | ZONA I | MUR/HEX:2 | -70.24842 | -17.98654 | 499.112 |
| 503 | MZA 1113 - LT 2 | 505 | ZONA I | MUR/HEX:1 | -70.24836 | -17.98658 | 16.869 |
| 504 | MZA 1113 - LT 3 | 506 | ZONA I | MUR/HEX:1 | -70.24831 | -17.98663 | 18.369 |
| 505 | MZA 1113 - LT 4 | 507 | ZONA I | MUR/HEX:1 | -70.24825 | -17.98668 | 17.170 |
| 506 | MZA 1113 - LT 5 | 508 | ZONA I | MUR/HEX:1 | -70.24820 | -17.98673 | 16.586 |
| 507 | MZA 1113 - LT 6 | 509 | ZONA I | MUR/HEX:1 | -70.24814 | -17.98677 | 16.424 |
| 508 | MZA 1113 - LT 7 | 510 | ZONA I | MUR/HEX:1 | -70.24808 | -17.98682 | 16.722 |
| 509 | MZA 1113 - LT 8 | 511 | ZONA I | MUR/HEX:1 | -70.24803 | -17.98687 | 18.025 |
| 510 | MZA 1113 - LT 9 | 512 | ZONA I | MUR/HEX:1 | -70.24797 | -17.98692 | 16.030 |
| 511 | MZA 1113 - LT 10 | 513 | ZONA I | MUR/HEX:1 | -70.24792 | -17.98696 | 16.614 |
| 512 | MZA 1113 - LT 11 | 514 | ZONA I | MUR/HEX:2 | -70.24786 | -17.98682 | 552.578 |
| 513 | MZA 1113 - LT 12 | 515 | ZONA I | MUR/HEX:1 | -70.24776 | -17.98679 | 16.661 |
| 514 | MZA 1113 - LT 13 | 516 | ZONA I | MUR/HEX:1 | -70.24782 | -17.98674 | 17.115 |
| 515 | MZA 1113 - LT 14 | 517 | ZONA I | MUR/HEX:1 | -70.24788 | -17.98669 | 15.774 |
| 516 | MZA 1113 - LT 15 | 518 | ZONA I | MUR/HEX:1 | -70.24793 | -17.98665 | 17.830 |
| 517 | MZA 1113 - LT 16 | 519 | ZONA I | MUR/HEX:1 | -70.24799 | -17.98660 | 17.141 |
| 518 | MZA 1113 - LT 17 | 520 | ZONA I | MUR/HEX:1 | -70.24804 | -17.98656 | 17.304 |
| 519 | MZA 1113 - LT 18 | 521 | ZONA I | MUR/HEX:1 | -70.24810 | -17.98651 | 16.562 |
| 520 | MZA 1113 - LT 19 | 522 | ZONA I | MUR/HEX:1 | -70.24815 | -17.98646 | 16.404 |
| 521 | MZA 1113 - LT 20 | 523 | ZONA I | MUR/HEX:1 | -70.24821 | -17.98641 | 17.078 |
| 522 | MZA 1113 - LT 21 | 524 | ZONA I | MUR/HEX:1 | -70.24827 | -17.98637 | 18.637 |
| 523 | MZA 1113 - LT 22 | 525 | ZONA I | MUR/HEX:1 | -70.24784 | -17.98697 | 9.123 |
| 524 | MZA 1114 - LT 1 | 526 | ZONA I | MUR/HEX:1 | -70.24804 | -17.98612 | 17.730 |
| 525 | MZA 1114 - LT 2 | 527 | ZONA I | MUR/HEX:1 | -70.24798 | -17.98617 | 17.318 |
| 526 | MZA 1114 - LT 3 | 528 | ZONA I | MUR/HEX:1 | -70.24793 | -17.98621 | 19.309 |
| 527 | MZA 1114 - LT 4 | 529 | ZONA I | MUR/HEX:1 | -70.24787 | -17.98626 | 17.401 |
| 528 | MZA 1114 - LT 5 | 530 | ZONA I | MUR/HEX:1 | -70.24781 | -17.98630 | 18.486 |
| 529 | MZA 1114 - LT 6 | 531 | ZONA I | MUR/HEX:1 | -70.24776 | -17.98635 | 16.596 |
| 530 | MZA 1114 - LT 7 | 532 | ZONA I | MUR/HEX:1 | -70.24770 | -17.98640 | 17.518 |
| 531 | MZA 1114 - LT 8 | 533 | ZONA I | MUR/HEX:1 | -70.24764 | -17.98644 | 19.850 |
| 532 | MZA 1114 - LT 9 | 534 | ZONA I | MUR/HEX:1 | -70.24759 | -17.98649 | 16.829 |
| 533 | MZA 1114 - LT 10 | 535 | ZONA I | MUR/HEX:1 | -70.24753 | -17.98653 | 17.075 |
| 534 | MZA 1114 - LT 11 | 536 | ZONA I | MUR/HEX:1 | -70.24748 | -17.98658 | 20.959 |
| 535 | MZA 1114 - LT 12 | 537 | ZONA I | MUR/HEX:1 | -70.24732 | -17.98641 | 19.704 |
| 536 | MZA 1114 - LT 13 | 538 | ZONA I | MUR/HEX:1 | -70.24738 | -17.98636 | 16.247 |
| 537 | MZA 1114 - LT 14 | 539 | ZONA I | MUR/HEX:1 | -70.24743 | -17.98632 | 18.764 |
| 538 | MZA 1114 - LT 15 | 540 | ZONA I | MUR/HEX:1 | -70.24749 | -17.98627 | 18.690 |
| 539 | MZA 1114 - LT 16 | 541 | ZONA I | MUR/HEX:1 | -70.24755 | -17.98622 | 17.068 |
| 540 | MZA 1114 - LT 17 | 542 | ZONA I | MUR/HEX:1 | -70.24760 | -17.98618 | 16.741 |
| 541 | MZA 1114 - LT 18 | 543 | ZONA I | MUR/HEX:1 | -70.24766 | -17.98613 | 18.893 |
| 542 | MZA 1114 - LT 19 | 544 | ZONA I | MUR/HEX:1 | -70.24772 | -17.98609 | 16.631 |
| 543 | MZA 1114 - LT 20 | 545 | ZONA I | MUR/HEX:1 | -70.24777 | -17.98604 | 17.029 |
| 544 | MZA 1114 - LT 21 | 546 | ZONA I | MUR/HEX:1 | -70.24783 | -17.98599 | 17.527 |
| 545 | MZA 1114 - LT 22 | 547 | ZONA I | MUR/HEX:1 | -70.24789 | -17.98595 | 16.850 |
| 546 | MZA 1115 - LT 1 | 548 | ZONA I | MUR/HEX:1 | -70.24766 | -17.98569 | 16.447 |
| 547 | MZA 1115 - LT 2 | 549 | ZONA I | MUR/HEX:1 | -70.24761 | -17.98574 | 18.421 |
| 548 | MZA 1115 - LT 3 | 550 | ZONA I | MUR/HEX:1 | -70.24755 | -17.98579 | 15.357 |
| 549 | MZA 1115 - LT 4 | 551 | ZONA I | MUR/HEX:1 | -70.24750 | -17.98583 | 17.694 |
| 550 | MZA 1115 - LT 5 | 552 | ZONA I | MUR/HEX:1 | -70.24744 | -17.98588 | 18.985 |
| 551 | MZA 1115 - LT 6 | 553 | ZONA I | MUR/HEX:1 | -70.24738 | -17.98593 | 16.739 |
| 552 | MZA 1115 - LT 7 | 554 | ZONA I | MUR/HEX:1 | -70.24733 | -17.98597 | 16.511 |
| 553 | MZA 1115 - LT 8 | 555 | ZONA I | MUR/HEX:1 | -70.24727 | -17.98602 | 17.423 |
| 554 | MZA 1115 - LT 9 | 556 | ZONA I | MUR/HEX:2 | -70.24721 | -17.98607 | 554.769 |
| 555 | MZA 1115 - LT 10 | 557 | ZONA I | MUR/HEX:1 | -70.24715 | -17.98611 | 17.266 |
| 556 | MZA 1115 - LT 11 | 558 | ZONA I | MUR/HEX:2 | -70.24709 | -17.98615 | 373.306 |
| 557 | MZA 1115 - LT 12 | 559 | ZONA I | MUR/HEX:1 | -70.24692 | -17.98596 | 17.497 |
| 558 | MZA 1115 - LT 13 | 560 | ZONA I | MUR/HEX:1 | -70.24700 | -17.98594 | 16.973 |
| 559 | MZA 1115 - LT 14 | 561 | ZONA I | MUR/HEX:1 | -70.24706 | -17.98589 | 18.784 |
| 560 | MZA 1115 - LT 15 | 562 | ZONA I | MUR/HEX:1 | -70.24711 | -17.98585 | 18.408 |
| 561 | MZA 1115 - LT 16 | 563 | ZONA I | MUR/HEX:1 | -70.24717 | -17.98580 | 17.952 |
| 562 | MZA 1115 - LT 17 | 564 | ZONA I | MUR/HEX:1 | -70.24723 | -17.98575 | 16.918 |
| 563 | MZA 1115 - LT 18 | 565 | ZONA I | MUR/HEX:1 | -70.24728 | -17.98571 | 18.633 |
| 564 | MZA 1115 - LT 19 | 566 | ZONA I | MUR/HEX:1 | -70.24734 | -17.98566 | 16.965 |
| 565 | MZA 1115 - LT 20 | 567 | ZONA I | MUR/HEX:1 | -70.24740 | -17.98562 | 16.979 |
| 566 | MZA 1115 - LT 21 | 568 | ZONA I | MUR/HEX:2 | -70.24745 | -17.98557 | 545.428 |
| 567 | MZA 1115 - LT 22 | 569 | ZONA I | MUR/HEX:1 | -70.24751 | -17.98552 | 8.651 |
| 568 | MZA 1116 - LT 1 | 570 | ZONA I | MUR/HEX:1 | -70.24730 | -17.98529 | 17.115 |
| 569 | MZA 1116 - LT 2 | 571 | ZONA I | MUR/HEX:1 | -70.24724 | -17.98533 | 17.183 |
| 570 | MZA 1116 - LT 3 | 572 | ZONA I | MUR/HEX:1 | -70.24718 | -17.98538 | 15.137 |
| 571 | MZA 1116 - LT 4 | 573 | ZONA I | MUR/HEX:1 | -70.24713 | -17.98542 | 18.317 |
| 572 | MZA 1116 - LT 5 | 574 | ZONA I | MUR/HEX:1 | -70.24707 | -17.98547 | 16.337 |
| 573 | MZA 1116 - LT 6 | 575 | ZONA I | MUR/HEX:1 | -70.24701 | -17.98552 | 16.653 |
| 574 | MZA 1116 - LT 7 | 576 | ZONA I | MUR/HEX:1 | -70.24696 | -17.98556 | 15.390 |
| 575 | MZA 1116 - LT 8 | 577 | ZONA I | MUR/HEX:1 | -70.24690 | -17.98561 | 18.892 |
| 576 | MZA 1116 - LT 9 | 578 | ZONA I | MUR/HEX:1 | -70.24684 | -17.98566 | 16.602 |
| 577 | MZA 1116 - LT 10 | 579 | ZONA I | MUR/HEX:1 | -70.24679 | -17.98570 | 11.948 |
| 578 | MZA 1116 - LT 11 | 580 | ZONA I | MUR/HEX:1 | -70.24674 | -17.98577 | 11.880 |
| 579 | MZA 1116 - LT 12 | 581 | ZONA I | MUR/HEX:1 | -70.24668 | -17.98584 | 21.405 |
| 580 | MZA 1116 - LT 13 | 582 | ZONA I | MUR/HEX:1 | -70.24663 | -17.98589 | 16.002 |
| 581 | MZA 1116 - LT 14 | 583 | ZONA I | MUR/HEX:1 | -70.24657 | -17.98596 | 16.693 |
| 582 | MZA 1116 - LT 15 | 584 | ZONA I | MUR/HEX:1 | -70.24652 | -17.98603 | 16.074 |
| 583 | MZA 1116 - LT 16 | 585 | ZONA I | MUR/HEX:1 | -70.24646 | -17.98610 | 16.845 |
| 584 | MZA 1116 - LT 17 | 586 | ZONA I | MUR/HEX:1 | -70.24641 | -17.98617 | 19.175 |
| 585 | MZA 1116 - LT 18 | 587 | ZONA I | MUR/HEX:1 | -70.24635 | -17.98624 | 16.286 |
| 586 | MZA 1116 - LT 19 | 588 | ZONA I | MUR/HEX:1 | -70.24630 | -17.98631 | 19.580 |
| 587 | MZA 1116 - LT 20 | 589 | ZONA I | MUR/HEX:2 | -70.24703 | -17.98521 | 450.912 |
| 588 | MZA 1116 - LT 21 | 590 | ZONA I | MUR/HEX:1 | -70.24709 | -17.98516 | 15.956 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|------------------------|-----------|-----------|---------------|
| 589 | MZA 1116 - LT 22 | 591 | ZONA I | MUR/HEX:1 | -70.24714 | -17.98511 | 17.741 |
| 590 | MZA 1119 - LT 1 | 593 | ZONA I | MUR/HEX:1 | -70.24624 | -17.98443 | 17.144 |
| 591 | MZA 1119 - LT 2 | 594 | ZONA I | MUR/HEX:1 | -70.24618 | -17.98448 | 17.565 |
| 592 | MZA 1119 - LT 3 | 595 | ZONA I | MUR/HEX:1 | -70.24613 | -17.98452 | 18.542 |
| 593 | MZA 1119 - LT 4 | 596 | ZONA I | MUR/HEX:1 | -70.24607 | -17.98457 | 16.798 |
| 594 | MZA 1119 - LT 5 | 597 | ZONA I | MUR/HEX:1 | -70.24601 | -17.98462 | 17.102 |
| 595 | MZA 1119 - LT 6 | 598 | ZONA I | MUR/HEX:1 | -70.24596 | -17.98466 | 18.018 |
| 596 | MZA 1119 - LT 7 | 599 | ZONA I | MUR/HEX:1 | -70.24590 | -17.98471 | 13.977 |
| 597 | MZA 1119 - LT 8 | 600 | ZONA I | MUR/HEX:1 | -70.24584 | -17.98476 | 18.735 |
| 598 | MZA 1119 - LT 9 | 601 | ZONA I | MUR/HEX:1 | -70.24569 | -17.98459 | 18.263 |
| 599 | MZA 1119 - LT 10 | 602 | ZONA I | MUR/HEX:1 | -70.24575 | -17.98454 | 13.729 |
| 600 | MZA 1119 - LT 11 | 603 | ZONA I | MUR/HEX:1 | -70.24580 | -17.98449 | 19.355 |
| 601 | MZA 1119 - LT 12 | 604 | ZONA I | MUR/HEX:1 | -70.24586 | -17.98445 | 16.212 |
| 602 | MZA 1119 - LT 13 | 605 | ZONA I | MUR/HEX:1 | -70.24592 | -17.98440 | 15.250 |
| 603 | MZA 1119 - LT 14 | 606 | ZONA I | MUR/HEX:1 | -70.24597 | -17.98435 | 16.428 |
| 604 | MZA 1119 - LT 15 | 607 | ZONA I | MUR/HEX:1 | -70.24603 | -17.98431 | 15.740 |
| 605 | MZA 1119 - LT 16 | 608 | ZONA I | MUR/HEX:1 | -70.24609 | -17.98426 | 14.919 |
| 606 | MZA 1120 - LT 1 | 609 | ZONA I | MUR/HEX:1 | -70.24586 | -17.98401 | 16.073 |
| 607 | MZA 1120 - LT 2 | 610 | ZONA I | MUR/HEX:1 | -70.24581 | -17.98406 | 17.984 |
| 608 | MZA 1120 - LT 3 | 611 | ZONA I | MUR/HEX:1 | -70.24575 | -17.98410 | 17.586 |
| 609 | MZA 1120 - LT 4 | 612 | ZONA I | MUR/HEX:1 | -70.24569 | -17.98415 | 17.280 |
| 610 | MZA 1120 - LT 5 | 613 | ZONA I | MUR/HEX:1 | -70.24564 | -17.98420 | 17.267 |
| 611 | MZA 1120 - LT 6 | 614 | ZONA I | MUR/HEX:1 | -70.24558 | -17.98424 | 17.151 |
| 612 | MZA 1120 - LT 7 | 615 | ZONA I | MUR/HEX:1 | -70.24552 | -17.98429 | 16.052 |
| 613 | MZA 1120 - LT 8 | 616 | ZONA I | MUR/HEX:1 | -70.24547 | -17.98434 | 9.073 |
| 614 | MZA 1120 - LT 9 | 617 | ZONA I | MUR/HEX:1 | -70.24531 | -17.98417 | 15.618 |
| 615 | MZA 1120 - LT 10 | 618 | ZONA I | MUR/HEX:1 | -70.24537 | -17.98412 | 17.697 |
| 616 | MZA 1120 - LT 11 | 619 | ZONA I | MUR/HEX:1 | -70.24542 | -17.98407 | 18.620 |
| 617 | MZA 1120 - LT 12 | 620 | ZONA I | MUR/HEX:1 | -70.24548 | -17.98402 | 16.718 |
| 618 | MZA 1120 - LT 13 | 621 | ZONA I | MUR/HEX:1 | -70.24554 | -17.98398 | 18.232 |
| 619 | MZA 1120 - LT 14 | 622 | ZONA I | MUR/HEX:1 | -70.24560 | -17.98393 | 16.565 |
| 620 | MZA 1120 - LT 15 | 623 | ZONA I | MUR/HEX:1 | -70.24565 | -17.98388 | 17.945 |
| 621 | MZA 1120 - LT 16 | 624 | ZONA I | MUR/HEX:1 | -70.24571 | -17.98384 | 16.918 |
| 622 | MZA 1121 - LT 1 | 625 | ZONA I | MUR/HEX:2 | -70.24549 | -17.98359 | 492.630 |
| 623 | MZA 1121 - LT 2 | 626 | ZONA I | MUR/HEX:1 | -70.24543 | -17.98363 | 18.054 |
| 624 | MZA 1121 - LT 3 | 627 | ZONA I | MUR/HEX:1 | -70.24537 | -17.98368 | 17.571 |
| 625 | MZA 1121 - LT 4 | 628 | ZONA I | MUR/HEX:2 | -70.24532 | -17.98373 | 480.758 |
| 626 | MZA 1121 - LT 5 | 629 | ZONA I | MUR/HEX:1 | -70.24526 | -17.98377 | 16.337 |
| 627 | MZA 1121 - LT 6 | 630 | ZONA I | MUR/HEX:1 | -70.24520 | -17.98382 | 16.768 |
| 628 | MZA 1121 - LT 7 | 631 | ZONA I | MUR/HEX:1 | -70.24515 | -17.98387 | 15.858 |
| 629 | MZA 1121 - LT 8 | 632 | ZONA I | MCF/LWAL+DNO/HEX:3/RES | -70.24509 | -17.98392 | 2216.028 |
| 630 | MZA 1121 - LT 9 | 633 | ZONA I | MUR/HEX:1 | -70.24494 | -17.98374 | 20.137 |
| 631 | MZA 1121 - LT 10 | 634 | ZONA I | MUR/HEX:1 | -70.24499 | -17.98370 | 15.372 |
| 632 | MZA 1121 - LT 11 | 635 | ZONA I | MUR/HEX:2 | -70.24505 | -17.98365 | 582.627 |
| 633 | MZA 1121 - LT 12 | 636 | ZONA I | MUR/HEX:1 | -70.24511 | -17.98360 | 14.627 |
| 634 | MZA 1121 - LT 13 | 637 | ZONA I | MUR/HEX:1 | -70.24517 | -17.98356 | 16.261 |
| 635 | MZA 1121 - LT 14 | 638 | ZONA I | MUR/HEX:1 | -70.24522 | -17.98351 | 18.598 |
| 636 | MZA 1121 - LT 15 | 639 | ZONA I | MCF/LWAL+DNO/HEX:3/RES | -70.24527 | -17.98347 | 2081.316 |
| 637 | MZA 1121 - LT 16 | 640 | ZONA I | MCF/LWAL+DNO/HEX:3/RES | -70.24529 | -17.98342 | 1974.337 |
| 638 | MZA 1123 - LT 1 | 641 | ZONA I | MUR/HEX:3 | -70.24483 | -17.98350 | 648.113 |
| 639 | MZA 1123 - LT 2 | 642 | ZONA I | MUR/HEX:2 | -70.24478 | -17.98345 | 479.129 |
| 640 | MZA 1123 - LT 3 | 643 | ZONA I | MUR/HEX:1 | -70.24473 | -17.98339 | 17.656 |
| 641 | MZA 1123 - LT 4 | 644 | ZONA I | MUR/HEX:1 | -70.24468 | -17.98334 | 18.592 |
| 642 | MZA 1123 - LT 5 | 645 | ZONA I | MUR/HEX:1 | -70.24463 | -17.98328 | 17.849 |
| 643 | MZA 1123 - LT 6 | 646 | ZONA I | MUR/HEX:1 | -70.24458 | -17.98323 | 16.549 |
| 644 | MZA 1123 - LT 7 | 647 | ZONA I | MUR/HEX:1 | -70.24453 | -17.98317 | 20.198 |
| 645 | MZA 1123 - LT 8 | 648 | ZONA I | MUR/HEX:1 | -70.24448 | -17.98312 | 16.335 |
| 646 | MZA 1123 - LT 9 | 649 | ZONA I | MUR/HEX:1 | -70.24443 | -17.98306 | 19.828 |
| 647 | MZA 1123 - LT 10 | 650 | ZONA I | MUR/HEX:1 | -70.24438 | -17.98301 | 16.597 |
| 648 | MZA 1123 - LT 11 | 651 | ZONA I | MUR/HEX:1 | -70.24433 | -17.98296 | 17.807 |
| 649 | MZA 1123 - LT 12 | 652 | ZONA I | MUR/HEX:1 | -70.24430 | -17.98288 | 17.862 |
| 650 | MZA 1123 - LT 13 | 653 | ZONA I | MUR/HEX:1 | -70.24425 | -17.98283 | 15.333 |
| 651 | MZA 1123 - LT 14 | 654 | ZONA I | MUR/HEX:1 | -70.24420 | -17.98278 | 20.819 |
| 652 | MZA 1123 - LT 15 | 655 | ZONA I | MUR/HEX:1 | -70.24438 | -17.98272 | 10.844 |
| 653 | MZA 1123 - LT 16 | 656 | ZONA I | MUR/HEX:1 | -70.24443 | -17.98267 | 12.198 |
| 654 | MZA 1123 - LT 17 | 657 | ZONA I | MUR/HEX:1 | -70.24448 | -17.98264 | 12.830 |
| 655 | MZA 1123 - LT 18 | 658 | ZONA I | MUR/HEX:1 | -70.24453 | -17.98260 | 12.047 |
| 656 | MZA 1123 - LT 19 | 659 | ZONA I | MUR/HEX:1 | -70.24458 | -17.98255 | 12.618 |
| 657 | MZA 1123 - LT 20 | 660 | ZONA I | MUR/HEX:3 | -70.24474 | -17.98272 | 428.289 |
| 658 | MZA 1123 - LT 21 | 661 | ZONA I | MUR/HEX:1 | -70.24474 | -17.98282 | 12.276 |
| 659 | MZA 1123 - LT 22 | 662 | ZONA I | MUR/HEX:1 | -70.24464 | -17.98281 | 12.853 |
| 660 | MZA 1123 - LT 23 | 663 | ZONA I | MUR/HEX:1 | -70.24463 | -17.98289 | 13.453 |
| 661 | MZA 1123 - LT 24 | 664 | ZONA I | CR/LFINF+DUC/HEX:1/RES | -70.24454 | -17.98289 | 4.616 |
| 662 | MZA 1124 - LT 1 | 665 | ZONA I | MUR/HEX:1 | -70.24397 | -17.98267 | 15.226 |
| 663 | MZA 1124 - LT 2 | 666 | ZONA I | MUR/HEX:1 | -70.24402 | -17.98262 | 13.380 |
| 664 | MZA 1124 - LT 3 | 667 | ZONA I | MUR/HEX:1 | -70.24408 | -17.98257 | 13.477 |
| 665 | MZA 1124 - LT 4 | 668 | ZONA I | MUR/HEX:1 | -70.24414 | -17.98253 | 13.041 |
| 666 | MZA 1124 - LT 5 | 669 | ZONA I | MUR/HEX:1 | -70.24419 | -17.98248 | 13.984 |
| 667 | MZA 1124 - LT 6 | 670 | ZONA I | MUR/HEX:1 | -70.24425 | -17.98243 | 14.225 |
| 668 | MZA 1124 - LT 7 | 671 | ZONA I | MUR/HEX:1 | -70.24430 | -17.98238 | 12.672 |
| 669 | MZA 1124 - LT 8 | 672 | ZONA I | MUR/HEX:1 | -70.24436 | -17.98233 | 15.176 |
| 670 | MZA 1124 - LT 9 | 673 | ZONA I | MUR/HEX:1 | -70.24424 | -17.98219 | 15.041 |
| 671 | MZA 1124 - LT 10 | 674 | ZONA I | MUR/HEX:2 | -70.24418 | -17.98224 | 400.439 |
| 672 | MZA 1124 - LT 11 | 675 | ZONA I | MUR/HEX:1 | -70.24412 | -17.98229 | 13.490 |
| 673 | MZA 1124 - LT 12 | 676 | ZONA I | MUR/HEX:1 | -70.24407 | -17.98234 | 14.383 |
| 674 | MZA 1124 - LT 13 | 677 | ZONA I | MUR/HEX:1 | -70.24401 | -17.98239 | 13.717 |
| 675 | MZA 1124 - LT 14 | 678 | ZONA I | MUR/HEX:1 | -70.24396 | -17.98244 | 13.672 |
| 676 | MZA 1124 - LT 15 | 679 | ZONA I | MUR/HEX:1 | -70.24390 | -17.98249 | 14.942 |
| 677 | MZA 1124 - LT 16 | 680 | ZONA I | MUR/HEX:1 | -70.24384 | -17.98254 | 14.931 |
| 678 | MZA 1125 - LT 1 | 681 | ZONA I | MUR/HEX:1 | -70.24365 | -17.98232 | 14.079 |
| 679 | MZA 1125 - LT 2 | 682 | ZONA I | MUR/HEX:1 | -70.24371 | -17.98227 | 12.912 |
| 680 | MZA 1125 - LT 3 | 683 | ZONA I | MUR/HEX:1 | -70.24376 | -17.98223 | 13.393 |
| 681 | MZA 1125 - LT 4 | 684 | ZONA I | MUR/HEX:1 | -70.24382 | -17.98218 | 12.970 |
| 682 | MZA 1125 - LT 5 | 685 | ZONA I | MUR/HEX:1 | -70.24387 | -17.98213 | 12.390 |
| 683 | MZA 1125 - LT 6 | 686 | ZONA I | MUR/HEX:1 | -70.24393 | -17.98208 | 13.553 |
| 684 | MZA 1125 - LT 7 | 687 | ZONA I | MUR/HEX:1 | -70.24398 | -17.98203 | 12.459 |
| 685 | MZA 1125 - LT 8 | 688 | ZONA I | MUR/HEX:1 | -70.24404 | -17.98198 | 12.622 |
| 686 | MZA 1125 - LT 9 | 689 | ZONA I | MUR/HEX:1 | -70.24392 | -17.98185 | 12.400 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|-----------|-----------|-----------|---------------|
| 687 | MZA 1125 - LT 10 | 690 | ZONA I | MUR/HEX:1 | -70.24386 | -17.98190 | 12.632 |
| 688 | MZA 1125 - LT 11 | 691 | ZONA I | MUR/HEX:1 | -70.24380 | -17.98195 | 13.819 |
| 689 | MZA 1125 - LT 12 | 692 | ZONA I | MUR/HEX:2 | -70.24375 | -17.98200 | 401.768 |
| 690 | MZA 1125 - LT 13 | 693 | ZONA I | MUR/HEX:2 | -70.24369 | -17.98204 | 387.355 |
| 691 | MZA 1125 - LT 14 | 694 | ZONA I | MUR/HEX:2 | -70.24364 | -17.98209 | 395.307 |
| 692 | MZA 1125 - LT 15 | 695 | ZONA I | MUR/HEX:1 | -70.24358 | -17.98214 | 12.546 |
| 693 | MZA 1125 - LT 16 | 696 | ZONA I | MUR/HEX:1 | -70.24353 | -17.98219 | 13.195 |
| 694 | MZA 1126 - LT 1 | 697 | ZONA I | MUR/HEX:2 | -70.24333 | -17.98198 | 325.909 |
| 695 | MZA 1126 - LT 2 | 698 | ZONA I | MUR/HEX:1 | -70.24337 | -17.98192 | 10.049 |
| 696 | MZA 1126 - LT 3 | 699 | ZONA I | MUR/HEX:1 | -70.24341 | -17.98187 | 10.531 |
| 697 | MZA 1126 - LT 4 | 700 | ZONA I | MUR/HEX:1 | -70.24345 | -17.98182 | 10.515 |
| 698 | MZA 1126 - LT 5 | 701 | ZONA I | MUR/HEX:1 | -70.24348 | -17.98177 | 10.349 |
| 699 | MZA 1126 - LT 6 | 702 | ZONA I | MUR/HEX:2 | -70.24352 | -17.98172 | 306.642 |
| 700 | MZA 1126 - LT 7 | 703 | ZONA I | MUR/HEX:3 | -70.24356 | -17.98166 | 349.023 |
| 701 | MZA 1126 - LT 8 | 704 | ZONA I | MUR/HEX:3 | -70.24360 | -17.98161 | 329.558 |
| 702 | MZA 1126 - LT 9 | 705 | ZONA I | MUR/HEX:1 | -70.24363 | -17.98156 | 12.372 |
| 703 | MZA 1127 - LT 1 | 706 | ZONA I | MUR/HEX:1 | -70.24731 | -17.98733 | 15.471 |
| 704 | MZA 1127 - LT 2 | 707 | ZONA I | MUR/HEX:1 | -70.24724 | -17.98726 | 11.529 |
| 705 | MZA 1127 - LT 3 | 708 | ZONA I | MUR/HEX:2 | -70.24718 | -17.98719 | 430.481 |
| 706 | MZA 1127 - LT 4 | 709 | ZONA I | MUR/HEX:1 | -70.24729 | -17.98714 | 13.986 |
| 707 | MZA 1127 - LT 5 | 710 | ZONA I | MUR/HEX:1 | -70.24735 | -17.98710 | 13.388 |
| 708 | MZA 1127 - LT 6 | 711 | ZONA I | MUR/HEX:1 | -70.24740 | -17.98705 | 13.139 |
| 709 | MZA 1127 - LT 7 | 712 | ZONA I | MUR/HEX:1 | -70.24746 | -17.98701 | 13.370 |
| 710 | MZA 1127 - LT 8 | 713 | ZONA I | MUR/HEX:1 | -70.24752 | -17.98696 | 12.204 |
| 711 | MZA 1127 - LT 9 | 714 | ZONA I | MUR/HEX:1 | -70.24766 | -17.98710 | 12.893 |
| 712 | MZA 1127 - LT 10 | 715 | ZONA I | MUR/HEX:1 | -70.24761 | -17.98714 | 13.465 |
| 713 | MZA 1127 - LT 11 | 716 | ZONA I | MUR/HEX:1 | -70.24754 | -17.98717 | 12.783 |
| 714 | MZA 1127 - LT 12 | 717 | ZONA I | MUR/HEX:1 | -70.24748 | -17.98721 | 13.424 |
| 715 | MZA 1127 - LT 13 | 718 | ZONA I | MUR/HEX:1 | -70.24740 | -17.98725 | 13.272 |
| 716 | MZA 1128 - LT 1 | 719 | ZONA I | MUR/HEX:1 | -70.24708 | -17.98702 | 15.579 |
| 717 | MZA 1128 - LT 2 | 720 | ZONA I | MUR/HEX:1 | -70.24703 | -17.98697 | 14.108 |
| 718 | MZA 1128 - LT 3 | 721 | ZONA I | MUR/HEX:1 | -70.24698 | -17.98691 | 14.522 |
| 719 | MZA 1128 - LT 4 | 722 | ZONA I | MUR/HEX:2 | -70.24692 | -17.98686 | 498.722 |
| 720 | MZA 1128 - LT 5 | 723 | ZONA I | MUR/HEX:1 | -70.24687 | -17.98680 | 14.916 |
| 721 | MZA 1128 - LT 6 | 724 | ZONA I | MUR/HEX:2 | -70.24682 | -17.98674 | 498.947 |
| 722 | MZA 1128 - LT 7 | 725 | ZONA I | MUR/HEX:1 | -70.24698 | -17.98671 | 16.903 |
| 723 | MZA 1128 - LT 8 | 726 | ZONA I | MUR/HEX:1 | -70.24704 | -17.98666 | 16.402 |
| 724 | MZA 1128 - LT 9 | 727 | ZONA I | MUR/HEX:1 | -70.24710 | -17.98661 | 17.783 |
| 725 | MZA 1128 - LT 10 | 728 | ZONA I | MUR/HEX:1 | -70.24715 | -17.98656 | 16.136 |
| 726 | MZA 1128 - LT 11 | 729 | ZONA I | MUR/HEX:1 | -70.24731 | -17.98673 | 14.799 |
| 727 | MZA 1128 - LT 12 | 730 | ZONA I | MUR/HEX:1 | -70.24725 | -17.98678 | 16.432 |
| 728 | MZA 1128 - LT 13 | 731 | ZONA I | MUR/HEX:1 | -70.24720 | -17.98683 | 15.891 |
| 729 | MZA 1128 - LT 14 | 732 | ZONA I | MUR/HEX:1 | -70.24714 | -17.98687 | 15.421 |
| 730 | MZA 1129 - LT 1 | 733 | ZONA I | MUR/HEX:2 | -70.24670 | -17.98662 | 472.889 |
| 731 | MZA 1129 - LT 2 | 734 | ZONA I | MUR/HEX:2 | -70.24665 | -17.98656 | 511.545 |
| 732 | MZA 1129 - LT 3 | 735 | ZONA I | MUR/HEX:1 | -70.24660 | -17.98651 | 16.163 |
| 733 | MZA 1129 - LT 4 | 736 | ZONA I | MUR/HEX:1 | -70.24655 | -17.98646 | 16.119 |
| 734 | MZA 1129 - LT 5 | 737 | ZONA I | MUR/HEX:1 | -70.24650 | -17.98640 | 17.135 |
| 735 | MZA 1129 - LT 6 | 738 | ZONA I | MUR/HEX:1 | -70.24645 | -17.98634 | 18.835 |
| 736 | MZA 1129 - LT 7 | 739 | ZONA I | MUR/HEX:1 | -70.24662 | -17.98632 | 16.011 |
| 737 | MZA 1129 - LT 8 | 740 | ZONA I | MUR/HEX:1 | -70.24668 | -17.98627 | 16.587 |
| 738 | MZA 1129 - LT 9 | 741 | ZONA I | MUR/HEX:1 | -70.24674 | -17.98622 | 17.390 |
| 739 | MZA 1129 - LT 10 | 742 | ZONA I | MUR/HEX:1 | -70.24679 | -17.98617 | 15.896 |
| 740 | MZA 1129 - LT 12 | 744 | ZONA I | MUR/HEX:1 | -70.24689 | -17.98639 | 17.122 |
| 741 | MZA 1129 - LT 13 | 745 | ZONA I | MUR/HEX:1 | -70.24683 | -17.98643 | 16.714 |
| 742 | MZA 1129 - LT 14 | 746 | ZONA I | MUR/HEX:1 | -70.24678 | -17.98648 | 16.627 |
| 743 | MZA 1130 - LT 1 | 747 | ZONA I | MUR/HEX:2 | -70.24632 | -17.98621 | 451.118 |
| 744 | MZA 1130 - LT 2 | 748 | ZONA I | MUR/HEX:1 | -70.24627 | -17.98615 | 16.413 |
| 745 | MZA 1130 - LT 3 | 749 | ZONA I | MUR/HEX:1 | -70.24622 | -17.98609 | 16.630 |
| 746 | MZA 1130 - LT 4 | 750 | ZONA I | MUR/HEX:1 | -70.24617 | -17.98604 | 15.814 |
| 747 | MZA 1130 - LT 5 | 751 | ZONA I | MUR/HEX:1 | -70.24612 | -17.98598 | 15.748 |
| 748 | MZA 1130 - LT 6 | 752 | ZONA I | MUR/HEX:1 | -70.24607 | -17.98592 | 17.397 |
| 749 | MZA 1130 - LT 7 | 753 | ZONA I | MUR/HEX:2 | -70.24623 | -17.98588 | 523.482 |
| 750 | MZA 1130 - LT 8 | 754 | ZONA I | MUR/HEX:2 | -70.24629 | -17.98583 | 519.026 |
| 751 | MZA 1130 - LT 9 | 755 | ZONA I | MUR/HEX:1 | -70.24634 | -17.98578 | 18.365 |
| 752 | MZA 1130 - LT 10 | 756 | ZONA I | MUR/HEX:1 | -70.24639 | -17.98574 | 16.954 |
| 753 | MZA 1130 - LT 11 | 757 | ZONA I | MUR/HEX:1 | -70.24655 | -17.98591 | 16.048 |
| 754 | MZA 1130 - LT 12 | 758 | ZONA I | MUR/HEX:1 | -70.24650 | -17.98596 | 18.343 |
| 755 | MZA 1130 - LT 13 | 759 | ZONA I | MUR/HEX:1 | -70.24644 | -17.98600 | 16.739 |
| 756 | MZA 1130 - LT 14 | 760 | ZONA I | MUR/HEX:1 | -70.24639 | -17.98605 | 15.704 |
| 757 | MZA 1131 - LT 1 | 761 | ZONA I | MUR/HEX:1 | -70.24594 | -17.98578 | 15.947 |
| 758 | MZA 1131 - LT 2 | 762 | ZONA I | MUR/HEX:1 | -70.24589 | -17.98572 | 14.908 |
| 759 | MZA 1131 - LT 3 | 763 | ZONA I | MUR/HEX:1 | -70.24584 | -17.98567 | 18.323 |
| 760 | MZA 1131 - LT 4 | 764 | ZONA I | MUR/HEX:1 | -70.24579 | -17.98561 | 17.274 |
| 761 | MZA 1131 - LT 5 | 765 | ZONA I | MUR/HEX:1 | -70.24574 | -17.98556 | 15.381 |
| 762 | MZA 1131 - LT 6 | 766 | ZONA I | MUR/HEX:1 | -70.24591 | -17.98549 | 16.699 |
| 763 | MZA 1131 - LT 7 | 767 | ZONA I | MUR/HEX:1 | -70.24598 | -17.98543 | 17.056 |
| 764 | MZA 1131 - LT 8 | 768 | ZONA I | MUR/HEX:2 | -70.24605 | -17.98537 | 464.405 |
| 765 | MZA 1131 - LT 9 | 769 | ZONA I | MUR/HEX:1 | -70.24617 | -17.98551 | 14.617 |
| 766 | MZA 1131 - LT 10 | 770 | ZONA I | MUR/HEX:1 | -70.24610 | -17.98557 | 17.561 |
| 767 | MZA 1131 - LT 11 | 771 | ZONA I | MUR/HEX:1 | -70.24603 | -17.98563 | 16.762 |
| 768 | MZA 1132 - LT 1 | 772 | ZONA I | MUR/HEX:1 | -70.24562 | -17.98542 | 16.201 |
| 769 | MZA 1132 - LT 2 | 773 | ZONA I | MUR/HEX:1 | -70.24557 | -17.98536 | 17.188 |
| 770 | MZA 1132 - LT 3 | 774 | ZONA I | MUR/HEX:1 | -70.24551 | -17.98531 | 15.953 |
| 771 | MZA 1132 - LT 4 | 775 | ZONA I | MUR/HEX:1 | -70.24547 | -17.98526 | 16.339 |
| 772 | MZA 1132 - LT 5 | 776 | ZONA I | MUR/HEX:1 | -70.24542 | -17.98520 | 17.863 |
| 773 | MZA 1132 - LT 6 | 777 | ZONA I | MUR/HEX:1 | -70.24558 | -17.98514 | 17.322 |
| 774 | MZA 1132 - LT 7 | 778 | ZONA I | MUR/HEX:1 | -70.24565 | -17.98508 | 17.942 |
| 775 | MZA 1132 - LT 8 | 779 | ZONA I | MUR/HEX:1 | -70.24572 | -17.98502 | 16.191 |
| 776 | MZA 1132 - LT 9 | 780 | ZONA I | MUR/HEX:1 | -70.24585 | -17.98515 | 16.087 |
| 777 | MZA 1132 - LT 10 | 781 | ZONA I | MUR/HEX:1 | -70.24578 | -17.98521 | 16.904 |
| 778 | MZA 1132 - LT 11 | 782 | ZONA I | MUR/HEX:1 | -70.24571 | -17.98527 | 17.515 |
| 779 | MZA 1134 - LT 1 | 783 | ZONA I | MUR/HEX:1 | -70.24503 | -17.98480 | 15.817 |
| 780 | MZA 1134 - LT 2 | 784 | ZONA I | MUR/HEX:1 | -70.24497 | -17.98474 | 18.398 |
| 781 | MZA 1134 - LT 3 | 785 | ZONA I | MUR/HEX:1 | -70.24492 | -17.98468 | 17.716 |
| 782 | MZA 1134 - LT 4 | 786 | ZONA I | MUR/HEX:1 | -70.24487 | -17.98463 | 18.137 |
| 783 | MZA 1134 - LT 5 | 787 | ZONA I | MUR/HEX:2 | -70.24482 | -17.98457 | 497.799 |
| 784 | MZA 1134 - LT 6 | 788 | ZONA I | MUR/HEX:1 | -70.24477 | -17.98451 | 15.837 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|-----------|-----------|-----------|---------------|
| 785 | MZA 1134 - LT 7 | 789 | ZONA I | MUR/HEX:1 | -70.24493 | -17.98447 | 16.820 |
| 786 | MZA 1134 - LT 8 | 790 | ZONA I | MUR/HEX:1 | -70.24499 | -17.98442 | 16.309 |
| 787 | MZA 1134 - LT 9 | 791 | ZONA I | MUR/HEX:1 | -70.24504 | -17.98438 | 16.834 |
| 788 | MZA 1134 - LT 10 | 792 | ZONA I | MUR/HEX:1 | -70.24510 | -17.98433 | 15.022 |
| 789 | MZA 1134 - LT 11 | 793 | ZONA I | MUR/HEX:1 | -70.24526 | -17.98450 | 15.734 |
| 790 | MZA 1134 - LT 12 | 794 | ZONA I | MUR/HEX:1 | -70.24520 | -17.98455 | 16.702 |
| 791 | MZA 1134 - LT 13 | 795 | ZONA I | MUR/HEX:1 | -70.24515 | -17.98460 | 17.245 |
| 792 | MZA 1134 - LT 14 | 796 | ZONA I | MUR/HEX:1 | -70.24509 | -17.98464 | 16.969 |
| 793 | MZA 1135 - LT 1 | 797 | ZONA I | MUR/HEX:1 | -70.24465 | -17.98438 | 15.851 |
| 794 | MZA 1135 - LT 2 | 798 | ZONA I | MUR/HEX:1 | -70.24460 | -17.98432 | 17.760 |
| 795 | MZA 1135 - LT 3 | 799 | ZONA I | MUR/HEX:1 | -70.24455 | -17.98426 | 15.364 |
| 796 | MZA 1135 - LT 4 | 800 | ZONA I | MUR/HEX:1 | -70.24449 | -17.98421 | 18.484 |
| 797 | MZA 1135 - LT 5 | 801 | ZONA I | MUR/HEX:1 | -70.24444 | -17.98416 | 17.638 |
| 798 | MZA 1135 - LT 6 | 802 | ZONA I | MUR/HEX:2 | -70.24439 | -17.98410 | 500.869 |
| 799 | MZA 1135 - LT 7 | 803 | ZONA I | MUR/HEX:1 | -70.24455 | -17.98405 | 16.700 |
| 800 | MZA 1135 - LT 8 | 804 | ZONA I | MUR/HEX:1 | -70.24461 | -17.98401 | 17.714 |
| 801 | MZA 1135 - LT 9 | 805 | ZONA I | MUR/HEX:1 | -70.24466 | -17.98396 | 16.977 |
| 802 | MZA 1135 - LT 10 | 806 | ZONA I | MUR/HEX:1 | -70.24471 | -17.98391 | 15.323 |
| 803 | MZA 1135 - LT 11 | 807 | ZONA I | MUR/HEX:2 | -70.24487 | -17.98408 | 443.370 |
| 804 | MZA 1135 - LT 12 | 808 | ZONA I | MUR/HEX:1 | -70.24482 | -17.98413 | 16.594 |
| 805 | MZA 1135 - LT 13 | 809 | ZONA I | MUR/HEX:1 | -70.24476 | -17.98417 | 17.948 |
| 806 | MZA 1135 - LT 14 | 810 | ZONA I | MUR/HEX:1 | -70.24471 | -17.98422 | 16.405 |
| 807 | MZA 1136 - LT 1 | 811 | ZONA I | MUR/HEX:1 | -70.24427 | -17.98396 | 16.397 |
| 808 | MZA 1136 - LT 2 | 812 | ZONA I | MUR/HEX:1 | -70.24422 | -17.98391 | 16.482 |
| 809 | MZA 1136 - LT 3 | 813 | ZONA I | MUR/HEX:1 | -70.24417 | -17.98385 | 19.092 |
| 810 | MZA 1136 - LT 4 | 814 | ZONA I | MUR/HEX:1 | -70.24411 | -17.98380 | 16.586 |
| 811 | MZA 1136 - LT 5 | 815 | ZONA I | MUR/HEX:1 | -70.24406 | -17.98374 | 19.097 |
| 812 | MZA 1136 - LT 6 | 816 | ZONA I | MUR/HEX:1 | -70.24401 | -17.98368 | 16.636 |
| 813 | MZA 1136 - LT 7 | 817 | ZONA I | MUR/HEX:1 | -70.24417 | -17.98364 | 16.381 |
| 814 | MZA 1136 - LT 8 | 818 | ZONA I | MUR/HEX:1 | -70.24422 | -17.98359 | 16.255 |
| 815 | MZA 1136 - LT 9 | 819 | ZONA I | MUR/HEX:1 | -70.24427 | -17.98354 | 16.272 |
| 816 | MZA 1136 - LT 10 | 820 | ZONA I | MUR/HEX:1 | -70.24433 | -17.98349 | 15.841 |
| 817 | MZA 1136 - LT 11 | 821 | ZONA I | MUR/HEX:1 | -70.24448 | -17.98366 | 16.711 |
| 818 | MZA 1136 - LT 12 | 822 | ZONA I | MUR/HEX:1 | -70.24443 | -17.98371 | 16.497 |
| 819 | MZA 1136 - LT 13 | 823 | ZONA I | MUR/HEX:2 | -70.24438 | -17.98375 | 494.165 |
| 820 | MZA 1136 - LT 14 | 824 | ZONA I | MUR/HEX:1 | -70.24432 | -17.98380 | 16.634 |
| 821 | MZA 1137 - LT 1 | 825 | ZONA I | MUR/HEX:1 | -70.24385 | -17.98357 | 16.990 |
| 822 | MZA 1137 - LT 2 | 826 | ZONA I | MUR/HEX:1 | -70.24383 | -17.98349 | 16.716 |
| 823 | MZA 1137 - LT 3 | 827 | ZONA I | MUR/HEX:1 | -70.24378 | -17.98343 | 17.281 |
| 824 | MZA 1137 - LT 4 | 828 | ZONA I | MUR/HEX:1 | -70.24372 | -17.98338 | 16.609 |
| 825 | MZA 1137 - LT 5 | 829 | ZONA I | MUR/HEX:1 | -70.24367 | -17.98332 | 16.526 |
| 826 | MZA 1137 - LT 6 | 830 | ZONA I | MUR/HEX:1 | -70.24364 | -17.98325 | 17.529 |
| 827 | MZA 1137 - LT 7 | 831 | ZONA I | MUR/HEX:1 | -70.24378 | -17.98322 | 16.223 |
| 828 | MZA 1137 - LT 8 | 832 | ZONA I | MUR/HEX:1 | -70.24384 | -17.98317 | 17.883 |
| 829 | MZA 1137 - LT 9 | 833 | ZONA I | MUR/HEX:1 | -70.24389 | -17.98312 | 15.573 |
| 830 | MZA 1137 - LT 10 | 834 | ZONA I | MUR/HEX:1 | -70.24394 | -17.98307 | 17.114 |
| 831 | MZA 1137 - LT 11 | 835 | ZONA I | MUR/HEX:1 | -70.24410 | -17.98324 | 15.703 |
| 832 | MZA 1137 - LT 12 | 836 | ZONA I | MUR/HEX:1 | -70.24405 | -17.98329 | 16.100 |
| 833 | MZA 1137 - LT 13 | 837 | ZONA I | MUR/HEX:1 | -70.24399 | -17.98334 | 15.287 |
| 834 | MZA 1137 - LT 14 | 838 | ZONA I | MUR/HEX:1 | -70.24394 | -17.98339 | 16.055 |
| 835 | MZA 1138 - LT 1 | 839 | ZONA I | MUR/HEX:1 | -70.24346 | -17.98316 | 17.614 |
| 836 | MZA 1138 - LT 2 | 840 | ZONA I | MUR/HEX:1 | -70.24344 | -17.98307 | 15.156 |
| 837 | MZA 1138 - LT 3 | 841 | ZONA I | MUR/HEX:1 | -70.24339 | -17.98302 | 17.712 |
| 838 | MZA 1138 - LT 4 | 842 | ZONA I | MUR/HEX:1 | -70.24333 | -17.98296 | 15.483 |
| 839 | MZA 1138 - LT 5 | 843 | ZONA I | MUR/HEX:2 | -70.24328 | -17.98291 | 497.020 |
| 840 | MZA 1138 - LT 6 | 844 | ZONA I | MUR/HEX:1 | -70.24323 | -17.98285 | 15.922 |
| 841 | MZA 1138 - LT 7 | 845 | ZONA I | MUR/HEX:1 | -70.24338 | -17.98281 | 15.153 |
| 842 | MZA 1138 - LT 8 | 846 | ZONA I | MUR/HEX:1 | -70.24344 | -17.98276 | 15.875 |
| 843 | MZA 1138 - LT 9 | 847 | ZONA I | MUR/HEX:1 | -70.24350 | -17.98271 | 14.645 |
| 844 | MZA 1138 - LT 10 | 848 | ZONA I | MUR/HEX:2 | -70.24355 | -17.98265 | 438.492 |
| 845 | MZA 1138 - LT 11 | 849 | ZONA I | MUR/HEX:1 | -70.24371 | -17.98282 | 15.534 |
| 846 | MZA 1138 - LT 12 | 850 | ZONA I | MUR/HEX:1 | -70.24365 | -17.98287 | 15.913 |
| 847 | MZA 1138 - LT 13 | 851 | ZONA I | MUR/HEX:1 | -70.24360 | -17.98292 | 14.716 |
| 848 | MZA 1138 - LT 14 | 852 | ZONA I | MUR/HEX:1 | -70.24355 | -17.98297 | 16.270 |
| 849 | MZA 1140 - LT 1 | 854 | ZONA I | MUR/HEX:1 | -70.24417 | -17.98438 | 14.789 |
| 850 | MZA 1140 - LT 2 | 855 | ZONA I | MUR/HEX:1 | -70.24409 | -17.98448 | 15.908 |
| 851 | MZA 1141 - LT 1 | 856 | ZONA I | MUR/HEX:1 | -70.24386 | -17.98408 | 19.117 |
| 852 | MZA 1141 - LT 2 | 857 | ZONA I | MUR/HEX:1 | -70.24394 | -17.98416 | 20.594 |
| 853 | MZA 1141 - LT 3 | 858 | ZONA I | MUR/HEX:1 | -70.24404 | -17.98424 | 17.505 |
| 854 | MZA 1141 - LT 4 | 859 | ZONA I | MUR/HEX:1 | -70.24395 | -17.98431 | 14.656 |
| 855 | MZA 1141 - LT 5 | 860 | ZONA I | MUR/HEX:1 | -70.24390 | -17.98438 | 15.515 |
| 856 | MZA 1141 - LT 6 | 861 | ZONA I | MUR/HEX:1 | -70.24376 | -17.98428 | 13.565 |
| 857 | MZA 1141 - LT 7 | 862 | ZONA I | MUR/HEX:1 | -70.24381 | -17.98421 | 14.847 |
| 858 | MZA 1142 - LT 1 | 863 | ZONA I | MUR/HEX:1 | -70.24366 | -17.98385 | 12.457 |
| 859 | MZA 1142 - LT 2 | 864 | ZONA I | MUR/HEX:1 | -70.24372 | -17.98390 | 12.216 |
| 860 | MZA 1142 - LT 3 | 865 | ZONA I | MUR/HEX:1 | -70.24377 | -17.98395 | 13.590 |
| 861 | MZA 1142 - LT 4 | 866 | ZONA I | MUR/HEX:2 | -70.24364 | -17.98399 | 408.024 |
| 862 | MZA 1142 - LT 5 | 867 | ZONA I | MUR/HEX:1 | -70.24361 | -17.98404 | 14.219 |
| 863 | MZA 1142 - LT 6 | 868 | ZONA I | MUR/HEX:1 | -70.24356 | -17.98409 | 14.570 |
| 864 | MZA 1142 - LT 7 | 869 | ZONA I | MUR/HEX:2 | -70.24353 | -17.98414 | 396.834 |
| 865 | MZA 1143 - LT 1 | 870 | ZONA I | MUR/HEX:1 | -70.24332 | -17.98348 | 11.782 |
| 866 | MZA 1143 - LT 2 | 871 | ZONA I | MUR/HEX:2 | -70.24339 | -17.98354 | 390.173 |
| 867 | MZA 1143 - LT 3 | 872 | ZONA I | MUR/HEX:1 | -70.24347 | -17.98360 | 8.223 |
| 868 | MZA 1143 - LT 4 | 873 | ZONA I | MUR/HEX:1 | -70.24356 | -17.98367 | 10.185 |
| 869 | MZA 1143 - LT 5 | 874 | ZONA I | MUR/HEX:1 | -70.24348 | -17.98372 | 14.322 |
| 870 | MZA 1143 - LT 6 | 875 | ZONA I | MUR/HEX:1 | -70.24344 | -17.98377 | 13.168 |
| 871 | MZA 1143 - LT 7 | 876 | ZONA I | MUR/HEX:1 | -70.24340 | -17.98382 | 13.646 |
| 872 | MZA 1143 - LT 8 | 877 | ZONA I | MUR/HEX:1 | -70.24336 | -17.98387 | 13.412 |
| 873 | MZA 1143 - LT 9 | 878 | ZONA I | MUR/HEX:1 | -70.24332 | -17.98392 | 13.137 |
| 874 | MZA 1143 - LT 10 | 879 | ZONA I | MUR/HEX:1 | -70.24328 | -17.98398 | 13.614 |
| 875 | MZA 1143 - LT 11 | 880 | ZONA I | MUR/HEX:1 | -70.24311 | -17.98386 | 14.226 |
| 876 | MZA 1143 - LT 12 | 881 | ZONA I | MUR/HEX:1 | -70.24315 | -17.98381 | 13.300 |
| 877 | MZA 1143 - LT 13 | 882 | ZONA I | MUR/HEX:1 | -70.24319 | -17.98376 | 13.791 |
| 878 | MZA 1143 - LT 14 | 883 | ZONA I | MUR/HEX:1 | -70.24322 | -17.98370 | 13.515 |
| 879 | MZA 1143 - LT 15 | 884 | ZONA I | MUR/HEX:2 | -70.24326 | -17.98365 | 395.331 |
| 880 | MZA 1143 - LT 16 | 885 | ZONA I | MUR/HEX:1 | -70.24330 | -17.98360 | 13.820 |
| 881 | MZA 1144 - LT 1 | 886 | ZONA I | MUR/HEX:2 | -70.24294 | -17.98314 | 491.469 |
| 882 | MZA 1144 - LT 2 | 887 | ZONA I | MUR/HEX:1 | -70.24302 | -17.98320 | 16.659 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by="OpenQuake engine 3.16.1", start_date="2023-06-02T22:33:01", checksum="1181138371, investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|------------------------|-----------|-----------|---------------|
| 883 | MZA 1144 - LT 3 | 888 | ZONA I | MUR/HEX:1 | -70.24309 | -17.98326 | 14.536 |
| 884 | MZA 1144 - LT 4 | 889 | ZONA I | MUR/HEX:1 | -70.24318 | -17.98334 | 17.649 |
| 885 | MZA 1144 - LT 5 | 890 | ZONA I | MUR/HEX:1 | -70.24310 | -17.98339 | 17.188 |
| 886 | MZA 1144 - LT 6 | 891 | ZONA I | MUR/HEX:2 | -70.24306 | -17.98344 | 395.503 |
| 887 | MZA 1144 - LT 7 | 892 | ZONA I | MUR/HEX:2 | -70.24302 | -17.98349 | 398.710 |
| 888 | MZA 1144 - LT 8 | 893 | ZONA I | MUR/HEX:1 | -70.24299 | -17.98354 | 13.646 |
| 889 | MZA 1144 - LT 9 | 894 | ZONA I | MUR/HEX:1 | -70.24295 | -17.98359 | 13.544 |
| 890 | MZA 1144 - LT 10 | 895 | ZONA I | MUR/HEX:1 | -70.24291 | -17.98364 | 14.369 |
| 891 | MZA 1144 - LT 11 | 896 | ZONA I | MUR/HEX:1 | -70.24287 | -17.98369 | 13.624 |
| 892 | MZA 1144 - LT 12 | 897 | ZONA I | MUR/HEX:1 | -70.24270 | -17.98358 | 14.216 |
| 893 | MZA 1144 - LT 13 | 898 | ZONA I | MUR/HEX:1 | -70.24273 | -17.98352 | 14.030 |
| 894 | MZA 1144 - LT 14 | 899 | ZONA I | MUR/HEX:1 | -70.24277 | -17.98347 | 13.412 |
| 895 | MZA 1144 - LT 15 | 900 | ZONA I | MUR/HEX:1 | -70.24281 | -17.98342 | 14.554 |
| 896 | MZA 1144 - LT 16 | 901 | ZONA I | MUR/HEX:1 | -70.24285 | -17.98337 | 13.038 |
| 897 | MZA 1144 - LT 17 | 902 | ZONA I | MUR/HEX:1 | -70.24288 | -17.98332 | 13.980 |
| 898 | MZA 1144 - LT 18 | 903 | ZONA I | MUR/HEX:1 | -70.24292 | -17.98327 | 13.365 |
| 899 | MZA 1146 - LT 1 | 904 | ZONA I | MUR/HEX:1 | -70.24267 | -17.98324 | 15.100 |
| 900 | MZA 1146 - LT 2 | 905 | ZONA I | MUR/HEX:1 | -70.24255 | -17.98340 | 15.586 |
| 901 | MZA 1146 - LT 3 | 906 | ZONA I | MUR/HEX:1 | -70.24241 | -17.98338 | 13.415 |
| 902 | MZA 1146 - LT 4 | 907 | ZONA I | MUR/HEX:1 | -70.24245 | -17.98332 | 13.602 |
| 903 | MZA 1146 - LT 5 | 908 | ZONA I | MUR/HEX:1 | -70.24250 | -17.98326 | 13.551 |
| 904 | MZA 1146 - LT 6 | 909 | ZONA I | MUR/HEX:1 | -70.24254 | -17.98319 | 11.837 |
| 905 | MZA 1146 - LT 7 | 910 | ZONA I | MUR/HEX:1 | -70.24259 | -17.98313 | 13.496 |
| 906 | MZA 1149 - LT 1 | 911 | ZONA I | MUR/HEX:1 | -70.24312 | -17.98409 | 8.338 |
| 907 | MZA 1149 - LT 2 | 912 | ZONA I | MUR/HEX:1 | -70.24318 | -17.98412 | 10.522 |
| 908 | MZA 1149 - LT 3 | 913 | ZONA I | MUR/HEX:1 | -70.24323 | -17.98416 | 10.426 |
| 909 | MZA 1149 - LT 4 | 914 | ZONA I | MUR/HEX:1 | -70.24329 | -17.98419 | 8.790 |
| 910 | MZA 1149 - LT 5 | 915 | ZONA I | MUR/HEX:1 | -70.24334 | -17.98423 | 9.556 |
| 911 | MZA 1149 - LT 6 | 916 | ZONA I | MUR/HEX:1 | -70.24340 | -17.98426 | 10.077 |
| 912 | MZA 1149 - LT 7 | 917 | ZONA I | MUR/HEX:3 | -70.24345 | -17.98430 | 342.049 |
| 913 | MZA 1149 - LT 8 | 918 | ZONA I | MUR/HEX:1 | -70.24351 | -17.98434 | 9.069 |
| 914 | MZA 1149 - LT 9 | 919 | ZONA I | MUR/HEX:1 | -70.24356 | -17.98437 | 10.438 |
| 915 | MZA 1149 - LT 10 | 920 | ZONA I | MUR/HEX:1 | -70.24361 | -17.98441 | 9.504 |
| 916 | MZA 1149 - LT 11 | 921 | ZONA I | MUR/HEX:2 | -70.24367 | -17.98444 | 297.851 |
| 917 | MZA 1149 - LT 12 | 922 | ZONA I | MUR/HEX:1 | -70.24372 | -17.98448 | 9.477 |
| 918 | MZA 1149 - LT 13 | 923 | ZONA I | MUR/HEX:2 | -70.24378 | -17.98451 | 265.569 |
| 919 | MZA 1149 - LT 14 | 924 | ZONA I | MUR/HEX:1 | -70.24383 | -17.98455 | 10.319 |
| 920 | MZA 1149 - LT 15 | 925 | ZONA I | MUR/HEX:1 | -70.24389 | -17.98459 | 10.050 |
| 921 | MZA 1149 - LT 16 | 926 | ZONA I | MUR/HEX:1 | -70.24394 | -17.98462 | 8.625 |
| 922 | MZA 1149 - LT 17 | 927 | ZONA I | MCF/LWAL+DNO/HEX:1/RES | -70.24400 | -17.98466 | 16.113 |
| 923 | MZA 1150 - LT 1 | 928 | ZONA I | MUR/HEX:1 | -70.24225 | -17.98350 | 12.704 |
| 924 | MZA 1150 - LT 2 | 929 | ZONA I | MUR/HEX:1 | -70.24230 | -17.98354 | 11.736 |
| 925 | MZA 1150 - LT 3 | 930 | ZONA I | MUR/HEX:1 | -70.24236 | -17.98357 | 11.098 |
| 926 | MZA 1150 - LT 4 | 931 | ZONA I | MUR/HEX:1 | -70.24241 | -17.98361 | 11.710 |
| 927 | MZA 1150 - LT 5 | 932 | ZONA I | MUR/HEX:1 | -70.24247 | -17.98365 | 12.425 |
| 928 | MZA 1150 - LT 6 | 933 | ZONA I | MUR/HEX:2 | -70.24252 | -17.98369 | 337.323 |
| 929 | MZA 1150 - LT 7 | 934 | ZONA I | MUR/HEX:1 | -70.24257 | -17.98372 | 10.841 |
| 930 | MZA 1150 - LT 8 | 935 | ZONA I | MUR/HEX:1 | -70.24263 | -17.98376 | 12.091 |
| 931 | MZA 1150 - LT 9 | 936 | ZONA I | MUR/HEX:1 | -70.24268 | -17.98379 | 10.998 |
| 932 | MZA 1150 - LT 10 | 937 | ZONA I | MUR/HEX:2 | -70.24274 | -17.98383 | 322.302 |
| 933 | MZA 1150 - LT 11 | 938 | ZONA I | MUR/HEX:1 | -70.24279 | -17.98386 | 11.640 |
| 934 | MZA 1150 - LT 12 | 939 | ZONA I | MUR/HEX:1 | -70.24285 | -17.98390 | 10.934 |
| 935 | MZA 1150 - LT 13 | 940 | ZONA I | MUR/HEX:1 | -70.24290 | -17.98394 | 11.295 |
| 936 | MZA 1150 - LT 14 | 941 | ZONA I | MUR/HEX:1 | -70.24295 | -17.98397 | 10.838 |
| 937 | MZA 1150 - LT 15 | 942 | ZONA I | MUR/HEX:2 | -70.24301 | -17.98401 | 369.064 |
| 938 | MZA 1151 - LT 1 | 943 | ZONA I | MUR/HEX:1 | -70.24390 | -17.98504 | 11.864 |
| 939 | MZA 1151 - LT 2 | 944 | ZONA I | MUR/HEX:1 | -70.24395 | -17.98508 | 10.651 |
| 940 | MZA 1151 - LT 3 | 945 | ZONA I | MUR/HEX:1 | -70.24400 | -17.98512 | 9.849 |
| 941 | MZA 1151 - LT 4 | 946 | ZONA I | MUR/HEX:1 | -70.24406 | -17.98515 | 10.599 |
| 942 | MZA 1151 - LT 5 | 947 | ZONA I | MUR/HEX:1 | -70.24411 | -17.98519 | 11.322 |
| 943 | MZA 1151 - LT 6 | 948 | ZONA I | MUR/HEX:1 | -70.24416 | -17.98522 | 10.787 |
| 944 | MZA 1151 - LT 7 | 949 | ZONA I | MUR/HEX:1 | -70.24422 | -17.98526 | 10.181 |
| 945 | MZA 1151 - LT 8 | 950 | ZONA I | MUR/HEX:3 | -70.24427 | -17.98530 | 319.781 |
| 946 | MZA 1151 - LT 9 | 951 | ZONA I | MUR/HEX:1 | -70.24433 | -17.98533 | 9.425 |
| 947 | MZA 1151 - LT 10 | 952 | ZONA I | MUR/HEX:1 | -70.24439 | -17.98536 | 9.732 |
| 948 | MZA 1151 - LT 11 | 953 | ZONA I | MUR/HEX:1 | -70.24445 | -17.98540 | 9.679 |
| 949 | MZA 1151 - LT 12 | 954 | ZONA I | MUR/HEX:1 | -70.24450 | -17.98544 | 9.581 |
| 950 | MZA 1151 - LT 13 | 955 | ZONA I | MUR/HEX:1 | -70.24455 | -17.98548 | 9.433 |
| 951 | MZA 1151 - LT 14 | 956 | ZONA I | MUR/HEX:1 | -70.24460 | -17.98551 | 9.231 |
| 952 | MZA 1151 - LT 15 | 957 | ZONA I | MUR/HEX:1 | -70.24465 | -17.98555 | 8.384 |
| 953 | MZA 1151 - LT 16 | 958 | ZONA I | MUR/HEX:1 | -70.24471 | -17.98558 | 8.943 |
| 954 | MZA 1151 - LT 17 | 959 | ZONA I | MUR/HEX:1 | -70.24476 | -17.98563 | 10.376 |
| 955 | MZA 1151 - LT 18 | 960 | ZONA I | MUR/HEX:1 | -70.24401 | -17.98498 | 11.230 |
| 956 | MZA 1151 - LT 19 | 961 | ZONA I | MUR/HEX:2 | -70.24406 | -17.98493 | 361.258 |
| 957 | MZA 1151 - LT 20 | 962 | ZONA I | MUR/HEX:1 | -70.24414 | -17.98503 | 11.131 |
| 958 | MZA 1151 - LT 21 | 963 | ZONA I | MUR/HEX:1 | -70.24420 | -17.98508 | 9.497 |
| 959 | MZA 1151 - LT 22 | 964 | ZONA I | MUR/HEX:1 | -70.24426 | -17.98512 | 8.483 |
| 960 | MZA 1151 - LT 23 | 965 | ZONA I | MUR/HEX:1 | -70.24431 | -17.98515 | 9.041 |
| 961 | MZA 1151 - LT 24 | 966 | ZONA I | MUR/HEX:2 | -70.24436 | -17.98519 | 266.074 |
| 962 | MZA 1151 - LT 25 | 967 | ZONA I | MUR/HEX:1 | -70.24442 | -17.98522 | 8.337 |
| 963 | MZA 1151 - LT 26 | 968 | ZONA I | MUR/HEX:1 | -70.24448 | -17.98525 | 8.477 |
| 964 | MZA 1151 - LT 27 | 969 | ZONA I | MUR/HEX:2 | -70.24454 | -17.98529 | 250.014 |
| 965 | MZA 1151 - LT 28 | 970 | ZONA I | MUR/HEX:1 | -70.24459 | -17.98534 | 8.384 |
| 966 | MZA 1151 - LT 29 | 971 | ZONA I | MUR/HEX:1 | -70.24464 | -17.98537 | 7.985 |
| 967 | MZA 1151 - LT 30 | 972 | ZONA I | MUR/HEX:1 | -70.24470 | -17.98541 | 8.063 |
| 968 | MZA 1151 - LT 31 | 973 | ZONA I | MUR/HEX:2 | -70.24476 | -17.98545 | 221.674 |
| 969 | MZA 1151 - LT 32 | 974 | ZONA I | MUR/HEX:1 | -70.24480 | -17.98549 | 8.057 |
| 970 | MZA 1151 - LT 33 | 975 | ZONA I | MUR/HEX:1 | -70.24486 | -17.98553 | 9.675 |
| 971 | MZA 1152 - LT 1 | 976 | ZONA I | MUR/HEX:1 | -70.24290 | -17.98440 | 10.169 |
| 972 | MZA 1152 - LT 2 | 977 | ZONA I | MUR/HEX:1 | -70.24295 | -17.98444 | 9.489 |
| 973 | MZA 1152 - LT 3 | 978 | ZONA I | MUR/HEX:1 | -70.24301 | -17.98447 | 10.038 |
| 974 | MZA 1152 - LT 4 | 979 | ZONA I | MUR/HEX:2 | -70.24306 | -17.98451 | 296.407 |
| 975 | MZA 1152 - LT 5 | 980 | ZONA I | MUR/HEX:1 | -70.24312 | -17.98455 | 9.717 |
| 976 | MZA 1152 - LT 6 | 981 | ZONA I | MUR/HEX:1 | -70.24317 | -17.98458 | 9.752 |
| 977 | MZA 1152 - LT 7 | 982 | ZONA I | MUR/HEX:1 | -70.24323 | -17.98462 | 9.097 |
| 978 | MZA 1152 - LT 8 | 983 | ZONA I | MUR/HEX:2 | -70.24328 | -17.98465 | 305.529 |
| 979 | MZA 1152 - LT 9 | 984 | ZONA I | MUR/HEX:2 | -70.24334 | -17.98469 | 283.946 |
| 980 | MZA 1152 - LT 10 | 985 | ZONA I | MUR/HEX:1 | -70.24339 | -17.98472 | 9.681 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|-----------|-----------|-----------|---------------|
| 981 | MZA 1152 - LT 11 | 986 | ZONA I | MUR/HEX:1 | -70.24345 | -17.98476 | 9.826 |
| 982 | MZA 1152 - LT 12 | 987 | ZONA I | MUR/HEX:1 | -70.24350 | -17.98479 | 10.997 |
| 983 | MZA 1152 - LT 13 | 988 | ZONA I | MUR/HEX:1 | -70.24356 | -17.98483 | 9.079 |
| 984 | MZA 1152 - LT 14 | 989 | ZONA I | MUR/HEX:1 | -70.24361 | -17.98486 | 9.236 |
| 985 | MZA 1152 - LT 15 | 990 | ZONA I | MUR/HEX:1 | -70.24366 | -17.98490 | 11.148 |
| 986 | MZA 1152 - LT 16 | 991 | ZONA I | MUR/HEX:1 | -70.24372 | -17.98494 | 9.098 |
| 987 | MZA 1152 - LT 17 | 992 | ZONA I | MUR/HEX:2 | -70.24377 | -17.98497 | 281.527 |
| 988 | MZA 1152 - LT 18 | 993 | ZONA I | MUR/HEX:1 | -70.24386 | -17.98485 | 9.894 |
| 989 | MZA 1152 - LT 19 | 994 | ZONA I | MUR/HEX:2 | -70.24380 | -17.98482 | 276.501 |
| 990 | MZA 1152 - LT 20 | 995 | ZONA I | MUR/HEX:1 | -70.24375 | -17.98478 | 10.598 |
| 991 | MZA 1152 - LT 21 | 996 | ZONA I | MUR/HEX:1 | -70.24369 | -17.98475 | 9.083 |
| 992 | MZA 1152 - LT 22 | 997 | ZONA I | MUR/HEX:1 | -70.24364 | -17.98471 | 9.802 |
| 993 | MZA 1152 - LT 23 | 998 | ZONA I | MUR/HEX:1 | -70.24359 | -17.98467 | 10.712 |
| 994 | MZA 1152 - LT 24 | 999 | ZONA I | MUR/HEX:2 | -70.24353 | -17.98464 | 281.790 |
| 995 | MZA 1152 - LT 25 | 1000 | ZONA I | MUR/HEX:1 | -70.24348 | -17.98460 | 9.001 |
| 996 | MZA 1152 - LT 26 | 1001 | ZONA I | MUR/HEX:1 | -70.24342 | -17.98457 | 8.775 |
| 997 | MZA 1152 - LT 27 | 1002 | ZONA I | MUR/HEX:1 | -70.24337 | -17.98453 | 9.570 |
| 998 | MZA 1152 - LT 28 | 1003 | ZONA I | MUR/HEX:1 | -70.24331 | -17.98450 | 9.312 |
| 999 | MZA 1152 - LT 29 | 1004 | ZONA I | MUR/HEX:1 | -70.24326 | -17.98446 | 9.374 |
| 1000 | MZA 1152 - LT 30 | 1005 | ZONA I | MUR/HEX:1 | -70.24320 | -17.98443 | 8.772 |
| 1001 | MZA 1152 - LT 31 | 1006 | ZONA I | MUR/HEX:2 | -70.24315 | -17.98439 | 279.053 |
| 1002 | MZA 1152 - LT 32 | 1007 | ZONA I | MUR/HEX:2 | -70.24309 | -17.98436 | 305.636 |
| 1003 | MZA 1152 - LT 33 | 1008 | ZONA I | MUR/HEX:1 | -70.24304 | -17.98432 | 8.837 |
| 1004 | MZA 1152 - LT 34 | 1009 | ZONA I | MUR/HEX:1 | -70.24298 | -17.98428 | 8.640 |
| 1005 | MZA 1153 - LT 1 | 1010 | ZONA I | MUR/HEX:1 | -70.24202 | -17.98383 | 11.119 |
| 1006 | MZA 1153 - LT 2 | 1011 | ZONA I | MUR/HEX:2 | -70.24207 | -17.98387 | 319.265 |
| 1007 | MZA 1153 - LT 3 | 1012 | ZONA I | MUR/HEX:1 | -70.24213 | -17.98390 | 11.355 |
| 1008 | MZA 1153 - LT 4 | 1013 | ZONA I | MUR/HEX:2 | -70.24218 | -17.98394 | 282.479 |
| 1009 | MZA 1153 - LT 5 | 1014 | ZONA I | MUR/HEX:1 | -70.24224 | -17.98397 | 9.921 |
| 1010 | MZA 1153 - LT 6 | 1015 | ZONA I | MUR/HEX:1 | -70.24229 | -17.98401 | 9.852 |
| 1011 | MZA 1153 - LT 7 | 1016 | ZONA I | MUR/HEX:1 | -70.24235 | -17.98404 | 10.153 |
| 1012 | MZA 1153 - LT 8 | 1017 | ZONA I | MUR/HEX:1 | -70.24240 | -17.98408 | 10.489 |
| 1013 | MZA 1153 - LT 9 | 1018 | ZONA I | MUR/HEX:2 | -70.24245 | -17.98411 | 298.147 |
| 1014 | MZA 1153 - LT 10 | 1019 | ZONA I | MUR/HEX:1 | -70.24251 | -17.98415 | 9.594 |
| 1015 | MZA 1153 - LT 11 | 1020 | ZONA I | MUR/HEX:1 | -70.24256 | -17.98419 | 10.247 |
| 1016 | MZA 1153 - LT 12 | 1021 | ZONA I | MUR/HEX:2 | -70.24262 | -17.98422 | 292.493 |
| 1017 | MZA 1153 - LT 13 | 1022 | ZONA I | MUR/HEX:1 | -70.24267 | -17.98426 | 10.812 |
| 1018 | MZA 1153 - LT 14 | 1023 | ZONA I | MUR/HEX:1 | -70.24273 | -17.98429 | 9.500 |
| 1019 | MZA 1153 - LT 15 | 1024 | ZONA I | MUR/HEX:1 | -70.24278 | -17.98433 | 9.910 |
| 1020 | MZA 1153 - LT 16 | 1025 | ZONA I | MUR/HEX:1 | -70.24287 | -17.98421 | 9.424 |
| 1021 | MZA 1153 - LT 17 | 1026 | ZONA I | MUR/HEX:1 | -70.24281 | -17.98417 | 9.880 |
| 1022 | MZA 1153 - LT 18 | 1027 | ZONA I | MUR/HEX:2 | -70.24276 | -17.98414 | 309.995 |
| 1023 | MZA 1153 - LT 19 | 1028 | ZONA I | MUR/HEX:2 | -70.24270 | -17.98410 | 277.082 |
| 1024 | MZA 1153 - LT 20 | 1029 | ZONA I | MUR/HEX:1 | -70.24265 | -17.98407 | 9.421 |
| 1025 | MZA 1153 - LT 21 | 1030 | ZONA I | MUR/HEX:2 | -70.24259 | -17.98403 | 276.687 |
| 1026 | MZA 1153 - LT 22 | 1031 | ZONA I | MUR/HEX:1 | -70.24254 | -17.98399 | 9.973 |
| 1027 | MZA 1153 - LT 23 | 1032 | ZONA I | MUR/HEX:1 | -70.24248 | -17.98396 | 9.072 |
| 1028 | MZA 1153 - LT 24 | 1033 | ZONA I | MUR/HEX:1 | -70.24243 | -17.98392 | 9.990 |
| 1029 | MZA 1153 - LT 25 | 1034 | ZONA I | MUR/HEX:1 | -70.24238 | -17.98389 | 9.396 |
| 1030 | MZA 1153 - LT 26 | 1035 | ZONA I | MUR/HEX:1 | -70.24232 | -17.98385 | 10.080 |
| 1031 | MZA 1153 - LT 27 | 1036 | ZONA I | MUR/HEX:1 | -70.24227 | -17.98382 | 8.883 |
| 1032 | MZA 1153 - LT 28 | 1037 | ZONA I | MUR/HEX:1 | -70.24221 | -17.98378 | 10.403 |
| 1033 | MZA 1153 - LT 29 | 1038 | ZONA I | MUR/HEX:2 | -70.24216 | -17.98375 | 288.391 |
| 1034 | MZA 1153 - LT 30 | 1039 | ZONA I | MUR/HEX:1 | -70.24210 | -17.98371 | 11.496 |
| 1035 | MZA 1156 - LT 1 | 1042 | ZONA I | MUR/HEX:2 | -70.24412 | -17.98572 | 526.277 |
| 1036 | MZA 1156 - LT 2 | 1043 | ZONA I | MUR/HEX:1 | -70.24406 | -17.98568 | 14.111 |
| 1037 | MZA 1156 - LT 3 | 1044 | ZONA I | MUR/HEX:2 | -70.24400 | -17.98564 | 447.380 |
| 1038 | MZA 1156 - LT 4 | 1045 | ZONA I | MUR/HEX:1 | -70.24393 | -17.98560 | 14.523 |
| 1039 | MZA 1156 - LT 5 | 1046 | ZONA I | MUR/HEX:2 | -70.24387 | -17.98556 | 444.908 |
| 1040 | MZA 1156 - LT 6 | 1047 | ZONA I | MUR/HEX:1 | -70.24381 | -17.98552 | 14.828 |
| 1041 | MZA 1156 - LT 7 | 1048 | ZONA I | MUR/HEX:2 | -70.24375 | -17.98548 | 415.552 |
| 1042 | MZA 1156 - LT 8 | 1049 | ZONA I | MUR/HEX:2 | -70.24369 | -17.98544 | 461.191 |
| 1043 | MZA 1156 - LT 9 | 1050 | ZONA I | MUR/HEX:1 | -70.24362 | -17.98540 | 13.840 |
| 1044 | MZA 1156 - LT 10 | 1051 | ZONA I | MUR/HEX:2 | -70.24356 | -17.98536 | 467.093 |
| 1045 | MZA 1156 - LT 11 | 1052 | ZONA I | MUR/HEX:1 | -70.24350 | -17.98531 | 15.898 |
| 1046 | MZA 1156 - LT 12 | 1053 | ZONA I | MUR/HEX:1 | -70.24344 | -17.98527 | 13.582 |
| 1047 | MZA 1156 - LT 13 | 1054 | ZONA I | MUR/HEX:1 | -70.24337 | -17.98523 | 16.565 |
| 1048 | MZA 1156 - LT 14 | 1055 | ZONA I | MUR/HEX:3 | -70.24331 | -17.98519 | 481.275 |
| 1049 | MZA 1156 - LT 15 | 1056 | ZONA I | MUR/HEX:1 | -70.24325 | -17.98515 | 16.091 |
| 1050 | MZA 1156 - LT 16 | 1057 | ZONA I | MUR/HEX:1 | -70.24336 | -17.98500 | 14.664 |
| 1051 | MZA 1156 - LT 17 | 1058 | ZONA I | MUR/HEX:1 | -70.24342 | -17.98504 | 13.775 |
| 1052 | MZA 1156 - LT 18 | 1059 | ZONA I | MUR/HEX:1 | -70.24348 | -17.98508 | 16.204 |
| 1053 | MZA 1156 - LT 19 | 1060 | ZONA I | MUR/HEX:1 | -70.24355 | -17.98512 | 13.789 |
| 1054 | MZA 1156 - LT 20 | 1061 | ZONA I | MUR/HEX:1 | -70.24361 | -17.98516 | 14.286 |
| 1055 | MZA 1156 - LT 21 | 1062 | ZONA I | MUR/HEX:2 | -70.24367 | -17.98521 | 475.000 |
| 1056 | MZA 1156 - LT 22 | 1063 | ZONA I | MUR/HEX:1 | -70.24373 | -17.98525 | 13.064 |
| 1057 | MZA 1156 - LT 23 | 1064 | ZONA I | MUR/HEX:1 | -70.24379 | -17.98529 | 15.244 |
| 1058 | MZA 1156 - LT 24 | 1065 | ZONA I | MUR/HEX:2 | -70.24386 | -17.98533 | 417.836 |
| 1059 | MZA 1156 - LT 25 | 1066 | ZONA I | MUR/HEX:1 | -70.24392 | -17.98537 | 14.799 |
| 1060 | MZA 1156 - LT 26 | 1067 | ZONA I | MUR/HEX:1 | -70.24398 | -17.98541 | 14.041 |
| 1061 | MZA 1156 - LT 27 | 1068 | ZONA I | MUR/HEX:1 | -70.24404 | -17.98545 | 14.051 |
| 1062 | MZA 1156 - LT 28 | 1069 | ZONA I | MUR/HEX:1 | -70.24410 | -17.98549 | 14.782 |
| 1063 | MZA 1156 - LT 29 | 1070 | ZONA I | MUR/HEX:1 | -70.24417 | -17.98553 | 14.891 |
| 1064 | MZA 1156 - LT 30 | 1071 | ZONA I | MUR/HEX:1 | -70.24423 | -17.98557 | 17.666 |
| 1065 | MZA 1157 - LT 1 | 1072 | ZONA I | MUR/HEX:1 | -70.24295 | -17.98496 | 12.790 |
| 1066 | MZA 1157 - LT 2 | 1073 | ZONA I | MUR/HEX:1 | -70.24289 | -17.98492 | 13.488 |
| 1067 | MZA 1157 - LT 3 | 1074 | ZONA I | MUR/HEX:1 | -70.24283 | -17.98488 | 14.753 |
| 1068 | MZA 1157 - LT 4 | 1075 | ZONA I | MUR/HEX:1 | -70.24276 | -17.98484 | 13.578 |
| 1069 | MZA 1157 - LT 5 | 1076 | ZONA I | MUR/HEX:1 | -70.24270 | -17.98480 | 14.920 |
| 1070 | MZA 1157 - LT 6 | 1077 | ZONA I | MUR/HEX:2 | -70.24264 | -17.98476 | 405.808 |
| 1071 | MZA 1157 - LT 7 | 1078 | ZONA I | MUR/HEX:2 | -70.24258 | -17.98472 | 425.135 |
| 1072 | MZA 1157 - LT 8 | 1079 | ZONA I | MUR/HEX:1 | -70.24251 | -17.98468 | 14.098 |
| 1073 | MZA 1157 - LT 9 | 1080 | ZONA I | MUR/HEX:2 | -70.24245 | -17.98464 | 429.190 |
| 1074 | MZA 1157 - LT 10 | 1081 | ZONA I | MUR/HEX:1 | -70.24239 | -17.98459 | 12.395 |
| 1075 | MZA 1157 - LT 11 | 1082 | ZONA I | MUR/HEX:1 | -70.24233 | -17.98455 | 14.967 |
| 1076 | MZA 1157 - LT 12 | 1083 | ZONA I | MUR/HEX:1 | -70.24226 | -17.98451 | 13.279 |
| 1077 | MZA 1157 - LT 13 | 1084 | ZONA I | MUR/HEX:1 | -70.24220 | -17.98447 | 14.323 |
| 1078 | MZA 1157 - LT 14 | 1085 | ZONA I | MUR/HEX:2 | -70.24214 | -17.98443 | 417.175 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|------------------------|-----------|-----------|---------------|
| 1079 | MZA 1157 - LT 15 | 1086 | ZONA I | MUR/HEX:2 | -70.24208 | -17.98439 | 404.612 |
| 1080 | MZA 1157 - LT 16 | 1087 | ZONA I | MUR/HEX:2 | -70.24201 | -17.98435 | 397.036 |
| 1081 | MZA 1157 - LT 17 | 1088 | ZONA I | MUR/HEX:2 | -70.24195 | -17.98431 | 413.694 |
| 1082 | MZA 1157 - LT 18 | 1089 | ZONA I | MUR/HEX:1 | -70.24189 | -17.98427 | 14.140 |
| 1083 | MZA 1157 - LT 19 | 1090 | ZONA I | MUR/HEX:1 | -70.24183 | -17.98423 | 14.033 |
| 1084 | MZA 1157 - LT 20 | 1091 | ZONA I | MUR/HEX:2 | -70.24176 | -17.98419 | 455.672 |
| 1085 | MZA 1157 - LT 21 | 1092 | ZONA I | MUR/HEX:2 | -70.24187 | -17.98404 | 410.059 |
| 1086 | MZA 1157 - LT 22 | 1093 | ZONA I | MUR/HEX:2 | -70.24194 | -17.98408 | 405.991 |
| 1087 | MZA 1157 - LT 23 | 1094 | ZONA I | MUR/HEX:1 | -70.24200 | -17.98412 | 13.117 |
| 1088 | MZA 1157 - LT 24 | 1095 | ZONA I | MUR/HEX:1 | -70.24206 | -17.98416 | 13.112 |
| 1089 | MZA 1157 - LT 25 | 1096 | ZONA I | MUR/HEX:1 | -70.24212 | -17.98420 | 14.279 |
| 1090 | MZA 1157 - LT 26 | 1097 | ZONA I | MUR/HEX:1 | -70.24218 | -17.98424 | 14.334 |
| 1091 | MZA 1157 - LT 27 | 1098 | ZONA I | MUR/HEX:1 | -70.24225 | -17.98428 | 14.626 |
| 1092 | MZA 1157 - LT 28 | 1099 | ZONA I | MUR/HEX:2 | -70.24231 | -17.98432 | 402.439 |
| 1093 | MZA 1157 - LT 29 | 1100 | ZONA I | MUR/HEX:1 | -70.24237 | -17.98436 | 12.727 |
| 1094 | MZA 1157 - LT 30 | 1101 | ZONA I | MUR/HEX:1 | -70.24243 | -17.98440 | 14.400 |
| 1095 | MZA 1157 - LT 31 | 1102 | ZONA I | MUR/HEX:1 | -70.24250 | -17.98444 | 12.155 |
| 1096 | MZA 1157 - LT 32 | 1103 | ZONA I | MUR/HEX:2 | -70.24256 | -17.98448 | 419.273 |
| 1097 | MZA 1157 - LT 33 | 1104 | ZONA I | MUR/HEX:1 | -70.24262 | -17.98453 | 13.671 |
| 1098 | MZA 1157 - LT 34 | 1105 | ZONA I | MUR/HEX:1 | -70.24268 | -17.98457 | 13.028 |
| 1099 | MZA 1157 - LT 35 | 1106 | ZONA I | MUR/HEX:1 | -70.24275 | -17.98461 | 13.058 |
| 1100 | MZA 1157 - LT 36 | 1107 | ZONA I | MUR/HEX:1 | -70.24281 | -17.98465 | 13.725 |
| 1101 | MZA 1157 - LT 37 | 1108 | ZONA I | MUR/HEX:1 | -70.24287 | -17.98469 | 12.787 |
| 1102 | MZA 1157 - LT 38 | 1109 | ZONA I | MUR/HEX:1 | -70.24293 | -17.98473 | 13.390 |
| 1103 | MZA 1157 - LT 39 | 1110 | ZONA I | MUR/HEX:1 | -70.24300 | -17.98477 | 12.910 |
| 1104 | MZA 1157 - LT 40 | 1111 | ZONA I | MUR/HEX:1 | -70.24306 | -17.98481 | 12.403 |
| 1105 | MZA 1158 - LT 1 | 1112 | ZONA I | MUR/HEX:1 | -70.24628 | -17.98852 | 32.913 |
| 1106 | MZA 1158 - LT 2 | 1113 | ZONA I | MUR/HEX:1 | -70.24638 | -17.98858 | 28.780 |
| 1107 | MZA 1158 - LT 3 | 1114 | ZONA I | MUR/HEX:2 | -70.24648 | -17.98864 | 878.156 |
| 1108 | MZA 1158 - LT 4 | 1115 | ZONA I | CR/LFINF+DUC/HEX:3/RES | -70.24658 | -17.98870 | 1241.253 |
| 1109 | MZA 1158 - LT 5 | 1116 | ZONA I | MUR/HEX:2 | -70.24663 | -17.98853 | 598.545 |
| 1110 | MZA 1158 - LT 6 | 1117 | ZONA I | MUR/HEX:1 | -70.24668 | -17.98846 | 21.049 |
| 1111 | MZA 1158 - LT 7 | 1118 | ZONA I | MUR/HEX:1 | -70.24674 | -17.98838 | 20.924 |
| 1112 | MZA 1158 - LT 8 | 1119 | ZONA I | MUR/HEX:2 | -70.24679 | -17.98831 | 624.419 |
| 1113 | MZA 1158 - LT 9 | 1120 | ZONA I | MUR/HEX:2 | -70.24685 | -17.98823 | 616.068 |
| 1114 | MZA 1158 - LT 10 | 1121 | ZONA I | MUR/HEX:2 | -70.24690 | -17.98816 | 636.094 |
| 1115 | MZA 1158 - LT 11 | 1122 | ZONA I | MUR/HEX:1 | -70.24695 | -17.98809 | 20.654 |
| 1116 | MZA 1158 - LT 12 | 1123 | ZONA I | MUR/HEX:2 | -70.24701 | -17.98801 | 632.751 |
| 1117 | MZA 1158 - LT 13 | 1124 | ZONA I | MUR/HEX:1 | -70.24706 | -17.98794 | 22.403 |
| 1118 | MZA 1158 - LT 14 | 1125 | ZONA I | MUR/HEX:3 | -70.24686 | -17.98781 | 752.374 |
| 1119 | MZA 1158 - LT 15 | 1126 | ZONA I | MUR/HEX:2 | -70.24681 | -17.98788 | 613.508 |
| 1120 | MZA 1158 - LT 16 | 1127 | ZONA I | MUR/HEX:1 | -70.24675 | -17.98796 | 21.186 |
| 1121 | MZA 1158 - LT 17 | 1128 | ZONA I | MUR/HEX:2 | -70.24670 | -17.98803 | 609.233 |
| 1122 | MZA 1158 - LT 18 | 1129 | ZONA I | MUR/HEX:2 | -70.24665 | -17.98811 | 590.629 |
| 1123 | MZA 1158 - LT 19 | 1130 | ZONA I | MUR/HEX:1 | -70.24659 | -17.98818 | 22.615 |
| 1124 | MZA 1158 - LT 20 | 1131 | ZONA I | MUR/HEX:1 | -70.24654 | -17.98826 | 19.690 |
| 1125 | MZA 1158 - LT 21 | 1132 | ZONA I | MUR/HEX:2 | -70.24649 | -17.98833 | 588.971 |
| 1126 | MZA 1158 - LT 22 | 1133 | ZONA I | MUR/HEX:2 | -70.24644 | -17.98841 | 577.354 |
| 1127 | MZA 1159 - LT 1 | 1134 | ZONA I | MUR/HEX:1 | -70.24657 | -17.98768 | 16.504 |
| 1128 | MZA 1159 - LT 2 | 1135 | ZONA I | MUR/HEX:1 | -70.24650 | -17.98763 | 18.577 |
| 1129 | MZA 1159 - LT 3 | 1136 | ZONA I | MUR/HEX:2 | -70.24642 | -17.98758 | 546.973 |
| 1130 | MZA 1159 - LT 4 | 1137 | ZONA I | MUR/HEX:2 | -70.24634 | -17.98753 | 506.580 |
| 1131 | MZA 1159 - LT 5 | 1138 | ZONA I | MUR/HEX:1 | -70.24626 | -17.98748 | 18.128 |
| 1132 | MZA 1159 - LT 6 | 1139 | ZONA I | MUR/HEX:1 | -70.24618 | -17.98743 | 17.353 |
| 1133 | MZA 1159 - LT 7 | 1140 | ZONA I | MUR/HEX:1 | -70.24610 | -17.98738 | 19.309 |
| 1134 | MZA 1159 - LT 8 | 1141 | ZONA I | MUR/HEX:1 | -70.24602 | -17.98733 | 18.019 |
| 1135 | MZA 1159 - LT 9 | 1142 | ZONA I | MUR/HEX:2 | -70.24595 | -17.98728 | 536.606 |
| 1136 | MZA 1159 - LT 10 | 1143 | ZONA I | MUR/HEX:2 | -70.24587 | -17.98723 | 524.716 |
| 1137 | MZA 1159 - LT 11 | 1144 | ZONA I | MUR/HEX:2 | -70.24580 | -17.98719 | 528.107 |
| 1138 | MZA 1159 - LT 12 | 1145 | ZONA I | MUR/HEX:3 | -70.24572 | -17.98714 | 616.977 |
| 1139 | MZA 1159 - LT 13 | 1146 | ZONA I | MUR/HEX:1 | -70.24646 | -17.98783 | 18.862 |
| 1140 | MZA 1159 - LT 14 | 1147 | ZONA I | MUR/HEX:1 | -70.24638 | -17.98778 | 17.895 |
| 1141 | MZA 1159 - LT 15 | 1148 | ZONA I | MUR/HEX:1 | -70.24631 | -17.98773 | 17.146 |
| 1142 | MZA 1159 - LT 16 | 1149 | ZONA I | MUR/HEX:1 | -70.24623 | -17.98768 | 18.453 |
| 1143 | MZA 1159 - LT 17 | 1150 | ZONA I | MUR/HEX:1 | -70.24615 | -17.98763 | 17.048 |
| 1144 | MZA 1159 - LT 18 | 1151 | ZONA I | MUR/HEX:1 | -70.24607 | -17.98758 | 17.967 |
| 1145 | MZA 1159 - LT 19 | 1152 | ZONA I | MUR/HEX:1 | -70.24599 | -17.98753 | 19.499 |
| 1146 | MZA 1159 - LT 20 | 1153 | ZONA I | MUR/HEX:1 | -70.24591 | -17.98748 | 17.119 |
| 1147 | MZA 1159 - LT 21 | 1154 | ZONA I | MUR/HEX:2 | -70.24584 | -17.98743 | 556.899 |
| 1148 | MZA 1159 - LT 22 | 1155 | ZONA I | MUR/HEX:1 | -70.24576 | -17.98738 | 17.628 |
| 1149 | MZA 1159 - LT 23 | 1156 | ZONA I | MUR/HEX:1 | -70.24569 | -17.98734 | 18.333 |
| 1150 | MZA 1159 - LT 24 | 1157 | ZONA I | MUR/HEX:2 | -70.24561 | -17.98729 | 551.761 |
| 1151 | MZA 1160 - LT 1 | 1158 | ZONA I | CR/LFINF+DUC/HEX:3/RES | -70.24630 | -17.98806 | 784.322 |
| 1152 | MZA 1160 - LT 2 | 1159 | ZONA I | MUR/HEX:1 | -70.24623 | -17.98801 | 17.821 |
| 1153 | MZA 1160 - LT 3 | 1160 | ZONA I | MUR/HEX:1 | -70.24615 | -17.98796 | 19.822 |
| 1154 | MZA 1160 - LT 4 | 1161 | ZONA I | MUR/HEX:2 | -70.24607 | -17.98791 | 535.206 |
| 1155 | MZA 1160 - LT 5 | 1162 | ZONA I | MUR/HEX:1 | -70.24599 | -17.98786 | 17.495 |
| 1156 | MZA 1160 - LT 6 | 1163 | ZONA I | MUR/HEX:1 | -70.24591 | -17.98781 | 17.804 |
| 1157 | MZA 1160 - LT 7 | 1164 | ZONA I | MUR/HEX:2 | -70.24583 | -17.98776 | 537.570 |
| 1158 | MZA 1160 - LT 8 | 1165 | ZONA I | MUR/HEX:1 | -70.24575 | -17.98771 | 16.904 |
| 1159 | MZA 1160 - LT 9 | 1166 | ZONA I | MUR/HEX:1 | -70.24568 | -17.98766 | 17.520 |
| 1160 | MZA 1160 - LT 10 | 1167 | ZONA I | MUR/HEX:1 | -70.24560 | -17.98761 | 16.615 |
| 1161 | MZA 1160 - LT 11 | 1168 | ZONA I | MUR/HEX:2 | -70.24553 | -17.98756 | 504.438 |
| 1162 | MZA 1160 - LT 12 | 1169 | ZONA I | MUR/HEX:1 | -70.24545 | -17.98751 | 17.062 |
| 1163 | MZA 1160 - LT 13 | 1170 | ZONA I | MUR/HEX:2 | -70.24620 | -17.98821 | 546.717 |
| 1164 | MZA 1160 - LT 14 | 1171 | ZONA I | MUR/HEX:1 | -70.24612 | -17.98816 | 17.063 |
| 1165 | MZA 1160 - LT 15 | 1172 | ZONA I | MUR/HEX:1 | -70.24604 | -17.98811 | 18.314 |
| 1166 | MZA 1160 - LT 16 | 1173 | ZONA I | MUR/HEX:1 | -70.24596 | -17.98806 | 18.011 |
| 1167 | MZA 1160 - LT 17 | 1174 | ZONA I | MUR/HEX:1 | -70.24588 | -17.98800 | 17.728 |
| 1168 | MZA 1160 - LT 18 | 1175 | ZONA I | MUR/HEX:1 | -70.24580 | -17.98795 | 15.801 |
| 1169 | MZA 1160 - LT 19 | 1176 | ZONA I | MUR/HEX:2 | -70.24572 | -17.98791 | 520.741 |
| 1170 | MZA 1160 - LT 20 | 1177 | ZONA I | MUR/HEX:1 | -70.24565 | -17.98786 | 16.580 |
| 1171 | MZA 1160 - LT 21 | 1178 | ZONA I | MUR/HEX:1 | -70.24557 | -17.98781 | 17.271 |
| 1172 | MZA 1160 - LT 22 | 1179 | ZONA I | MUR/HEX:1 | -70.24549 | -17.98776 | 15.785 |
| 1173 | MZA 1160 - LT 23 | 1180 | ZONA I | MUR/HEX:2 | -70.24542 | -17.98771 | 508.153 |
| 1174 | MZA 1160 - LT 24 | 1181 | ZONA I | MUR/HEX:2 | -70.24535 | -17.98766 | 524.312 |
| 1175 | MZA 1161 - LT 1 | 1182 | ZONA I | MUR/HEX:2 | -70.24603 | -17.98844 | 645.521 |
| 1176 | MZA 1161 - LT 2 | 1183 | ZONA I | MUR/HEX:1 | -70.24595 | -17.98840 | 19.409 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|----------------------------|-----------|-----------|---------------|
| 1177 | MZA 1161 - LT 3 | 1184 | ZONA I | MUR/HEX:2 | -70.24587 | -17.98834 | 671.115 |
| 1178 | MZA 1161 - LT 4 | 1185 | ZONA I | MUR/HEX:1 | -70.24579 | -17.98829 | 20.007 |
| 1179 | MZA 1161 - LT 5 | 1186 | ZONA I | MUR/HEX:1 | -70.24572 | -17.98826 | 21.988 |
| 1180 | MZA 1161 - LT 6 | 1187 | ZONA I | MUR/HEX:1 | -70.24563 | -17.98820 | 22.583 |
| 1181 | MZA 1161 - LT 7 | 1188 | ZONA I | MUR/HEX:1 | -70.24555 | -17.98815 | 23.535 |
| 1182 | MZA 1161 - LT 8 | 1189 | ZONA I | MUR/HEX:2 | -70.24547 | -17.98811 | 741.225 |
| 1183 | MZA 1161 - LT 9 | 1190 | ZONA I | MUR/HEX:2 | -70.24539 | -17.98806 | 794.462 |
| 1184 | MZA 1161 - LT 10 | 1191 | ZONA I | MUR/HEX:2 | -70.24531 | -17.98802 | 702.673 |
| 1185 | MZA 1161 - LT 11 | 1192 | ZONA I | MUR/HEX:1 | -70.24524 | -17.98797 | 25.888 |
| 1186 | MZA 1161 - LT 12 | 1193 | ZONA I | MUR/HEX:1 | -70.24516 | -17.98793 | 28.034 |
| 1187 | MZA 1162 - LT 1 | 1194 | ZONA I | MUR/HEX:1 | -70.24469 | -17.98771 | 22.065 |
| 1188 | MZA 1162 - LT 2 | 1195 | ZONA I | MUR/HEX:1 | -70.24477 | -17.98776 | 19.209 |
| 1189 | MZA 1162 - LT 3 | 1196 | ZONA I | MUR/HEX:1 | -70.24485 | -17.98780 | 19.516 |
| 1190 | MZA 1162 - LT 4 | 1197 | ZONA I | MUR/HEX:1 | -70.24493 | -17.98785 | 19.087 |
| 1191 | MZA 1162 - LT 5 | 1198 | ZONA I | MUR/HEX:1 | -70.24498 | -17.98770 | 17.446 |
| 1192 | MZA 1162 - LT 6 | 1199 | ZONA I | MUR/HEX:1 | -70.24503 | -17.98763 | 17.204 |
| 1193 | MZA 1162 - LT 7 | 1200 | ZONA I | MUR/HEX:1 | -70.24508 | -17.98755 | 15.855 |
| 1194 | MZA 1162 - LT 8 | 1201 | ZONA I | MUR/HEX:1 | -70.24514 | -17.98748 | 16.994 |
| 1195 | MZA 1162 - LT 9 | 1202 | ZONA I | MUR/HEX:2 | -70.24519 | -17.98740 | 504.509 |
| 1196 | MZA 1162 - LT 10 | 1203 | ZONA I | MUR/HEX:1 | -70.24524 | -17.98733 | 15.634 |
| 1197 | MZA 1162 - LT 11 | 1204 | ZONA I | MUR/HEX:1 | -70.24530 | -17.98725 | 18.841 |
| 1198 | MZA 1162 - LT 12 | 1205 | ZONA I | MUR/HEX:2 | -70.24535 | -17.98718 | 488.556 |
| 1199 | MZA 1162 - LT 13 | 1206 | ZONA I | MUR/HEX:2 | -70.24540 | -17.98710 | 500.960 |
| 1200 | MZA 1162 - LT 14 | 1207 | ZONA I | MUR/HEX:1 | -70.24546 | -17.98703 | 15.496 |
| 1201 | MZA 1162 - LT 15 | 1208 | ZONA I | MUR/HEX:1 | -70.24551 | -17.98695 | 19.657 |
| 1202 | MZA 1162 - LT 16 | 1209 | ZONA I | MUR/HEX:1 | -70.24535 | -17.98685 | 23.473 |
| 1203 | MZA 1162 - LT 17 | 1210 | ZONA I | MUR/HEX:2 | -70.24529 | -17.98693 | 556.416 |
| 1204 | MZA 1162 - LT 18 | 1211 | ZONA I | MUR/HEX:1 | -70.24524 | -17.98700 | 17.804 |
| 1205 | MZA 1162 - LT 19 | 1212 | ZONA I | MUR/HEX:1 | -70.24519 | -17.98708 | 18.647 |
| 1206 | MZA 1162 - LT 20 | 1213 | ZONA I | MUR/HEX:1 | -70.24514 | -17.98715 | 19.816 |
| 1207 | MZA 1162 - LT 21 | 1214 | ZONA I | MUR/HEX:2 | -70.24508 | -17.98723 | 500.706 |
| 1208 | MZA 1162 - LT 22 | 1215 | ZONA I | MUR/HEX:2 | -70.24503 | -17.98730 | 532.258 |
| 1209 | MZA 1162 - LT 23 | 1216 | ZONA I | MUR/HEX:2 | -70.24498 | -17.98738 | 526.848 |
| 1210 | MZA 1162 - LT 24 | 1217 | ZONA I | MUR/HEX:1 | -70.24493 | -17.98745 | 16.993 |
| 1211 | MZA 1162 - LT 25 | 1218 | ZONA I | MUR/HEX:1 | -70.24487 | -17.98753 | 18.287 |
| 1212 | MZA 1162 - LT 26 | 1219 | ZONA I | MUR/HEX:2 | -70.24482 | -17.98760 | 527.017 |
| 1213 | MZA 1163 - LT 1 | 1220 | ZONA I | MUR/HEX:1 | -70.24440 | -17.98763 | 17.527 |
| 1214 | MZA 1163 - LT 2 | 1221 | ZONA I | MUR/HEX:1 | -70.24444 | -17.98757 | 14.273 |
| 1215 | MZA 1163 - LT 3 | 1222 | ZONA I | MUR/HEX:1 | -70.24449 | -17.98750 | 16.785 |
| 1216 | MZA 1163 - LT 4 | 1223 | ZONA I | MUR/HEX:1 | -70.24454 | -17.98743 | 15.812 |
| 1217 | MZA 1163 - LT 5 | 1224 | ZONA I | MUR/HEX:2 | -70.24459 | -17.98736 | 520.263 |
| 1218 | MZA 1163 - LT 6 | 1225 | ZONA I | MUR/HEX:1 | -70.24464 | -17.98728 | 17.012 |
| 1219 | MZA 1163 - LT 7 | 1226 | ZONA I | MUR/HEX:1 | -70.24469 | -17.98721 | 19.248 |
| 1220 | MZA 1163 - LT 8 | 1227 | ZONA I | MUR/HEX:1 | -70.24475 | -17.98713 | 15.966 |
| 1221 | MZA 1163 - LT 9 | 1228 | ZONA I | MUR/HEX:2 | -70.24480 | -17.98706 | 526.286 |
| 1222 | MZA 1163 - LT 10 | 1229 | ZONA I | MUR/HEX:2 | -70.24485 | -17.98698 | 504.590 |
| 1223 | MZA 1163 - LT 11 | 1230 | ZONA I | MUR/HEX:1 | -70.24490 | -17.98691 | 16.374 |
| 1224 | MZA 1163 - LT 12 | 1231 | ZONA I | MUR/HEX:2 | -70.24496 | -17.98683 | 508.266 |
| 1225 | MZA 1163 - LT 13 | 1232 | ZONA I | MUR/HEX:1 | -70.24501 | -17.98676 | 18.085 |
| 1226 | MZA 1163 - LT 14 | 1233 | ZONA I | MUR/HEX:1 | -70.24507 | -17.98667 | 25.756 |
| 1227 | MZA 1163 - LT 15 | 1234 | ZONA I | MUR/HEX:1 | -70.24423 | -17.98754 | 21.478 |
| 1228 | MZA 1163 - LT 16 | 1235 | ZONA I | MUR/HEX:2 | -70.24428 | -17.98748 | 439.197 |
| 1229 | MZA 1163 - LT 17 | 1236 | ZONA I | MUR/HEX:1 | -70.24433 | -17.98741 | 16.351 |
| 1230 | MZA 1163 - LT 18 | 1237 | ZONA I | MUR/HEX:2 | -70.24438 | -17.98733 | 558.790 |
| 1231 | MZA 1163 - LT 19 | 1238 | ZONA I | MUR/HEX:1 | -70.24443 | -17.98726 | 17.220 |
| 1232 | MZA 1163 - LT 20 | 1239 | ZONA I | MUR/HEX:1 | -70.24448 | -17.98718 | 17.810 |
| 1233 | MZA 1163 - LT 21 | 1240 | ZONA I | MUR/HEX:1 | -70.24454 | -17.98711 | 17.774 |
| 1234 | MZA 1163 - LT 22 | 1241 | ZONA I | MUR/HEX:1 | -70.24459 | -17.98703 | 17.971 |
| 1235 | MZA 1163 - LT 23 | 1242 | ZONA I | MUR/HEX:2 | -70.24464 | -17.98696 | 522.737 |
| 1236 | MZA 1163 - LT 24 | 1243 | ZONA I | MUR/HEX:1 | -70.24469 | -17.98688 | 16.871 |
| 1237 | MZA 1163 - LT 25 | 1244 | ZONA I | MUR/HEX:1 | -70.24475 | -17.98681 | 18.004 |
| 1238 | MZA 1163 - LT 26 | 1245 | ZONA I | MUR/HEX:1 | -70.24480 | -17.98673 | 17.511 |
| 1239 | MZA 1163 - LT 27 | 1246 | ZONA I | MUR/HEX:1 | -70.24485 | -17.98666 | 18.698 |
| 1240 | MZA 1163 - LT 28 | 1247 | ZONA I | MUR/HEX:1 | -70.24491 | -17.98657 | 23.522 |
| 1241 | MZA 1165 - LT 1 | 1248 | ZONA I | MUR/HEX:1 | -70.24352 | -17.98708 | 18.147 |
| 1242 | MZA 1165 - LT 2 | 1249 | ZONA I | MUR/HEX:2 | -70.24358 | -17.98700 | 514.316 |
| 1243 | MZA 1165 - LT 3 | 1250 | ZONA I | MUR/HEX:2 | -70.24363 | -17.98693 | 506.104 |
| 1244 | MZA 1165 - LT 4 | 1251 | ZONA I | MUR/HEX:1 | -70.24368 | -17.98686 | 16.854 |
| 1245 | MZA 1165 - LT 5 | 1252 | ZONA I | MUR/HEX:2 | -70.24375 | -17.98679 | 546.745 |
| 1246 | MZA 1165 - LT 6 | 1253 | ZONA I | MUR/HEX:1 | -70.24379 | -17.98671 | 16.970 |
| 1247 | MZA 1165 - LT 7 | 1254 | ZONA I | MUR/HEX:1 | -70.24384 | -17.98663 | 18.838 |
| 1248 | MZA 1165 - LT 8 | 1255 | ZONA I | MUR/HEX:1 | -70.24390 | -17.98656 | 16.307 |
| 1249 | MZA 1165 - LT 9 | 1256 | ZONA I | MUR/HEX:1 | -70.24395 | -17.98648 | 16.243 |
| 1250 | MZA 1165 - LT 10 | 1257 | ZONA I | MUR/HEX:1 | -70.24400 | -17.98641 | 16.969 |
| 1251 | MZA 1165 - LT 11 | 1258 | ZONA I | MUR/HEX:2 | -70.24406 | -17.98633 | 513.083 |
| 1252 | MZA 1165 - LT 12 | 1259 | ZONA I | MUR/HEX:2 | -70.24411 | -17.98626 | 524.572 |
| 1253 | MZA 1165 - LT 13 | 1260 | ZONA I | MUR/HEX:1 | -70.24416 | -17.98618 | 18.019 |
| 1254 | MZA 1165 - LT 14 | 1261 | ZONA I | MUR/HEX:1 | -70.24422 | -17.98610 | 16.990 |
| 1255 | MZA 1165 - LT 15 | 1262 | ZONA I | MUR/HEX:1 | -70.24337 | -17.98698 | 20.433 |
| 1256 | MZA 1165 - LT 16 | 1263 | ZONA I | MUR/HEX:1 | -70.24342 | -17.98690 | 16.457 |
| 1257 | MZA 1165 - LT 17 | 1264 | ZONA I | MUR/HEX:1 | -70.24347 | -17.98683 | 16.738 |
| 1258 | MZA 1165 - LT 18 | 1265 | ZONA I | MUR/HEX:2 | -70.24352 | -17.98675 | 535.445 |
| 1259 | MZA 1165 - LT 19 | 1266 | ZONA I | MUR/HEX:2 | -70.24358 | -17.98668 | 562.439 |
| 1260 | MZA 1165 - LT 20 | 1267 | ZONA I | MUR/HEX:1 | -70.24363 | -17.98660 | 16.993 |
| 1261 | MZA 1165 - LT 21 | 1268 | ZONA I | MUR/HEX:2 | -70.24368 | -17.98653 | 571.196 |
| 1262 | MZA 1165 - LT 22 | 1269 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24374 | -17.98645 | 310.350 |
| 1263 | MZA 1165 - LT 23 | 1270 | ZONA I | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24379 | -17.98638 | 315.895 |
| 1264 | MZA 1165 - LT 24 | 1271 | ZONA I | MUR/HEX:2 | -70.24385 | -17.98630 | 520.097 |
| 1265 | MZA 1165 - LT 25 | 1272 | ZONA I | MUR/HEX:1 | -70.24390 | -17.98623 | 17.970 |
| 1266 | MZA 1165 - LT 26 | 1273 | ZONA I | MUR/HEX:1 | -70.24395 | -17.98615 | 18.127 |
| 1267 | MZA 1165 - LT 27 | 1274 | ZONA I | MUR/HEX:1 | -70.24401 | -17.98607 | 18.040 |
| 1268 | MZA 1165 - LT 28 | 1275 | ZONA I | MUR/HEX:1 | -70.24406 | -17.98600 | 15.884 |
| 1269 | MZA 1166 - LT 1 | 1276 | ZONA I | MUR/HEX:1 | -70.24312 | -17.98682 | 18.816 |
| 1270 | MZA 1166 - LT 2 | 1277 | ZONA I | MUR/HEX:1 | -70.24317 | -17.98674 | 16.653 |
| 1271 | MZA 1166 - LT 3 | 1278 | ZONA I | MUR/HEX:2 | -70.24321 | -17.98666 | 506.076 |
| 1272 | MZA 1166 - LT 4 | 1279 | ZONA I | MUR/HEX:1 | -70.24328 | -17.98659 | 17.158 |
| 1273 | MZA 1166 - LT 5 | 1280 | ZONA I | MUR/HEX:1 | -70.24333 | -17.98652 | 18.827 |
| 1274 | MZA 1166 - LT 6 | 1281 | ZONA I | MUR/HEX:1 | -70.24338 | -17.98644 | 18.774 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|--------|-----------|-----------|-----------|---------------|
| 1275 | MZA 1166 - LT 7 | 1282 | ZONA I | MUR/HEX:1 | -70.24344 | -17.98636 | 17.092 |
| 1276 | MZA 1166 - LT 8 | 1283 | ZONA I | MUR/HEX:2 | -70.24349 | -17.98629 | 569.122 |
| 1277 | MZA 1166 - LT 9 | 1284 | ZONA I | MUR/HEX:1 | -70.24354 | -17.98621 | 18.752 |
| 1278 | MZA 1166 - LT 10 | 1285 | ZONA I | MUR/HEX:1 | -70.24360 | -17.98614 | 18.436 |
| 1279 | MZA 1166 - LT 11 | 1286 | ZONA I | MUR/HEX:1 | -70.24365 | -17.98606 | 18.126 |
| 1280 | MZA 1166 - LT 12 | 1287 | ZONA I | MUR/HEX:1 | -70.24370 | -17.98599 | 19.142 |
| 1281 | MZA 1166 - LT 13 | 1288 | ZONA I | MUR/HEX:2 | -70.24376 | -17.98591 | 529.066 |
| 1282 | MZA 1166 - LT 14 | 1289 | ZONA I | MUR/HEX:1 | -70.24381 | -17.98584 | 21.386 |
| 1283 | MZA 1166 - LT 15 | 1290 | ZONA I | MUR/HEX:1 | -70.24296 | -17.98671 | 19.279 |
| 1284 | MZA 1166 - LT 16 | 1291 | ZONA I | MUR/HEX:1 | -70.24302 | -17.98664 | 17.015 |
| 1285 | MZA 1166 - LT 17 | 1292 | ZONA I | MUR/HEX:2 | -70.24307 | -17.98656 | 537.712 |
| 1286 | MZA 1166 - LT 18 | 1293 | ZONA I | MUR/HEX:1 | -70.24312 | -17.98649 | 17.624 |
| 1287 | MZA 1166 - LT 19 | 1294 | ZONA I | MUR/HEX:1 | -70.24317 | -17.98642 | 16.895 |
| 1288 | MZA 1166 - LT 20 | 1295 | ZONA I | MUR/HEX:2 | -70.24323 | -17.98634 | 581.130 |
| 1289 | MZA 1166 - LT 21 | 1296 | ZONA I | MUR/HEX:1 | -70.24328 | -17.98627 | 16.720 |
| 1290 | MZA 1166 - LT 22 | 1297 | ZONA I | MUR/HEX:1 | -70.24333 | -17.98619 | 18.952 |
| 1291 | MZA 1166 - LT 23 | 1298 | ZONA I | MUR/HEX:1 | -70.24339 | -17.98611 | 17.386 |
| 1292 | MZA 1166 - LT 24 | 1299 | ZONA I | MUR/HEX:1 | -70.24344 | -17.98604 | 18.646 |
| 1293 | MZA 1166 - LT 25 | 1300 | ZONA I | MUR/HEX:2 | -70.24349 | -17.98596 | 514.469 |
| 1294 | MZA 1166 - LT 26 | 1301 | ZONA I | MUR/HEX:1 | -70.24355 | -17.98589 | 18.600 |
| 1295 | MZA 1166 - LT 27 | 1302 | ZONA I | MUR/HEX:1 | -70.24360 | -17.98582 | 15.788 |
| 1296 | MZA 1166 - LT 28 | 1303 | ZONA I | MUR/HEX:1 | -70.24365 | -17.98574 | 20.426 |
| 1297 | MZA 1167 - LT 1 | 1304 | ZONA I | MUR/HEX:1 | -70.24271 | -17.98655 | 17.404 |
| 1298 | MZA 1167 - LT 2 | 1305 | ZONA I | MUR/HEX:1 | -70.24277 | -17.98648 | 17.593 |
| 1299 | MZA 1167 - LT 3 | 1306 | ZONA I | MUR/HEX:1 | -70.24282 | -17.98640 | 18.019 |
| 1300 | MZA 1167 - LT 4 | 1307 | ZONA I | MUR/HEX:1 | -70.24287 | -17.98633 | 16.716 |
| 1301 | MZA 1167 - LT 5 | 1308 | ZONA I | MUR/HEX:1 | -70.24292 | -17.98626 | 17.476 |
| 1302 | MZA 1167 - LT 6 | 1309 | ZONA I | MUR/HEX:1 | -70.24298 | -17.98618 | 17.614 |
| 1303 | MZA 1167 - LT 7 | 1310 | ZONA I | MUR/HEX:1 | -70.24303 | -17.98611 | 17.223 |
| 1304 | MZA 1167 - LT 8 | 1311 | ZONA I | MUR/HEX:1 | -70.24308 | -17.98603 | 18.547 |
| 1305 | MZA 1167 - LT 9 | 1312 | ZONA I | MUR/HEX:1 | -70.24314 | -17.98596 | 19.064 |
| 1306 | MZA 1167 - LT 10 | 1313 | ZONA I | MUR/HEX:1 | -70.24319 | -17.98588 | 18.039 |
| 1307 | MZA 1167 - LT 11 | 1314 | ZONA I | MUR/HEX:1 | -70.24324 | -17.98580 | 16.861 |
| 1308 | MZA 1167 - LT 12 | 1315 | ZONA I | MUR/HEX:1 | -70.24330 | -17.98573 | 16.682 |
| 1309 | MZA 1167 - LT 13 | 1316 | ZONA I | MUR/HEX:1 | -70.24335 | -17.98565 | 16.967 |
| 1310 | MZA 1167 - LT 14 | 1317 | ZONA I | MUR/HEX:2 | -70.24340 | -17.98558 | 565.621 |
| 1311 | MZA 1167 - LT 15 | 1318 | ZONA I | MUR/HEX:2 | -70.24255 | -17.98645 | 528.472 |
| 1312 | MZA 1167 - LT 16 | 1319 | ZONA I | MUR/HEX:1 | -70.24261 | -17.98637 | 16.674 |
| 1313 | MZA 1167 - LT 17 | 1320 | ZONA I | MUR/HEX:1 | -70.24266 | -17.98630 | 19.011 |
| 1314 | MZA 1167 - LT 18 | 1321 | ZONA I | MUR/HEX:1 | -70.24271 | -17.98622 | 16.688 |
| 1315 | MZA 1167 - LT 19 | 1322 | ZONA I | MUR/HEX:2 | -70.24277 | -17.98615 | 522.712 |
| 1316 | MZA 1167 - LT 20 | 1323 | ZONA I | MUR/HEX:1 | -70.24282 | -17.98608 | 17.528 |
| 1317 | MZA 1167 - LT 21 | 1324 | ZONA I | MUR/HEX:1 | -70.24287 | -17.98600 | 18.039 |
| 1318 | MZA 1167 - LT 22 | 1325 | ZONA I | MUR/HEX:1 | -70.24292 | -17.98593 | 17.042 |
| 1319 | MZA 1167 - LT 23 | 1326 | ZONA I | MUR/HEX:1 | -70.24298 | -17.98585 | 17.343 |
| 1320 | MZA 1167 - LT 24 | 1327 | ZONA I | MUR/HEX:1 | -70.24303 | -17.98577 | 16.541 |
| 1321 | MZA 1167 - LT 25 | 1328 | ZONA I | MUR/HEX:2 | -70.24309 | -17.98570 | 508.075 |
| 1322 | MZA 1167 - LT 26 | 1329 | ZONA I | MUR/HEX:2 | -70.24314 | -17.98562 | 484.014 |
| 1323 | MZA 1167 - LT 27 | 1330 | ZONA I | MUR/HEX:1 | -70.24319 | -17.98555 | 16.382 |
| 1324 | MZA 1167 - LT 28 | 1331 | ZONA I | MUR/HEX:1 | -70.24324 | -17.98548 | 17.344 |
| 1325 | MZA 1168 - LT 1 | 1332 | ZONA I | MUR/HEX:1 | -70.24232 | -17.98630 | 17.616 |
| 1326 | MZA 1168 - LT 2 | 1333 | ZONA I | MUR/HEX:2 | -70.24237 | -17.98622 | 490.905 |
| 1327 | MZA 1168 - LT 3 | 1334 | ZONA I | MUR/HEX:1 | -70.24243 | -17.98615 | 18.729 |
| 1328 | MZA 1168 - LT 4 | 1335 | ZONA I | MUR/HEX:1 | -70.24248 | -17.98607 | 18.883 |
| 1329 | MZA 1168 - LT 5 | 1336 | ZONA I | MUR/HEX:1 | -70.24253 | -17.98600 | 17.287 |
| 1330 | MZA 1168 - LT 6 | 1337 | ZONA I | MUR/HEX:2 | -70.24259 | -17.98592 | 508.408 |
| 1331 | MZA 1168 - LT 7 | 1338 | ZONA I | MUR/HEX:2 | -70.24264 | -17.98585 | 495.303 |
| 1332 | MZA 1168 - LT 8 | 1339 | ZONA I | MUR/HEX:1 | -70.24269 | -17.98578 | 18.491 |
| 1333 | MZA 1168 - LT 9 | 1340 | ZONA I | MUR/HEX:3 | -70.24275 | -17.98570 | 546.045 |
| 1334 | MZA 1168 - LT 10 | 1341 | ZONA I | MUR/HEX:1 | -70.24280 | -17.98563 | 18.147 |
| 1335 | MZA 1168 - LT 11 | 1342 | ZONA I | MUR/HEX:1 | -70.24285 | -17.98555 | 16.748 |
| 1336 | MZA 1168 - LT 12 | 1343 | ZONA I | MUR/HEX:1 | -70.24291 | -17.98548 | 17.168 |
| 1337 | MZA 1168 - LT 13 | 1344 | ZONA I | MUR/HEX:1 | -70.24296 | -17.98540 | 15.767 |
| 1338 | MZA 1168 - LT 14 | 1345 | ZONA I | MUR/HEX:1 | -70.24301 | -17.98533 | 15.845 |
| 1339 | MZA 1168 - LT 15 | 1346 | ZONA I | MUR/HEX:2 | -70.24216 | -17.98620 | 540.346 |
| 1340 | MZA 1168 - LT 16 | 1347 | ZONA I | MUR/HEX:1 | -70.24222 | -17.98612 | 17.986 |
| 1341 | MZA 1168 - LT 17 | 1348 | ZONA I | MUR/HEX:1 | -70.24227 | -17.98605 | 17.957 |
| 1342 | MZA 1168 - LT 18 | 1349 | ZONA I | MUR/HEX:1 | -70.24232 | -17.98597 | 18.628 |
| 1343 | MZA 1168 - LT 19 | 1350 | ZONA I | MUR/HEX:1 | -70.24238 | -17.98590 | 18.105 |
| 1344 | MZA 1168 - LT 20 | 1351 | ZONA I | MUR/HEX:1 | -70.24243 | -17.98582 | 17.243 |
| 1345 | MZA 1168 - LT 21 | 1352 | ZONA I | MUR/HEX:2 | -70.24248 | -17.98575 | 502.129 |
| 1346 | MZA 1168 - LT 22 | 1353 | ZONA I | MUR/HEX:1 | -70.24254 | -17.98567 | 18.103 |
| 1347 | MZA 1168 - LT 23 | 1354 | ZONA I | MUR/HEX:1 | -70.24259 | -17.98560 | 16.774 |
| 1348 | MZA 1168 - LT 24 | 1355 | ZONA I | MUR/HEX:1 | -70.24264 | -17.98552 | 18.778 |
| 1349 | MZA 1168 - LT 25 | 1356 | ZONA I | MUR/HEX:1 | -70.24270 | -17.98545 | 17.399 |
| 1350 | MZA 1168 - LT 26 | 1357 | ZONA I | MUR/HEX:1 | -70.24275 | -17.98537 | 17.816 |
| 1351 | MZA 1168 - LT 27 | 1358 | ZONA I | MUR/HEX:1 | -70.24280 | -17.98530 | 16.742 |
| 1352 | MZA 1168 - LT 28 | 1359 | ZONA I | MUR/HEX:1 | -70.24286 | -17.98522 | 16.722 |
| 1353 | MZA 1169 - LT 1 | 1360 | ZONA I | MUR/HEX:1 | -70.24194 | -17.98605 | 16.694 |
| 1354 | MZA 1169 - LT 2 | 1361 | ZONA I | MUR/HEX:1 | -70.24199 | -17.98597 | 16.025 |
| 1355 | MZA 1169 - LT 3 | 1362 | ZONA I | MUR/HEX:1 | -70.24205 | -17.98590 | 17.813 |
| 1356 | MZA 1169 - LT 4 | 1363 | ZONA I | MUR/HEX:1 | -70.24210 | -17.98582 | 18.025 |
| 1357 | MZA 1169 - LT 5 | 1364 | ZONA I | MUR/HEX:1 | -70.24215 | -17.98575 | 17.868 |
| 1358 | MZA 1169 - LT 6 | 1365 | ZONA I | MUR/HEX:1 | -70.24220 | -17.98567 | 18.325 |
| 1359 | MZA 1169 - LT 7 | 1366 | ZONA I | MUR/HEX:1 | -70.24226 | -17.98560 | 18.261 |
| 1360 | MZA 1169 - LT 8 | 1367 | ZONA I | MUR/HEX:2 | -70.24231 | -17.98552 | 512.396 |
| 1361 | MZA 1169 - LT 9 | 1368 | ZONA I | MUR/HEX:1 | -70.24236 | -17.98545 | 19.426 |
| 1362 | MZA 1169 - LT 10 | 1369 | ZONA I | MUR/HEX:2 | -70.24241 | -17.98537 | 519.521 |
| 1363 | MZA 1169 - LT 11 | 1370 | ZONA I | MUR/HEX:1 | -70.24247 | -17.98530 | 17.145 |
| 1364 | MZA 1169 - LT 12 | 1371 | ZONA I | MUR/HEX:1 | -70.24252 | -17.98522 | 19.166 |
| 1365 | MZA 1169 - LT 13 | 1372 | ZONA I | MUR/HEX:1 | -70.24257 | -17.98515 | 17.195 |
| 1366 | MZA 1169 - LT 14 | 1373 | ZONA I | MUR/HEX:1 | -70.24262 | -17.98507 | 17.933 |
| 1367 | MZA 1169 - LT 15 | 1374 | ZONA I | MUR/HEX:2 | -70.24178 | -17.98595 | 577.982 |
| 1368 | MZA 1169 - LT 16 | 1375 | ZONA I | MUR/HEX:1 | -70.24184 | -17.98587 | 18.880 |
| 1369 | MZA 1169 - LT 17 | 1376 | ZONA I | MUR/HEX:2 | -70.24189 | -17.98580 | 578.533 |
| 1370 | MZA 1169 - LT 18 | 1377 | ZONA I | MUR/HEX:1 | -70.24194 | -17.98572 | 20.063 |
| 1371 | MZA 1169 - LT 19 | 1378 | ZONA I | MUR/HEX:1 | -70.24199 | -17.98565 | 18.727 |
| 1372 | MZA 1169 - LT 20 | 1379 | ZONA I | MUR/HEX:1 | -70.24205 | -17.98557 | 18.647 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|------------------------|-----------|-----------|---------------|
| 1373 | MZA 1169 - LT 21 | 1380 | ZONA I | MUR/HEX:1 | -70.24210 | -17.98549 | 18.726 |
| 1374 | MZA 1169 - LT 22 | 1381 | ZONA I | MUR/HEX:1 | -70.24215 | -17.98542 | 18.345 |
| 1375 | MZA 1169 - LT 23 | 1382 | ZONA I | MUR/HEX:1 | -70.24220 | -17.98534 | 18.166 |
| 1376 | MZA 1169 - LT 24 | 1383 | ZONA I | MUR/HEX:1 | -70.24226 | -17.98527 | 16.825 |
| 1377 | MZA 1169 - LT 25 | 1384 | ZONA I | MUR/HEX:1 | -70.24231 | -17.98519 | 16.750 |
| 1378 | MZA 1169 - LT 26 | 1385 | ZONA I | MUR/HEX:1 | -70.24236 | -17.98512 | 18.249 |
| 1379 | MZA 1169 - LT 27 | 1386 | ZONA I | MUR/HEX:1 | -70.24241 | -17.98504 | 17.570 |
| 1380 | MZA 1169 - LT 28 | 1387 | ZONA I | MUR/HEX:1 | -70.24246 | -17.98497 | 16.895 |
| 1381 | MZA 1170 - LT 1 | 1388 | ZONA I | MUR/HEX:1 | -70.24152 | -17.98578 | 19.744 |
| 1382 | MZA 1170 - LT 2 | 1389 | ZONA I | MUR/HEX:1 | -70.24158 | -17.98571 | 18.778 |
| 1383 | MZA 1170 - LT 3 | 1390 | ZONA I | MUR/HEX:1 | -70.24163 | -17.98563 | 17.349 |
| 1384 | MZA 1170 - LT 4 | 1391 | ZONA I | MUR/HEX:1 | -70.24168 | -17.98556 | 18.146 |
| 1385 | MZA 1170 - LT 5 | 1392 | ZONA I | MUR/HEX:1 | -70.24174 | -17.98548 | 17.506 |
| 1386 | MZA 1170 - LT 6 | 1393 | ZONA I | MUR/HEX:3 | -70.24179 | -17.98541 | 564.794 |
| 1387 | MZA 1170 - LT 7 | 1394 | ZONA I | MUR/HEX:2 | -70.24184 | -17.98533 | 528.167 |
| 1388 | MZA 1170 - LT 8 | 1395 | ZONA I | MUR/HEX:1 | -70.24189 | -17.98527 | 17.791 |
| 1389 | MZA 1170 - LT 9 | 1396 | ZONA I | MUR/HEX:1 | -70.24195 | -17.98519 | 17.324 |
| 1390 | MZA 1170 - LT 10 | 1397 | ZONA I | MUR/HEX:1 | -70.24200 | -17.98511 | 16.869 |
| 1391 | MZA 1170 - LT 11 | 1398 | ZONA I | MUR/HEX:1 | -70.24206 | -17.98503 | 16.713 |
| 1392 | MZA 1170 - LT 12 | 1399 | ZONA I | MUR/HEX:1 | -70.24211 | -17.98496 | 17.611 |
| 1393 | MZA 1170 - LT 13 | 1400 | ZONA I | MUR/HEX:1 | -70.24216 | -17.98489 | 17.422 |
| 1394 | MZA 1170 - LT 14 | 1401 | ZONA I | MUR/HEX:1 | -70.24222 | -17.98481 | 16.213 |
| 1395 | MZA 1170 - LT 15 | 1402 | ZONA I | MUR/HEX:1 | -70.24137 | -17.98568 | 17.626 |
| 1396 | MZA 1170 - LT 16 | 1403 | ZONA I | MUR/HEX:1 | -70.24142 | -17.98560 | 17.270 |
| 1397 | MZA 1170 - LT 17 | 1404 | ZONA I | MUR/HEX:1 | -70.24147 | -17.98553 | 17.606 |
| 1398 | MZA 1170 - LT 18 | 1405 | ZONA I | MUR/HEX:1 | -70.24152 | -17.98545 | 15.704 |
| 1399 | MZA 1170 - LT 19 | 1406 | ZONA I | MUR/HEX:1 | -70.24158 | -17.98538 | 16.008 |
| 1400 | MZA 1170 - LT 20 | 1407 | ZONA I | MUR/HEX:1 | -70.24163 | -17.98530 | 16.546 |
| 1401 | MZA 1170 - LT 21 | 1408 | ZONA I | MUR/HEX:1 | -70.24168 | -17.98523 | 16.818 |
| 1402 | MZA 1170 - LT 22 | 1409 | ZONA I | MUR/HEX:2 | -70.24174 | -17.98516 | 482.340 |
| 1403 | MZA 1170 - LT 23 | 1410 | ZONA I | MUR/HEX:1 | -70.24179 | -17.98508 | 17.107 |
| 1404 | MZA 1170 - LT 24 | 1411 | ZONA I | MUR/HEX:1 | -70.24185 | -17.98501 | 16.843 |
| 1405 | MZA 1170 - LT 25 | 1412 | ZONA I | MUR/HEX:1 | -70.24190 | -17.98493 | 16.433 |
| 1406 | MZA 1170 - LT 26 | 1413 | ZONA I | MUR/HEX:1 | -70.24195 | -17.98486 | 16.017 |
| 1407 | MZA 1170 - LT 27 | 1414 | ZONA I | MUR/HEX:2 | -70.24201 | -17.98478 | 496.111 |
| 1408 | MZA 1170 - LT 28 | 1415 | ZONA I | MUR/HEX:1 | -70.24206 | -17.98471 | 15.463 |
| 1409 | MZA 1171 - LT 1 | 1416 | ZONA I | MUR/HEX:1 | -70.24112 | -17.98551 | 16.526 |
| 1410 | MZA 1171 - LT 2 | 1417 | ZONA I | MUR/HEX:1 | -70.24117 | -17.98544 | 17.464 |
| 1411 | MZA 1171 - LT 3 | 1418 | ZONA I | MUR/HEX:1 | -70.24123 | -17.98537 | 17.305 |
| 1412 | MZA 1171 - LT 4 | 1419 | ZONA I | MUR/HEX:1 | -70.24128 | -17.98529 | 17.053 |
| 1413 | MZA 1171 - LT 5 | 1420 | ZONA I | MUR/HEX:1 | -70.24133 | -17.98522 | 17.809 |
| 1414 | MZA 1171 - LT 8 | 1423 | ZONA I | MUR/HEX:1 | -70.24149 | -17.98499 | 17.055 |
| 1415 | MZA 1171 - LT 9 | 1424 | ZONA I | MUR/HEX:1 | -70.24155 | -17.98492 | 17.898 |
| 1416 | MZA 1171 - LT 10 | 1425 | ZONA I | MUR/HEX:2 | -70.24160 | -17.98484 | 503.378 |
| 1417 | MZA 1171 - LT 11 | 1426 | ZONA I | MUR/HEX:1 | -70.24165 | -17.98477 | 16.972 |
| 1418 | MZA 1171 - LT 12 | 1427 | ZONA I | MUR/HEX:1 | -70.24171 | -17.98469 | 17.480 |
| 1419 | MZA 1171 - LT 13 | 1428 | ZONA I | MUR/HEX:2 | -70.24176 | -17.98462 | 514.070 |
| 1420 | MZA 1171 - LT 14 | 1429 | ZONA I | MUR/HEX:1 | -70.24181 | -17.98454 | 15.370 |
| 1421 | MZA 1171 - LT 15 | 1430 | ZONA I | MUR/HEX:1 | -70.24096 | -17.98541 | 16.432 |
| 1422 | MZA 1171 - LT 16 | 1431 | ZONA I | MUR/HEX:2 | -70.24102 | -17.98534 | 522.502 |
| 1423 | MZA 1171 - LT 17 | 1432 | ZONA I | MUR/HEX:1 | -70.24107 | -17.98526 | 17.221 |
| 1424 | MZA 1171 - LT 18 | 1433 | ZONA I | MUR/HEX:1 | -70.24112 | -17.98519 | 17.436 |
| 1425 | MZA 1171 - LT 19 | 1434 | ZONA I | MUR/HEX:2 | -70.24118 | -17.98511 | 535.090 |
| 1426 | MZA 1171 - LT 20 | 1435 | ZONA I | MUR/HEX:2 | -70.24123 | -17.98504 | 497.418 |
| 1427 | MZA 1171 - LT 21 | 1436 | ZONA I | MUR/HEX:1 | -70.24128 | -17.98496 | 16.565 |
| 1428 | MZA 1171 - LT 22 | 1437 | ZONA I | MUR/HEX:2 | -70.24134 | -17.98489 | 513.090 |
| 1429 | MZA 1171 - LT 23 | 1438 | ZONA I | MUR/HEX:1 | -70.24139 | -17.98481 | 17.967 |
| 1430 | MZA 1171 - LT 24 | 1439 | ZONA I | MUR/HEX:1 | -70.24144 | -17.98474 | 16.831 |
| 1431 | MZA 1171 - LT 25 | 1440 | ZONA I | MUR/HEX:2 | -70.24150 | -17.98466 | 505.098 |
| 1432 | MZA 1171 - LT 26 | 1441 | ZONA I | MUR/HEX:1 | -70.24155 | -17.98459 | 19.051 |
| 1433 | MZA 1171 - LT 27 | 1442 | ZONA I | MUR/HEX:1 | -70.24160 | -17.98451 | 19.686 |
| 1434 | MZA 1171 - LT 28 | 1443 | ZONA I | MUR/HEX:1 | -70.24166 | -17.98444 | 16.585 |
| 1435 | MZA 2201 - LT 1 | 1 | ZONA II | MUR/HEX:1 | -70.24024 | -17.98675 | 17.879 |
| 1436 | MZA 2201 - LT 2 | 2 | ZONA II | MUR/HEX:1 | -70.24030 | -17.98668 | 16.622 |
| 1437 | MZA 2201 - LT 3 | 3 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24035 | -17.98660 | 25.078 |
| 1438 | MZA 2201 - LT 4 | 4 | ZONA II | MUR/HEX:1 | -70.24040 | -17.98653 | 17.122 |
| 1439 | MZA 2201 - LT 5 | 5 | ZONA II | MUR/HEX:1 | -70.24045 | -17.98645 | 17.622 |
| 1440 | MZA 2201 - LT 6 | 6 | ZONA II | MUR/HEX:2 | -70.24051 | -17.98638 | 505.280 |
| 1441 | MZA 2201 - LT 7 | 7 | ZONA II | MUR/HEX:1 | -70.24056 | -17.98630 | 16.350 |
| 1442 | MZA 2201 - LT 8 | 8 | ZONA II | MUR/HEX:1 | -70.24061 | -17.98623 | 17.702 |
| 1443 | MZA 2201 - LT 9 | 9 | ZONA II | MUR/HEX:1 | -70.24067 | -17.98615 | 16.205 |
| 1444 | MZA 2201 - LT 10 | 10 | ZONA II | MUR/HEX:1 | -70.24072 | -17.98608 | 17.048 |
| 1445 | MZA 2201 - LT 11 | 11 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24077 | -17.98600 | 307.292 |
| 1446 | MZA 2201 - LT 12 | 12 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24083 | -17.98593 | 307.120 |
| 1447 | MZA 2201 - LT 13 | 13 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24088 | -17.98585 | 2108.456 |
| 1448 | MZA 2201 - LT 14 | 14 | ZONA II | MUR/HEX:2 | -70.24093 | -17.98578 | 524.520 |
| 1449 | MZA 2201 - LT 15 | 15 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24098 | -17.98665 | 314.741 |
| 1450 | MZA 2201 - LT 16 | 16 | ZONA II | MUR/HEX:2 | -70.24014 | -17.98657 | 492.356 |
| 1451 | MZA 2201 - LT 17 | 17 | ZONA II | MUR/HEX:2 | -70.24019 | -17.98650 | 482.524 |
| 1452 | MZA 2201 - LT 18 | 18 | ZONA II | MUR/HEX:1 | -70.24024 | -17.98642 | 16.644 |
| 1453 | MZA 2201 - LT 19 | 19 | ZONA II | MUR/HEX:3 | -70.24030 | -17.98635 | 17.935 |
| 1454 | MZA 2201 - LT 20 | 20 | ZONA II | MUR/HEX:3 | -70.24035 | -17.98627 | 567.508 |
| 1455 | MZA 2201 - LT 21 | 21 | ZONA II | MUR/HEX:2 | -70.24040 | -17.98620 | 507.721 |
| 1456 | MZA 2201 - LT 22 | 22 | ZONA II | MUR/HEX:1 | -70.24046 | -17.98612 | 16.961 |
| 1457 | MZA 2201 - LT 23 | 23 | ZONA II | MUR/HEX:1 | -70.24051 | -17.98605 | 16.422 |
| 1458 | MZA 2201 - LT 24 | 24 | ZONA II | MUR/HEX:1 | -70.24056 | -17.98597 | 17.648 |
| 1459 | MZA 2201 - LT 25 | 25 | ZONA II | MUR/HEX:2 | -70.24062 | -17.98590 | 495.378 |
| 1460 | MZA 2201 - LT 26 | 26 | ZONA II | MUR/HEX:2 | -70.24067 | -17.98583 | 491.391 |
| 1461 | MZA 2201 - LT 27 | 27 | ZONA II | MUR/HEX:1 | -70.24072 | -17.98575 | 16.672 |
| 1462 | MZA 2201 - LT 28 | 28 | ZONA II | MUR/HEX:1 | -70.24078 | -17.98568 | 17.158 |
| 1463 | MZA 2202 - LT 1 | 29 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23940 | -17.98794 | 359.607 |
| 1464 | MZA 2202 - LT 2 | 30 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23946 | -17.98786 | 25.073 |
| 1465 | MZA 2202 - LT 3 | 31 | ZONA II | MUR/HEX:1 | -70.23951 | -17.98778 | 15.849 |
| 1466 | MZA 2202 - LT 4 | 32 | ZONA II | MUR/HEX:1 | -70.23956 | -17.98771 | 17.495 |
| 1467 | MZA 2202 - LT 5 | 33 | ZONA II | MUR/HEX:1 | -70.23961 | -17.98763 | 15.975 |
| 1468 | MZA 2202 - LT 6 | 34 | ZONA II | MUR/HEX:1 | -70.23967 | -17.98756 | 16.284 |
| 1469 | MZA 2202 - LT 7 | 35 | ZONA II | MUR/HEX:1 | -70.23972 | -17.98748 | 16.728 |
| 1470 | MZA 2202 - LT 8 | 36 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23977 | -17.98741 | 301.434 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by="OpenQuake engine 3.16.1", start_date="2023-06-02T22:33:01", checksum="1181138371", investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 1471 | MZA 2202 - LT 9 | 37 | ZONA II | MUR/HEX:1 | -70.23983 | -17.98733 | 15.835 |
| 1472 | MZA 2202 - LT 10 | 38 | ZONA II | MUR/HEX:1 | -70.23988 | -17.98726 | 16.842 |
| 1473 | MZA 2202 - LT 11 | 39 | ZONA II | MUR/HEX:2 | -70.23993 | -17.98718 | 532.144 |
| 1474 | MZA 2202 - LT 12 | 40 | ZONA II | MUR/HEX:2 | -70.23999 | -17.98710 | 504.828 |
| 1475 | MZA 2202 - LT 13 | 41 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24004 | -17.98703 | 25.398 |
| 1476 | MZA 2202 - LT 14 | 42 | ZONA II | MUR/HEX:1 | -70.24010 | -17.98695 | 19.223 |
| 1477 | MZA 2202 - LT 15 | 43 | ZONA II | MUR/HEX:1 | -70.23924 | -17.98782 | 19.849 |
| 1478 | MZA 2202 - LT 16 | 44 | ZONA II | MUR/HEX:1 | -70.23930 | -17.98775 | 17.251 |
| 1479 | MZA 2202 - LT 17 | 45 | ZONA II | MUR/HEX:1 | -70.23935 | -17.98768 | 16.765 |
| 1480 | MZA 2202 - LT 18 | 46 | ZONA II | MUR/HEX:1 | -70.23940 | -17.98760 | 16.865 |
| 1481 | MZA 2202 - LT 19 | 47 | ZONA II | MUR/HEX:1 | -70.23946 | -17.98753 | 16.922 |
| 1482 | MZA 2202 - LT 20 | 48 | ZONA II | MUR/HEX:1 | -70.23951 | -17.98746 | 16.270 |
| 1483 | MZA 2202 - LT 21 | 49 | ZONA II | MUR/HEX:1 | -70.23956 | -17.98738 | 16.753 |
| 1484 | MZA 2202 - LT 22 | 50 | ZONA II | MUR/HEX:1 | -70.23962 | -17.98730 | 15.997 |
| 1485 | MZA 2202 - LT 23 | 51 | ZONA II | MUR/HEX:1 | -70.23967 | -17.98723 | 16.003 |
| 1486 | MZA 2202 - LT 24 | 52 | ZONA II | MUR/HEX:1 | -70.23972 | -17.98716 | 17.587 |
| 1487 | MZA 2202 - LT 25 | 53 | ZONA II | MUR/HEX:1 | -70.23978 | -17.98708 | 16.895 |
| 1488 | MZA 2202 - LT 26 | 54 | ZONA II | MUR/HEX:1 | -70.23983 | -17.98700 | 16.863 |
| 1489 | MZA 2202 - LT 27 | 55 | ZONA II | MUR/HEX:1 | -70.23989 | -17.98692 | 16.713 |
| 1490 | MZA 2202 - LT 28 | 56 | ZONA II | MUR/HEX:1 | -70.23994 | -17.98685 | 19.796 |
| 1491 | MZA 2203 - LT 6 | 57 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23911 | -17.98834 | 24.538 |
| 1492 | MZA 2203 - LT 7 | 58 | ZONA II | MUR/HEX:1 | -70.23916 | -17.98827 | 16.646 |
| 1493 | MZA 2203 - LT 8 | 59 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23922 | -17.98819 | 26.358 |
| 1494 | MZA 2203 - LT 9 | 60 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23927 | -17.98811 | 330.486 |
| 1495 | MZA 2203 - LT 15 | 61 | ZONA II | MUR/HEX:1 | -70.23895 | -17.98824 | 15.652 |
| 1496 | MZA 2203 - LT 16 | 62 | ZONA II | MUR/HEX:1 | -70.23901 | -17.98816 | 16.220 |
| 1497 | MZA 2203 - LT 17 | 63 | ZONA II | MUR/HEX:1 | -70.23906 | -17.98809 | 18.900 |
| 1498 | MZA 2203 - LT 18 | 64 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23912 | -17.98801 | 24.216 |
| 1499 | MZA 2204 - LT 1 | 65 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23884 | -17.98872 | 27.063 |
| 1500 | MZA 2204 - LT 2 | 66 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23890 | -17.98864 | 23.397 |
| 1501 | MZA 2204 - LT 3 | 67 | ZONA II | MUR/HEX:1 | -70.23895 | -17.98856 | 15.328 |
| 1502 | MZA 2204 - LT 4 | 68 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23900 | -17.98849 | 23.488 |
| 1503 | MZA 2204 - LT 10 | 69 | ZONA II | MUR/HEX:2 | -70.23868 | -17.98862 | 529.215 |
| 1504 | MZA 2204 - LT 11 | 70 | ZONA II | MUR/HEX:1 | -70.23874 | -17.98854 | 15.760 |
| 1505 | MZA 2204 - LT 12 | 71 | ZONA II | MUR/HEX:1 | -70.23879 | -17.98846 | 15.570 |
| 1506 | MZA 2204 - LT 13 | 72 | ZONA II | MUR/HEX:1 | -70.23885 | -17.98839 | 15.268 |
| 1507 | MZA 2206 - LT 1 | 73 | ZONA II | MUR/HEX:2 | -70.23882 | -17.98964 | 544.371 |
| 1508 | MZA 2206 - LT 2 | 74 | ZONA II | MUR/HEX:1 | -70.23874 | -17.98959 | 16.382 |
| 1509 | MZA 2206 - LT 3 | 75 | ZONA II | MUR/HEX:1 | -70.23867 | -17.98953 | 16.317 |
| 1510 | MZA 2206 - LT 4 | 76 | ZONA II | MUR/HEX:1 | -70.23859 | -17.98948 | 17.128 |
| 1511 | MZA 2206 - LT 5 | 77 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23852 | -17.98942 | 25.377 |
| 1512 | MZA 2206 - LT 6 | 78 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23844 | -17.98937 | 299.615 |
| 1513 | MZA 2206 - LT 7 | 79 | ZONA II | MUR/HEX:1 | -70.23837 | -17.98931 | 17.539 |
| 1514 | MZA 2206 - LT 8 | 80 | ZONA II | MUR/HEX:1 | -70.23829 | -17.98926 | 17.668 |
| 1515 | MZA 2206 - LT 9 | 81 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23821 | -17.98920 | 330.337 |
| 1516 | MZA 2206 - LT 10 | 82 | ZONA II | MUR/HEX:2 | -70.23871 | -17.98979 | 542.877 |
| 1517 | MZA 2206 - LT 11 | 83 | ZONA II | MUR/HEX:1 | -70.23863 | -17.98973 | 16.973 |
| 1518 | MZA 2206 - LT 12 | 84 | ZONA II | MUR/HEX:1 | -70.23855 | -17.98967 | 17.692 |
| 1519 | MZA 2206 - LT 13 | 85 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23848 | -17.98962 | 23.554 |
| 1520 | MZA 2206 - LT 14 | 86 | ZONA II | MUR/HEX:2 | -70.23840 | -17.98956 | 526.264 |
| 1521 | MZA 2206 - LT 15 | 87 | ZONA II | MUR/HEX:1 | -70.23833 | -17.98951 | 17.208 |
| 1522 | MZA 2206 - LT 16 | 88 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23825 | -17.98946 | 25.344 |
| 1523 | MZA 2206 - LT 17 | 89 | ZONA II | MUR/HEX:1 | -70.23818 | -17.98940 | 17.090 |
| 1524 | MZA 2206 - LT 18 | 90 | ZONA II | MUR/HEX:1 | -70.23810 | -17.98934 | 19.044 |
| 1525 | MZA 2210 - LT 1 | 170 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23980 | -17.98820 | 26.650 |
| 1526 | MZA 2210 - LT 2 | 171 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23986 | -17.98812 | 300.516 |
| 1527 | MZA 2210 - LT 3 | 172 | ZONA II | MUR/HEX:1 | -70.23991 | -17.98805 | 16.987 |
| 1528 | MZA 2210 - LT 4 | 173 | ZONA II | MUR/HEX:1 | -70.23996 | -17.98797 | 16.615 |
| 1529 | MZA 2210 - LT 5 | 174 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24002 | -17.98790 | 24.607 |
| 1530 | MZA 2210 - LT 6 | 175 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24007 | -17.98782 | 24.302 |
| 1531 | MZA 2210 - LT 7 | 176 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24012 | -17.98775 | 25.883 |
| 1532 | MZA 2210 - LT 8 | 177 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24018 | -17.98767 | 307.480 |
| 1533 | MZA 2210 - LT 9 | 178 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24023 | -17.98760 | 297.027 |
| 1534 | MZA 2210 - LT 10 | 179 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24028 | -17.98752 | 300.015 |
| 1535 | MZA 2210 - LT 11 | 180 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24034 | -17.98745 | 297.565 |
| 1536 | MZA 2210 - LT 12 | 181 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24039 | -17.98737 | 301.427 |
| 1537 | MZA 2210 - LT 13 | 182 | ZONA II | MUR/HEX:2 | -70.24044 | -17.98730 | 487.068 |
| 1538 | MZA 2210 - LT 14 | 183 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24050 | -17.98722 | 30.911 |
| 1539 | MZA 2210 - LT 15 | 184 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23964 | -17.98810 | 345.774 |
| 1540 | MZA 2210 - LT 16 | 185 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23970 | -17.98802 | 23.793 |
| 1541 | MZA 2210 - LT 17 | 186 | ZONA II | MUR/HEX:1 | -70.23975 | -17.98795 | 17.274 |
| 1542 | MZA 2210 - LT 18 | 187 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.23981 | -17.98787 | 300.112 |
| 1543 | MZA 2210 - LT 19 | 188 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23986 | -17.98780 | 25.709 |
| 1544 | MZA 2210 - LT 20 | 189 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23991 | -17.98772 | 24.201 |
| 1545 | MZA 2210 - LT 21 | 190 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23997 | -17.98765 | 23.466 |
| 1546 | MZA 2210 - LT 22 | 191 | ZONA II | MUR/HEX:1 | -70.24002 | -17.98757 | 17.186 |
| 1547 | MZA 2210 - LT 23 | 192 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24007 | -17.98750 | 24.427 |
| 1548 | MZA 2210 - LT 24 | 193 | ZONA II | MUR/HEX:1 | -70.24013 | -17.98742 | 18.408 |
| 1549 | MZA 2210 - LT 25 | 194 | ZONA II | MUR/HEX:1 | -70.24018 | -17.98735 | 16.082 |
| 1550 | MZA 2210 - LT 26 | 195 | ZONA II | MUR/HEX:1 | -70.24023 | -17.98727 | 16.945 |
| 1551 | MZA 2210 - LT 27 | 196 | ZONA II | MUR/HEX:1 | -70.24029 | -17.98720 | 17.513 |
| 1552 | MZA 2210 - LT 28 | 197 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24035 | -17.98711 | 29.202 |
| 1553 | MZA 2211 - LT 6 | 198 | ZONA II | MUR/HEX:1 | -70.23951 | -17.98860 | 17.159 |
| 1554 | MZA 2211 - LT 7 | 199 | ZONA II | MUR/HEX:2 | -70.23957 | -17.98853 | 492.106 |
| 1555 | MZA 2211 - LT 8 | 200 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23962 | -17.98845 | 303.067 |
| 1556 | MZA 2211 - LT 9 | 201 | ZONA II | MUR/HEX:2 | -70.23968 | -17.98838 | 547.270 |
| 1557 | MZA 2211 - LT 15 | 202 | ZONA II | MUR/HEX:1 | -70.23936 | -17.98850 | 16.552 |
| 1558 | MZA 2211 - LT 16 | 203 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23941 | -17.98843 | 302.131 |
| 1559 | MZA 2211 - LT 17 | 204 | ZONA II | MUR/HEX:1 | -70.23947 | -17.98835 | 16.425 |
| 1560 | MZA 2211 - LT 18 | 205 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23952 | -17.98827 | 26.059 |
| 1561 | MZA 2212 - LT 1 | 206 | ZONA II | MUR/HEX:1 | -70.23925 | -17.98898 | 17.683 |
| 1562 | MZA 2212 - LT 2 | 207 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23930 | -17.98890 | 23.485 |
| 1563 | MZA 2212 - LT 3 | 208 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.23936 | -17.98883 | 2158.510 |
| 1564 | MZA 2212 - LT 4 | 209 | ZONA II | MUR/HEX:1 | -70.23941 | -17.98875 | 17.676 |
| 1565 | MZA 2212 - LT 10 | 210 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23909 | -17.98888 | 26.676 |
| 1566 | MZA 2212 - LT 11 | 211 | ZONA II | MUR/HEX:2 | -70.23915 | -17.98880 | 501.046 |
| 1567 | MZA 2212 - LT 12 | 212 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.23920 | -17.98873 | 2101.221 |
| 1568 | MZA 2212 - LT 13 | 213 | ZONA II | MUR/HEX:2 | -70.23925 | -17.98865 | 499.593 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by=OpenQuake engine 3.16.1', start_date=2023-06-02T22:33:01', checksum=1181138371, investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 1569 | MZA 2213 - LT 1 | 214 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24105 | -17.98728 | 308.602 |
| 1570 | MZA 2213 - LT 2 | 215 | ZONA II | MUR/HEX:2 | -70.24111 | -17.98720 | 512.738 |
| 1571 | MZA 2213 - LT 3 | 216 | ZONA II | MUR/HEX:1 | -70.24116 | -17.98713 | 16.488 |
| 1572 | MZA 2213 - LT 4 | 217 | ZONA II | MUR/HEX:1 | -70.24121 | -17.98705 | 17.167 |
| 1573 | MZA 2213 - LT 5 | 218 | ZONA II | MUR/HEX:1 | -70.24127 | -17.98698 | 18.304 |
| 1574 | MZA 2213 - LT 6 | 219 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24132 | -17.98690 | 25.376 |
| 1575 | MZA 2213 - LT 7 | 220 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24137 | -17.98683 | 25.630 |
| 1576 | MZA 2213 - LT 8 | 221 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24143 | -17.98675 | 22.742 |
| 1577 | MZA 2213 - LT 9 | 222 | ZONA II | MUR/HEX:1 | -70.24148 | -17.98668 | 16.474 |
| 1578 | MZA 2213 - LT 10 | 223 | ZONA II | MUR/HEX:1 | -70.24153 | -17.98660 | 16.587 |
| 1579 | MZA 2213 - LT 11 | 224 | ZONA II | MUR/HEX:1 | -70.24158 | -17.98653 | 16.324 |
| 1580 | MZA 2213 - LT 12 | 225 | ZONA II | MUR/HEX:1 | -70.24164 | -17.98646 | 16.687 |
| 1581 | MZA 2213 - LT 13 | 226 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24169 | -17.98638 | 313.340 |
| 1582 | MZA 2213 - LT 14 | 227 | ZONA II | MUR/HEX:1 | -70.24174 | -17.98630 | 17.295 |
| 1583 | MZA 2213 - LT 15 | 228 | ZONA II | MUR/HEX:2 | -70.24090 | -17.98718 | 513.598 |
| 1584 | MZA 2213 - LT 16 | 229 | ZONA II | MUR/HEX:1 | -70.24095 | -17.98710 | 16.822 |
| 1585 | MZA 2213 - LT 17 | 230 | ZONA II | MUR/HEX:1 | -70.24100 | -17.98703 | 17.888 |
| 1586 | MZA 2213 - LT 18 | 231 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24106 | -17.98695 | 26.085 |
| 1587 | MZA 2213 - LT 19 | 232 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24111 | -17.98688 | 24.959 |
| 1588 | MZA 2213 - LT 20 | 233 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24116 | -17.98680 | 303.991 |
| 1589 | MZA 2213 - LT 21 | 234 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24122 | -17.98673 | 2059.796 |
| 1590 | MZA 2213 - LT 22 | 235 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24127 | -17.98665 | 301.038 |
| 1591 | MZA 2213 - LT 23 | 236 | ZONA II | MUR/HEX:1 | -70.24132 | -17.98658 | 17.252 |
| 1592 | MZA 2213 - LT 24 | 237 | ZONA II | MUR/HEX:1 | -70.24137 | -17.98650 | 16.762 |
| 1593 | MZA 2213 - LT 25 | 238 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24143 | -17.98643 | 301.593 |
| 1594 | MZA 2213 - LT 26 | 239 | ZONA II | MUR/HEX:1 | -70.24148 | -17.98635 | 17.233 |
| 1595 | MZA 2213 - LT 27 | 240 | ZONA II | MUR/HEX:2 | -70.24153 | -17.98628 | 498.173 |
| 1596 | MZA 2213 - LT 28 | 241 | ZONA II | MUR/HEX:1 | -70.24156 | -17.98620 | 16.769 |
| 1597 | MZA 2217 - LT 1 | 242 | ZONA II | MUR/HEX:1 | -70.24088 | -17.98921 | 17.161 |
| 1598 | MZA 2217 - LT 2 | 243 | ZONA II | MUR/HEX:2 | -70.24080 | -17.98916 | 516.510 |
| 1599 | MZA 2217 - LT 3 | 244 | ZONA II | MUR/HEX:2 | -70.24072 | -17.98911 | 487.099 |
| 1600 | MZA 2217 - LT 4 | 245 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24065 | -17.98905 | 299.984 |
| 1601 | MZA 2217 - LT 5 | 246 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24057 | -17.98900 | 307.264 |
| 1602 | MZA 2217 - LT 6 | 247 | ZONA II | MUR/HEX:1 | -70.24049 | -17.98895 | 17.286 |
| 1603 | MZA 2217 - LT 7 | 248 | ZONA II | MUR/HEX:1 | -70.24041 | -17.98890 | 16.632 |
| 1604 | MZA 2217 - LT 8 | 249 | ZONA II | MUR/HEX:1 | -70.24033 | -17.98885 | 16.550 |
| 1605 | MZA 2217 - LT 9 | 250 | ZONA II | MUR/HEX:1 | -70.24026 | -17.98880 | 17.520 |
| 1606 | MZA 2217 - LT 10 | 251 | ZONA II | MUR/HEX:1 | -70.24018 | -17.98875 | 16.886 |
| 1607 | MZA 2217 - LT 11 | 252 | ZONA II | MUR/HEX:1 | -70.24010 | -17.98870 | 15.751 |
| 1608 | MZA 2217 - LT 12 | 253 | ZONA II | MUR/HEX:1 | -70.24002 | -17.98865 | 17.024 |
| 1609 | MZA 2217 - LT 13 | 254 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23994 | -17.98860 | 302.078 |
| 1610 | MZA 2217 - LT 14 | 255 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.23986 | -17.98855 | 2107.694 |
| 1611 | MZA 2217 - LT 15 | 256 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24077 | -17.98936 | 25.799 |
| 1612 | MZA 2217 - LT 16 | 257 | ZONA II | MUR/HEX:1 | -70.24069 | -17.98931 | 17.629 |
| 1613 | MZA 2217 - LT 17 | 258 | ZONA II | MUR/HEX:1 | -70.24062 | -17.98925 | 16.479 |
| 1614 | MZA 2217 - LT 18 | 259 | ZONA II | MUR/HEX:2 | -70.24054 | -17.98920 | 505.873 |
| 1615 | MZA 2217 - LT 19 | 260 | ZONA II | MUR/HEX:1 | -70.24046 | -17.98915 | 17.612 |
| 1616 | MZA 2217 - LT 20 | 261 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24038 | -17.98910 | 308.687 |
| 1617 | MZA 2217 - LT 21 | 262 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24030 | -17.98905 | 300.963 |
| 1618 | MZA 2217 - LT 22 | 263 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24023 | -17.98900 | 306.090 |
| 1619 | MZA 2217 - LT 23 | 264 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24015 | -17.98895 | 304.251 |
| 1620 | MZA 2217 - LT 24 | 265 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24007 | -17.98890 | 304.098 |
| 1621 | MZA 2217 - LT 25 | 266 | ZONA II | MUR/HEX:1 | -70.23999 | -17.98885 | 16.678 |
| 1622 | MZA 2217 - LT 26 | 267 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23991 | -17.98880 | 24.183 |
| 1623 | MZA 2217 - LT 27 | 268 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23984 | -17.98875 | 24.140 |
| 1624 | MZA 2217 - LT 28 | 269 | ZONA II | MUR/HEX:2 | -70.23976 | -17.98869 | 508.828 |
| 1625 | MZA 2218 - LT 1 | 270 | ZONA II | MUR/HEX:1 | -70.24060 | -17.98960 | 16.590 |
| 1626 | MZA 2218 - LT 2 | 271 | ZONA II | MUR/HEX:2 | -70.24053 | -17.98955 | 499.801 |
| 1627 | MZA 2218 - LT 3 | 272 | ZONA II | MUR/HEX:1 | -70.24045 | -17.98950 | 17.492 |
| 1628 | MZA 2218 - LT 4 | 273 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24037 | -17.98944 | 2068.675 |
| 1629 | MZA 2218 - LT 5 | 274 | ZONA II | MUR/HEX:1 | -70.24029 | -17.98939 | 18.345 |
| 1630 | MZA 2218 - LT 6 | 275 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24021 | -17.98934 | 306.089 |
| 1631 | MZA 2218 - LT 7 | 276 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24014 | -17.98929 | 301.145 |
| 1632 | MZA 2218 - LT 8 | 277 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24006 | -17.98924 | 306.603 |
| 1633 | MZA 2218 - LT 9 | 278 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23998 | -17.98919 | 303.811 |
| 1634 | MZA 2218 - LT 10 | 279 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23990 | -17.98914 | 310.956 |
| 1635 | MZA 2218 - LT 11 | 280 | ZONA II | MUR/HEX:1 | -70.23982 | -17.98909 | 16.158 |
| 1636 | MZA 2218 - LT 12 | 281 | ZONA II | MUR/HEX:1 | -70.23974 | -17.98904 | 15.537 |
| 1637 | MZA 2218 - LT 13 | 282 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23967 | -17.98899 | 22.731 |
| 1638 | MZA 2218 - LT 14 | 283 | ZONA II | MUR/HEX:1 | -70.23959 | -17.98893 | 16.452 |
| 1639 | MZA 2218 - LT 15 | 284 | ZONA II | MUR/HEX:2 | -70.24050 | -17.98975 | 506.997 |
| 1640 | MZA 2218 - LT 16 | 285 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24042 | -17.98970 | 311.169 |
| 1641 | MZA 2218 - LT 17 | 286 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24034 | -17.98965 | 298.492 |
| 1642 | MZA 2218 - LT 18 | 287 | ZONA II | MUR/HEX:1 | -70.24026 | -17.98959 | 16.610 |
| 1643 | MZA 2218 - LT 19 | 288 | ZONA II | MUR/HEX:1 | -70.24018 | -17.98954 | 17.053 |
| 1644 | MZA 2218 - LT 20 | 289 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24011 | -17.98949 | 24.949 |
| 1645 | MZA 2218 - LT 21 | 290 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24003 | -17.98944 | 307.535 |
| 1646 | MZA 2218 - LT 22 | 291 | ZONA II | MUR/HEX:1 | -70.23995 | -17.98939 | 15.919 |
| 1647 | MZA 2218 - LT 23 | 292 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23987 | -17.98934 | 25.128 |
| 1648 | MZA 2218 - LT 24 | 293 | ZONA II | MUR/HEX:1 | -70.23979 | -17.98929 | 16.461 |
| 1649 | MZA 2218 - LT 25 | 294 | ZONA II | MUR/HEX:2 | -70.23972 | -17.98924 | 511.210 |
| 1650 | MZA 2218 - LT 26 | 295 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23964 | -17.98919 | 23.612 |
| 1651 | MZA 2218 - LT 27 | 296 | ZONA II | MUR/HEX:1 | -70.23956 | -17.98914 | 16.848 |
| 1652 | MZA 2218 - LT 28 | 297 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23948 | -17.98908 | 24.428 |
| 1653 | MZA 2220 - LT 1 | 298 | ZONA II | MUR/HEX:2 | -70.23996 | -17.99047 | 660.612 |
| 1654 | MZA 2220 - LT 2 | 299 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23988 | -17.99040 | 304.005 |
| 1655 | MZA 2220 - LT 3 | 300 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23978 | -17.99035 | 34.145 |
| 1656 | MZA 2220 - LT 4 | 301 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23970 | -17.99028 | 25.844 |
| 1657 | MZA 2220 - LT 5 | 302 | ZONA II | MUR/HEX:1 | -70.23962 | -17.99022 | 16.077 |
| 1658 | MZA 2220 - LT 6 | 303 | ZONA II | MUR/HEX:1 | -70.23955 | -17.99017 | 18.171 |
| 1659 | MZA 2220 - LT 7 | 304 | ZONA II | MUR/HEX:1 | -70.23947 | -17.99011 | 17.203 |
| 1660 | MZA 2220 - LT 8 | 305 | ZONA II | MUR/HEX:2 | -70.23940 | -17.99006 | 502.019 |
| 1661 | MZA 2220 - LT 9 | 306 | ZONA II | MUR/HEX:1 | -70.23932 | -17.99000 | 17.109 |
| 1662 | MZA 2220 - LT 10 | 307 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23925 | -17.98995 | 308.681 |
| 1663 | MZA 2220 - LT 11 | 308 | ZONA II | MUR/HEX:1 | -70.23917 | -17.98989 | 17.718 |
| 1664 | MZA 2220 - LT 12 | 309 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23909 | -17.98984 | 316.070 |
| 1665 | MZA 2220 - LT 13 | 310 | ZONA II | MUR/HEX:1 | -70.23900 | -17.98977 | 23.693 |
| 1666 | MZA 2220 - LT 14 | 311 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.23985 | -17.99061 | 2769.042 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by="OpenQuake engine 3.16.1", start_date="2023-06-02T22:33:01", checksum="1181138371", investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|------------------------|-----------|-----------|---------------|
| 1667 | MZA 2220 - LT 15 | 312 | ZONA II | MUR/HEX:1 | -70.23976 | -17.99055 | 17.016 |
| 1668 | MZA 2220 - LT 16 | 313 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23967 | -17.99048 | 404.417 |
| 1669 | MZA 2220 - LT 17 | 314 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.23958 | -17.99042 | 303.494 |
| 1670 | MZA 2220 - LT 18 | 315 | ZONA II | MUR/HEX:1 | -70.23951 | -17.99037 | 17.498 |
| 1671 | MZA 2220 - LT 19 | 316 | ZONA II | MUR/HEX:2 | -70.23943 | -17.99031 | 490.178 |
| 1672 | MZA 2220 - LT 20 | 317 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23936 | -17.99026 | 24.375 |
| 1673 | MZA 2220 - LT 21 | 318 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23928 | -17.99020 | 24.684 |
| 1674 | MZA 2220 - LT 22 | 319 | ZONA II | MUR/HEX:1 | -70.23921 | -17.99015 | 16.735 |
| 1675 | MZA 2220 - LT 23 | 320 | ZONA II | MUR/HEX:1 | -70.23913 | -17.99009 | 16.794 |
| 1676 | MZA 2220 - LT 24 | 321 | ZONA II | MUR/HEX:1 | -70.23906 | -17.99004 | 17.105 |
| 1677 | MZA 2220 - LT 25 | 322 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.23898 | -17.98999 | 25.479 |
| 1678 | MZA 2220 - LT 26 | 323 | ZONA II | MUR/HEX:1 | -70.23889 | -17.98992 | 25.197 |
| 1679 | MZA 2221 - LT 1 | 324 | ZONA II | MUR/HEX:1 | -70.24145 | -17.98754 | 16.420 |
| 1680 | MZA 2221 - LT 2 | 325 | ZONA II | MUR/HEX:1 | -70.24150 | -17.98746 | 17.201 |
| 1681 | MZA 2221 - LT 3 | 326 | ZONA II | MUR/HEX:1 | -70.24155 | -17.98738 | 16.359 |
| 1682 | MZA 2221 - LT 4 | 327 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24161 | -17.98731 | 302.389 |
| 1683 | MZA 2221 - LT 5 | 328 | ZONA II | MUR/HEX:1 | -70.24166 | -17.98723 | 17.285 |
| 1684 | MZA 2221 - LT 6 | 329 | ZONA II | MUR/HEX:1 | -70.24171 | -17.98716 | 16.236 |
| 1685 | MZA 2221 - LT 7 | 330 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24177 | -17.98708 | 296.452 |
| 1686 | MZA 2221 - LT 8 | 331 | ZONA II | MUR/HEX:1 | -70.24182 | -17.98701 | 15.964 |
| 1687 | MZA 2221 - LT 9 | 332 | ZONA II | MUR/HEX:1 | -70.24187 | -17.98693 | 16.587 |
| 1688 | MZA 2221 - LT 10 | 333 | ZONA II | MUR/HEX:2 | -70.24192 | -17.98686 | 500.361 |
| 1689 | MZA 2221 - LT 11 | 334 | ZONA II | MUR/HEX:1 | -70.24198 | -17.98678 | 15.593 |
| 1690 | MZA 2221 - LT 12 | 335 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24203 | -17.98671 | 311.648 |
| 1691 | MZA 2221 - LT 13 | 336 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24208 | -17.98663 | 23.720 |
| 1692 | MZA 2221 - LT 14 | 337 | ZONA II | MUR/HEX:1 | -70.24214 | -17.98656 | 15.958 |
| 1693 | MZA 2221 - LT 15 | 338 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24219 | -17.98743 | 312.517 |
| 1694 | MZA 2221 - LT 16 | 339 | ZONA II | MUR/HEX:1 | -70.24134 | -17.98736 | 16.231 |
| 1695 | MZA 2221 - LT 17 | 340 | ZONA II | MUR/HEX:1 | -70.24140 | -17.98728 | 17.428 |
| 1696 | MZA 2221 - LT 18 | 341 | ZONA II | MUR/HEX:1 | -70.24145 | -17.98721 | 16.505 |
| 1697 | MZA 2221 - LT 19 | 342 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24150 | -17.98713 | 304.092 |
| 1698 | MZA 2221 - LT 20 | 343 | ZONA II | MUR/HEX:2 | -70.24156 | -17.98706 | 493.027 |
| 1699 | MZA 2221 - LT 21 | 344 | ZONA II | MUR/HEX:1 | -70.24161 | -17.98698 | 16.438 |
| 1700 | MZA 2221 - LT 22 | 345 | ZONA II | MUR/HEX:1 | -70.24166 | -17.98691 | 16.279 |
| 1701 | MZA 2221 - LT 23 | 346 | ZONA II | MUR/HEX:1 | -70.24171 | -17.98683 | 16.828 |
| 1702 | MZA 2221 - LT 24 | 347 | ZONA II | MUR/HEX:1 | -70.24177 | -17.98676 | 15.991 |
| 1703 | MZA 2221 - LT 25 | 348 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24182 | -17.98668 | 24.407 |
| 1704 | MZA 2221 - LT 26 | 349 | ZONA II | MUR/HEX:1 | -70.24187 | -17.98661 | 16.658 |
| 1705 | MZA 2221 - LT 27 | 350 | ZONA II | MUR/HEX:1 | -70.24192 | -17.98653 | 17.454 |
| 1706 | MZA 2221 - LT 28 | 351 | ZONA II | MUR/HEX:1 | -70.24198 | -17.98646 | 16.923 |
| 1707 | MZA 2222 - LT 1 | 352 | ZONA II | MUR/HEX:1 | -70.24184 | -17.98779 | 16.192 |
| 1708 | MZA 2222 - LT 2 | 353 | ZONA II | MUR/HEX:1 | -70.24189 | -17.98771 | 17.562 |
| 1709 | MZA 2222 - LT 3 | 354 | ZONA II | MUR/HEX:1 | -70.24194 | -17.98764 | 16.193 |
| 1710 | MZA 2222 - LT 4 | 355 | ZONA II | MUR/HEX:1 | -70.24200 | -17.98756 | 16.419 |
| 1711 | MZA 2222 - LT 5 | 356 | ZONA II | MUR/HEX:1 | -70.24205 | -17.98749 | 16.460 |
| 1712 | MZA 2222 - LT 6 | 357 | ZONA II | MUR/HEX:1 | -70.24210 | -17.98741 | 16.429 |
| 1713 | MZA 2222 - LT 7 | 358 | ZONA II | MUR/HEX:1 | -70.24215 | -17.98734 | 17.076 |
| 1714 | MZA 2222 - LT 8 | 359 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24221 | -17.98726 | 297.312 |
| 1715 | MZA 2222 - LT 9 | 360 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24226 | -17.98719 | 298.629 |
| 1716 | MZA 2222 - LT 10 | 361 | ZONA II | MUR/HEX:1 | -70.24231 | -17.98711 | 16.341 |
| 1717 | MZA 2222 - LT 11 | 362 | ZONA II | MUR/HEX:1 | -70.24237 | -17.98704 | 15.590 |
| 1718 | MZA 2222 - LT 12 | 363 | ZONA II | MUR/HEX:1 | -70.24242 | -17.98696 | 16.673 |
| 1719 | MZA 2222 - LT 13 | 364 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24247 | -17.98689 | 293.869 |
| 1720 | MZA 2222 - LT 14 | 365 | ZONA II | MUR/HEX:1 | -70.24252 | -17.98681 | 17.072 |
| 1721 | MZA 2222 - LT 15 | 366 | ZONA II | MUR/HEX:1 | -70.24168 | -17.98769 | 15.888 |
| 1722 | MZA 2222 - LT 16 | 367 | ZONA II | MUR/HEX:1 | -70.24173 | -17.98761 | 17.469 |
| 1723 | MZA 2222 - LT 17 | 368 | ZONA II | MUR/HEX:1 | -70.24179 | -17.98753 | 16.467 |
| 1724 | MZA 2222 - LT 18 | 369 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24184 | -17.98746 | 314.458 |
| 1725 | MZA 2222 - LT 19 | 370 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24189 | -17.98739 | 290.314 |
| 1726 | MZA 2222 - LT 20 | 371 | ZONA II | MUR/HEX:1 | -70.24194 | -17.98731 | 17.104 |
| 1727 | MZA 2222 - LT 21 | 372 | ZONA II | MUR/HEX:1 | -70.24200 | -17.98724 | 16.617 |
| 1728 | MZA 2222 - LT 22 | 373 | ZONA II | MUR/HEX:1 | -70.24205 | -17.98716 | 17.830 |
| 1729 | MZA 2222 - LT 23 | 374 | ZONA II | MUR/HEX:1 | -70.24210 | -17.98709 | 15.916 |
| 1730 | MZA 2222 - LT 24 | 375 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24216 | -17.98701 | 303.405 |
| 1731 | MZA 2222 - LT 25 | 376 | ZONA II | MUR/HEX:1 | -70.24221 | -17.98694 | 16.247 |
| 1732 | MZA 2222 - LT 26 | 377 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24226 | -17.98686 | 309.246 |
| 1733 | MZA 2222 - LT 27 | 378 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24231 | -17.98679 | 303.499 |
| 1734 | MZA 2222 - LT 28 | 379 | ZONA II | MUR/HEX:1 | -70.24237 | -17.98671 | 17.442 |
| 1735 | MZA 2223 - LT 1 | 380 | ZONA II | MUR/HEX:2 | -70.24116 | -17.98882 | 515.418 |
| 1736 | MZA 2223 - LT 2 | 381 | ZONA II | MUR/HEX:1 | -70.24108 | -17.98877 | 17.242 |
| 1737 | MZA 2223 - LT 3 | 382 | ZONA II | MUR/HEX:2 | -70.24100 | -17.98872 | 504.765 |
| 1738 | MZA 2223 - LT 4 | 383 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24092 | -17.98867 | 276.302 |
| 1739 | MZA 2223 - LT 5 | 384 | ZONA II | MUR/HEX:1 | -70.24105 | -17.98897 | 16.518 |
| 1740 | MZA 2223 - LT 6 | 385 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24097 | -17.98892 | 308.804 |
| 1741 | MZA 2223 - LT 7 | 386 | ZONA II | MUR/HEX:1 | -70.24089 | -17.98887 | 17.109 |
| 1742 | MZA 2223 - LT 8 | 387 | ZONA II | MUR/HEX:1 | -70.24082 | -17.98882 | 14.927 |
| 1743 | MZA 2224 - LT 1 | 388 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24224 | -17.98805 | 298.624 |
| 1744 | MZA 2224 - LT 2 | 389 | ZONA II | MUR/HEX:1 | -70.24229 | -17.98798 | 16.725 |
| 1745 | MZA 2224 - LT 3 | 390 | ZONA II | MUR/HEX:1 | -70.24235 | -17.98790 | 17.052 |
| 1746 | MZA 2224 - LT 4 | 391 | ZONA II | MUR/HEX:1 | -70.24240 | -17.98783 | 16.927 |
| 1747 | MZA 2224 - LT 5 | 392 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24245 | -17.98775 | 25.042 |
| 1748 | MZA 2224 - LT 6 | 393 | ZONA II | MUR/HEX:1 | -70.24251 | -17.98768 | 16.930 |
| 1749 | MZA 2224 - LT 7 | 394 | ZONA II | MUR/HEX:2 | -70.24256 | -17.98760 | 504.767 |
| 1750 | MZA 2224 - LT 8 | 395 | ZONA II | MUR/HEX:1 | -70.24261 | -17.98753 | 17.620 |
| 1751 | MZA 2224 - LT 9 | 396 | ZONA II | MUR/HEX:1 | -70.24267 | -17.98745 | 18.178 |
| 1752 | MZA 2224 - LT 10 | 397 | ZONA II | MUR/HEX:1 | -70.24272 | -17.98738 | 19.401 |
| 1753 | MZA 2224 - LT 11 | 398 | ZONA II | MUR/HEX:2 | -70.24277 | -17.98730 | 498.694 |
| 1754 | MZA 2224 - LT 12 | 399 | ZONA II | MUR/HEX:1 | -70.24282 | -17.98723 | 16.022 |
| 1755 | MZA 2224 - LT 13 | 400 | ZONA II | MUR/HEX:2 | -70.24288 | -17.98715 | 513.954 |
| 1756 | MZA 2224 - LT 14 | 401 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24293 | -17.98708 | 2113.931 |
| 1757 | MZA 2224 - LT 15 | 402 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24209 | -17.98795 | 307.478 |
| 1758 | MZA 2224 - LT 16 | 403 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24214 | -17.98787 | 25.023 |
| 1759 | MZA 2224 - LT 17 | 404 | ZONA II | MUR/HEX:1 | -70.24219 | -17.98780 | 18.098 |
| 1760 | MZA 2224 - LT 18 | 405 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24224 | -17.98772 | 2017.151 |
| 1761 | MZA 2224 - LT 19 | 406 | ZONA II | MUR/HEX:1 | -70.24230 | -17.98765 | 17.281 |
| 1762 | MZA 2224 - LT 20 | 407 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24235 | -17.98757 | 309.680 |
| 1763 | MZA 2224 - LT 21 | 408 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24240 | -17.98750 | 24.274 |
| 1764 | MZA 2224 - LT 22 | 409 | ZONA II | MUR/HEX:1 | -70.24246 | -17.98742 | 17.799 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 1765 | MZA 2224 - LT 23 | 410 | ZONA II | MUR/HEX:1 | -70.24251 | -17.98735 | 17.921 |
| 1766 | MZA 2224 - LT 24 | 411 | ZONA II | MUR/HEX:1 | -70.24256 | -17.98727 | 16.313 |
| 1767 | MZA 2224 - LT 25 | 412 | ZONA II | MUR/HEX:1 | -70.24261 | -17.98720 | 17.114 |
| 1768 | MZA 2224 - LT 26 | 413 | ZONA II | MUR/HEX:1 | -70.24267 | -17.98712 | 16.590 |
| 1769 | MZA 2224 - LT 27 | 414 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24272 | -17.98705 | 24.295 |
| 1770 | MZA 2224 - LT 28 | 415 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24277 | -17.98697 | 304.525 |
| 1771 | MZA 2225 - LT 1 | 416 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24139 | -17.98924 | 29.162 |
| 1772 | MZA 2225 - LT 2 | 417 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24145 | -17.98915 | 23.402 |
| 1773 | MZA 2225 - LT 3 | 418 | ZONA II | MUR/HEX:2 | -70.24151 | -17.98908 | 504.750 |
| 1774 | MZA 2225 - LT 4 | 419 | ZONA II | MUR/HEX:1 | -70.24156 | -17.98901 | 17.877 |
| 1775 | MZA 2225 - LT 5 | 420 | ZONA II | MUR/HEX:2 | -70.24161 | -17.98893 | 504.160 |
| 1776 | MZA 2225 - LT 6 | 421 | ZONA II | MUR/HEX:2 | -70.24167 | -17.98886 | 503.173 |
| 1777 | MZA 2225 - LT 7 | 422 | ZONA II | MUR/HEX:1 | -70.24172 | -17.98878 | 17.246 |
| 1778 | MZA 2225 - LT 8 | 423 | ZONA II | MUR/HEX:1 | -70.24177 | -17.98871 | 17.171 |
| 1779 | MZA 2225 - LT 9 | 424 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24183 | -17.98863 | 24.662 |
| 1780 | MZA 2225 - LT 10 | 425 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24188 | -17.98856 | 308.665 |
| 1781 | MZA 2225 - LT 11 | 426 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24193 | -17.98848 | 306.110 |
| 1782 | MZA 2225 - LT 12 | 427 | ZONA II | MUR/HEX:1 | -70.24198 | -17.98841 | 17.738 |
| 1783 | MZA 2225 - LT 13 | 428 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24204 | -17.98833 | 24.734 |
| 1784 | MZA 2225 - LT 14 | 429 | ZONA II | MUR/HEX:1 | -70.24210 | -17.98825 | 21.656 |
| 1785 | MZA 2225 - LT 15 | 430 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24124 | -17.98914 | 372.834 |
| 1786 | MZA 2225 - LT 16 | 431 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24130 | -17.98905 | 312.937 |
| 1787 | MZA 2225 - LT 17 | 432 | ZONA II | MUR/HEX:1 | -70.24135 | -17.98898 | 16.876 |
| 1788 | MZA 2225 - LT 18 | 433 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24140 | -17.98890 | 306.392 |
| 1789 | MZA 2225 - LT 19 | 434 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24146 | -17.98883 | 303.427 |
| 1790 | MZA 2225 - LT 20 | 435 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24151 | -17.98875 | 25.314 |
| 1791 | MZA 2225 - LT 21 | 436 | ZONA II | MUR/HEX:2 | -70.24156 | -17.98868 | 491.266 |
| 1792 | MZA 2225 - LT 22 | 437 | ZONA II | MUR/HEX:1 | -70.24162 | -17.98860 | 17.813 |
| 1793 | MZA 2225 - LT 23 | 438 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24167 | -17.98853 | 301.941 |
| 1794 | MZA 2225 - LT 24 | 439 | ZONA II | MUR/HEX:1 | -70.24172 | -17.98845 | 17.284 |
| 1795 | MZA 2225 - LT 25 | 440 | ZONA II | MUR/HEX:1 | -70.24178 | -17.98838 | 18.006 |
| 1796 | MZA 2225 - LT 26 | 441 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24183 | -17.98831 | 300.936 |
| 1797 | MZA 2225 - LT 27 | 442 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24188 | -17.98823 | 301.747 |
| 1798 | MZA 2225 - LT 28 | 443 | ZONA II | MUR/HEX:2 | -70.24194 | -17.98815 | 616.452 |
| 1799 | MZA 2226 - LT 1 | 444 | ZONA II | MUR/HEX:2 | -70.24169 | -17.98973 | 556.807 |
| 1800 | MZA 2226 - LT 2 | 445 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24161 | -17.98968 | 311.564 |
| 1801 | MZA 2226 - LT 3 | 446 | ZONA II | MUR/HEX:2 | -70.24153 | -17.98963 | 506.956 |
| 1802 | MZA 2226 - LT 4 | 447 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24145 | -17.98958 | 24.789 |
| 1803 | MZA 2226 - LT 5 | 448 | ZONA II | MUR/HEX:1 | -70.24137 | -17.98953 | 15.933 |
| 1804 | MZA 2226 - LT 6 | 449 | ZONA II | MUR/HEX:1 | -70.24129 | -17.98948 | 17.113 |
| 1805 | MZA 2226 - LT 7 | 450 | ZONA II | MUR/HEX:1 | -70.24121 | -17.98943 | 17.415 |
| 1806 | MZA 2226 - LT 8 | 451 | ZONA II | MUR/HEX:1 | -70.24114 | -17.98937 | 16.925 |
| 1807 | MZA 2226 - LT 9 | 452 | ZONA II | MUR/HEX:1 | -70.24105 | -17.98932 | 19.272 |
| 1808 | MZA 2226 - LT 10 | 453 | ZONA II | MUR/HEX:1 | -70.24158 | -17.98988 | 19.583 |
| 1809 | MZA 2226 - LT 11 | 454 | ZONA II | MUR/HEX:1 | -70.24150 | -17.98983 | 16.435 |
| 1810 | MZA 2226 - LT 12 | 455 | ZONA II | MUR/HEX:1 | -70.24142 | -17.98978 | 16.926 |
| 1811 | MZA 2226 - LT 13 | 456 | ZONA II | MUR/HEX:1 | -70.24134 | -17.98973 | 16.421 |
| 1812 | MZA 2226 - LT 14 | 457 | ZONA II | MUR/HEX:1 | -70.24126 | -17.98968 | 16.612 |
| 1813 | MZA 2226 - LT 15 | 458 | ZONA II | MUR/HEX:1 | -70.24118 | -17.98963 | 16.566 |
| 1814 | MZA 2226 - LT 16 | 459 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24111 | -17.98957 | 2053.184 |
| 1815 | MZA 2226 - LT 17 | 460 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24103 | -17.98952 | 308.873 |
| 1816 | MZA 2226 - LT 18 | 461 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24095 | -17.98947 | 320.089 |
| 1817 | MZA 2227 - LT 1 | 462 | ZONA II | MUR/HEX:1 | -70.24141 | -17.99012 | 19.341 |
| 1818 | MZA 2227 - LT 2 | 463 | ZONA II | MUR/HEX:1 | -70.24133 | -17.99007 | 16.217 |
| 1819 | MZA 2227 - LT 3 | 464 | ZONA II | MUR/HEX:1 | -70.24126 | -17.99003 | 16.386 |
| 1820 | MZA 2227 - LT 4 | 465 | ZONA II | MUR/HEX:1 | -70.24117 | -17.98997 | 16.510 |
| 1821 | MZA 2227 - LT 5 | 466 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24110 | -17.98992 | 301.781 |
| 1822 | MZA 2227 - LT 6 | 467 | ZONA II | MUR/HEX:1 | -70.24102 | -17.98986 | 16.672 |
| 1823 | MZA 2227 - LT 7 | 468 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24094 | -17.98981 | 301.456 |
| 1824 | MZA 2227 - LT 8 | 469 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24086 | -17.98976 | 301.454 |
| 1825 | MZA 2227 - LT 9 | 470 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24078 | -17.98971 | 28.879 |
| 1826 | MZA 2227 - LT 10 | 471 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24130 | -17.99027 | 25.558 |
| 1827 | MZA 2227 - LT 11 | 472 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24122 | -17.99022 | 24.295 |
| 1828 | MZA 2227 - LT 12 | 473 | ZONA II | MUR/HEX:1 | -70.24114 | -17.99017 | 16.614 |
| 1829 | MZA 2227 - LT 13 | 474 | ZONA II | MUR/HEX:1 | -70.24107 | -17.99012 | 16.845 |
| 1830 | MZA 2227 - LT 14 | 475 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24099 | -17.99007 | 24.016 |
| 1831 | MZA 2227 - LT 15 | 476 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24091 | -17.99001 | 24.602 |
| 1832 | MZA 2227 - LT 16 | 477 | ZONA II | MUR/HEX:1 | -70.24083 | -17.98996 | 17.998 |
| 1833 | MZA 2227 - LT 17 | 478 | ZONA II | MUR/HEX:1 | -70.24075 | -17.98991 | 17.168 |
| 1834 | MZA 2227 - LT 18 | 479 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24067 | -17.98986 | 29.512 |
| 1835 | MZA 2229 - LT 1 | 480 | ZONA II | MUR/HEX:1 | -70.24075 | -17.99104 | 21.568 |
| 1836 | MZA 2229 - LT 2 | 481 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24066 | -17.99098 | 302.291 |
| 1837 | MZA 2229 - LT 3 | 482 | ZONA II | MUR/HEX:1 | -70.24059 | -17.99092 | 16.448 |
| 1838 | MZA 2229 - LT 4 | 483 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24051 | -17.99087 | 24.778 |
| 1839 | MZA 2229 - LT 5 | 484 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24044 | -17.99081 | 303.664 |
| 1840 | MZA 2229 - LT 6 | 485 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24036 | -17.99076 | 297.950 |
| 1841 | MZA 2229 - LT 7 | 486 | ZONA II | MUR/HEX:1 | -70.24029 | -17.99071 | 16.438 |
| 1842 | MZA 2229 - LT 8 | 487 | ZONA II | MUR/HEX:2 | -70.24022 | -17.99065 | 511.914 |
| 1843 | MZA 2229 - LT 9 | 488 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24014 | -17.99060 | 2127.589 |
| 1844 | MZA 2229 - LT 10 | 489 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24064 | -17.99119 | 435.197 |
| 1845 | MZA 2229 - LT 11 | 490 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24055 | -17.99112 | 302.419 |
| 1846 | MZA 2229 - LT 12 | 491 | ZONA II | MUR/HEX:1 | -70.24047 | -17.99107 | 15.804 |
| 1847 | MZA 2229 - LT 13 | 492 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24040 | -17.99101 | 302.668 |
| 1848 | MZA 2229 - LT 14 | 493 | ZONA II | MUR/HEX:1 | -70.24032 | -17.99096 | 16.155 |
| 1849 | MZA 2229 - LT 15 | 494 | ZONA II | MUR/HEX:2 | -70.24025 | -17.99091 | 510.696 |
| 1850 | MZA 2229 - LT 16 | 495 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24017 | -17.99085 | 294.839 |
| 1851 | MZA 2229 - LT 17 | 496 | ZONA II | MUR/HEX:1 | -70.24010 | -17.99080 | 16.745 |
| 1852 | MZA 2229 - LT 18 | 497 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24003 | -17.99074 | 23.145 |
| 1853 | MZA 2231 - LT 1 | 520 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24265 | -17.98831 | 299.947 |
| 1854 | MZA 2231 - LT 2 | 521 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24270 | -17.98824 | 303.120 |
| 1855 | MZA 2231 - LT 3 | 522 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24275 | -17.98816 | 296.241 |
| 1856 | MZA 2231 - LT 4 | 523 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24281 | -17.98809 | 298.878 |
| 1857 | MZA 2231 - LT 5 | 524 | ZONA II | MUR/HEX:1 | -70.24286 | -17.98801 | 16.788 |
| 1858 | MZA 2231 - LT 6 | 525 | ZONA II | MUR/HEX:1 | -70.24291 | -17.98794 | 17.873 |
| 1859 | MZA 2231 - LT 7 | 526 | ZONA II | MUR/HEX:1 | -70.24297 | -17.98786 | 16.945 |
| 1860 | MZA 2231 - LT 8 | 527 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24302 | -17.98779 | 299.646 |
| 1861 | MZA 2231 - LT 9 | 528 | ZONA II | MUR/HEX:1 | -70.24307 | -17.98771 | 18.216 |
| 1862 | MZA 2231 - LT 10 | 529 | ZONA II | MUR/HEX:1 | -70.24312 | -17.98764 | 17.805 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 1863 | MZA 2231 - LT 11 | 530 | ZONA II | MUR/HEX:1 | -70.24318 | -17.98757 | 17.326 |
| 1864 | MZA 2231 - LT 12 | 531 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24323 | -17.98749 | 25.764 |
| 1865 | MZA 2231 - LT 13 | 532 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24329 | -17.98742 | 23.873 |
| 1866 | MZA 2231 - LT 14 | 533 | ZONA II | MUR/HEX:2 | -70.24334 | -17.98734 | 506.531 |
| 1867 | MZA 2231 - LT 15 | 534 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24249 | -17.98821 | 22.234 |
| 1868 | MZA 2231 - LT 16 | 535 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24255 | -17.98814 | 24.413 |
| 1869 | MZA 2231 - LT 17 | 536 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24260 | -17.98806 | 295.359 |
| 1870 | MZA 2231 - LT 18 | 537 | ZONA II | MUR/HEX:1 | -70.24265 | -17.98799 | 16.486 |
| 1871 | MZA 2231 - LT 19 | 538 | ZONA II | MUR/HEX:1 | -70.24270 | -17.98791 | 18.043 |
| 1872 | MZA 2231 - LT 20 | 539 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24276 | -17.98784 | 2097.685 |
| 1873 | MZA 2231 - LT 21 | 540 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24281 | -17.98776 | 25.235 |
| 1874 | MZA 2231 - LT 22 | 541 | ZONA II | MUR/HEX:1 | -70.24286 | -17.98769 | 17.997 |
| 1875 | MZA 2231 - LT 23 | 542 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24291 | -17.98761 | 305.159 |
| 1876 | MZA 2231 - LT 24 | 543 | ZONA II | MUR/HEX:1 | -70.24297 | -17.98754 | 17.135 |
| 1877 | MZA 2231 - LT 25 | 544 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24302 | -17.98746 | 313.291 |
| 1878 | MZA 2231 - LT 26 | 545 | ZONA II | MUR/HEX:1 | -70.24307 | -17.98739 | 18.068 |
| 1879 | MZA 2231 - LT 27 | 546 | ZONA II | MUR/HEX:1 | -70.24313 | -17.98731 | 17.884 |
| 1880 | MZA 2231 - LT 28 | 547 | ZONA II | MUR/HEX:1 | -70.24318 | -17.98724 | 17.748 |
| 1881 | MZA 2232 - LT 1 | 548 | ZONA II | MUR/HEX:1 | -70.24180 | -17.98950 | 20.665 |
| 1882 | MZA 2232 - LT 2 | 549 | ZONA II | MUR/HEX:1 | -70.24186 | -17.98942 | 16.269 |
| 1883 | MZA 2232 - LT 3 | 550 | ZONA II | MUR/HEX:1 | -70.24191 | -17.98934 | 16.464 |
| 1884 | MZA 2232 - LT 4 | 551 | ZONA II | MUR/HEX:3 | -70.24197 | -17.98927 | 568.221 |
| 1885 | MZA 2232 - LT 5 | 552 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24202 | -17.98919 | 313.930 |
| 1886 | MZA 2232 - LT 6 | 553 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24207 | -17.98912 | 23.519 |
| 1887 | MZA 2232 - LT 7 | 554 | ZONA II | MUR/HEX:2 | -70.24213 | -17.98904 | 498.559 |
| 1888 | MZA 2232 - LT 8 | 555 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24218 | -17.98897 | 24.198 |
| 1889 | MZA 2232 - LT 9 | 556 | ZONA II | MUR/HEX:1 | -70.24223 | -17.98890 | 16.864 |
| 1890 | MZA 2232 - LT 10 | 557 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24228 | -17.98882 | 311.064 |
| 1891 | MZA 2232 - LT 11 | 558 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24234 | -17.98875 | 24.422 |
| 1892 | MZA 2232 - LT 12 | 559 | ZONA II | MUR/HEX:1 | -70.24239 | -17.98867 | 16.880 |
| 1893 | MZA 2232 - LT 13 | 560 | ZONA II | MUR/HEX:3 | -70.24244 | -17.98860 | 569.531 |
| 1894 | MZA 2232 - LT 14 | 561 | ZONA II | MUR/HEX:2 | -70.24250 | -17.98851 | 608.310 |
| 1895 | MZA 2232 - LT 15 | 562 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24164 | -17.98940 | 2435.368 |
| 1896 | MZA 2232 - LT 16 | 563 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24170 | -17.98932 | 308.918 |
| 1897 | MZA 2232 - LT 17 | 564 | ZONA II | MUR/HEX:1 | -70.24175 | -17.98924 | 17.779 |
| 1898 | MZA 2232 - LT 18 | 565 | ZONA II | MUR/HEX:1 | -70.24181 | -17.98917 | 17.666 |
| 1899 | MZA 2232 - LT 19 | 566 | ZONA II | MUR/HEX:1 | -70.24186 | -17.98909 | 17.117 |
| 1900 | MZA 2232 - LT 20 | 567 | ZONA II | MUR/HEX:1 | -70.24192 | -17.98902 | 17.160 |
| 1901 | MZA 2232 - LT 21 | 568 | ZONA II | MUR/HEX:2 | -70.24197 | -17.98894 | 502.722 |
| 1902 | MZA 2232 - LT 22 | 569 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24202 | -17.98887 | 303.662 |
| 1903 | MZA 2232 - LT 23 | 570 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24207 | -17.98879 | 306.911 |
| 1904 | MZA 2232 - LT 24 | 571 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24213 | -17.98872 | 311.549 |
| 1905 | MZA 2232 - LT 25 | 572 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24218 | -17.98864 | 303.457 |
| 1906 | MZA 2232 - LT 26 | 573 | ZONA II | MUR/HEX:1 | -70.24224 | -17.98857 | 17.637 |
| 1907 | MZA 2232 - LT 27 | 574 | ZONA II | MUR/HEX:1 | -70.24229 | -17.98849 | 17.189 |
| 1908 | MZA 2232 - LT 28 | 575 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24235 | -17.98841 | 371.001 |
| 1909 | MZA 2233 - LT 1 | 576 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24357 | -17.98759 | 338.519 |
| 1910 | MZA 2233 - LT 2 | 577 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24351 | -17.98766 | 24.660 |
| 1911 | MZA 2233 - LT 3 | 578 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24346 | -17.98774 | 23.976 |
| 1912 | MZA 2233 - LT 4 | 579 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24340 | -17.98781 | 300.066 |
| 1913 | MZA 2233 - LT 5 | 580 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24335 | -17.98789 | 26.592 |
| 1914 | MZA 2233 - LT 6 | 581 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24329 | -17.98796 | 306.431 |
| 1915 | MZA 2233 - LT 7 | 582 | ZONA II | MUR/HEX:1 | -70.24324 | -17.98804 | 17.658 |
| 1916 | MZA 2233 - LT 8 | 583 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24319 | -17.98811 | 25.992 |
| 1917 | MZA 2233 - LT 9 | 584 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24313 | -17.98819 | 24.721 |
| 1918 | MZA 2233 - LT 10 | 585 | ZONA II | MUR/HEX:1 | -70.24308 | -17.98826 | 17.960 |
| 1919 | MZA 2233 - LT 11 | 586 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24303 | -17.98834 | 309.486 |
| 1920 | MZA 2233 - LT 12 | 587 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24297 | -17.98842 | 312.143 |
| 1921 | MZA 2233 - LT 13 | 588 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24292 | -17.98849 | 307.998 |
| 1922 | MZA 2233 - LT 14 | 589 | ZONA II | MUR/HEX:1 | -70.24308 | -17.98859 | 18.294 |
| 1923 | MZA 2233 - LT 15 | 590 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24313 | -17.98852 | 309.982 |
| 1924 | MZA 2233 - LT 16 | 591 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24319 | -17.98844 | 26.207 |
| 1925 | MZA 2233 - LT 17 | 592 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24324 | -17.98837 | 309.541 |
| 1926 | MZA 2233 - LT 18 | 593 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24329 | -17.98829 | 307.451 |
| 1927 | MZA 2233 - LT 19 | 594 | ZONA II | MUR/HEX:1 | -70.24335 | -17.98822 | 16.809 |
| 1928 | MZA 2233 - LT 20 | 595 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24340 | -17.98814 | 310.147 |
| 1929 | MZA 2233 - LT 21 | 596 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24345 | -17.98807 | 2068.388 |
| 1930 | MZA 2233 - LT 22 | 597 | ZONA II | MUR/HEX:1 | -70.24351 | -17.98799 | 16.734 |
| 1931 | MZA 2233 - LT 23 | 598 | ZONA II | MUR/HEX:1 | -70.24356 | -17.98792 | 17.504 |
| 1932 | MZA 2233 - LT 24 | 599 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24361 | -17.98784 | 301.080 |
| 1933 | MZA 2233 - LT 25 | 600 | ZONA II | MUR/HEX:2 | -70.24366 | -17.98777 | 515.076 |
| 1934 | MZA 2233 - LT 26 | 601 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24373 | -17.98764 | 566.951 |
| 1935 | MZA 2234 - LT 1 | 603 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24278 | -17.98869 | 297.344 |
| 1936 | MZA 2234 - LT 2 | 604 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24273 | -17.98876 | 302.751 |
| 1937 | MZA 2234 - LT 3 | 605 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24267 | -17.98884 | 24.669 |
| 1938 | MZA 2234 - LT 4 | 606 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24262 | -17.98891 | 27.368 |
| 1939 | MZA 2234 - LT 5 | 607 | ZONA II | MUR/HEX:1 | -70.24257 | -17.98899 | 16.744 |
| 1940 | MZA 2234 - LT 6 | 608 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24251 | -17.98906 | 24.135 |
| 1941 | MZA 2234 - LT 7 | 609 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24246 | -17.98914 | 305.400 |
| 1942 | MZA 2234 - LT 8 | 610 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24241 | -17.98921 | 303.836 |
| 1943 | MZA 2234 - LT 9 | 611 | ZONA II | MUR/HEX:1 | -70.24235 | -17.98929 | 16.972 |
| 1944 | MZA 2234 - LT 10 | 612 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24230 | -17.98936 | 318.774 |
| 1945 | MZA 2234 - LT 11 | 613 | ZONA II | MUR/HEX:1 | -70.24225 | -17.98943 | 16.773 |
| 1946 | MZA 2234 - LT 12 | 614 | ZONA II | MUR/HEX:1 | -70.24220 | -17.98950 | 14.874 |
| 1947 | MZA 2234 - LT 13 | 615 | ZONA II | MUR/HEX:1 | -70.24215 | -17.98957 | 15.849 |
| 1948 | MZA 2234 - LT 14 | 616 | ZONA II | MUR/HEX:1 | -70.24210 | -17.98964 | 16.301 |
| 1949 | MZA 2234 - LT 15 | 617 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24206 | -17.98970 | 18.960 |
| 1950 | MZA 2234 - LT 16 | 618 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24222 | -17.98980 | 1635.002 |
| 1951 | MZA 2234 - LT 17 | 619 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24226 | -17.98974 | 21.547 |
| 1952 | MZA 2234 - LT 18 | 620 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24231 | -17.98967 | 285.424 |
| 1953 | MZA 2234 - LT 19 | 621 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24236 | -17.98961 | 273.269 |
| 1954 | MZA 2234 - LT 20 | 622 | ZONA II | MUR/HEX:1 | -70.24246 | -17.98946 | 15.430 |
| 1955 | MZA 2234 - LT 21 | 623 | ZONA II | MUR/HEX:1 | -70.24241 | -17.98954 | 17.000 |
| 1956 | MZA 2234 - LT 22 | 624 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24251 | -17.98939 | 23.935 |
| 1957 | MZA 2234 - LT 23 | 625 | ZONA II | MUR/HEX:1 | -70.24256 | -17.98932 | 17.521 |
| 1958 | MZA 2234 - LT 24 | 626 | ZONA II | MUR/HEX:1 | -70.24262 | -17.98924 | 16.969 |
| 1959 | MZA 2234 - LT 25 | 627 | ZONA II | MUR/HEX:1 | -70.24267 | -17.98917 | 15.711 |
| 1960 | MZA 2234 - LT 26 | 628 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24272 | -17.98909 | 25.493 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by="OpenQuake engine 3.16.1", start_date="2023-06-02T22:33:01", checksum="1181138371", investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|-------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 1961 | MZA 2234 - LT 27 | 629 | ZONA II | MUR/HEX:1 | -70.24278 | -17.98902 | 16.721 |
| 1962 | MZA 2234 - LT 28 | 630 | ZONA II | MUR/HEX:1 | -70.24283 | -17.98894 | 17.500 |
| 1963 | MZA 2234 - LT 29 | 631 | ZONA II | MUR/HEX:1 | -70.24289 | -17.98886 | 18.037 |
| 1964 | MZA 2234 - LT 30A | 632 | ZONA II | MUR/HEX:1 | -70.24296 | -17.98880 | 12.458 |
| 1965 | MZA 2234 - LT 30B | 633 | ZONA II | MUR/HEX:2 | -70.24288 | -17.98875 | 131.207 |
| 1966 | MZA 2235 - LT 1 | 634 | ZONA II | MUR/HEX:1 | -70.24257 | -17.99031 | 13.845 |
| 1967 | MZA 2235 - LT 2 | 635 | ZONA II | MUR/HEX:1 | -70.24250 | -17.99027 | 14.365 |
| 1968 | MZA 2235 - LT 3 | 636 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24243 | -17.99023 | 292.883 |
| 1969 | MZA 2235 - LT 4 | 637 | ZONA II | MUR/HEX:2 | -70.24235 | -17.99018 | 506.504 |
| 1970 | MZA 2235 - LT 5 | 638 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24228 | -17.99013 | 25.802 |
| 1971 | MZA 2235 - LT 6 | 639 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24220 | -17.99007 | 309.459 |
| 1972 | MZA 2235 - LT 7 | 640 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24212 | -17.99002 | 302.295 |
| 1973 | MZA 2235 - LT 8 | 641 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24204 | -17.98997 | 309.333 |
| 1974 | MZA 2235 - LT 9 | 642 | ZONA II | MUR/HEX:1 | -70.24196 | -17.98992 | 17.721 |
| 1975 | MZA 2235 - LT 10 | 643 | ZONA II | MUR/HEX:1 | -70.24188 | -17.98987 | 17.943 |
| 1976 | MZA 2235 - LT 11 | 644 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24246 | -17.99047 | 20.154 |
| 1977 | MZA 2235 - LT 12 | 645 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24239 | -17.99042 | 277.895 |
| 1978 | MZA 2235 - LT 13 | 646 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24232 | -17.99038 | 280.535 |
| 1979 | MZA 2235 - LT 14 | 647 | ZONA II | MUR/HEX:1 | -70.24225 | -17.99033 | 17.585 |
| 1980 | MZA 2235 - LT 15 | 648 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24217 | -17.99028 | 301.346 |
| 1981 | MZA 2235 - LT 16 | 649 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24209 | -17.99023 | 313.027 |
| 1982 | MZA 2235 - LT 17 | 650 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24201 | -17.99017 | 24.468 |
| 1983 | MZA 2235 - LT 18 | 651 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24194 | -17.99012 | 307.313 |
| 1984 | MZA 2235 - LT 19 | 652 | ZONA II | MUR/HEX:1 | -70.24185 | -17.99007 | 17.230 |
| 1985 | MZA 2235 - LT 20 | 653 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24178 | -17.99002 | 302.569 |
| 1986 | MZA 2236 - LT 1 | 654 | ZONA II | MUR/HEX:1 | -70.24155 | -17.99066 | 17.570 |
| 1987 | MZA 2236 - LT 2 | 655 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24163 | -17.99071 | 316.190 |
| 1988 | MZA 2236 - LT 3 | 656 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24167 | -17.99057 | 311.321 |
| 1989 | MZA 2236 - LT 4 | 657 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24172 | -17.99050 | 315.760 |
| 1990 | MZA 2236 - LT 5 | 658 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24178 | -17.99042 | 25.767 |
| 1991 | MZA 2236 - LT 6 | 659 | ZONA II | MUR/HEX:1 | -70.24183 | -17.99035 | 17.279 |
| 1992 | MZA 2236 - LT 7 | 660 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24167 | -17.99024 | 25.180 |
| 1993 | MZA 2236 - LT 8 | 661 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24162 | -17.99032 | 24.921 |
| 1994 | MZA 2236 - LT 9 | 662 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24157 | -17.99039 | 24.809 |
| 1995 | MZA 2236 - LT 10 | 663 | ZONA II | MUR/HEX:1 | -70.24151 | -17.99047 | 17.867 |
| 1996 | MZA 2236 - LT 11 | 664 | ZONA II | MUR/HEX:1 | -70.24147 | -17.99061 | 16.382 |
| 1997 | MZA 2236 - LT 12 | 665 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24139 | -17.99055 | 299.491 |
| 1998 | MZA 2237 - LT 1 | 666 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24145 | -17.99119 | 26.962 |
| 1999 | MZA 2237 - LT 2 | 667 | ZONA II | MUR/HEX:1 | -70.24136 | -17.99113 | 16.899 |
| 2000 | MZA 2237 - LT 3 | 668 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24129 | -17.99108 | 314.689 |
| 2001 | MZA 2237 - LT 4 | 669 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24121 | -17.99102 | 25.538 |
| 2002 | MZA 2237 - LT 5 | 670 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24113 | -17.99096 | 32.202 |
| 2003 | MZA 2237 - LT 6 | 671 | ZONA II | MUR/HEX:1 | -70.24156 | -17.99104 | 19.182 |
| 2004 | MZA 2237 - LT 7 | 672 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24148 | -17.99098 | 24.670 |
| 2005 | MZA 2237 - LT 8 | 673 | ZONA II | MUR/HEX:1 | -70.24140 | -17.99093 | 16.257 |
| 2006 | MZA 2237 - LT 9 | 674 | ZONA II | MUR/HEX:1 | -70.24133 | -17.99088 | 17.731 |
| 2007 | MZA 2237 - LT 10 | 675 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24124 | -17.99081 | 34.122 |
| 2008 | MZA 2238 - LT 1 | 676 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24115 | -17.99156 | 29.235 |
| 2009 | MZA 2238 - LT 2 | 677 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24107 | -17.99150 | 305.824 |
| 2010 | MZA 2238 - LT 3 | 678 | ZONA II | MUR/HEX:1 | -70.24100 | -17.99145 | 16.628 |
| 2011 | MZA 2238 - LT 4 | 679 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24092 | -17.99140 | 25.308 |
| 2012 | MZA 2238 - LT 5 | 680 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24084 | -17.99134 | 27.660 |
| 2013 | MZA 2238 - LT 6 | 681 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24127 | -17.99142 | 333.936 |
| 2014 | MZA 2238 - LT 7 | 682 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24119 | -17.99136 | 24.115 |
| 2015 | MZA 2238 - LT 8 | 683 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24111 | -17.99131 | 305.601 |
| 2016 | MZA 2238 - LT 9 | 684 | ZONA II | MUR/HEX:1 | -70.24104 | -17.99125 | 17.526 |
| 2017 | MZA 2238 - LT 10 | 685 | ZONA II | MUR/HEX:1 | -70.24095 | -17.99119 | 21.166 |
| 2018 | MZA 2240 - LT 1 | 690 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24403 | -17.98783 | 318.512 |
| 2019 | MZA 2240 - LT 2 | 691 | ZONA II | MUR/HEX:1 | -70.24397 | -17.98790 | 15.167 |
| 2020 | MZA 2240 - LT 3 | 692 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24392 | -17.98797 | 282.404 |
| 2021 | MZA 2240 - LT 4 | 693 | ZONA II | MUR/HEX:1 | -70.24389 | -17.98805 | 14.332 |
| 2022 | MZA 2240 - LT 5 | 694 | ZONA II | MUR/HEX:1 | -70.24383 | -17.98811 | 14.472 |
| 2023 | MZA 2240 - LT 6 | 695 | ZONA II | MUR/HEX:2 | -70.24378 | -17.98818 | 501.973 |
| 2024 | MZA 2240 - LT 7 | 696 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24372 | -17.98826 | 318.186 |
| 2025 | MZA 2240 - LT 8 | 697 | ZONA II | MUR/HEX:1 | -70.24367 | -17.98833 | 16.617 |
| 2026 | MZA 2240 - LT 9 | 698 | ZONA II | MUR/HEX:1 | -70.24362 | -17.98841 | 16.095 |
| 2027 | MZA 2240 - LT 10 | 699 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24356 | -17.98848 | 310.151 |
| 2028 | MZA 2240 - LT 11 | 700 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24351 | -17.98856 | 313.082 |
| 2029 | MZA 2240 - LT 12 | 701 | ZONA II | MUR/HEX:1 | -70.24346 | -17.98863 | 16.373 |
| 2030 | MZA 2240 - LT 13 | 702 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24340 | -17.98871 | 308.294 |
| 2031 | MZA 2240 - LT 14 | 703 | ZONA II | MUR/HEX:1 | -70.24335 | -17.98878 | 14.935 |
| 2032 | MZA 2240 - LT 15 | 704 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24351 | -17.98888 | 280.872 |
| 2033 | MZA 2240 - LT 16 | 705 | ZONA II | MUR/HEX:1 | -70.24356 | -17.98881 | 17.292 |
| 2034 | MZA 2240 - LT 17 | 706 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24361 | -17.98874 | 305.010 |
| 2035 | MZA 2240 - LT 18 | 707 | ZONA II | MUR/HEX:2 | -70.24367 | -17.98866 | 503.971 |
| 2036 | MZA 2240 - LT 19 | 708 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24372 | -17.98859 | 25.287 |
| 2037 | MZA 2240 - LT 20 | 709 | ZONA II | MCFLWAL+DNO/HEX:3/RES | -70.24377 | -17.98851 | 2088.734 |
| 2038 | MZA 2240 - LT 21 | 710 | ZONA II | MCFLWAL+DNO/HEX:3/RES | -70.24382 | -17.98843 | 2146.368 |
| 2039 | MZA 2240 - LT 22 | 711 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24388 | -17.98836 | 25.625 |
| 2040 | MZA 2240 - LT 23 | 712 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24393 | -17.98828 | 314.098 |
| 2041 | MZA 2240 - LT 24 | 713 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24398 | -17.98821 | 274.627 |
| 2042 | MZA 2240 - LT 25 | 714 | ZONA II | MUR/HEX:1 | -70.24403 | -17.98814 | 15.268 |
| 2043 | MZA 2240 - LT 26 | 715 | ZONA II | MUR/HEX:1 | -70.24408 | -17.98808 | 15.721 |
| 2044 | MZA 2240 - LT 27 | 716 | ZONA II | MUR/HEX:1 | -70.24413 | -17.98801 | 14.503 |
| 2045 | MZA 2240 - LT 28 | 717 | ZONA II | MUR/HEX:1 | -70.24419 | -17.98793 | 21.750 |
| 2046 | MZA 2242 - LT 1 | 718 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24230 | -17.99180 | 24.548 |
| 2047 | MZA 2242 - LT 2 | 719 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24222 | -17.99175 | 24.016 |
| 2048 | MZA 2242 - LT 3 | 720 | ZONA II | MUR/HEX:1 | -70.24214 | -17.99169 | 16.551 |
| 2049 | MZA 2242 - LT 4 | 721 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24207 | -17.99164 | 296.633 |
| 2050 | MZA 2242 - LT 5 | 722 | ZONA II | MUR/HEX:1 | -70.24199 | -17.99159 | 16.213 |
| 2051 | MZA 2242 - LT 6 | 723 | ZONA II | MUR/HEX:1 | -70.24192 | -17.99153 | 15.885 |
| 2052 | MZA 2242 - LT 7 | 724 | ZONA II | MUR/HEX:1 | -70.24184 | -17.99148 | 16.564 |
| 2053 | MZA 2242 - LT 8 | 725 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24177 | -17.99142 | 22.990 |
| 2054 | MZA 2242 - LT 9 | 726 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24169 | -17.99137 | 25.111 |
| 2055 | MZA 2242 - LT 10 | 727 | ZONA II | MCFLWAL+DNO/HEX:2/RES | -70.24161 | -17.99131 | 299.957 |
| 2056 | MZA 2242 - LT 11 | 728 | ZONA II | MUR/HEX:1 | -70.24241 | -17.99166 | 15.393 |
| 2057 | MZA 2242 - LT 12 | 729 | ZONA II | MCFLWAL+DNO/HEX:1/RES | -70.24233 | -17.99160 | 23.566 |
| 2058 | MZA 2242 - LT 13 | 730 | ZONA II | MUR/HEX:1 | -70.24226 | -17.99155 | 17.403 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by="OpenQuake engine 3.16.1", start_date="2023-06-02T22:33:01", checksum="1181138371, investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 2059 | MZA 2242 - LT 14 | 731 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24218 | -17.99149 | 311.936 |
| 2060 | MZA 2242 - LT 15 | 732 | ZONA II | MUR/HEX:1 | -70.24211 | -17.99144 | 17.750 |
| 2061 | MZA 2242 - LT 16 | 733 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24203 | -17.99139 | 304.100 |
| 2062 | MZA 2242 - LT 17 | 734 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24195 | -17.99133 | 25.427 |
| 2063 | MZA 2242 - LT 18 | 735 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24188 | -17.99128 | 313.226 |
| 2064 | MZA 2242 - LT 19 | 736 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24180 | -17.99122 | 314.072 |
| 2065 | MZA 2242 - LT 20 | 737 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24173 | -17.99117 | 24.092 |
| 2066 | MZA 2243 - LT 1 | 738 | ZONA II | MUR/HEX:1 | -70.24200 | -17.99218 | 17.064 |
| 2067 | MZA 2243 - LT 2 | 739 | ZONA II | MUR/HEX:1 | -70.24192 | -17.99212 | 17.148 |
| 2068 | MZA 2243 - LT 3 | 740 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24185 | -17.99207 | 314.907 |
| 2069 | MZA 2243 - LT 4 | 741 | ZONA II | MUR/HEX:1 | -70.24177 | -17.99201 | 17.609 |
| 2070 | MZA 2243 - LT 5 | 742 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24170 | -17.99196 | 310.806 |
| 2071 | MZA 2243 - LT 6 | 743 | ZONA II | MUR/HEX:2 | -70.24162 | -17.99190 | 504.400 |
| 2072 | MZA 2243 - LT 7 | 744 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24155 | -17.99185 | 307.451 |
| 2073 | MZA 2243 - LT 8 | 745 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24147 | -17.99179 | 25.992 |
| 2074 | MZA 2243 - LT 9 | 746 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24140 | -17.99174 | 24.194 |
| 2075 | MZA 2243 - LT 10 | 747 | ZONA II | MUR/HEX:1 | -70.24132 | -17.99168 | 17.570 |
| 2076 | MZA 2243 - LT 11 | 748 | ZONA II | MUR/HEX:1 | -70.24211 | -17.99203 | 16.950 |
| 2077 | MZA 2243 - LT 12 | 749 | ZONA II | MUR/HEX:1 | -70.24204 | -17.99198 | 16.950 |
| 2078 | MZA 2243 - LT 13 | 750 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24196 | -17.99192 | 302.850 |
| 2079 | MZA 2243 - LT 14 | 751 | ZONA II | MUR/HEX:1 | -70.24189 | -17.99187 | 17.640 |
| 2080 | MZA 2243 - LT 15 | 752 | ZONA II | MUR/HEX:1 | -70.24181 | -17.99181 | 16.546 |
| 2081 | MZA 2243 - LT 16 | 753 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24174 | -17.99176 | 2045.073 |
| 2082 | MZA 2243 - LT 17 | 754 | ZONA II | MUR/HEX:1 | -70.24166 | -17.99170 | 18.129 |
| 2083 | MZA 2243 - LT 18 | 755 | ZONA II | MUR/HEX:1 | -70.24159 | -17.99165 | 17.449 |
| 2084 | MZA 2243 - LT 19 | 756 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24151 | -17.99159 | 24.688 |
| 2085 | MZA 2243 - LT 20 | 757 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24143 | -17.99154 | 25.065 |
| 2086 | MZA 2244 - LT 1 | 758 | ZONA II | MUR/HEX:1 | -70.24450 | -17.98807 | 16.627 |
| 2087 | MZA 2244 - LT 2 | 759 | ZONA II | MUR/HEX:1 | -70.24445 | -17.98815 | 16.525 |
| 2088 | MZA 2244 - LT 3 | 760 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24439 | -17.98822 | 302.619 |
| 2089 | MZA 2244 - LT 4 | 761 | ZONA II | MUR/HEX:2 | -70.24433 | -17.98830 | 503.576 |
| 2090 | MZA 2244 - LT 5 | 762 | ZONA II | MUR/HEX:1 | -70.24428 | -17.98837 | 18.255 |
| 2091 | MZA 2244 - LT 6 | 763 | ZONA II | MUR/HEX:1 | -70.24422 | -17.98845 | 18.867 |
| 2092 | MZA 2244 - LT 7 | 764 | ZONA II | MUR/HEX:2 | -70.24416 | -17.98853 | 507.692 |
| 2093 | MZA 2244 - LT 8 | 765 | ZONA II | MUR/HEX:1 | -70.24411 | -17.98861 | 17.456 |
| 2094 | MZA 2244 - LT 9 | 766 | ZONA II | MUR/HEX:2 | -70.24406 | -17.98869 | 503.378 |
| 2095 | MZA 2244 - LT 10 | 767 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24400 | -17.98876 | 311.509 |
| 2096 | MZA 2244 - LT 11 | 768 | ZONA II | MUR/HEX:1 | -70.24395 | -17.98884 | 16.515 |
| 2097 | MZA 2244 - LT 12 | 769 | ZONA II | MUR/HEX:1 | -70.24390 | -17.98891 | 16.381 |
| 2098 | MZA 2244 - LT 13 | 770 | ZONA II | MUR/HEX:1 | -70.24384 | -17.98898 | 17.959 |
| 2099 | MZA 2244 - LT 14 | 771 | ZONA II | MUR/HEX:1 | -70.24379 | -17.98906 | 17.615 |
| 2100 | MZA 2244 - LT 15 | 772 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24395 | -17.98916 | 304.598 |
| 2101 | MZA 2244 - LT 16 | 773 | ZONA II | MUR/HEX:1 | -70.24400 | -17.98909 | 18.560 |
| 2102 | MZA 2244 - LT 17 | 774 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24406 | -17.98901 | 23.145 |
| 2103 | MZA 2244 - LT 18 | 775 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24411 | -17.98894 | 307.380 |
| 2104 | MZA 2244 - LT 19 | 776 | ZONA II | MUR/HEX:1 | -70.24416 | -17.98886 | 17.066 |
| 2105 | MZA 2244 - LT 20 | 777 | ZONA II | MUR/HEX:1 | -70.24421 | -17.98879 | 17.254 |
| 2106 | MZA 2244 - LT 21 | 778 | ZONA II | MUR/HEX:1 | -70.24427 | -17.98871 | 17.720 |
| 2107 | MZA 2244 - LT 22 | 779 | ZONA II | MUR/HEX:1 | -70.24432 | -17.98864 | 17.842 |
| 2108 | MZA 2244 - LT 23 | 780 | ZONA II | MUR/HEX:1 | -70.24438 | -17.98856 | 18.401 |
| 2109 | MZA 2244 - LT 24 | 781 | ZONA II | MUR/HEX:1 | -70.24443 | -17.98848 | 19.087 |
| 2110 | MZA 2244 - LT 25 | 782 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24449 | -17.98840 | 298.974 |
| 2111 | MZA 2244 - LT 26 | 783 | ZONA II | MUR/HEX:2 | -70.24454 | -17.98832 | 511.651 |
| 2112 | MZA 2244 - LT 27 | 784 | ZONA II | MUR/HEX:1 | -70.24460 | -17.98824 | 17.749 |
| 2113 | MZA 2244 - LT 28 | 785 | ZONA II | MUR/HEX:1 | -70.24466 | -17.98816 | 19.549 |
| 2114 | MZA 2245 - LT 1 | 786 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24365 | -17.98926 | 28.398 |
| 2115 | MZA 2245 - LT 2 | 787 | ZONA II | MUR/HEX:1 | -70.24359 | -17.98934 | 16.958 |
| 2116 | MZA 2245 - LT 3 | 788 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24354 | -17.98942 | 24.322 |
| 2117 | MZA 2245 - LT 4 | 789 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24348 | -17.98949 | 337.398 |
| 2118 | MZA 2245 - LT 5 | 790 | ZONA II | MUR/HEX:1 | -70.24342 | -17.98958 | 18.022 |
| 2119 | MZA 2245 - LT 6 | 791 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24337 | -17.98966 | 333.200 |
| 2120 | MZA 2245 - LT 7 | 792 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24331 | -17.98974 | 289.247 |
| 2121 | MZA 2245 - LT 8 | 793 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24326 | -17.98981 | 24.054 |
| 2122 | MZA 2245 - LT 9 | 794 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24320 | -17.98989 | 312.664 |
| 2123 | MZA 2245 - LT 10 | 795 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24315 | -17.98996 | 303.240 |
| 2124 | MZA 2245 - LT 11 | 796 | ZONA II | MUR/HEX:2 | -70.24310 | -17.99004 | 496.465 |
| 2125 | MZA 2245 - LT 12 | 797 | ZONA II | MUR/HEX:1 | -70.24304 | -17.99011 | 16.050 |
| 2126 | MZA 2245 - LT 13 | 798 | ZONA II | MUR/HEX:2 | -70.24299 | -17.99019 | 494.128 |
| 2127 | MZA 2245 - LT 14 | 799 | ZONA II | MUR/HEX:1 | -70.24294 | -17.99026 | 17.228 |
| 2128 | MZA 2245 - LT 15 | 800 | ZONA II | MUR/HEX:1 | -70.24310 | -17.99037 | 17.720 |
| 2129 | MZA 2245 - LT 16 | 801 | ZONA II | MUR/HEX:1 | -70.24315 | -17.99029 | 16.248 |
| 2130 | MZA 2245 - LT 17 | 802 | ZONA II | MUR/HEX:1 | -70.24320 | -17.99022 | 16.402 |
| 2131 | MZA 2245 - LT 18 | 803 | ZONA II | MUR/HEX:1 | -70.24326 | -17.99014 | 16.988 |
| 2132 | MZA 2245 - LT 19 | 804 | ZONA II | MUR/HEX:1 | -70.24331 | -17.99007 | 17.897 |
| 2133 | MZA 2245 - LT 20 | 805 | ZONA II | MUR/HEX:1 | -70.24336 | -17.98999 | 17.129 |
| 2134 | MZA 2245 - LT 21 | 806 | ZONA II | MUR/HEX:1 | -70.24341 | -17.98992 | 17.386 |
| 2135 | MZA 2245 - LT 22 | 807 | ZONA II | MUR/HEX:1 | -70.24347 | -17.98984 | 17.743 |
| 2136 | MZA 2245 - LT 23 | 808 | ZONA II | MUR/HEX:1 | -70.24352 | -17.98976 | 18.239 |
| 2137 | MZA 2245 - LT 24 | 809 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24358 | -17.98968 | 341.989 |
| 2138 | MZA 2245 - LT 25 | 810 | ZONA II | MUR/HEX:1 | -70.24364 | -17.98960 | 18.756 |
| 2139 | MZA 2245 - LT 26 | 811 | ZONA II | MUR/HEX:1 | -70.24369 | -17.98952 | 16.243 |
| 2140 | MZA 2245 - LT 27 | 812 | ZONA II | MUR/HEX:1 | -70.24375 | -17.98944 | 18.714 |
| 2141 | MZA 2245 - LT 28 | 813 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24381 | -17.98936 | 338.983 |
| 2142 | MZA 2247 - LT 1 | 814 | ZONA II | MUR/HEX:1 | -70.24577 | -17.98880 | 21.623 |
| 2143 | MZA 2247 - LT 2 | 815 | ZONA II | MUR/HEX:2 | -70.24568 | -17.98875 | 660.762 |
| 2144 | MZA 2247 - LT 3 | 816 | ZONA II | MUR/HEX:1 | -70.24560 | -17.98869 | 22.129 |
| 2145 | MZA 2247 - LT 4 | 817 | ZONA II | MUR/HEX:1 | -70.24551 | -17.98864 | 19.897 |
| 2146 | MZA 2247 - LT 5 | 818 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24542 | -17.98859 | 28.333 |
| 2147 | MZA 2247 - LT 6 | 819 | ZONA II | MUR/HEX:2 | -70.24532 | -17.98854 | 580.844 |
| 2148 | MZA 2247 - LT 7 | 820 | ZONA II | MUR/HEX:2 | -70.24521 | -17.98847 | 651.986 |
| 2149 | MZA 2247 - LT 8 | 821 | ZONA II | MUR/HEX:1 | -70.24509 | -17.98840 | 22.170 |
| 2150 | MZA 2247 - LT 9 | 822 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24494 | -17.98832 | 361.452 |
| 2151 | MZA 2247 - LT 10 | 823 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24483 | -17.98843 | 367.736 |
| 2152 | MZA 2247 - LT 11 | 824 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24491 | -17.98848 | 24.575 |
| 2153 | MZA 2247 - LT 12 | 825 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24500 | -17.98854 | 27.844 |
| 2154 | MZA 2247 - LT 13 | 826 | ZONA II | MUR/HEX:2 | -70.24508 | -17.98859 | 463.597 |
| 2155 | MZA 2247 - LT 14 | 827 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24515 | -17.98864 | 23.079 |
| 2156 | MZA 2247 - LT 15 | 828 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24523 | -17.98869 | 24.990 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 2157 | MZA 2247 - LT 16 | 829 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24531 | -17.98874 | 340.231 |
| 2158 | MZA 2247 - LT 17 | 830 | ZONA II | MUR/HEX:2 | -70.24539 | -17.98880 | 568.095 |
| 2159 | MZA 2247 - LT 18 | 831 | ZONA II | MUR/HEX:1 | -70.24548 | -17.98885 | 19.642 |
| 2160 | MZA 2247 - LT 19 | 832 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24557 | -17.98891 | 28.481 |
| 2161 | MZA 2247 - LT 20 | 833 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24565 | -17.98897 | 27.034 |
| 2162 | MZA 2248 - LT 1 | 834 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24548 | -17.98921 | 24.733 |
| 2163 | MZA 2248 - LT 2 | 835 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24539 | -17.98915 | 25.804 |
| 2164 | MZA 2248 - LT 3 | 836 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24531 | -17.98909 | 29.438 |
| 2165 | MZA 2248 - LT 4 | 837 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24522 | -17.98904 | 29.486 |
| 2166 | MZA 2248 - LT 5 | 838 | ZONA II | MUR/HEX:2 | -70.24514 | -17.98898 | 505.488 |
| 2167 | MZA 2248 - LT 6 | 839 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24505 | -17.98893 | 27.389 |
| 2168 | MZA 2248 - LT 7 | 840 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24497 | -17.98887 | 24.867 |
| 2169 | MZA 2248 - LT 8 | 841 | ZONA II | MUR/HEX:1 | -70.24489 | -17.98882 | 16.959 |
| 2170 | MZA 2248 - LT 9 | 842 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24482 | -17.98877 | 303.296 |
| 2171 | MZA 2248 - LT 10 | 843 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24474 | -17.98872 | 316.448 |
| 2172 | MZA 2248 - LT 11 | 844 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24466 | -17.98867 | 343.021 |
| 2173 | MZA 2248 - LT 12 | 845 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24455 | -17.98882 | 2274.102 |
| 2174 | MZA 2248 - LT 13 | 846 | ZONA II | MUR/HEX:3 | -70.24463 | -17.98887 | 580.471 |
| 2175 | MZA 2248 - LT 14 | 847 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24471 | -17.98892 | 24.400 |
| 2176 | MZA 2248 - LT 15 | 848 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24479 | -17.98897 | 23.730 |
| 2177 | MZA 2248 - LT 16 | 849 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24487 | -17.98903 | 25.432 |
| 2178 | MZA 2248 - LT 17 | 850 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24495 | -17.98908 | 26.304 |
| 2179 | MZA 2248 - LT 18 | 851 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24503 | -17.98913 | 25.101 |
| 2180 | MZA 2248 - LT 19 | 852 | ZONA II | MUR/HEX:2 | -70.24511 | -17.98919 | 571.778 |
| 2181 | MZA 2248 - LT 20 | 853 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24520 | -17.98924 | 349.929 |
| 2182 | MZA 2248 - LT 21 | 854 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24529 | -17.98930 | 340.803 |
| 2183 | MZA 2248 - LT 22 | 855 | ZONA II | MUR/HEX:2 | -70.24537 | -17.98936 | 792.034 |
| 2184 | MZA 2249 - LT 1 | 856 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24519 | -17.98962 | 34.780 |
| 2185 | MZA 2249 - LT 2 | 857 | ZONA II | MUR/HEX:1 | -70.24510 | -17.98957 | 22.615 |
| 2186 | MZA 2249 - LT 3 | 858 | ZONA II | MUR/HEX:1 | -70.24502 | -17.98950 | 23.096 |
| 2187 | MZA 2249 - LT 4 | 859 | ZONA II | MUR/HEX:1 | -70.24493 | -17.98945 | 24.913 |
| 2188 | MZA 2249 - LT 5 | 860 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24484 | -17.98939 | 33.061 |
| 2189 | MZA 2249 - LT 6 | 861 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24476 | -17.98934 | 401.514 |
| 2190 | MZA 2249 - LT 7 | 862 | ZONA II | MUR/HEX:1 | -70.24468 | -17.98929 | 21.480 |
| 2191 | MZA 2249 - LT 8 | 863 | ZONA II | MUR/HEX:1 | -70.24460 | -17.98923 | 22.253 |
| 2192 | MZA 2249 - LT 9 | 864 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24453 | -17.98919 | 31.541 |
| 2193 | MZA 2249 - LT 10 | 865 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24444 | -17.98913 | 29.982 |
| 2194 | MZA 2249 - LT 11 | 866 | ZONA II | MUR/HEX:2 | -70.24436 | -17.98908 | 698.322 |
| 2195 | MZA 2249 - LT 12 | 867 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24423 | -17.98927 | 33.352 |
| 2196 | MZA 2249 - LT 13 | 868 | ZONA II | MUR/HEX:1 | -70.24431 | -17.98932 | 21.058 |
| 2197 | MZA 2249 - LT 14 | 869 | ZONA II | MUR/HEX:1 | -70.24439 | -17.98937 | 22.712 |
| 2198 | MZA 2249 - LT 15 | 870 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24447 | -17.98942 | 377.217 |
| 2199 | MZA 2249 - LT 16 | 871 | ZONA II | MUR/HEX:1 | -70.24455 | -17.98947 | 21.581 |
| 2200 | MZA 2249 - LT 17 | 872 | ZONA II | MUR/HEX:1 | -70.24463 | -17.98953 | 21.945 |
| 2201 | MZA 2249 - LT 18 | 873 | ZONA II | MUR/HEX:1 | -70.24480 | -17.98963 | 25.845 |
| 2202 | MZA 2249 - LT 19 | 874 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24488 | -17.98969 | 419.854 |
| 2203 | MZA 2249 - LT 20 | 875 | ZONA II | MUR/HEX:1 | -70.24497 | -17.98975 | 23.326 |
| 2204 | MZA 2249 - LT 21 | 876 | ZONA II | MUR/HEX:1 | -70.24497 | -17.98975 | 23.326 |
| 2205 | MZA 2249 - LT 22 | 877 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24505 | -17.98980 | 426.211 |
| 2206 | MZA 2250 - LT 1 | 878 | ZONA II | MUR/HEX:1 | -70.24411 | -17.98956 | 24.871 |
| 2207 | MZA 2250 - LT 2 | 879 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24405 | -17.98964 | 35.326 |
| 2208 | MZA 2250 - LT 3 | 880 | ZONA II | MUR/HEX:1 | -70.24399 | -17.98972 | 21.580 |
| 2209 | MZA 2250 - LT 4 | 881 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24393 | -17.98980 | 403.512 |
| 2210 | MZA 2250 - LT 5 | 882 | ZONA II | MUR/HEX:1 | -70.24387 | -17.98988 | 21.770 |
| 2211 | MZA 2250 - LT 6 | 883 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24382 | -17.98996 | 32.297 |
| 2212 | MZA 2250 - LT 7 | 884 | ZONA II | MUR/HEX:1 | -70.24377 | -17.99004 | 20.452 |
| 2213 | MZA 2250 - LT 8 | 885 | ZONA II | MUR/HEX:1 | -70.24371 | -17.99011 | 22.674 |
| 2214 | MZA 2250 - LT 9 | 886 | ZONA II | MUR/HEX:1 | -70.24366 | -17.99019 | 21.990 |
| 2215 | MZA 2250 - LT 10 | 887 | ZONA II | MUR/HEX:1 | -70.24361 | -17.99026 | 20.789 |
| 2216 | MZA 2250 - LT 11 | 888 | ZONA II | MUR/HEX:1 | -70.24356 | -17.99034 | 21.459 |
| 2217 | MZA 2250 - LT 12 | 889 | ZONA II | MUR/HEX:1 | -70.24350 | -17.99041 | 20.915 |
| 2218 | MZA 2250 - LT 13 | 890 | ZONA II | MUR/HEX:1 | -70.24345 | -17.99049 | 21.001 |
| 2219 | MZA 2250 - LT 14 | 891 | ZONA II | MUR/HEX:1 | -70.24340 | -17.99056 | 20.535 |
| 2220 | MZA 2250 - LT 15 | 892 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24359 | -17.99069 | 28.412 |
| 2221 | MZA 2250 - LT 16 | 893 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24364 | -17.99061 | 368.797 |
| 2222 | MZA 2250 - LT 17 | 894 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24370 | -17.99054 | 366.366 |
| 2223 | MZA 2250 - LT 18 | 895 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24375 | -17.99046 | 29.530 |
| 2224 | MZA 2250 - LT 19 | 896 | ZONA II | MUR/HEX:1 | -70.24380 | -17.99039 | 20.371 |
| 2225 | MZA 2250 - LT 20 | 897 | ZONA II | MUR/HEX:2 | -70.24386 | -17.99031 | 622.659 |
| 2226 | MZA 2250 - LT 21 | 898 | ZONA II | MUR/HEX:1 | -70.24391 | -17.99024 | 21.004 |
| 2227 | MZA 2250 - LT 22 | 899 | ZONA II | MUR/HEX:1 | -70.24396 | -17.99016 | 20.221 |
| 2228 | MZA 2250 - LT 23 | 900 | ZONA II | MUR/HEX:1 | -70.24402 | -17.99008 | 22.807 |
| 2229 | MZA 2250 - LT 24 | 901 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24407 | -17.99001 | 352.836 |
| 2230 | MZA 2251 - LT 1 | 903 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24345 | -17.99264 | 35.046 |
| 2231 | MZA 2251 - LT 2 | 904 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24336 | -17.99258 | 24.906 |
| 2232 | MZA 2251 - LT 3 | 905 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24329 | -17.99252 | 308.039 |
| 2233 | MZA 2251 - LT 4 | 906 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24322 | -17.99247 | 310.706 |
| 2234 | MZA 2251 - LT 5 | 907 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24314 | -17.99241 | 2038.124 |
| 2235 | MZA 2251 - LT 6 | 908 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24306 | -17.99236 | 25.437 |
| 2236 | MZA 2251 - LT 7 | 909 | ZONA II | MUR/HEX:1 | -70.24299 | -17.99230 | 16.665 |
| 2237 | MZA 2251 - LT 8 | 910 | ZONA II | MUR/HEX:1 | -70.24291 | -17.99225 | 16.867 |
| 2238 | MZA 2251 - LT 9 | 911 | ZONA II | MUR/HEX:1 | -70.24284 | -17.99219 | 16.795 |
| 2239 | MZA 2251 - LT 10 | 912 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24276 | -17.99214 | 309.714 |
| 2240 | MZA 2251 - LT 11 | 913 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24269 | -17.99208 | 24.552 |
| 2241 | MZA 2251 - LT 12 | 914 | ZONA II | MUR/HEX:1 | -70.24261 | -17.99203 | 17.336 |
| 2242 | MZA 2251 - LT 13 | 915 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24253 | -17.99198 | 24.581 |
| 2243 | MZA 2251 - LT 14 | 916 | ZONA II | MUR/HEX:1 | -70.24245 | -17.99192 | 20.527 |
| 2244 | MZA 2251 - LT 15 | 917 | ZONA II | MUR/HEX:1 | -70.24257 | -17.99177 | 20.218 |
| 2245 | MZA 2251 - LT 16 | 918 | ZONA II | MUR/HEX:1 | -70.24265 | -17.99183 | 17.050 |
| 2246 | MZA 2251 - LT 17 | 919 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24273 | -17.99189 | 310.301 |
| 2247 | MZA 2251 - LT 18 | 920 | ZONA II | MUR/HEX:1 | -70.24280 | -17.99194 | 17.241 |
| 2248 | MZA 2251 - LT 19 | 921 | ZONA II | MUR/HEX:1 | -70.24288 | -17.99200 | 15.949 |
| 2249 | MZA 2251 - LT 20 | 922 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24295 | -17.99205 | 22.657 |
| 2250 | MZA 2251 - LT 21 | 923 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24303 | -17.99211 | 308.887 |
| 2251 | MZA 2251 - LT 22 | 924 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24310 | -17.99216 | 23.299 |
| 2252 | MZA 2251 - LT 23 | 925 | ZONA II | MUR/HEX:1 | -70.24318 | -17.99222 | 16.551 |
| 2253 | MZA 2251 - LT 24 | 926 | ZONA II | MUR/HEX:1 | -70.24325 | -17.99227 | 18.116 |
| 2254 | MZA 2251 - LT 25 | 927 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24333 | -17.99233 | 25.055 |
| 2255 | MZA 2251 - LT 26 | 928 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24340 | -17.99238 | 301.025 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|---------|----------------------------|-----------|-----------|---------------|
| 2255 | MZA 2251 - LT 27 | 929 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24348 | -17.99244 | 300.077 |
| 2256 | MZA 2251 - LT 28 | 930 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24357 | -17.99250 | 406.982 |
| 2257 | MZA 2251 - LT 29 | 931 | ZONA II | MUR/HEX:2 | -70.24365 | -17.99257 | 428.169 |
| 2258 | MZA 2251 - LT 30 | 932 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24372 | -17.99261 | 260.915 |
| 2259 | MZA 2251 - LT 31 | 933 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24379 | -17.99265 | 221.740 |
| 2260 | MZA 2251 - LT 32 | 934 | ZONA II | MUR/HEX:1 | -70.24386 | -17.99270 | 13.961 |
| 2261 | MZA 2251 - LT 33 | 935 | ZONA II | MUR/HEX:1 | -70.24373 | -17.99277 | 18.161 |
| 2262 | MZA 2251 - LT 34 | 936 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24361 | -17.99274 | 217.992 |
| 2263 | MZA 2251 - LT 35 | 937 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24354 | -17.99270 | 21.841 |
| 2264 | MZA 2252 - LT 1 | 938 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24218 | -17.99230 | 517.726 |
| 2265 | MZA 2252 - LT 2 | 939 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24232 | -17.99239 | 475.385 |
| 2266 | MZA 2252 - LT 3 | 940 | ZONA II | MUR/HEX:1 | -70.24248 | -17.99249 | 29.218 |
| 2267 | MZA 2252 - LT 4 | 941 | ZONA II | MUR/HEX:1 | -70.24226 | -17.99214 | 17.702 |
| 2268 | MZA 2252 - LT 5 | 942 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24234 | -17.99220 | 26.507 |
| 2269 | MZA 2252 - LT 6 | 943 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24241 | -17.99225 | 308.166 |
| 2270 | MZA 2252 - LT 7 | 944 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24249 | -17.99231 | 330.436 |
| 2271 | MZA 2252 - LT 8 | 945 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24257 | -17.99236 | 275.935 |
| 2272 | MZA 2252 - LT 9 | 946 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24264 | -17.99242 | 25.924 |
| 2273 | MZA 2252 - LT 10 | 947 | ZONA II | MUR/HEX:1 | -70.24269 | -17.99250 | 26.894 |
| 2274 | MZA 2252 - LT 11 | 948 | ZONA II | MUR/HEX:1 | -70.24278 | -17.99255 | 24.743 |
| 2275 | MZA 2252 - LT 12 | 949 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24287 | -17.99260 | 330.253 |
| 2276 | MZA 2252 - LT 13 | 950 | ZONA II | MUR/HEX:1 | -70.24300 | -17.99266 | 29.892 |
| 2277 | MZA 2252 - LT 14 | 951 | ZONA II | MUR/HEX:2 | -70.24316 | -17.99273 | 399.064 |
| 2278 | MZA 2254 - LT 1 | 952 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24484 | -17.99117 | 365.750 |
| 2279 | MZA 2254 - LT 2 | 953 | ZONA II | MUR/HEX:1 | -70.24477 | -17.99111 | 21.191 |
| 2280 | MZA 2254 - LT 3 | 954 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24469 | -17.99106 | 371.218 |
| 2281 | MZA 2254 - LT 4 | 955 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24461 | -17.99100 | 2497.845 |
| 2282 | MZA 2254 - LT 5 | 956 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24453 | -17.99095 | 30.005 |
| 2283 | MZA 2254 - LT 6 | 957 | ZONA II | MUR/HEX:2 | -70.24444 | -17.99090 | 652.845 |
| 2284 | MZA 2254 - LT 7 | 958 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24436 | -17.99084 | 386.150 |
| 2285 | MZA 2254 - LT 8 | 959 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24427 | -17.99079 | 32.314 |
| 2286 | MZA 2254 - LT 9 | 960 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24419 | -17.99073 | 392.579 |
| 2287 | MZA 2254 - LT 10 | 961 | ZONA II | MUR/HEX:1 | -70.24410 | -17.99068 | 21.088 |
| 2288 | MZA 2254 - LT 11 | 962 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24402 | -17.99063 | 376.952 |
| 2289 | MZA 2254 - LT 12 | 963 | ZONA II | MUR/HEX:2 | -70.24389 | -17.99081 | 665.865 |
| 2290 | MZA 2254 - LT 13 | 964 | ZONA II | MUR/HEX:2 | -70.24398 | -17.99086 | 712.532 |
| 2291 | MZA 2254 - LT 14 | 965 | ZONA II | MUR/HEX:1 | -70.24406 | -17.99092 | 21.664 |
| 2292 | MZA 2254 - LT 15 | 966 | ZONA II | MUR/HEX:3 | -70.24415 | -17.99097 | 776.184 |
| 2293 | MZA 2254 - LT 16 | 967 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24423 | -17.99103 | 408.453 |
| 2294 | MZA 2254 - LT 17 | 968 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24432 | -17.99108 | 2766.449 |
| 2295 | MZA 2254 - LT 18 | 969 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24440 | -17.99113 | 388.768 |
| 2296 | MZA 2254 - LT 19 | 970 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24448 | -17.99119 | 374.017 |
| 2297 | MZA 2254 - LT 20 | 971 | ZONA II | MUR/HEX:1 | -70.24456 | -17.99124 | 21.218 |
| 2298 | MZA 2254 - LT 22 | 973 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24472 | -17.99134 | 2553.144 |
| 2299 | MZA 2255 - LT 1 | 974 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24379 | -17.99106 | 377.996 |
| 2300 | MZA 2255 - LT 2 | 975 | ZONA II | MUR/HEX:2 | -70.24374 | -17.99113 | 630.378 |
| 2301 | MZA 2255 - LT 3 | 976 | ZONA II | MUR/HEX:2 | -70.24369 | -17.99121 | 624.363 |
| 2302 | MZA 2255 - LT 4 | 977 | ZONA II | MUR/HEX:2 | -70.24364 | -17.99128 | 600.426 |
| 2303 | MZA 2255 - LT 5 | 978 | ZONA II | MUR/HEX:1 | -70.24359 | -17.99135 | 20.501 |
| 2304 | MZA 2255 - LT 6 | 979 | ZONA II | MUR/HEX:1 | -70.24354 | -17.99142 | 19.232 |
| 2305 | MZA 2255 - LT 7 | 980 | ZONA II | MUR/HEX:2 | -70.24350 | -17.99150 | 600.639 |
| 2306 | MZA 2255 - LT 8 | 981 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24368 | -17.99168 | 296.094 |
| 2307 | MZA 2255 - LT 9 | 982 | ZONA II | MUR/HEX:2 | -70.24370 | -17.99162 | 490.453 |
| 2308 | MZA 2255 - LT 10 | 983 | ZONA II | CR/LFINF+DNO/HEX:4/RES | -70.24374 | -17.99155 | 1820.527 |
| 2309 | MZA 2255 - LT 11 | 984 | ZONA II | MUR/HEX:2 | -70.24379 | -17.99148 | 563.650 |
| 2310 | MZA 2255 - LT 12 | 985 | ZONA II | MUR/HEX:1 | -70.24384 | -17.99141 | 18.989 |
| 2311 | MZA 2255 - LT 13 | 986 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24388 | -17.99134 | 380.658 |
| 2312 | MZA 2255 - LT 14 | 987 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24394 | -17.99126 | 402.404 |
| 2313 | MZA 2255 - LT 15 | 988 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24399 | -17.99119 | 391.020 |
| 2314 | MZA 2256 - LT 1 | 989 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24610 | -17.98889 | 382.059 |
| 2315 | MZA 2256 - LT 2 | 990 | ZONA II | MUR/HEX:2 | -70.24604 | -17.98896 | 671.205 |
| 2316 | MZA 2256 - LT 3 | 991 | ZONA II | MUR/HEX:1 | -70.24598 | -17.98904 | 23.816 |
| 2317 | MZA 2256 - LT 4 | 992 | ZONA II | MUR/HEX:1 | -70.24592 | -17.98912 | 21.650 |
| 2318 | MZA 2256 - LT 5 | 993 | ZONA II | MUR/HEX:1 | -70.24587 | -17.98919 | 20.920 |
| 2319 | MZA 2256 - LT 6 | 994 | ZONA II | MUR/HEX:2 | -70.24582 | -17.98927 | 632.624 |
| 2320 | MZA 2256 - LT 7 | 995 | ZONA II | MUR/HEX:2 | -70.24576 | -17.98934 | 624.462 |
| 2321 | MZA 2256 - LT 8 | 996 | ZONA II | MUR/HEX:6 | -70.24571 | -17.98942 | 12299.440 |
| 2322 | MZA 2256 - LT 9 | 997 | ZONA II | MUR/HEX:3 | -70.24566 | -17.98949 | 670.375 |
| 2323 | MZA 2256 - LT 10 | 998 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24561 | -17.98956 | 389.553 |
| 2324 | MZA 2256 - LT 11 | 999 | ZONA II | MUR/HEX:1 | -70.24580 | -17.98969 | 22.092 |
| 2325 | MZA 2256 - LT 12 | 1000 | ZONA II | MUR/HEX:1 | -70.24586 | -17.98962 | 22.012 |
| 2326 | MZA 2256 - LT 13 | 1001 | ZONA II | MUR/HEX:2 | -70.24591 | -17.98954 | 624.489 |
| 2327 | MZA 2256 - LT 14 | 1002 | ZONA II | MUR/HEX:2 | -70.24596 | -17.98947 | 616.805 |
| 2328 | MZA 2256 - LT 15 | 1003 | ZONA II | MUR/HEX:1 | -70.24601 | -17.98939 | 19.287 |
| 2329 | MZA 2256 - LT 16 | 1004 | ZONA II | MUR/HEX:1 | -70.24607 | -17.98932 | 20.734 |
| 2330 | MZA 2256 - LT 17 | 1005 | ZONA II | MUR/HEX:1 | -70.24612 | -17.98924 | 20.904 |
| 2331 | MZA 2256 - LT 18 | 1006 | ZONA II | MUR/HEX:1 | -70.24617 | -17.98917 | 21.259 |
| 2332 | MZA 2256 - LT 19 | 1007 | ZONA II | MUR/HEX:1 | -70.24623 | -17.98909 | 22.583 |
| 2333 | MZA 2256 - LT 20 | 1008 | ZONA II | MCF/LWAL+DNO/HEX:3/RES | -70.24630 | -17.98900 | 3300.221 |
| 2334 | MZA 2257 - LT 1 | 1009 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24549 | -17.98973 | 32.948 |
| 2335 | MZA 2257 - LT 2 | 1010 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24543 | -17.98981 | 31.448 |
| 2336 | MZA 2257 - LT 3 | 1011 | ZONA II | MUR/HEX:1 | -70.24538 | -17.98988 | 21.104 |
| 2337 | MZA 2257 - LT 4 | 1012 | ZONA II | MCF/LWAL+DUC/HEX:1/RES | -70.24533 | -17.98996 | 17.696 |
| 2338 | MZA 2257 - LT 5 | 1013 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24527 | -17.99003 | 378.325 |
| 2339 | MZA 2257 - LT 6 | 1014 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24522 | -17.99011 | 381.465 |
| 2340 | MZA 2257 - LT 7 | 1015 | ZONA II | MUR/HEX:2 | -70.24517 | -17.99018 | 642.654 |
| 2341 | MZA 2257 - LT 8 | 1016 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24511 | -17.99026 | 405.741 |
| 2342 | MZA 2257 - LT 9 | 1017 | ZONA II | MUR/HEX:1 | -70.24506 | -17.99034 | 23.853 |
| 2343 | MZA 2257 - LT 10 | 1018 | ZONA II | MUR/HEX:1 | -70.24500 | -17.99042 | 24.899 |
| 2344 | MZA 2257 - LT 11 | 1019 | ZONA II | MUR/HEX:1 | -70.24494 | -17.99050 | 23.571 |
| 2345 | MZA 2257 - LT 12 | 1020 | ZONA II | MUR/HEX:1 | -70.24488 | -17.99058 | 25.147 |
| 2346 | MZA 2257 - LT 13 | 1021 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24482 | -17.99067 | 432.105 |
| 2347 | MZA 2257 - LT 14 | 1022 | ZONA II | MUR/HEX:2 | -70.24476 | -17.99075 | 721.918 |
| 2348 | MZA 2257 - LT 15 | 1023 | ZONA II | MCF/LWAL+DUC/HEX:2/RES | -70.24496 | -17.99088 | 172.602 |
| 2349 | MZA 2257 - LT 16 | 1024 | ZONA II | MUR/HEX:2 | -70.24502 | -17.99079 | 692.291 |
| 2350 | MZA 2257 - LT 17 | 1025 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24508 | -17.99071 | 440.442 |
| 2351 | MZA 2257 - LT 18 | 1026 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24514 | -17.99063 | 34.194 |
| 2352 | MZA 2257 - LT 19 | 1027 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24520 | -17.99055 | 438.060 |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PÉRDIDA PROMEDIO ANUAL (AAL)

generated_by='OpenQuake engine 3.16.1', start_date='2023-06-02T22:33:01', checksum='1181138371', investigation_time=1.0, risk_investigation_time=1.0

| asset_id | Codigo | NZona | Zona | taxonomy | lon | lat | losses (US\$) |
|----------|------------------|-------|----------|----------------------------|-----------|-----------|---------------|
| 2353 | MZA 2257 - LT 20 | 1028 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24526 | -17.99046 | 406.154 |
| 2354 | MZA 2257 - LT 21 | 1029 | ZONA II | MUR/HEX:1 | -70.24531 | -17.99038 | 22.093 |
| 2355 | MZA 2257 - LT 22 | 1030 | ZONA II | MUR/HEX:1 | -70.24537 | -17.99031 | 22.646 |
| 2356 | MZA 2257 - LT 23 | 1031 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24542 | -17.99023 | 393.238 |
| 2357 | MZA 2257 - LT 24 | 1032 | ZONA II | MUR/HEX:1 | -70.24547 | -17.99016 | 20.762 |
| 2358 | MZA 2257 - LT 25 | 1033 | ZONA II | MUR/HEX:1 | -70.24553 | -17.99008 | 22.646 |
| 2359 | MZA 2257 - LT 26 | 1034 | ZONA II | MUR/HEX:2 | -70.24558 | -17.99001 | 628.694 |
| 2360 | MZA 2257 - LT 27 | 1035 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24563 | -17.98993 | 380.999 |
| 2361 | MZA 2257 - LT 28 | 1036 | ZONA II | MUR/HEX:2 | -70.24569 | -17.98986 | 659.339 |
| 2362 | MZA 2258 - LT 1 | 1037 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24430 | -17.99139 | 33.486 |
| 2363 | MZA 2258 - LT 3 | 1039 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24419 | -17.99154 | 393.322 |
| 2364 | MZA 2258 - LT 4 | 1040 | ZONA II | MUR/HEX:1 | -70.24414 | -17.99162 | 22.238 |
| 2365 | MZA 2258 - LT 5 | 1041 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24409 | -17.99170 | 406.414 |
| 2366 | MZA 2258 - LT 6 | 1042 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24404 | -17.99177 | 394.343 |
| 2367 | MZA 2258 - LT 7 | 1043 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24398 | -17.99185 | 428.146 |
| 2368 | MZA 2258 - LT 8 | 1044 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24393 | -17.99195 | 492.580 |
| 2369 | MZA 2258 - LT 9 | 1045 | ZONA II | MCF/LWAL+DNO/HEX:2/RES | -70.24409 | -17.99213 | 377.116 |
| 2370 | MZA 2258 - LT 10 | 1046 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24413 | -17.99205 | 29.887 |
| 2371 | MZA 2258 - LT 11 | 1047 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24418 | -17.99198 | 31.731 |
| 2372 | MZA 2258 - LT 12 | 1048 | ZONA II | MUR/HEX:2 | -70.24424 | -17.99190 | 646.219 |
| 2373 | MZA 2258 - LT 13 | 1049 | ZONA II | MUR/HEX:2 | -70.24429 | -17.99183 | 635.102 |
| 2374 | MZA 2258 - LT 14 | 1050 | ZONA II | MUR+ADO/LWAL+DNO/HEX:1/RES | -70.24434 | -17.99175 | 385.342 |
| 2375 | MZA 2258 - LT 15 | 1051 | ZONA II | MUR/HEX:1 | -70.24440 | -17.99167 | 22.679 |
| 2376 | MZA 2258 - LT 16 | 1052 | ZONA II | MUR/HEX:1 | -70.24445 | -17.99160 | 20.900 |
| 2377 | MZA 2258 - LT 17 | 1053 | ZONA II | MCF/LWAL+DNO/HEX:1/RES | -70.24450 | -17.99152 | 30.996 |
| 2378 | MZA 3302 - LT 1 | 1 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24935 | -17.99149 | 450.950 |
| 2379 | MZA 3302 - LT 2 | 2 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24924 | -17.99147 | 274.595 |
| 2380 | MZA 3302 - LT 3 | 3 | ZONA III | MUR/HEX:1 | -70.24917 | -17.99146 | 14.855 |
| 2381 | MZA 3302 - LT 4 | 4 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24909 | -17.99146 | 22.187 |
| 2382 | MZA 3302 - LT 5 | 5 | ZONA III | MUR/HEX:1 | -70.24902 | -17.99146 | 13.638 |
| 2383 | MZA 3302 - LT 6 | 6 | ZONA III | MUR/HEX:1 | -70.24894 | -17.99146 | 14.877 |
| 2384 | MZA 3302 - LT 7 | 7 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24887 | -17.99146 | 267.649 |
| 2385 | MZA 3302 - LT 8 | 8 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24879 | -17.99146 | 265.255 |
| 2386 | MZA 3302 - LT 9 | 9 | ZONA III | MUR/HEX:1 | -70.24872 | -17.99146 | 16.350 |
| 2387 | MZA 3302 - LT 10 | 10 | ZONA III | MUR/HEX:1 | -70.24864 | -17.99146 | 15.049 |
| 2388 | MZA 3302 - LT 11 | 11 | ZONA III | MUR/HEX:1 | -70.24856 | -17.99146 | 15.412 |
| 2389 | MZA 3302 - LT 12 | 12 | ZONA III | MUR/HEX:2 | -70.24849 | -17.99146 | 442.611 |
| 2390 | MZA 3302 - LT 13 | 13 | ZONA III | MUR/HEX:1 | -70.24841 | -17.99145 | 14.623 |
| 2391 | MZA 3302 - LT 14 | 14 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24834 | -17.99145 | 267.056 |
| 2392 | MZA 3302 - LT 15 | 15 | ZONA III | MUR/HEX:1 | -70.24826 | -17.99145 | 14.322 |
| 2393 | MZA 3302 - LT 16 | 16 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24819 | -17.99145 | 264.304 |
| 2394 | MZA 3302 - LT 17 | 17 | ZONA III | MUR/HEX:1 | -70.24811 | -17.99145 | 15.792 |
| 2395 | MZA 3302 - LT 18 | 18 | ZONA III | MCF/LWAL+DNO/HEX:3/RES | -70.24804 | -17.99145 | 1806.688 |
| 2396 | MZA 3302 - LT 19 | 19 | ZONA III | MUR/HEX:1 | -70.24803 | -17.99126 | 14.738 |
| 2397 | MZA 3302 - LT 20 | 20 | ZONA III | MUR/HEX:1 | -70.24811 | -17.99126 | 13.697 |
| 2398 | MZA 3302 - LT 21 | 21 | ZONA III | MUR/HEX:1 | -70.24819 | -17.99126 | 13.458 |
| 2399 | MZA 3302 - LT 22 | 22 | ZONA III | MUR/HEX:2 | -70.24826 | -17.99126 | 413.837 |
| 2400 | MZA 3302 - LT 23 | 23 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24834 | -17.99126 | 255.374 |
| 2401 | MZA 3302 - LT 24 | 24 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24841 | -17.99126 | 250.680 |
| 2402 | MZA 3302 - LT 25 | 25 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24849 | -17.99126 | 18.984 |
| 2403 | MZA 3302 - LT 26 | 26 | ZONA III | MUR/HEX:1 | -70.24856 | -17.99127 | 14.107 |
| 2404 | MZA 3302 - LT 27 | 27 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24864 | -17.99127 | 19.109 |
| 2405 | MZA 3302 - LT 28 | 28 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24872 | -17.99127 | 251.246 |
| 2406 | MZA 3302 - LT 29 | 29 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24879 | -17.99127 | 243.207 |
| 2407 | MZA 3302 - LT 30 | 30 | ZONA III | MUR/HEX:1 | -70.24887 | -17.99127 | 14.329 |
| 2408 | MZA 3302 - LT 31 | 31 | ZONA III | MUR/HEX:1 | -70.24894 | -17.99127 | 13.587 |
| 2409 | MZA 3302 - LT 32 | 32 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24902 | -17.99127 | 238.636 |
| 2410 | MZA 3302 - LT 33 | 33 | ZONA III | MUR/HEX:2 | -70.24909 | -17.99127 | 395.473 |
| 2411 | MZA 3302 - LT 34 | 34 | ZONA III | MUR/HEX:1 | -70.24920 | -17.99130 | 20.611 |
| 2412 | MZA 3304 - LT 1 | 35 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24677 | -17.99143 | 349.287 |
| 2413 | MZA 3304 - LT 2 | 36 | ZONA III | MUR/HEX:1 | -70.24669 | -17.99143 | 16.210 |
| 2414 | MZA 3304 - LT 3 | 37 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24661 | -17.99143 | 294.286 |
| 2415 | MZA 3304 - LT 4 | 38 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24653 | -17.99143 | 272.705 |
| 2416 | MZA 3304 - LT 5 | 39 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24646 | -17.99143 | 275.269 |
| 2417 | MZA 3304 - LT 6 | 40 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24638 | -17.99143 | 266.363 |
| 2418 | MZA 3304 - LT 7 | 41 | ZONA III | MUR/HEX:1 | -70.24631 | -17.99143 | 15.204 |
| 2419 | MZA 3304 - LT 8 | 42 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24623 | -17.99143 | 272.347 |
| 2420 | MZA 3304 - LT 9 | 43 | ZONA III | MUR/HEX:1 | -70.24616 | -17.99143 | 15.163 |
| 2421 | MZA 3304 - LT 10 | 44 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24608 | -17.99142 | 273.098 |
| 2422 | MZA 3304 - LT 11 | 45 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24601 | -17.99142 | 20.177 |
| 2423 | MZA 3304 - LT 12 | 46 | ZONA III | MUR/HEX:3 | -70.24593 | -17.99142 | 468.836 |
| 2424 | MZA 3304 - LT 13 | 47 | ZONA III | MUR/HEX:1 | -70.24586 | -17.99142 | 13.426 |
| 2425 | MZA 3304 - LT 14 | 48 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24573 | -17.99138 | 473.705 |
| 2426 | MZA 3304 - LT 15 | 49 | ZONA III | MUR/HEX:1 | -70.24542 | -17.99119 | 18.645 |
| 2427 | MZA 3304 - LT 16 | 50 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24554 | -17.99122 | 21.077 |
| 2428 | MZA 3304 - LT 17 | 51 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24563 | -17.99123 | 283.419 |
| 2429 | MZA 3304 - LT 18 | 52 | ZONA III | MUR/HEX:3 | -70.24571 | -17.99123 | 531.719 |
| 2430 | MZA 3304 - LT 19 | 53 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24580 | -17.99123 | 292.574 |
| 2431 | MZA 3304 - LT 20 | 54 | ZONA III | MUR/HEX:1 | -70.24588 | -17.99123 | 13.977 |
| 2432 | MZA 3304 - LT 21 | 55 | ZONA III | MUR/HEX:1 | -70.24595 | -17.99123 | 14.601 |
| 2433 | MZA 3304 - LT 22 | 56 | ZONA III | MUR/HEX:1 | -70.24603 | -17.99123 | 13.617 |
| 2434 | MZA 3304 - LT 23 | 57 | ZONA III | MUR/HEX:1 | -70.24610 | -17.99123 | 13.902 |
| 2435 | MZA 3304 - LT 24 | 58 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24618 | -17.99123 | 244.886 |
| 2436 | MZA 3304 - LT 25 | 59 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24625 | -17.99124 | 20.200 |
| 2437 | MZA 3304 - LT 26 | 60 | ZONA III | MUR/HEX:2 | -70.24633 | -17.99124 | 403.340 |
| 2438 | MZA 3304 - LT 27 | 61 | ZONA III | MCF/LWAL+DNO/HEX:1/RES | -70.24641 | -17.99124 | 18.993 |
| 2439 | MZA 3304 - LT 28 | 62 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24648 | -17.99124 | 245.446 |
| 2440 | MZA 3304 - LT 29 | 63 | ZONA III | MUR/HEX:2 | -70.24656 | -17.99124 | 405.101 |
| 2441 | MZA 3304 - LT 30 | 64 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24663 | -17.99124 | 238.601 |
| 2442 | MZA 3304 - LT 31 | 65 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24671 | -17.99124 | 236.239 |
| 2443 | MZA 3304 - LT 32 | 66 | ZONA III | MUR/HEX:1 | -70.24678 | -17.99124 | 13.356 |
| 2444 | MZA 3305 - LT 1 | 67 | ZONA III | MCF/LWAL+DNO/HEX:3/RES | -70.24543 | -17.99147 | 2293.097 |
| 2445 | MZA 3305 - LT 2 | 68 | ZONA III | MUR/HEX:2 | -70.24531 | -17.99143 | 501.976 |
| 2446 | MZA 3305 - LT 3 | 69 | ZONA III | MCF/LWAL+DNO/HEX:3/RES | -70.24522 | -17.99141 | 2669.013 |
| 2447 | MZA 3305 - LT 4 | 70 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24516 | -17.99133 | 308.023 |
| 2448 | MZA 3305 - LT 5 | 71 | ZONA III | MCF/LWAL+DNO/HEX:3/RES | -70.24508 | -17.99129 | 2122.748 |
| 2449 | MZA 3305 - LT 6A | 72 | ZONA III | MCF/LWAL+DNO/HEX:2/RES | -70.24496 | -17.99147 | 187.859 |
| 2450 | MZA 3305 - LT 6B | 73 | ZONA III | MCF/LWAL+DNO/HEX:3/RES | -70.24499 | -17.99140 | 1595.124 |

**Anexo 7. RESULTADOS DE RIESGO SÍSMICO: PÉRDIDAS MÁXIMAS
PROBABLES POR PERIODO DE RETORNO (PML)**



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 403766 | 2002 | 334 | 385 | 563 | 66245000 | 53276 | 1 | 0.000% | 50000.00 | 7.75 | 0.016 | -0.862 | 0.653 | 0.060 | -69.52 | -18.52 | 133.24 | Subduction IntraSlab |
| 403435 | 1989 | 332 | 361 | 481 | 63801000 | 52983 | 2 | 0.000% | 25000.00 | 7.65 | 0.132 | -0.581 | -0.311 | 1.954 | -70.08 | -18.24 | 116.37 | Subduction IntraSlab |
| 402888 | 2047 | 353 | 407 | 484 | 63478900 | 52349 | 3 | 0.001% | 186666.67 | 7.45 | 0.079 | -1.581 | -0.078 | 1.448 | -70.09 | -18.17 | 117.10 | Subduction IntraSlab |
| 403710 | 1918 | 291 | 374 | 520 | 62701500 | 53226 | 4 | 0.001% | 125000.00 | 7.75 | 0.238 | 1.117 | 1.935 | -1.331 | -69.91 | -18.35 | 121.10 | Subduction IntraSlab |
| 403698 | 2329 | 372 | 380 | 492 | 62168500 | 53214 | 5 | 0.001% | 100000.00 | 7.75 | 0.275 | -0.077 | 1.807 | 1.201 | -69.96 | -18.38 | 118.73 | Subduction IntraSlab |
| 403646 | 1687 | 315 | 375 | 485 | 60654600 | 53170 | 6 | 0.001% | 83333.33 | 7.75 | 0.407 | 1.832 | -0.108 | 0.349 | -70.11 | -18.50 | 111.58 | Subduction IntraSlab |
| 403649 | 2201 | 443 | 424 | 475 | 60614400 | 53172 | 7 | 0.001% | 71428.57 | 7.75 | -1.479 | 0.421 | 1.370 | -0.239 | -70.03 | -18.87 | 110.49 | Subduction IntraSlab |
| 403730 | 1866 | 293 | 372 | 451 | 60371600 | 53245 | 8 | 0.002% | 62500.00 | 7.75 | -0.758 | 1.360 | -1.227 | 0.101 | -69.82 | -18.30 | 125.25 | Subduction IntraSlab |
| 403670 | 1987 | 341 | 363 | 484 | 60198000 | 53188 | 9 | 0.002% | 55555.56 | 7.75 | -2.335 | -1.651 | -1.706 | -0.331 | -70.06 | -18.42 | 114.65 | Subduction IntraSlab |
| 403677 | 2190 | 373 | 408 | 487 | 59857800 | 53195 | 10 | 0.002% | 50000.00 | 7.75 | -0.213 | -0.190 | -0.774 | 1.196 | -69.98 | -18.61 | 115.14 | Subduction IntraSlab |
| 403732 | 1975 | 352 | 396 | 427 | 59679600 | 53245 | 11 | 0.002% | 45454.55 | 7.75 | -0.831 | -1.327 | -1.256 | 0.813 | -69.82 | -18.30 | 125.25 | Subduction IntraSlab |
| 403627 | 1942 | 338 | 406 | 406 | 59085200 | 53151 | 12 | 0.002% | 41666.67 | 7.75 | 0.433 | -1.070 | -0.804 | -1.696 | -70.18 | -18.40 | 110.42 | Subduction IntraSlab |
| 403660 | 2135 | 367 | 405 | 435 | 58519000 | 53181 | 13 | 0.003% | 38461.54 | 7.75 | -0.401 | 1.995 | -1.550 | -1.670 | -70.09 | -18.30 | 115.12 | Subduction IntraSlab |
| 403671 | 2138 | 375 | 338 | 523 | 58531400 | 53189 | 14 | 0.003% | 35714.29 | 7.75 | 0.721 | -2.369 | -0.516 | -0.332 | -70.06 | -18.37 | 115.39 | Subduction IntraSlab |
| 403667 | 1956 | 355 | 381 | 412 | 58444000 | 53186 | 15 | 0.003% | 33333.33 | 7.75 | 0.727 | 1.663 | 0.656 | 0.754 | -70.00 | -18.67 | 113.87 | Subduction IntraSlab |
| 539624 | 2189 | 400 | 370 | 457 | 57766900 | 67362 | 16 | 0.003% | 31250.00 | 8.25 | -0.164 | 0.785 | 0.341 | 1.145 | -71.67 | -17.98 | 55.53 | Subduction IntraSlab |
| 403150 | 1889 | 310 | 355 | 427 | 57331000 | 52737 | 17 | 0.003% | 29411.76 | 7.55 | -0.272 | 1.110 | -0.125 | 1.866 | -70.03 | -18.10 | 120.34 | Subduction IntraSlab |
| 539639 | 2384 | 403 | 354 | 461 | 57002900 | 67363 | 18 | 0.004% | 27777.78 | 8.25 | 0.365 | -2.037 | -1.003 | 0.468 | -71.70 | -17.95 | 55.50 | Subduction IntraSlab |
| 403695 | 2239 | 359 | 323 | 457 | 56952800 | 53211 | 19 | 0.004% | 26315.79 | 7.75 | 0.521 | -0.304 | 0.477 | 0.075 | -69.85 | -18.86 | 117.12 | Subduction IntraSlab |
| 403330 | 2278 | 375 | 393 | 411 | 56700300 | 52888 | 20 | 0.004% | 25000.00 | 7.65 | -0.305 | 0.807 | -0.283 | -2.092 | -70.33 | -18.46 | 103.95 | Subduction IntraSlab |
| 403542 | 1953 | 295 | 303 | 444 | 56361900 | 53076 | 21 | 0.004% | 23809.52 | 7.65 | -1.970 | 0.222 | 1.750 | -1.378 | -69.59 | -18.37 | 132.56 | Subduction IntraSlab |
| 403755 | 1902 | 341 | 348 | 419 | 56244400 | 53285 | 22 | 0.004% | 22727.27 | 7.75 | 0.576 | 1.084 | 0.045 | -1.534 | -69.75 | -18.15 | 129.79 | Subduction IntraSlab |
| 403563 | 1969 | 313 | 337 | 426 | 56142800 | 53096 | 23 | 0.005% | 21739.13 | 7.65 | -0.645 | 1.113 | -0.490 | -0.250 | -69.70 | -17.92 | 135.35 | Subduction IntraSlab |
| 403782 | 1639 | 310 | 349 | 435 | 55948300 | 53291 | 24 | 0.005% | 20833.33 | 7.75 | 0.016 | -0.094 | 2.149 | -0.767 | -69.49 | -18.35 | 136.41 | Subduction IntraSlab |
| 403591 | 1944 | 288 | 307 | 474 | 55824900 | 53122 | 25 | 0.005% | 20000.00 | 7.75 | -0.408 | -0.348 | 1.464 | -0.198 | -70.32 | -18.45 | 104.51 | Subduction IntraSlab |
| 403225 | 2046 | 359 | 360 | 442 | 55613100 | 52801 | 26 | 0.005% | 19230.77 | 7.55 | -1.758 | -1.023 | -2.507 | 1.375 | -69.78 | -18.22 | 127.56 | Subduction IntraSlab |
| 403744 | 1739 | 336 | 353 | 471 | 55526000 | 53255 | 27 | 0.005% | 18518.52 | 7.75 | -0.419 | -0.362 | -0.070 | 0.011 | -69.75 | -18.30 | 127.76 | Subduction IntraSlab |
| 403650 | 2098 | 332 | 339 | 422 | 55481500 | 53173 | 28 | 0.006% | 17857.14 | 7.75 | 0.071 | -1.209 | -0.224 | -0.058 | -70.12 | -18.36 | 113.26 | Subduction IntraSlab |
| 402601 | 1837 | 283 | 311 | 455 | 55153600 | 52279 | 29 | 0.006% | 17241.38 | 7.45 | 0.874 | -0.191 | 0.395 | -2.006 | -70.20 | -18.30 | 111.00 | Subduction IntraSlab |
| 403086 | 1836 | 306 | 324 | 426 | 55109800 | 52683 | 30 | 0.006% | 16666.67 | 7.55 | -0.125 | -0.605 | -0.042 | 0.184 | -70.09 | -18.35 | 114.39 | Subduction IntraSlab |
| 403688 | 1888 | 322 | 356 | 402 | 54926600 | 53205 | 31 | 0.006% | 16129.03 | 7.75 | -0.263 | 1.006 | 1.505 | -1.669 | -70.01 | -18.34 | 117.70 | Subduction IntraSlab |
| 403520 | 1975 | 315 | 345 | 437 | 54835600 | 53061 | 32 | 0.006% | 15625.00 | 7.65 | 0.671 | 0.118 | 0.113 | 0.087 | -69.68 | -18.37 | 129.29 | Subduction IntraSlab |
| 403787 | 1817 | 330 | 339 | 379 | 54739000 | 53295 | 33 | 0.007% | 15151.52 | 7.75 | 0.448 | -0.354 | 1.230 | 0.117 | -69.34 | -18.58 | 138.51 | Subduction IntraSlab |
| 403444 | 1791 | 328 | 334 | 411 | 54669300 | 52992 | 34 | 0.007% | 14705.88 | 7.65 | -0.374 | -0.369 | -0.837 | 1.456 | -70.04 | -18.31 | 116.67 | Subduction IntraSlab |
| 403425 | 1924 | 301 | 326 | 420 | 54610800 | 52973 | 35 | 0.007% | 14285.71 | 7.65 | -0.709 | -1.568 | 0.860 | 1.524 | -70.11 | -18.21 | 115.96 | Subduction IntraSlab |
| 403634 | 2031 | 356 | 354 | 463 | 54566900 | 53158 | 36 | 0.007% | 13888.89 | 7.75 | -0.832 | 0.265 | -1.326 | -0.497 | -70.16 | -18.43 | 110.76 | Subduction IntraSlab |
| 539726 | 1855 | 345 | 318 | 435 | 54273400 | 67376 | 37 | 0.007% | 13513.51 | 8.35 | 0.116 | -0.888 | -1.366 | -1.320 | -71.91 | -17.99 | 50.32 | Subduction IntraSlab |
| 403616 | 2242 | 311 | 353 | 391 | 54259800 | 53141 | 38 | 0.008% | 13157.89 | 7.75 | 1.615 | -0.453 | 0.223 | -0.798 | -70.23 | -18.43 | 108.14 | Subduction IntraSlab |
| 403612 | 2274 | 380 | 364 | 408 | 54199800 | 53138 | 39 | 0.008% | 12820.51 | 7.75 | 0.123 | -0.003 | 0.741 | -0.272 | -70.24 | -18.53 | 106.42 | Subduction IntraSlab |
| 540705 | 1805 | 266 | 300 | 425 | 54149800 | 67466 | 40 | 0.008% | 12500.00 | 8.35 | -0.003 | 1.212 | 0.564 | -1.709 | -71.90 | -17.85 | 53.88 | Subduction InterSlab |
| 539636 | 1949 | 342 | 317 | 419 | 53963400 | 67363 | 41 | 0.008% | 12195.12 | 8.25 | -0.615 | -2.614 | 0.335 | 0.354 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 403790 | 2180 | 285 | 312 | 402 | 53848900 | 53298 | 42 | 0.008% | 11904.76 | 7.75 | 0.700 | 0.311 | -0.272 | 0.453 | -69.51 | -18.25 | 137.15 | Subduction IntraSlab |
| 403477 | 1812 | 327 | 336 | 400 | 53646000 | 53018 | 43 | 0.009% | 11627.91 | 7.65 | 1.597 | 1.346 | -0.627 | 1.151 | -69.88 | -18.34 | 122.29 | Subduction IntraSlab |
| 403729 | 1918 | 330 | 346 | 397 | 53503100 | 53245 | 44 | 0.009% | 11363.64 | 7.75 | -0.500 | 0.310 | -0.495 | -0.666 | -69.82 | -18.30 | 125.25 | Subduction IntraSlab |
| 539715 | 1595 | 268 | 309 | 412 | 53500500 | 67375 | 45 | 0.009% | 11111.11 | 8.35 | 0.486 | 0.492 | 1.145 | 0.219 | -71.87 | -18.01 | 50.35 | Subduction InterSlab |
| 403720 | 2272 | 368 | 339 | 412 | 53400700 | 53236 | 46 | 0.009% | 10869.57 | 7.75 | -0.006 | -1.352 | -0.915 | -1.088 | -69.83 | -18.35 | 124.16 | Subduction IntraSlab |
| 403733 | 1933 | 302 | 344 | 400 | 53141600 | 53246 | 47 | 0.009% | 10638.30 | 7.75 | -0.356 | -0.280 | -0.010 | -0.084 | -69.88 | -18.07 | 126.22 | Subduction IntraSlab |
| 539727 | 2040 | 347 | 342 | 395 | 53101300 | 67376 | 48 | 0.010% | 10416.67 | 8.35 | 0.842 | 0.010 | -0.802 | 0.984 | -71.91 | -17.99 | 50.32 | Subduction IntraSlab |
| 403607 | 1993 | 306 | 335 | 368 | 52884700 | 53133 | 49 | 0.010% | 10204.08 | 7.75 | -0.007 | -0.876 | -0.057 | -1.256 | -70.27 | -18.51 | 105.56 | Subduction IntraSlab |
| 403181 | 2015 | 339 | 341 | 416 | 52739200 | 52762 | 50 | 0.010% | 10000.00 | 7.55 | -1.848 | 0.262 | 1.720 | -0.539 | -69.98 | -18.01 | 123.51 | Subduction IntraSlab |
| 403061 | 1831 | 328 | 328 | 370 | 52665500 | 52660 | 51 | 0.010% | 9803.92 | 7.55 | -0.502 | 0.099 | -1.435 | -1.220 | -70.16 | -18.25 | 113.27 | Subduction IntraSlab |
| 403492 | 1829 | 312 | 339 | 367 | 52581700 | 53033 | 52 | 0.010% | 9615.38 | 7.65 | 0.198 | 0.880 | 0.178 | -0.017 | -69.92 | -18.05 | 125.11 | Subduction IntraSlab |
| 403399 | 2074 | 346 | 365 | 381 | 52572400 | 52949 | 53 | 0.011% | 9433.96 | 7.65 | 0.457 | -0.335 | -1.224 | 0.201 | -70.12 | -18.60 | 110.26 | Subduction IntraSlab |
| 403433 | 1847 | 310 | 320 | 375 | 52347500 | 52981 | 54 | 0.011% | 9259.26 | 7.65 | -0.225 | 0.287 | -1.113 | 0.339 | -70.02 | -18.54 | 114.54 | Subduction IntraSlab |
| 403351 | 1929 | 293 | 340 | 373 | 52148600 | 52908 | 55 | 0.011% | 9090.91 | 7.65 | 0.860 | 0.194 | 0.271 | 1.315 | -70.25 | -18.72 | 104.01 | Subduction IntraSlab |
| 403222 | 1814 | 309 | 331 | 387 | 52104900 | 52798 | 56 | 0.011% | 8928.57 | 7.55 | 0.444 | -2.282 | -0.546 | 0.784 | -69.70 | -18.44 | 127.58 | Subduction IntraSlab |
| 403786 | 1556 | 261 | 260 | 397 | 51860200 | 53294 | 57 | 0.011% | 8771.93 | 7.75 | 0.460 | -0.957 | 0.181 | 0.681 | -69.32 | -18.63 | 138.76 | Subduction IntraSlab |
| 403727 | 1642 | 280 | 284 | 407 | 51784300 | 53243 | 58 | 0.012% | 8620.69 | 7.75 | 0.306 | 0.318 | -0.141 | -1.734 | -69.72 | -18.60 | 124.78 | Subduction IntraSlab |
| 403467 | 1700 | 295 | 337 | 388 | 51482200 | 53010 | 59 | 0.012% | 8474.58 | 7.65 | 0.191 | -0.876 | 1.047 | -0.298 | -70.02 | -18.09 | 120.87 | Subduction IntraSlab |
| 539438 | 1692 | 265 | 300 | 366 | 51386100 | 67330 | 60 | 0.012% | 8333.33 | 8.25 | -0.641 | 0.674 | 0.136 | 2.056 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 540178 | 1883 | 309 | 339 | 316 | 51374200 | 67417 | 61 | 0.012% | 8196.72 | 8.35 | 1.095 | 1.011 | -1.923 | 1.412 | -72.09 | -17.79 | 51.58 | Subduction InterSlab |
| 402972 | 2219 | 329 | 350 | 379 | 51358800 | 525 | | | | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 403615 | 1953 | 359 | 330 | 300 | 48283500 | 53141 | 112 | 0.022% | 4464.29 | 7.75 | -1.548 | -0.090 | -0.051 | -0.889 | -70.23 | -18.43 | 108.14 | Subduction IntraSlab |
| 403737 | 1478 | 277 | 309 | 333 | 48183600 | 53250 | 113 | 0.023% | 4424.78 | 7.75 | -0.421 | -0.372 | -0.002 | 1.416 | -69.69 | -18.58 | 126.07 | Subduction IntraSlab |
| 403752 | 1778 | 315 | 300 | 335 | 48115700 | 53262 | 114 | 0.023% | 4385.96 | 7.75 | 0.434 | -0.999 | 0.389 | 1.284 | -69.85 | -17.99 | 128.84 | Subduction IntraSlab |
| 403513 | 2018 | 307 | 323 | 321 | 48110100 | 53054 | 115 | 0.023% | 4347.83 | 7.65 | 0.845 | 1.027 | -0.282 | 1.579 | -69.65 | -18.56 | 128.00 | Subduction IntraSlab |
| 540674 | 1547 | 268 | 315 | 281 | 47921600 | 67463 | 116 | 0.023% | 4310.34 | 8.35 | -0.048 | 0.021 | 1.613 | -1.009 | -71.79 | -17.94 | 53.98 | Subduction InterSlab |
| 403034 | 1638 | 254 | 303 | 337 | 47909800 | 52640 | 117 | 0.023% | 4273.50 | 7.55 | 1.884 | -0.998 | 1.926 | -0.219 | -70.21 | -18.28 | 111.12 | Subduction IntraSlab |
| 402750 | 1851 | 282 | 294 | 352 | 47870300 | 52402 | 118 | 0.024% | 4237.29 | 7.45 | -1.354 | 0.239 | -0.472 | 1.053 | -69.90 | -18.42 | 120.59 | Subduction IntraSlab |
| 403748 | 1585 | 286 | 280 | 324 | 47702100 | 53259 | 119 | 0.024% | 4201.68 | 7.75 | 0.567 | -0.674 | 0.701 | 0.447 | -69.72 | -18.29 | 128.96 | Subduction IntraSlab |
| 540489 | 1620 | 285 | 304 | 290 | 47690700 | 67445 | 120 | 0.024% | 4166.67 | 8.35 | -0.656 | 0.017 | 0.014 | 0.827 | -71.81 | -17.95 | 53.26 | Subduction InterSlab |
| 403713 | 1807 | 306 | 302 | 319 | 47664700 | 53229 | 121 | 0.024% | 4132.23 | 7.75 | 0.404 | 1.956 | 0.155 | 0.514 | -69.88 | -18.38 | 121.76 | Subduction IntraSlab |
| 403152 | 1568 | 270 | 265 | 357 | 47523800 | 52738 | 122 | 0.024% | 4098.36 | 7.55 | 1.705 | -0.142 | -0.877 | -0.715 | -70.05 | -18.06 | 120.40 | Subduction IntraSlab |
| 403401 | 1869 | 305 | 302 | 308 | 47507100 | 52951 | 123 | 0.025% | 4065.04 | 7.65 | 0.256 | 0.192 | -0.219 | 0.348 | -70.14 | -18.43 | 111.34 | Subduction IntraSlab |
| 540202 | 1699 | 246 | 280 | 315 | 47451000 | 67420 | 124 | 0.025% | 4032.26 | 8.35 | -0.008 | -0.557 | -0.541 | -0.028 | -72.19 | -17.69 | 52.20 | Subduction InterSlab |
| 540689 | 1578 | 304 | 305 | 294 | 47333400 | 67464 | 125 | 0.025% | 4000.00 | 8.35 | -0.607 | 1.521 | 0.428 | 0.264 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 402497 | 1730 | 261 | 285 | 329 | 47321000 | 52191 | 126 | 0.025% | 3968.25 | 7.45 | -1.211 | 1.530 | -0.803 | -0.959 | -70.37 | -18.68 | 99.54 | Subduction IntraSlab |
| 403614 | 2010 | 330 | 285 | 304 | 47316500 | 53140 | 127 | 0.025% | 3937.01 | 7.75 | -0.022 | -0.678 | 1.590 | -1.884 | -70.21 | -18.56 | 106.81 | Subduction IntraSlab |
| 540115 | 1951 | 306 | 267 | 352 | 47285300 | 67412 | 128 | 0.026% | 3906.25 | 8.35 | -0.722 | -1.317 | -0.334 | 0.429 | -71.91 | -17.93 | 51.74 | Subduction InterSlab |
| 403721 | 1907 | 317 | 311 | 310 | 47242300 | 53237 | 129 | 0.026% | 3875.97 | 7.75 | 0.144 | 1.650 | 0.043 | 0.119 | -69.84 | -18.31 | 124.07 | Subduction IntraSlab |
| 403179 | 1908 | 315 | 308 | 328 | 47179500 | 52760 | 130 | 0.026% | 3846.15 | 7.55 | -1.451 | -0.459 | 1.584 | -0.303 | -69.89 | -18.32 | 122.30 | Subduction IntraSlab |
| 403523 | 1926 | 289 | 303 | 310 | 47168100 | 53063 | 131 | 0.026% | 3816.79 | 7.65 | 0.168 | -1.607 | -1.280 | 0.756 | -69.61 | -18.49 | 130.40 | Subduction IntraSlab |
| 539641 | 1644 | 269 | 274 | 316 | 47153300 | 67364 | 132 | 0.026% | 3787.88 | 8.25 | 0.602 | -2.161 | -1.078 | -0.509 | -71.74 | -17.92 | 55.46 | Subduction InterSlab |
| 403595 | 1910 | 310 | 329 | 319 | 47147000 | 53125 | 133 | 0.027% | 3759.40 | 7.75 | 1.177 | 1.294 | 1.185 | -0.149 | -70.27 | -18.73 | 102.78 | Subduction IntraSlab |
| 403705 | 1806 | 294 | 320 | 310 | 47123400 | 53221 | 134 | 0.027% | 3731.34 | 7.75 | -0.641 | -0.566 | 0.327 | -1.283 | -69.89 | -18.59 | 118.91 | Subduction IntraSlab |
| 403151 | 1997 | 311 | 301 | 366 | 47097800 | 52737 | 135 | 0.027% | 3703.70 | 7.55 | 0.051 | 0.918 | 0.201 | -0.003 | -70.03 | -18.10 | 120.34 | Subduction IntraSlab |
| 403457 | 1780 | 286 | 278 | 355 | 47093300 | 53002 | 136 | 0.027% | 3676.47 | 7.65 | 0.765 | -0.995 | 1.139 | -2.058 | -70.03 | -18.15 | 119.73 | Subduction IntraSlab |
| 403693 | 1666 | 278 | 308 | 311 | 47054700 | 53209 | 137 | 0.027% | 3649.64 | 7.75 | 0.617 | -0.450 | -0.271 | -1.603 | -69.82 | -18.94 | 117.14 | Subduction IntraSlab |
| 403774 | 1776 | 293 | 293 | 326 | 47011100 | 53283 | 138 | 0.028% | 3623.19 | 7.75 | -2.050 | 0.926 | -0.736 | -0.659 | -69.47 | -18.49 | 135.18 | Subduction IntraSlab |
| 402346 | 1507 | 224 | 257 | 357 | 46963600 | 52072 | 139 | 0.028% | 3597.12 | 7.35 | 1.305 | 0.472 | 0.177 | -0.576 | -69.85 | -18.05 | 127.85 | Subduction IntraSlab |
| 403626 | 1943 | 339 | 321 | 331 | 46929000 | 53150 | 140 | 0.028% | 3571.43 | 7.75 | 0.516 | 1.026 | 1.175 | 1.329 | -70.16 | -18.53 | 109.20 | Subduction IntraSlab |
| 403483 | 1803 | 296 | 305 | 353 | 46895000 | 53024 | 141 | 0.028% | 3546.10 | 7.65 | 1.293 | -0.133 | -2.168 | 0.474 | -69.84 | -18.36 | 123.56 | Subduction IntraSlab |
| 403421 | 1815 | 318 | 271 | 333 | 46810600 | 52970 | 142 | 0.028% | 3521.13 | 7.65 | 0.012 | -0.717 | -0.589 | 1.180 | -70.06 | -18.47 | 113.97 | Subduction IntraSlab |
| 403414 | 1839 | 260 | 314 | 338 | 46781300 | 52963 | 143 | 0.029% | 3496.50 | 7.65 | -0.036 | 1.510 | 1.693 | 0.168 | -70.08 | -18.48 | 112.78 | Subduction IntraSlab |
| 403240 | 1832 | 298 | 307 | 313 | 46709300 | 52814 | 144 | 0.029% | 3472.22 | 7.55 | -1.863 | 1.437 | -1.024 | -0.554 | -69.85 | -17.94 | 129.80 | Subduction IntraSlab |
| 403369 | 1761 | 302 | 275 | 320 | 46699400 | 52922 | 145 | 0.029% | 3448.28 | 7.65 | 0.420 | 0.551 | 0.913 | 0.203 | -70.20 | -18.64 | 106.59 | Subduction IntraSlab |
| 403731 | 1985 | 321 | 284 | 349 | 46682600 | 53245 | 146 | 0.029% | 3424.66 | 7.75 | 0.412 | -0.139 | 1.053 | -1.386 | -69.82 | -18.30 | 125.25 | Subduction IntraSlab |
| 403562 | 1618 | 288 | 305 | 293 | 46626800 | 53095 | 147 | 0.029% | 3401.36 | 7.65 | 1.535 | 0.946 | -0.597 | 1.333 | -69.61 | -18.08 | 136.20 | Subduction IntraSlab |
| 538325 | 1543 | 234 | 235 | 357 | 46591700 | 67114 | 148 | 0.030% | 3378.38 | 8.15 | -1.540 | 0.615 | -1.252 | 0.159 | -71.85 | -17.84 | 55.34 | Subduction InterSlab |
| 403749 | 1821 | 296 | 260 | 325 | 46581500 | 53260 | 149 | 0.030% | 3355.70 | 7.75 | -2.565 | 0.745 | 1.089 | 0.405 | -69.78 | -18.17 | 128.64 | Subduction IntraSlab |
| 403505 | 1894 | 301 | 300 | 310 | 46525700 | 53046 | 150 | 0.030% | 3333.33 | 7.65 | 0.412 | -0.881 | -0.708 | -0.434 | -69.84 | -18.15 | 126.87 | Subduction IntraSlab |
| 402788 | 1723 | 285 | 283 | 323 | 46494300 | 52437 | 151 | 0.030% | 3311.26 | 7.45 | -1.844 | -1.258 | 1.817 | 1.008 | -69.75 | -18.49 | 125.15 | Subduction IntraSlab |
| 539757 | 1541 | 232 | 269 | 319 | 46437300 | 67379 | 152 | 0.030% | 3289.47 | 8.35 | 1.023 | 0.566 | -0.233 | -0.034 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 402894 | 1738 | 294 | 266 | 362 | 46372300 | 52524 | 153 | 0.031% | 3267.97 | 7.45 | -0.260 | 1.358 | -0.333 | 0.931 | -69.67 | -18.06 | 134.28 | Subduction IntraSlab |
| 403285 | 1901 | 279 | 289 | 339 | 46349700 | 52852 | 154 | 0.031% | 3246.75 | 7.55 | -1.149 | 1.328 | 1.684 | 0.260 | -69.72 | -17.96 | 133.83 | Subduction IntraSlab |
| 403274 | 1650 | 267 | 280 | 323 | 46187700 | 52842 | 155 | 0.031% | 3225.81 | 7.55 | -0.873 | 0.596 | 0.786 | 1.649 | -69.44 | -18.66 | 133.93 | Subduction IntraSlab |
| 403753 | 2232 | 355 | 278 | 296 | 46109000 | 53263 | 156 | 0.031% | 3205.13 | 7.75 | -0.587 | 0.633 | -0.326 | 0.233 | -69.64 | -18.45 | 129.61 | Subduction IntraSlab |
| 403385 | 1566 | 302 | 299 | 314 | 45983100 | 52937 | 157 | 0.031% | 3184.71 | 7.65 | -1.106 | -0.132 | 1.548 | -0.042 | -70.10 | -18.95 | 107.09 | Subduction IntraSlab |
| 403620 | 1980 | 295 | 297 | 313 | 45961000 | 53145 | 158 | 0.032% | 3164.56 | 7.75 | 0.298 | -0.811 | -0.508 | 0.855 | -70.15 | -18.89 | 105.96 | Subduction IntraSlab |
| 540181 | 1868 | 259 | 295 | 297 | 45945300 | 67418 | 159 | 0.032% | 3144.65 | 8.35 | -0.840 | -1.849 | 0.254 | -0.818 | -72.13 | -17.76 | 51.55 | Subduction InterSlab |
| 540491 | 1778 | 294 | 253 | 338 | 45926000 | 67446 | 160 | 0.032% | 3125.00 | 8.35 | -1.052 | -1.934 | 0.927 | 1.412 | -71.84 | -17.93 | 53.22 | Subduction InterSlab |
| 403345 | 1830 | 301 | 316 | 324 | 45825700 | 52903 | 161 | 0.032% | 3105.99 | 7.65 | -1.462 | 0.372 | 1.044 | 0.418 | -70.29 | -18.39 | 106.50 | Subduction IntraSlab |
| 540684 | 2020 | 326 | 340 | 267 | 45817900 | 67464 | 162 | 0.032% | 3086.42 | 8.35 | -0.516 | -0.182 | -1.798 | 0.183 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 539762 | 1741 | 260 | 297 | 313 | 45798200 | 67380 | 163 | 0.033% | 3067.48 | 8.35 | 0.036 | 1.838 | -2.093 | 0.972 | -72.06 | -17.87 | 50.20 | Subduction InterSlab |
| 403621 | 1637 | 272 | 268 | 347 | 45688800 | 53146 | 164 | 0.033% | 3048.78 | 7.75 | -0.590 | -1.453 | -1.642 | -0.589 | -70.18 | -18.64 | 107.20 | Subduction IntraSlab |
| 403434 | 1457 | 265 | 273 | 318 | 45587000 | 52982 | 165 | 0.033% | 3030.30 | 7.65 | -0.752 | -0.551 | -1.601 | 0.272 | -70.06 | -18.32 | 116.10 | Subduction IntraSlab |
| 402502 | 2105 | 305 | 286 | 330 | 45583300 | 52196 | 166 | 0.033% | 3012.05 | 7.45 | -0.625 | 0.478 | -1.066 | 1.919 | -70.39 | -18.34 | 103.61 | Subduction IntraSlab |
| 403149 | 1828 | 308 | 310 | 331 | 45582100 | 52736 | 167 | 0.033% | 2994.01 | 7.55 | 1.274 | 0.773 | -0.177 | 0.576 | -70.02 | -18.14 | 120.27 | Subduction IntraSlab |
| 403183 | 1793 | 260 | 285 | 306 | 45556600 | 52764 | 168 | 0.034% | 2976.19 | 7.55 | -0.311 | 0.664 | -0.677 | -0.816 | -69.74 | -18.68 | 122.97 | Subduction IntraSlab |
| 403139 | 1676 | 280 | 291 | 327 | 45548600 | 52726 | 169 | 0.034% | 2958.58 | 7.55 | 0.583 | 0.041 | -0.861 | 0.293 | -70.04 | -18.16 | 119.20 | Subduction IntraSlab |
| 402856 | 2087 | 300 | 299 | 327 | 45528400 | 52492 | 170 | 0.034% | 2941.18 | 7.45 | 0.955 | 0.661 | -0.020 | 0.180 | -69.81 | -17.94 | 130.91 | Subduction IntraSlab |
| 540515 | 1923 | 267 | 305 | 278 | 45519800 | 67447 | 171 | 0.034% | 2923.98 | 8.35 | -1.166 | 0.667 | 0.864 | 0.423 | -71.88 | -17.90 | 53.19 | Subduction InterSlab |
| 540680 | 1595 | 252 | 263 | 323 | 45471100 | 67463 | 172 | 0.034% | 2906.98 | 8.35 | -0.505 | -0.140 | -1.829 | -0.874 | -71.79 | -17.94 | 53.98 | Subduction InterSlab |
| 403658 | 2005 | 268 | 283 | 335 | 45445700 | | | | | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 403361 | 1699 | 248 | 261 | 285 | 43414200 | 52916 | 223 | 0.045% | 2242.15 | 7.65 | 0.548 | -0.334 | -0.587 | -0.858 | -70.22 | -18.79 | 104.38 | Subduction IntraSlab |
| 402360 | 1715 | 288 | 292 | 286 | 43406400 | 52086 | 224 | 0.045% | 2232.14 | 7.35 | -0.940 | 0.316 | 0.926 | 1.207 | -69.90 | -17.86 | 129.07 | Subduction IntraSlab |
| 540501 | 1718 | 279 | 282 | 282 | 43372800 | 67446 | 225 | 0.045% | 2222.22 | 8.35 | -1.753 | 0.241 | -0.294 | -0.919 | -71.84 | -17.93 | 53.22 | Subduction IntraSlab |
| 536234 | 1592 | 227 | 263 | 283 | 43308300 | 66509 | 226 | 0.045% | 2212.39 | 7.95 | -0.280 | 0.227 | -0.073 | -0.643 | -71.55 | -17.87 | 60.64 | Subduction IntraSlab |
| 539746 | 1549 | 231 | 257 | 293 | 43246100 | 67378 | 227 | 0.045% | 2202.64 | 8.35 | -0.445 | 1.076 | 0.557 | 0.112 | -71.98 | -17.93 | 50.26 | Subduction IntraSlab |
| 403672 | 1537 | 243 | 251 | 309 | 43234900 | 53190 | 228 | 0.046% | 2192.98 | 7.75 | -0.624 | -0.834 | 0.080 | -0.473 | -70.10 | -18.20 | 116.50 | Subduction IntraSlab |
| 540107 | 1634 | 244 | 241 | 271 | 43221300 | 67411 | 229 | 0.046% | 2183.41 | 8.35 | -0.114 | -0.870 | -1.480 | 2.062 | -71.88 | -17.96 | 51.77 | Subduction IntraSlab |
| 403719 | 1880 | 278 | 288 | 269 | 43198200 | 53235 | 230 | 0.046% | 2173.91 | 7.75 | -1.014 | 0.270 | 0.246 | -0.735 | -69.74 | -18.61 | 124.14 | Subduction IntraSlab |
| 540700 | 1775 | 285 | 274 | 274 | 43102500 | 67465 | 231 | 0.046% | 2164.50 | 8.35 | 1.309 | 0.449 | -0.606 | -0.119 | -71.86 | -17.88 | 53.91 | Subduction IntraSlab |
| 403113 | 1592 | 264 | 275 | 307 | 43083600 | 52705 | 232 | 0.046% | 2155.17 | 7.55 | 0.370 | -0.364 | 0.313 | -0.043 | -70.06 | -18.32 | 116.10 | Subduction IntraSlab |
| 403751 | 1766 | 313 | 297 | 273 | 43077300 | 53261 | 233 | 0.047% | 2145.92 | 7.75 | 0.448 | -0.826 | -0.598 | 0.746 | -69.83 | -18.03 | 128.94 | Subduction IntraSlab |
| 403524 | 1953 | 281 | 277 | 290 | 43025400 | 53063 | 234 | 0.047% | 2136.75 | 7.65 | 1.137 | 1.280 | -0.384 | -0.405 | -69.61 | -18.49 | 130.40 | Subduction IntraSlab |
| 402736 | 1696 | 291 | 256 | 282 | 43019500 | 52390 | 235 | 0.047% | 2127.66 | 7.45 | 1.157 | 0.656 | 0.355 | 0.480 | -69.94 | -18.35 | 119.95 | Subduction IntraSlab |
| 403075 | 1680 | 278 | 261 | 291 | 42983100 | 52674 | 236 | 0.047% | 2118.64 | 7.55 | -0.541 | -0.997 | -0.760 | 0.306 | -70.13 | -18.32 | 113.44 | Subduction IntraSlab |
| 403465 | 1673 | 243 | 285 | 270 | 42961300 | 53008 | 237 | 0.047% | 2109.70 | 7.65 | -0.211 | 0.300 | 1.249 | -0.546 | -69.84 | -18.71 | 119.03 | Subduction IntraSlab |
| 539218 | 1800 | 319 | 292 | 255 | 42876100 | 67288 | 238 | 0.048% | 2100.84 | 8.25 | -0.186 | -0.786 | -0.131 | -0.564 | -71.73 | -18.04 | 52.61 | Subduction IntraSlab |
| 402800 | 2016 | 266 | 288 | 279 | 42875400 | 52448 | 239 | 0.048% | 2092.05 | 7.45 | -1.252 | -0.928 | 1.318 | 2.464 | -69.74 | -18.43 | 126.27 | Subduction IntraSlab |
| 403750 | 1948 | 317 | 311 | 254 | 42856900 | 53261 | 240 | 0.048% | 2083.33 | 7.75 | -0.887 | 1.588 | -0.994 | -0.060 | -69.83 | -18.03 | 128.94 | Subduction IntraSlab |
| 403575 | 1813 | 274 | 316 | 238 | 42799600 | 53108 | 241 | 0.048% | 2074.69 | 7.65 | -0.270 | -0.464 | 0.148 | 0.097 | -69.39 | -18.40 | 139.44 | Subduction IntraSlab |
| 540487 | 1881 | 299 | 274 | 256 | 42799300 | 67445 | 242 | 0.048% | 2066.12 | 8.35 | -0.050 | 0.507 | -0.277 | 0.754 | -71.81 | -17.95 | 53.26 | Subduction IntraSlab |
| 403413 | 1880 | 314 | 277 | 316 | 42712600 | 52962 | 243 | 0.049% | 2057.61 | 7.65 | 0.728 | 0.446 | 0.910 | -0.486 | -70.07 | -18.52 | 112.74 | Subduction IntraSlab |
| 540503 | 1638 | 232 | 263 | 296 | 42694200 | 67447 | 244 | 0.049% | 2049.18 | 8.35 | -0.559 | -0.763 | 0.416 | -0.218 | -71.88 | -17.90 | 53.19 | Subduction IntraSlab |
| 403659 | 1963 | 310 | 277 | 271 | 42680500 | 53180 | 245 | 0.049% | 2040.82 | 7.75 | -0.452 | -1.313 | 0.817 | 0.415 | -70.07 | -18.43 | 114.07 | Subduction IntraSlab |
| 403400 | 1914 | 291 | 309 | 294 | 42643800 | 52950 | 246 | 0.049% | 2032.52 | 7.65 | 0.244 | 0.223 | 0.345 | -0.588 | -70.14 | -18.52 | 110.39 | Subduction IntraSlab |
| 403232 | 1860 | 252 | 299 | 284 | 42638900 | 52807 | 247 | 0.049% | 2024.29 | 7.55 | -1.106 | -0.132 | 1.409 | -0.276 | -69.87 | -17.95 | 128.75 | Subduction IntraSlab |
| 402973 | 1693 | 240 | 281 | 282 | 42588600 | 52587 | 248 | 0.050% | 2016.13 | 7.55 | -0.543 | -0.240 | -1.623 | 1.472 | -70.34 | -18.40 | 104.48 | Subduction IntraSlab |
| 540098 | 1706 | 261 | 270 | 275 | 42581500 | 67411 | 249 | 0.050% | 2008.03 | 8.35 | 1.049 | -1.366 | 0.845 | 1.402 | -71.88 | -17.96 | 51.77 | Subduction IntraSlab |
| 539768 | 1974 | 336 | 289 | 292 | 42559700 | 67380 | 250 | 0.050% | 2000.00 | 8.35 | 1.441 | -0.034 | 0.069 | -1.439 | -72.06 | -17.87 | 50.20 | Subduction IntraSlab |
| 402665 | 2014 | 274 | 279 | 294 | 42503500 | 52333 | 251 | 0.050% | 1992.03 | 7.45 | -0.788 | -0.354 | 1.172 | -1.495 | -70.10 | -18.33 | 114.48 | Subduction IntraSlab |
| 403032 | 1786 | 252 | 259 | 285 | 42459800 | 52638 | 252 | 0.050% | 1984.13 | 7.55 | -0.094 | -0.484 | -0.162 | -0.258 | -70.18 | -18.45 | 109.61 | Subduction IntraSlab |
| 540679 | 1720 | 273 | 265 | 270 | 42420300 | 67463 | 253 | 0.051% | 1976.28 | 8.35 | 2.271 | -0.684 | -0.609 | -0.333 | -71.79 | -17.94 | 53.98 | Subduction IntraSlab |
| 403775 | 1878 | 295 | 298 | 233 | 42414700 | 53284 | 254 | 0.051% | 1968.50 | 7.75 | 1.058 | 0.775 | -0.551 | -1.445 | -69.55 | -18.32 | 134.93 | Subduction IntraSlab |
| 540088 | 1684 | 263 | 225 | 290 | 42346900 | 67410 | 255 | 0.051% | 1960.78 | 8.35 | 1.406 | -0.474 | 1.384 | -0.997 | -71.84 | -17.98 | 51.80 | Subduction IntraSlab |
| 403146 | 1664 | 268 | 275 | 262 | 42280500 | 52733 | 256 | 0.051% | 1953.13 | 7.55 | 0.040 | 2.140 | 0.020 | 0.774 | -69.94 | -18.44 | 118.78 | Subduction IntraSlab |
| 403046 | 1809 | 259 | 263 | 295 | 42276300 | 52649 | 257 | 0.051% | 1945.53 | 7.55 | 1.640 | 0.049 | 0.929 | -1.401 | -70.19 | -18.26 | 112.19 | Subduction IntraSlab |
| 403058 | 1714 | 273 | 265 | 301 | 42242400 | 52657 | 258 | 0.052% | 1937.98 | 7.55 | 1.054 | -0.373 | 0.219 | 0.973 | -70.12 | -18.51 | 110.99 | Subduction IntraSlab |
| 540097 | 1945 | 296 | 281 | 252 | 42207900 | 67410 | 259 | 0.052% | 1930.50 | 8.35 | -1.169 | 0.225 | 0.081 | 0.835 | -71.84 | -17.98 | 51.80 | Subduction IntraSlab |
| 403449 | 1732 | 278 | 292 | 286 | 42197700 | 52997 | 260 | 0.052% | 1923.08 | 7.65 | 0.352 | -0.725 | 0.545 | 0.921 | -69.99 | -18.38 | 117.60 | Subduction IntraSlab |
| 403498 | 1816 | 308 | 288 | 250 | 42197700 | 53040 | 261 | 0.052% | 1915.71 | 7.65 | -0.776 | 0.554 | 0.508 | -0.844 | -69.78 | -18.38 | 125.48 | Subduction IntraSlab |
| 403588 | 1532 | 227 | 257 | 282 | 42159400 | 53119 | 262 | 0.052% | 1908.40 | 7.75 | -1.091 | -1.045 | -0.637 | -1.094 | -70.29 | -19.05 | 99.07 | Subduction IntraSlab |
| 403757 | 1562 | 242 | 252 | 259 | 42118200 | 53267 | 263 | 0.053% | 1901.14 | 7.75 | 0.142 | -0.752 | -1.516 | 0.543 | -69.80 | -18.02 | 130.02 | Subduction IntraSlab |
| 402522 | 1583 | 245 | 263 | 300 | 42089000 | 52212 | 264 | 0.053% | 1893.94 | 7.45 | 0.946 | 0.032 | -0.627 | -0.235 | -70.34 | -18.26 | 106.56 | Subduction IntraSlab |
| 403474 | 1782 | 280 | 281 | 267 | 42009900 | 53016 | 265 | 0.053% | 1886.79 | 7.65 | -0.056 | -0.583 | -1.411 | 0.416 | -69.75 | -18.76 | 121.76 | Subduction IntraSlab |
| 403605 | 1897 | 299 | 276 | 284 | 41943000 | 53132 | 266 | 0.053% | 1879.70 | 7.75 | 0.448 | 0.292 | -1.454 | -0.429 | -70.27 | -18.60 | 104.42 | Subduction IntraSlab |
| 539719 | 1738 | 253 | 264 | 284 | 41928400 | 67375 | 267 | 0.053% | 1872.66 | 8.35 | -0.431 | -0.832 | 0.652 | -1.271 | -71.87 | -18.01 | 50.35 | Subduction IntraSlab |
| 540139 | 1700 | 285 | 272 | 263 | 41817300 | 67414 | 268 | 0.054% | 1865.67 | 8.35 | 0.240 | 1.204 | 1.788 | -1.417 | -71.99 | -17.87 | 51.68 | Subduction IntraSlab |
| 538452 | 1515 | 224 | 254 | 281 | 41778900 | 67143 | 269 | 0.054% | 1858.74 | 8.15 | 0.435 | 0.494 | 0.242 | 0.175 | -71.61 | -17.99 | 56.30 | Subduction IntraSlab |
| 403161 | 1702 | 258 | 264 | 281 | 41740000 | 52745 | 270 | 0.054% | 1851.85 | 7.55 | -0.776 | 0.068 | -0.262 | 1.068 | -69.98 | -18.22 | 120.70 | Subduction IntraSlab |
| 539220 | 1666 | 262 | 297 | 216 | 41687400 | 67288 | 271 | 0.054% | 1845.02 | 8.25 | -1.456 | -0.389 | 0.468 | -0.916 | -71.73 | -18.04 | 52.61 | Subduction IntraSlab |
| 402708 | 1451 | 239 | 220 | 322 | 41684700 | 52366 | 272 | 0.054% | 1838.24 | 7.45 | 0.012 | -1.120 | -0.510 | 0.066 | -70.03 | -18.33 | 117.18 | Subduction IntraSlab |
| 403338 | 1905 | 286 | 282 | 240 | 41613400 | 52896 | 273 | 0.055% | 1831.50 | 7.65 | -0.439 | -1.861 | 1.787 | -0.438 | -70.31 | -18.58 | 102.89 | Subduction IntraSlab |
| 403454 | 1501 | 247 | 276 | 245 | 41589400 | 53000 | 274 | 0.055% | 1824.82 | 7.65 | -1.444 | -1.205 | 0.480 | 1.701 | -69.90 | -18.66 | 117.69 | Subduction IntraSlab |
| 402677 | 1525 | 286 | 265 | 265 | 41549600 | 52342 | 275 | 0.055% | 1818.18 | 7.45 | -1.255 | 0.304 | 1.117 | -0.052 | -70.13 | -18.10 | 116.84 | Subduction IntraSlab |
| 403456 | 1823 | 342 | 253 | 272 | 41526100 | 53001 | 276 | 0.055% | 1811.59 | 7.65 | 0.697 | -1.314 | 0.013 | 0.562 | -70.00 | -18.28 | 118.94 | Subduction IntraSlab |
| 403857 | 1638 | 240 | 256 | 282 | 41515100 | 53178 | 277 | 0.055% | 1805.05 | 7.75 | -2.624 | -0.768 | -0.397 | -0.886 | -69.99 | -18.90 | 111.77 | Subduction IntraSlab |
| 403514 | 1358 | 251 | 230 | 332 | 41495000 | 53055 | 278 | 0.056% | 1798.56 | 7.65 | -0.020 | 0.290 | 1.745 | 0.321 | -69.69 | -18.43 | 128.20 | Subduction IntraSlab |
| 540618 | 1486 | 237 | 233 | 285 | 41462100 | 67457 | 279 | 0.056% | 1792.11 | 8.35 | -0.027 | 0.177 | -0.327 | 1.013 | -72.24 | -17.61 | 52.84 | Subduction IntraSlab |
| 403390 | 1732 | 285 | 281 | 234 | 41454700 | 52941 | 280 | 0.056% | 1785.71 | 7.65 | -0.303 | 1.223 | -2.236 | 1.455 | -70.20 | -18.27 | 111.66 | Subduction IntraSlab |
| 403110 | 1761 | 267 | 240 | 269 | 41440600 | 52702 | 281 | 0.056% | 1779.36 | 7.55 | -1.706 | 0.989 | 1.402 | 0.418 | -69.99 | -18.57 | 115.14 | Subduction IntraSlab |
| 403770 | 1714 | 286 | 241 | 295 | 41427800 | 53279 | 282 | 0.056% | 1773.05 | 7.75 | -0.163 | -0.744 | 0.931 | 0.133 | -69.71 | -18.12 | 132.08 | Subduction IntraSlab |
| 539709 | 1664 | 249 | 285 | 268 | 41386800 | 67375 | 283 | 0.057% | 1766.78 | 8.35 | -0.400 | -0.337 | -1.465 | -0.804 | -71.87 | -18.01 | 50.35 | Subduction IntraSlab |
| 403789 | 1854 | 268 | 276 | 267 | 4134 | | | | | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 403037 | 1584 | 228 | 259 | 301 | 40310500 | 52641 | 334 | 0.067% | 1497.01 | 7.55 | -0.097 | -0.828 | -0.061 | -0.095 | -70.22 | -18.24 | 111.35 | Subduction IntraSlab |
| 540488 | 1809 | 254 | 259 | 245 | 40305100 | 67445 | 335 | 0.067% | 1492.54 | 8.35 | 0.521 | 0.280 | 0.657 | 0.737 | -71.81 | -17.95 | 53.26 | Subduction InterSlab |
| 539764 | 1789 | 295 | 301 | 205 | 40281200 | 67380 | 336 | 0.067% | 1488.10 | 8.35 | 0.508 | 0.613 | 0.387 | 0.016 | -72.06 | -17.87 | 50.20 | Subduction InterSlab |
| 402602 | 1899 | 260 | 288 | 259 | 40283600 | 52279 | 337 | 0.067% | 1483.68 | 7.45 | 0.790 | -0.878 | -1.023 | -0.093 | -70.20 | -18.30 | 111.00 | Subduction IntraSlab |
| 402537 | 1719 | 248 | 260 | 238 | 40238800 | 52225 | 338 | 0.068% | 1479.29 | 7.45 | -0.746 | 0.285 | 0.895 | 0.261 | -70.26 | -18.62 | 104.35 | Subduction IntraSlab |
| 403560 | 1432 | 223 | 247 | 259 | 40151500 | 53093 | 339 | 0.068% | 1474.93 | 7.65 | -0.523 | -0.066 | -1.742 | -0.576 | -69.45 | -18.43 | 136.89 | Subduction InterSlab |
| 535100 | 1530 | 270 | 252 | 243 | 40137700 | 66133 | 340 | 0.068% | 1470.59 | 7.85 | 0.690 | -1.369 | -0.272 | 0.612 | -71.26 | -18.00 | 63.14 | Subduction InterSlab |
| 402735 | 1540 | 235 | 241 | 265 | 40132200 | 52389 | 341 | 0.068% | 1466.28 | 7.45 | 0.452 | -2.244 | -0.296 | -0.276 | -69.94 | -18.40 | 119.34 | Subduction IntraSlab |
| 540150 | 1628 | 246 | 246 | 261 | 40130200 | 67415 | 342 | 0.068% | 1461.99 | 8.35 | 0.822 | 1.636 | -0.709 | 0.962 | -72.02 | -17.84 | 51.64 | Subduction InterSlab |
| 537295 | 1564 | 240 | 241 | 267 | 40112200 | 66837 | 343 | 0.069% | 1457.73 | 8.05 | 0.696 | -0.247 | 0.812 | -0.099 | -71.52 | -18.00 | 57.82 | Subduction InterSlab |
| 539620 | 1981 | 265 | 263 | 248 | 40109500 | 67362 | 344 | 0.069% | 1453.49 | 8.25 | 0.832 | 0.234 | -0.739 | -1.162 | -71.67 | -17.98 | 55.53 | Subduction InterSlab |
| 403099 | 1979 | 296 | 278 | 300 | 40078900 | 52694 | 345 | 0.069% | 1449.28 | 7.55 | -0.303 | 0.872 | -0.598 | 0.629 | -70.08 | -18.29 | 115.68 | Subduction IntraSlab |
| 536965 | 1726 | 244 | 219 | 302 | 40056600 | 66740 | 346 | 0.069% | 1445.09 | 8.05 | -0.599 | 0.224 | -0.933 | 1.109 | -71.73 | -18.01 | 53.33 | Subduction InterSlab |
| 403078 | 1651 | 255 | 240 | 266 | 40048400 | 52676 | 347 | 0.069% | 1440.92 | 7.55 | 0.503 | 0.173 | -0.477 | 0.889 | -70.15 | -18.19 | 114.52 | Subduction IntraSlab |
| 403074 | 1745 | 303 | 265 | 262 | 40035400 | 53292 | 348 | 0.070% | 1436.78 | 7.75 | 1.752 | 0.839 | -1.664 | -0.125 | -69.62 | -18.09 | 135.62 | Subduction IntraSlab |
| 403073 | 1537 | 241 | 277 | 252 | 40019400 | 52672 | 349 | 0.070% | 1432.66 | 7.55 | 0.152 | 1.118 | 0.839 | -0.797 | -70.12 | -18.41 | 112.50 | Subduction IntraSlab |
| 402596 | 1394 | 215 | 233 | 286 | 40016600 | 52275 | 350 | 0.070% | 1428.57 | 7.45 | -0.317 | 0.538 | -0.096 | 1.957 | -70.15 | -18.64 | 108.38 | Subduction IntraSlab |
| 540103 | 1980 | 268 | 250 | 258 | 40009300 | 67411 | 351 | 0.070% | 1424.50 | 8.35 | 0.996 | 0.831 | -1.828 | -0.444 | -71.88 | -17.96 | 51.77 | Subduction InterSlab |
| 537304 | 1594 | 222 | 240 | 261 | 39994600 | 66839 | 352 | 0.070% | 1420.45 | 8.05 | -0.577 | -0.673 | -1.150 | -0.118 | -71.60 | -17.94 | 57.74 | Subduction InterSlab |
| 539664 | 1965 | 233 | 264 | 257 | 39946500 | 67368 | 353 | 0.071% | 1416.43 | 8.25 | -0.199 | -0.766 | -0.400 | -1.496 | -71.89 | -17.81 | 55.31 | Subduction InterSlab |
| 538302 | 1521 | 273 | 278 | 225 | 39920000 | 67108 | 354 | 0.071% | 1412.43 | 8.15 | -0.257 | 0.489 | -0.704 | -0.216 | -71.65 | -18.02 | 54.84 | Subduction InterSlab |
| 540599 | 1682 | 233 | 255 | 253 | 39905900 | 67456 | 355 | 0.071% | 1408.45 | 8.35 | 0.958 | -2.222 | -1.214 | 0.220 | -72.21 | -17.64 | 52.88 | Subduction InterSlab |
| 403160 | 1876 | 272 | 246 | 266 | 39894100 | 52744 | 356 | 0.071% | 1404.49 | 7.55 | -0.721 | 0.073 | -2.213 | 0.119 | -69.94 | -18.30 | 120.59 | Subduction IntraSlab |
| 540125 | 1955 | 257 | 268 | 225 | 39882800 | 67413 | 357 | 0.071% | 1400.58 | 8.35 | 1.607 | 0.941 | 0.337 | -0.528 | -71.95 | -17.90 | 51.71 | Subduction InterSlab |
| 403352 | 1524 | 269 | 259 | 236 | 39870800 | 52909 | 358 | 0.072% | 1396.65 | 7.65 | 1.503 | -1.457 | -0.449 | 0.178 | -70.26 | -18.64 | 104.28 | Subduction IntraSlab |
| 403208 | 1681 | 288 | 276 | 300 | 39844500 | 52786 | 359 | 0.072% | 1392.76 | 7.55 | -0.893 | 0.261 | 0.149 | -1.710 | -69.85 | -18.19 | 125.76 | Subduction IntraSlab |
| 539423 | 1784 | 278 | 248 | 223 | 39819400 | 67326 | 360 | 0.072% | 1388.89 | 8.25 | 1.799 | 0.593 | -0.074 | 0.163 | -71.74 | -17.98 | 54.04 | Subduction InterSlab |
| 540697 | 1437 | 255 | 230 | 241 | 39767400 | 67465 | 361 | 0.072% | 1385.04 | 8.35 | -0.081 | -1.067 | 0.364 | -0.477 | -71.86 | -17.88 | 53.91 | Subduction InterSlab |
| 540673 | 1775 | 313 | 283 | 194 | 39753700 | 67463 | 362 | 0.072% | 1381.22 | 8.35 | 1.164 | -2.193 | -0.783 | -1.502 | -71.79 | -17.94 | 53.98 | Subduction InterSlab |
| 538792 | 1509 | 244 | 235 | 265 | 39750100 | 67216 | 363 | 0.073% | 1377.41 | 8.25 | -0.854 | -1.223 | -1.645 | 0.882 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 540687 | 1582 | 251 | 226 | 227 | 39744700 | 67464 | 364 | 0.073% | 1373.63 | 8.35 | -0.222 | 0.336 | 0.699 | 1.328 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 401424 | 1490 | 247 | 288 | 236 | 39743200 | 51364 | 365 | 0.073% | 1369.86 | 7.25 | -1.006 | -0.505 | 1.549 | -1.037 | -70.27 | -18.37 | 107.59 | Subduction IntraSlab |
| 533550 | 1702 | 240 | 261 | 228 | 39726000 | 65607 | 366 | 0.073% | 1366.12 | 7.75 | 2.908 | -1.076 | -0.795 | 0.197 | -71.25 | -18.09 | 61.00 | Subduction InterSlab |
| 540120 | 1981 | 273 | 295 | 222 | 39692400 | 67412 | 367 | 0.073% | 1362.40 | 7.65 | -0.352 | -0.295 | -1.200 | 2.466 | -71.91 | -17.93 | 51.74 | Subduction InterSlab |
| 403448 | 1491 | 251 | 255 | 263 | 39687600 | 52996 | 368 | 0.074% | 1358.70 | 8.35 | 0.482 | 0.113 | 0.518 | -0.095 | -69.95 | -18.55 | 117.00 | Subduction IntraSlab |
| 539638 | 1714 | 256 | 273 | 253 | 39683800 | 67363 | 369 | 0.074% | 1355.01 | 8.25 | -0.595 | -0.677 | -0.477 | 0.358 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 402851 | 1533 | 279 | 222 | 286 | 39661800 | 52319 | 370 | 0.074% | 1351.35 | 7.45 | -0.720 | 1.180 | 1.890 | 2.891 | -70.07 | -18.59 | 112.07 | Subduction IntraSlab |
| 403806 | 1779 | 273 | 239 | 294 | 39658800 | 53132 | 371 | 0.074% | 1347.71 | 7.75 | -0.077 | 0.032 | -0.253 | -0.065 | -70.27 | -18.60 | 104.42 | Subduction IntraSlab |
| 538785 | 1868 | 242 | 289 | 230 | 39646100 | 67214 | 372 | 0.074% | 1344.09 | 8.25 | 0.381 | 0.443 | -0.065 | 1.580 | -71.80 | -18.10 | 49.70 | Subduction InterSlab |
| 538451 | 1456 | 242 | 245 | 257 | 39630100 | 67143 | 373 | 0.075% | 1340.48 | 8.15 | 0.014 | 0.357 | -1.426 | 0.180 | -71.61 | -17.99 | 56.30 | Subduction InterSlab |
| 401512 | 1598 | 252 | 237 | 271 | 39612000 | 51432 | 374 | 0.075% | 1336.90 | 7.25 | 0.681 | 1.819 | -0.102 | 1.146 | -70.20 | -18.13 | 113.85 | Subduction IntraSlab |
| 539030 | 1934 | 255 | 248 | 251 | 39602900 | 67256 | 375 | 0.075% | 1333.33 | 8.25 | -0.988 | 0.504 | 0.378 | 0.509 | -71.95 | -17.93 | 51.00 | Subduction InterSlab |
| 539430 | 1993 | 333 | 270 | 240 | 39570000 | 67328 | 376 | 0.075% | 1329.79 | 8.25 | 1.145 | -0.198 | -0.347 | -0.359 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 536045 | 1350 | 203 | 221 | 300 | 39563200 | 66442 | 377 | 0.075% | 1326.26 | 7.95 | 0.469 | -0.346 | 0.406 | -0.007 | -71.49 | -18.06 | 57.15 | Subduction InterSlab |
| 539024 | 1610 | 224 | 253 | 237 | 39510100 | 67255 | 378 | 0.076% | 1322.75 | 8.25 | 0.652 | -0.724 | 0.506 | -0.835 | -71.91 | -17.96 | 51.03 | Subduction InterSlab |
| 403409 | 1801 | 288 | 268 | 254 | 39508600 | 52958 | 379 | 0.076% | 1319.26 | 7.65 | -0.474 | 0.842 | 0.835 | 1.316 | -70.16 | -18.20 | 113.99 | Subduction IntraSlab |
| 402900 | 1791 | 266 | 271 | 255 | 39507500 | 52529 | 380 | 0.076% | 1315.79 | 7.45 | 1.763 | -1.431 | -1.790 | 0.910 | -69.54 | -18.26 | 135.93 | Subduction IntraSlab |
| 539755 | 1763 | 239 | 263 | 241 | 39501600 | 67379 | 381 | 0.076% | 1312.34 | 8.35 | 1.059 | -2.406 | -0.040 | 0.991 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 403350 | 1539 | 249 | 230 | 242 | 39436500 | 52907 | 382 | 0.076% | 1308.90 | 7.65 | -0.839 | -0.539 | 0.302 | -1.325 | -70.23 | -18.89 | 102.83 | Subduction IntraSlab |
| 540118 | 1740 | 255 | 232 | 248 | 39423400 | 67412 | 383 | 0.077% | 1305.48 | 8.35 | -0.283 | 1.792 | 0.882 | -1.648 | -71.91 | -17.93 | 51.74 | Subduction InterSlab |
| 403431 | 1484 | 249 | 222 | 265 | 39413400 | 52979 | 384 | 0.077% | 1302.08 | 7.65 | 0.684 | -1.102 | -0.835 | 1.656 | -69.99 | -18.71 | 113.85 | Subduction IntraSlab |
| 403011 | 1522 | 233 | 240 | 275 | 39371800 | 52619 | 385 | 0.077% | 1298.70 | 7.55 | 1.771 | 0.731 | -1.308 | -2.099 | -70.20 | -18.69 | 105.87 | Subduction IntraSlab |
| 400764 | 1580 | 217 | 262 | 296 | 39365100 | 50853 | 386 | 0.077% | 1295.34 | 7.15 | 0.010 | -0.063 | 0.220 | 0.638 | -70.21 | -18.11 | 113.45 | Subduction IntraSlab |
| 403101 | 1465 | 232 | 254 | 240 | 39356900 | 52895 | 387 | 0.077% | 1291.99 | 7.55 | -1.548 | -1.738 | 1.071 | 1.579 | -70.11 | -18.21 | 115.96 | Subduction IntraSlab |
| 402173 | 1745 | 259 | 236 | 269 | 39345600 | 51948 | 388 | 0.078% | 1288.66 | 7.35 | 0.532 | -0.694 | -1.001 | 0.718 | -69.97 | -18.54 | 116.38 | Subduction IntraSlab |
| 402747 | 1317 | 223 | 227 | 259 | 39333600 | 52399 | 389 | 0.078% | 1285.35 | 7.45 | 0.143 | -0.097 | 0.402 | -0.196 | -69.78 | -18.80 | 120.46 | Subduction IntraSlab |
| 403708 | 1843 | 311 | 248 | 248 | 39316500 | 53224 | 390 | 0.078% | 1282.05 | 7.75 | -1.651 | -2.506 | -0.847 | -1.522 | -69.86 | -18.57 | 120.17 | Subduction IntraSlab |
| 403503 | 1815 | 263 | 273 | 228 | 39309700 | 53044 | 391 | 0.078% | 1278.77 | 7.65 | -0.579 | 0.710 | 0.064 | 1.366 | -69.68 | -18.57 | 126.71 | Subduction IntraSlab |
| 538448 | 1883 | 271 | 287 | 210 | 39306700 | 67142 | 392 | 0.078% | 1275.51 | 8.15 | 0.501 | 2.063 | 0.608 | 1.205 | -71.58 | -18.02 | 56.34 | Subduction InterSlab |
| 540127 | 1427 | 233 | 225 | 254 | 39282400 | 67413 | 393 | 0.079% | 1272.26 | 8.35 | -0.289 | 1.327 | 1.025 | -0.108 | -71.95 | -17.90 | 51.71 | Subduction InterSlab |
| 402850 | 1539 | 219 | 222 | 241 | 39213900 | 52488 | 394 | 0.079% | 1269.04 | 7.45 | -1.393 | -0.555 | -0.334 | -1.418 | -69.56 | -18.54 | 131.30 | Subduction IntraSlab |
| 540109 | 1451 | 264 | 270 | 230 | 39200300 | 67411 | 395 | 0.079% | 1265.8 | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 539708 | 1508 | 222 | 251 | 212 | 38277600 | 67374 | 445 | 0.089% | 1123.60 | 8.25 | -0.239 | -1.288 | -0.345 | -1.392 | -72.11 | -17.64 | 55.08 | Subduction InterSlab |
| 403788 | 2002 | 265 | 256 | 224 | 38242500 | 53296 | 446 | 0.089% | 1121.08 | 7.75 | 0.626 | 0.745 | -1.282 | -0.297 | -69.36 | -18.54 | 138.26 | Subduction IntraSlab |
| 540579 | 1484 | 204 | 220 | 261 | 38210300 | 67454 | 447 | 0.089% | 1118.57 | 8.35 | 1.404 | -0.174 | 0.895 | -1.521 | -72.14 | -17.70 | 52.95 | Subduction InterSlab |
| 539484 | 1770 | 236 | 233 | 245 | 38192700 | 67150 | 448 | 0.090% | 1116.07 | 8.15 | -1.988 | -0.428 | 0.898 | -0.025 | -71.85 | -17.78 | 56.75 | Subduction InterSlab |
| 538622 | 1963 | 266 | 257 | 216 | 38191700 | 67184 | 449 | 0.090% | 1113.59 | 8.25 | -0.785 | -0.955 | 0.104 | 0.797 | -72.05 | -17.96 | 48.08 | Subduction InterSlab |
| 539721 | 1474 | 218 | 227 | 260 | 38177100 | 67376 | 450 | 0.090% | 1111.11 | 8.35 | -0.190 | 0.829 | -1.100 | -0.738 | -71.91 | -17.99 | 50.32 | Subduction InterSlab |
| 402704 | 1867 | 293 | 266 | 234 | 38173400 | 52362 | 451 | 0.090% | 1108.65 | 7.45 | -0.387 | -0.506 | -0.957 | -0.243 | -69.93 | -18.66 | 116.40 | Subduction IntraSlab |
| 539647 | 1442 | 226 | 252 | 250 | 38142500 | 67364 | 452 | 0.090% | 1106.19 | 8.25 | -0.978 | 0.372 | 0.786 | 0.718 | -71.74 | -17.92 | 55.46 | Subduction InterSlab |
| 538463 | 1869 | 264 | 263 | 207 | 38138800 | 67146 | 453 | 0.091% | 1103.75 | 8.15 | -0.327 | 0.201 | -0.126 | 0.150 | -71.71 | -17.89 | 56.91 | Subduction InterSlab |
| 539758 | 1664 | 256 | 234 | 230 | 38113200 | 67379 | 454 | 0.091% | 1101.32 | 8.35 | 0.820 | 0.872 | -0.801 | -1.603 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 540096 | 1957 | 272 | 252 | 239 | 38064100 | 67410 | 455 | 0.091% | 1098.90 | 8.35 | -0.061 | 0.738 | 0.908 | 0.153 | -71.84 | -17.98 | 51.80 | Subduction InterSlab |
| 403547 | 1584 | 263 | 226 | 235 | 38063700 | 53081 | 456 | 0.091% | 1096.49 | 7.65 | -0.348 | 1.254 | 0.449 | 1.928 | -69.45 | -18.61 | 134.40 | Subduction IntraSlab |
| 403278 | 1589 | 232 | 251 | 255 | 38016800 | 52846 | 457 | 0.091% | 1094.09 | 7.55 | 1.904 | 0.680 | 0.319 | 1.048 | -69.78 | -17.89 | 132.94 | Subduction IntraSlab |
| 539020 | 1497 | 198 | 232 | 250 | 38012000 | 67255 | 458 | 0.092% | 1091.70 | 8.25 | 0.981 | 1.288 | 0.320 | -1.004 | -71.91 | -17.96 | 51.03 | Subduction InterSlab |
| 403601 | 1682 | 218 | 238 | 272 | 38004500 | 53130 | 459 | 0.092% | 1089.32 | 7.75 | -1.752 | -1.655 | 0.891 | 1.016 | -70.24 | -19.06 | 100.92 | Subduction IntraSlab |
| 540151 | 1445 | 228 | 250 | 207 | 37998600 | 67415 | 460 | 0.092% | 1086.96 | 8.35 | -0.430 | -0.380 | -1.709 | -1.251 | -72.02 | -17.84 | 51.64 | Subduction InterSlab |
| 402864 | 1678 | 279 | 240 | 251 | 37965300 | 52498 | 461 | 0.092% | 1084.60 | 7.45 | 0.344 | 1.533 | 0.924 | -0.551 | -69.76 | -18.01 | 131.73 | Subduction IntraSlab |
| 403552 | 1638 | 272 | 262 | 233 | 37963700 | 53086 | 462 | 0.092% | 1082.25 | 7.65 | 0.280 | -0.237 | 0.790 | -0.331 | -69.53 | -18.34 | 135.04 | Subduction IntraSlab |
| 539217 | 1816 | 244 | 267 | 212 | 37955800 | 67288 | 463 | 0.093% | 1079.91 | 8.25 | -0.140 | 0.866 | 1.040 | 1.653 | -71.73 | -18.04 | 52.61 | Subduction InterSlab |
| 538487 | 1600 | 252 | 237 | 227 | 37907800 | 67151 | 464 | 0.093% | 1077.59 | 8.15 | 1.697 | 2.057 | -0.729 | -0.659 | -71.89 | -17.75 | 56.71 | Subduction InterSlab |
| 540498 | 1365 | 208 | 218 | 246 | 37895000 | 67446 | 465 | 0.093% | 1075.27 | 8.35 | -0.976 | -0.629 | 0.195 | 0.212 | -71.84 | -17.93 | 53.22 | Subduction InterSlab |
| 400956 | 1450 | 221 | 231 | 244 | 37892200 | 51004 | 466 | 0.093% | 1072.96 | 7.15 | -0.447 | -0.982 | -0.851 | -0.057 | -70.07 | -17.94 | 121.55 | Subduction IntraSlab |
| 539422 | 1592 | 258 | 229 | 233 | 37873800 | 67325 | 467 | 0.093% | 1070.66 | 8.25 | -0.235 | 1.547 | 0.793 | 0.114 | -71.70 | -18.01 | 54.07 | Subduction InterSlab |
| 540111 | 1621 | 239 | 251 | 224 | 37860300 | 67411 | 468 | 0.094% | 1068.38 | 8.35 | 1.039 | -0.726 | 0.419 | -0.542 | -71.88 | -17.96 | 51.77 | Subduction InterSlab |
| 403156 | 1807 | 246 | 265 | 234 | 37857500 | 52742 | 469 | 0.094% | 1066.10 | 7.55 | 1.517 | 0.142 | 1.681 | -0.111 | -69.82 | -18.72 | 119.70 | Subduction IntraSlab |
| 403205 | 1403 | 241 | 254 | 229 | 37842100 | 52783 | 470 | 0.094% | 1063.83 | 7.55 | -0.060 | -0.588 | -0.408 | -0.782 | -69.72 | -18.52 | 125.89 | Subduction IntraSlab |
| 403447 | 1635 | 243 | 223 | 235 | 37831800 | 52995 | 471 | 0.094% | 1061.57 | 7.65 | -0.033 | 1.315 | -0.441 | -0.214 | -69.88 | -18.89 | 115.78 | Subduction IntraSlab |
| 540574 | 1826 | 249 | 237 | 204 | 37828800 | 67453 | 472 | 0.094% | 1059.32 | 8.35 | 0.631 | 1.396 | 1.096 | -0.666 | -72.10 | -17.73 | 52.98 | Subduction InterSlab |
| 539654 | 1572 | 244 | 263 | 192 | 37815300 | 67366 | 473 | 0.095% | 1057.08 | 8.25 | -0.688 | -1.328 | 0.930 | 0.821 | -71.81 | -17.87 | 55.38 | Subduction InterSlab |
| 539886 | 1442 | 198 | 242 | 230 | 37806000 | 67391 | 474 | 0.095% | 1054.85 | 8.35 | -0.132 | -2.031 | -0.660 | -0.401 | -72.44 | -17.55 | 50.58 | Subduction InterSlab |
| 403145 | 1413 | 226 | 224 | 256 | 37799100 | 52732 | 475 | 0.095% | 1052.63 | 7.55 | 0.051 | -0.366 | 0.017 | -1.356 | -69.92 | -18.49 | 118.82 | Subduction IntraSlab |
| 539014 | 2052 | 283 | 248 | 240 | 37783300 | 67253 | 476 | 0.095% | 1050.42 | 8.25 | -1.377 | -1.188 | -0.893 | 0.375 | -71.84 | -18.01 | 51.09 | Subduction InterSlab |
| 402640 | 1441 | 216 | 229 | 272 | 37782400 | 52308 | 477 | 0.095% | 1048.22 | 7.45 | 0.173 | -1.884 | 0.274 | -1.083 | -70.13 | -18.44 | 111.82 | Subduction IntraSlab |
| 539754 | 1818 | 294 | 241 | 229 | 37754300 | 67379 | 478 | 0.096% | 1046.03 | 8.35 | -0.825 | 0.373 | -1.136 | -2.005 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 539457 | 1748 | 229 | 261 | 221 | 37750500 | 67332 | 479 | 0.096% | 1043.84 | 8.25 | 1.147 | -1.232 | 0.120 | -2.175 | -71.94 | -17.80 | 54.55 | Subduction InterSlab |
| 401059 | 1397 | 235 | 233 | 255 | 37745200 | 51082 | 480 | 0.096% | 1041.67 | 7.15 | -0.490 | -0.945 | 1.196 | -0.543 | -69.90 | -18.08 | 125.67 | Subduction IntraSlab |
| 540145 | 1926 | 254 | 244 | 240 | 37741600 | 67414 | 481 | 0.096% | 1039.50 | 8.35 | -0.527 | -1.088 | 0.730 | -1.243 | -71.99 | -17.87 | 51.68 | Subduction InterSlab |
| 539233 | 1906 | 236 | 259 | 209 | 37736200 | 67290 | 482 | 0.096% | 1037.34 | 8.25 | -0.651 | -0.623 | -0.424 | -1.401 | -71.81 | -17.98 | 52.55 | Subduction InterSlab |
| 403423 | 1574 | 268 | 251 | 224 | 37731700 | 52972 | 483 | 0.097% | 1035.20 | 7.65 | 0.264 | -0.377 | 0.024 | 1.876 | -70.11 | -18.26 | 115.27 | Subduction IntraSlab |
| 539713 | 1782 | 236 | 258 | 207 | 37700400 | 67375 | 484 | 0.097% | 1033.06 | 8.35 | 0.092 | 0.916 | -2.136 | 1.908 | -71.87 | -18.01 | 50.35 | Subduction InterSlab |
| 402123 | 1512 | 231 | 237 | 235 | 37619400 | 51907 | 485 | 0.097% | 1030.93 | 7.35 | -1.237 | -0.910 | 1.150 | 1.666 | -70.15 | -18.26 | 113.72 | Subduction IntraSlab |
| 402549 | 1570 | 231 | 231 | 254 | 37614900 | 52236 | 486 | 0.097% | 1028.81 | 7.45 | 1.746 | 1.272 | 0.382 | -0.243 | -70.22 | -18.66 | 103.54 | Subduction IntraSlab |
| 403407 | 1749 | 250 | 222 | 235 | 37614800 | 52966 | 487 | 0.097% | 1026.69 | 7.65 | 0.866 | 0.042 | -0.091 | -0.429 | -70.10 | -18.54 | 111.53 | Subduction IntraSlab |
| 403010 | 1724 | 262 | 252 | 242 | 37610100 | 52618 | 488 | 0.098% | 1024.59 | 7.55 | 0.385 | 0.666 | 1.585 | -0.787 | -70.21 | -18.74 | 105.13 | Subduction IntraSlab |
| 538793 | 1852 | 238 | 214 | 239 | 37600300 | 67216 | 489 | 0.098% | 1022.49 | 8.25 | -0.341 | -1.102 | -0.525 | -0.933 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 403159 | 1609 | 241 | 270 | 240 | 37566600 | 52743 | 490 | 0.098% | 1020.41 | 7.55 | -1.233 | 0.019 | -1.191 | -0.082 | -69.85 | -18.64 | 119.61 | Subduction IntraSlab |
| 402891 | 1478 | 224 | 215 | 257 | 37559700 | 52521 | 491 | 0.098% | 1018.33 | 7.45 | -0.926 | -2.145 | 0.555 | 0.508 | -69.59 | -18.24 | 134.48 | Subduction IntraSlab |
| 403167 | 1535 | 258 | 254 | 228 | 37549300 | 52750 | 492 | 0.098% | 1016.26 | 7.55 | -0.620 | -0.108 | -0.391 | 2.108 | -69.97 | -18.16 | 121.85 | Subduction IntraSlab |
| 540486 | 1727 | 243 | 247 | 215 | 37548200 | 67445 | 493 | 0.099% | 1014.20 | 8.35 | -0.199 | -1.023 | 0.186 | -1.699 | -71.81 | -17.95 | 53.26 | Subduction InterSlab |
| 535101 | 1924 | 249 | 238 | 215 | 37475100 | 66134 | 494 | 0.099% | 1012.15 | 7.85 | -0.632 | -0.513 | -0.241 | -1.692 | -71.29 | -17.97 | 63.09 | Subduction InterSlab |
| 400629 | 1346 | 138 | 203 | 301 | 37438500 | 50757 | 495 | 0.099% | 1010.10 | 7.15 | -0.802 | 0.764 | 0.359 | 0.567 | -70.31 | -18.37 | 106.11 | Subduction IntraSlab |
| 403226 | 1564 | 212 | 248 | 236 | 37354800 | 52802 | 496 | 0.099% | 1008.06 | 7.55 | -1.478 | 0.997 | -1.012 | -0.670 | -69.82 | -18.14 | 127.43 | Subduction IntraSlab |
| 403121 | 1619 | 273 | 265 | 225 | 37324600 | 52713 | 497 | 0.099% | 1006.04 | 7.55 | 0.640 | -0.700 | 0.256 | -0.161 | -69.93 | -18.73 | 115.77 | Subduction IntraSlab |
| 538055 | 1868 | 194 | 231 | 250 | 37319100 | 67040 | 498 | 0.100% | 1004.02 | 8.15 | -0.493 | -0.868 | 1.905 | -0.148 | -71.81 | -17.98 | 52.55 | Subduction InterSlab |
| 538609 | 1655 | 249 | 209 | 231 | 37289100 | 67182 | 499 | 0.100% | 1002.00 | 8.25 | -1.340 | -1.348 | -0.957 | -1.132 | -71.98 | -18.02 | 48.13 | Subduction InterSlab |
| 401549 | 1412 | 230 | 232 | 248 | 37286000 | 51459 | 500 | 0.100% | 1000.00 | 7.25 | 0.090 | 0.124 | 1.636 | -0.121 | -70.12 | -18.26 | 114.72 | Subduction IntraSlab |
| 540092 | 1572 | 264 | 230 | 201 | 37257900 | 67410 | 501 | 0.100% | 998.00 | 8.35 | -0.463 | -2.079 | -1.514 | 0.186 | -71.84 | -17.98 | 51.80 | Subduction InterSlab |
| 403472 | 1809 | 252 | 235 | 239 | 37228900 | 53015 | 502 | 0.100% | 996.02 | 7.65 | -1.059 | -1.458 | 2.664 | 0.498 | -69.72 | -18.89 | 121.25 | Subduction IntraSlab |
| 403531 | 1418 | 240 | 246 | 204 | 37204500 | 53068 | 503 | 0.101% | 994.04 | 7.65 | 2.393 | 0.815 | -2.855 | 1.235 | -69.51 | -18.64 | 131.74 | Subduction IntraSlab |
| 539029 | 1788 | 252 | 246 | 218 | 37200000 | 67256 | 504 | 0.101% | 992.06 | 8.25 | -0.179 | -0.364 | 0.049 | -1.147 | -71.95 | -17.93 | 51.00 | Subduction InterSlab |
| 539244 | 1502 | 194 | 263 | 206 | 37198300 | 67293 | 505 | 0.101% | 990.10 | 8.25 | 1.098 | -0.199 | 0.574 | 0.937 | -71.92 | -17.90 | 52.45 | Subduction InterSlab |
| 402999 | 1855 | 295 | 257 | 232 | 37196400 | 52609 | 506 | 0.101% | 988.14 | 7.55 | -1.169</ | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 403594 | 1326 | 197 | 222 | 250 | 36284800 | 53124 | 556 | 0.111% | 899.28 | 7.75 | 1.608 | -1.330 | -1.553 | 1.403 | -70.27 | -18.99 | 100.56 | Subduction IntraSlab |
| 402159 | 1690 | 232 | 230 | 229 | 36280000 | 51937 | 557 | 0.111% | 897.67 | 7.35 | 0.149 | -0.961 | 0.020 | 1.490 | -70.04 | -18.43 | 115.17 | Subduction IntraSlab |
| 402049 | 1491 | 230 | 231 | 222 | 36282900 | 51844 | 558 | 0.112% | 896.06 | 7.35 | 0.278 | -1.385 | 0.650 | 0.428 | -70.27 | -18.37 | 107.59 | Subduction IntraSlab |
| 403551 | 1552 | 255 | 228 | 210 | 36255900 | 53085 | 559 | 0.112% | 894.45 | 7.65 | -0.820 | 2.051 | 2.634 | -0.041 | -69.51 | -18.38 | 135.27 | Subduction IntraSlab |
| 402904 | 1473 | 224 | 192 | 250 | 36228900 | 52533 | 560 | 0.112% | 892.86 | 7.45 | -1.717 | 1.007 | 0.540 | -0.476 | -69.67 | -18.01 | 135.22 | Subduction IntraSlab |
| 402571 | 1641 | 235 | 253 | 218 | 36219400 | 52254 | 561 | 0.112% | 891.27 | 7.45 | 1.275 | -1.094 | 0.001 | -0.080 | -70.26 | -18.29 | 109.10 | Subduction IntraSlab |
| 539732 | 1715 | 247 | 233 | 226 | 36218600 | 67377 | 562 | 0.112% | 889.68 | 8.35 | -2.400 | -0.764 | 1.504 | -1.569 | -71.95 | -17.96 | 50.29 | Subduction InterSlab |
| 540583 | 1709 | 268 | 224 | 228 | 36211900 | 67454 | 563 | 0.113% | 888.10 | 8.35 | 0.133 | 0.125 | -1.075 | -1.595 | -72.14 | -17.70 | 52.95 | Subduction InterSlab |
| 403764 | 1505 | 254 | 257 | 211 | 36164300 | 53274 | 564 | 0.113% | 886.52 | 7.75 | 0.907 | 1.109 | -0.011 | -0.624 | -69.41 | -18.77 | 133.64 | Subduction IntraSlab |
| 539751 | 1735 | 280 | 267 | 171 | 36164100 | 67379 | 565 | 0.113% | 884.96 | 8.35 | 1.955 | 0.079 | -0.058 | -0.066 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 538480 | 1518 | 259 | 225 | 197 | 36149700 | 67149 | 566 | 0.113% | 883.39 | 8.15 | -1.455 | 0.358 | 0.951 | 0.326 | -71.82 | -17.81 | 56.79 | Subduction InterSlab |
| 402273 | 1481 | 251 | 240 | 218 | 36129400 | 52018 | 567 | 0.113% | 881.83 | 7.35 | -2.707 | 1.130 | 0.638 | 0.739 | -69.91 | -18.20 | 123.49 | Subduction IntraSlab |
| 403761 | 1651 | 282 | 260 | 208 | 36123500 | 53271 | 568 | 0.114% | 880.28 | 7.75 | 0.250 | -0.726 | -0.321 | -1.012 | -69.78 | -18.00 | 131.11 | Subduction IntraSlab |
| 540575 | 1431 | 226 | 229 | 232 | 36114100 | 67453 | 569 | 0.114% | 878.73 | 8.35 | 0.017 | -2.044 | -0.980 | -0.234 | -72.10 | -17.73 | 52.98 | Subduction IntraSlab |
| 401991 | 1672 | 227 | 248 | 230 | 36100700 | 51798 | 570 | 0.114% | 877.19 | 7.35 | -1.811 | 0.904 | -0.947 | 1.398 | -70.35 | -18.43 | 103.75 | Subduction IntraSlab |
| 538461 | 1730 | 247 | 245 | 175 | 36076000 | 67145 | 571 | 0.114% | 875.66 | 8.15 | 1.540 | 0.851 | -1.241 | 2.341 | -71.67 | -17.92 | 56.95 | Subduction InterSlab |
| 538599 | 1633 | 245 | 216 | 222 | 36069400 | 67178 | 572 | 0.114% | 874.13 | 8.25 | -0.271 | 0.814 | -0.244 | 1.674 | -71.83 | -18.13 | 48.24 | Subduction InterSlab |
| 536956 | 1565 | 209 | 210 | 234 | 36029300 | 66737 | 573 | 0.115% | 872.60 | 8.05 | 0.802 | -0.208 | -0.557 | 0.602 | -71.63 | -18.09 | 53.43 | Subduction InterSlab |
| 538502 | 1428 | 209 | 206 | 259 | 36008000 | 67153 | 574 | 0.115% | 871.08 | 8.15 | 0.501 | 0.477 | -0.575 | 1.310 | -71.96 | -17.70 | 56.63 | Subduction InterSlab |
| 403238 | 1770 | 271 | 233 | 243 | 35996400 | 52812 | 575 | 0.115% | 869.57 | 7.55 | 0.017 | -0.524 | -0.813 | -0.434 | -69.67 | -18.36 | 129.90 | Subduction IntraSlab |
| 403169 | 1730 | 254 | 236 | 266 | 35993100 | 52752 | 576 | 0.115% | 868.06 | 7.55 | -1.500 | -0.807 | -0.223 | -0.455 | -70.01 | -18.03 | 122.48 | Subduction IntraSlab |
| 402812 | 1570 | 250 | 235 | 223 | 35978900 | 52459 | 577 | 0.115% | 866.55 | 7.45 | 0.205 | 0.303 | 0.293 | -0.590 | -69.73 | -18.37 | 127.37 | Subduction IntraSlab |
| 403441 | 1713 | 272 | 228 | 231 | 35976800 | 52989 | 578 | 0.116% | 865.05 | 7.65 | 0.019 | -0.584 | -0.425 | -1.406 | -69.92 | -18.87 | 114.44 | Subduction IntraSlab |
| 540198 | 1611 | 245 | 238 | 200 | 35975500 | 67419 | 579 | 0.116% | 863.56 | 8.35 | -1.661 | 0.331 | 0.249 | 0.602 | -72.17 | -17.73 | 51.51 | Subduction InterSlab |
| 402968 | 1364 | 280 | 229 | 204 | 35962700 | 52583 | 580 | 0.116% | 862.07 | 7.55 | -0.146 | 0.316 | -0.220 | -1.101 | -70.33 | -18.74 | 100.39 | Subduction IntraSlab |
| 536757 | 1762 | 219 | 218 | 192 | 35945000 | 66673 | 581 | 0.116% | 860.59 | 8.05 | -0.786 | 0.377 | -0.412 | -0.032 | -71.73 | -18.13 | 50.47 | Subduction InterSlab |
| 538454 | 1512 | 225 | 245 | 218 | 35941200 | 67144 | 582 | 0.116% | 859.11 | 8.15 | -0.296 | -0.114 | 0.081 | 0.767 | -71.65 | -17.96 | 56.26 | Subduction InterSlab |
| 539223 | 1815 | 233 | 242 | 194 | 35932400 | 67289 | 583 | 0.117% | 857.63 | 8.25 | -0.250 | 0.326 | -1.690 | -0.139 | -71.77 | -18.01 | 52.58 | Subduction InterSlab |
| 401567 | 1571 | 203 | 251 | 236 | 35929900 | 51474 | 584 | 0.117% | 856.16 | 7.25 | 0.445 | 0.442 | 1.166 | 0.388 | -70.12 | -18.17 | 116.11 | Subduction IntraSlab |
| 537065 | 1319 | 206 | 217 | 233 | 35928400 | 66771 | 585 | 0.117% | 854.70 | 8.05 | -1.098 | 0.950 | -0.409 | 0.062 | -71.66 | -18.01 | 54.82 | Subduction IntraSlab |
| 402801 | 1544 | 242 | 229 | 224 | 35904500 | 52449 | 586 | 0.117% | 853.24 | 7.45 | -0.538 | 1.451 | 0.784 | -1.766 | -69.76 | -18.39 | 126.15 | Subduction IntraSlab |
| 538830 | 1559 | 235 | 225 | 172 | 35902600 | 67222 | 587 | 0.117% | 851.79 | 8.25 | -0.874 | -0.608 | 2.709 | 0.981 | -72.07 | -17.86 | 50.18 | Subduction InterSlab |
| 402585 | 1532 | 271 | 240 | 241 | 35886500 | 52265 | 588 | 0.118% | 850.34 | 7.45 | -0.764 | 0.625 | -1.767 | 0.522 | -70.20 | -18.58 | 107.35 | Subduction IntraSlab |
| 540089 | 1901 | 285 | 230 | 189 | 35875200 | 67410 | 589 | 0.118% | 848.90 | 8.35 | 1.420 | 0.106 | -0.568 | 0.118 | -71.84 | -17.98 | 51.80 | Subduction InterSlab |
| 535773 | 1378 | 197 | 215 | 216 | 35865100 | 66348 | 590 | 0.118% | 847.46 | 7.95 | 0.421 | -0.735 | 0.533 | 0.262 | -71.62 | -18.12 | 52.72 | Subduction IntraSlab |
| 403336 | 1723 | 243 | 254 | 238 | 35862900 | 52894 | 591 | 0.118% | 846.02 | 7.65 | -0.775 | -0.161 | 1.187 | -1.173 | -70.28 | -19.00 | 99.90 | Subduction IntraSlab |
| 537798 | 1646 | 236 | 235 | 202 | 35798700 | 66969 | 592 | 0.118% | 844.59 | 8.15 | -0.610 | 0.920 | -0.372 | -1.295 | -71.78 | -18.15 | 49.00 | Subduction InterSlab |
| 403398 | 1604 | 255 | 241 | 240 | 35797900 | 52948 | 593 | 0.119% | 843.17 | 7.65 | 0.132 | -0.319 | 1.826 | 0.079 | -70.12 | -18.65 | 109.58 | Subduction IntraSlab |
| 539634 | 1977 | 315 | 256 | 247 | 35791400 | 67363 | 594 | 0.119% | 841.75 | 8.25 | 0.857 | 0.136 | -1.769 | -2.238 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 403112 | 1591 | 252 | 234 | 246 | 35776700 | 52704 | 595 | 0.119% | 840.34 | 7.55 | 0.879 | 1.635 | -0.050 | 1.077 | -70.03 | -18.40 | 115.83 | Subduction IntraSlab |
| 538194 | 1681 | 227 | 235 | 212 | 35775200 | 67078 | 596 | 0.119% | 838.93 | 8.15 | 1.136 | 0.228 | -0.196 | -0.119 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 402637 | 1714 | 241 | 255 | 214 | 35758600 | 52305 | 597 | 0.119% | 837.52 | 7.45 | -0.590 | 0.468 | 0.710 | 0.693 | -70.10 | -18.66 | 110.17 | Subduction IntraSlab |
| 403309 | 1601 | 236 | 223 | 224 | 35750800 | 52870 | 598 | 0.120% | 836.12 | 7.55 | 0.092 | -0.044 | -0.391 | 0.539 | -69.51 | -18.22 | 137.63 | Subduction IntraSlab |
| 540153 | 1654 | 212 | 205 | 207 | 35745700 | 67416 | 599 | 0.120% | 834.72 | 8.35 | -0.583 | -0.860 | 0.823 | -0.360 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 540698 | 1914 | 261 | 264 | 173 | 35720100 | 67465 | 600 | 0.120% | 833.33 | 8.35 | 1.421 | -0.894 | 1.456 | 0.030 | -71.86 | -17.88 | 53.91 | Subduction InterSlab |
| 540548 | 1555 | 237 | 229 | 208 | 35680500 | 67451 | 601 | 0.120% | 831.95 | 8.35 | -0.966 | -0.137 | 0.143 | -1.153 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 401526 | 1740 | 212 | 242 | 236 | 35645400 | 51441 | 602 | 0.120% | 830.56 | 7.25 | -0.193 | -0.289 | 1.008 | -0.972 | -70.07 | -18.57 | 112.09 | Subduction IntraSlab |
| 403555 | 1596 | 256 | 230 | 222 | 35644500 | 53088 | 603 | 0.121% | 829.19 | 7.65 | 0.617 | -0.426 | 0.371 | 0.915 | -69.71 | -17.95 | 134.37 | Subduction IntraSlab |
| 402288 | 1443 | 224 | 247 | 216 | 35638100 | 52030 | 604 | 0.121% | 827.81 | 7.35 | 0.677 | -0.271 | -0.161 | 0.598 | -69.77 | -18.48 | 124.47 | Subduction IntraSlab |
| 539834 | 1811 | 270 | 250 | 228 | 35632100 | 67387 | 605 | 0.121% | 826.45 | 8.35 | -0.267 | -0.502 | -1.303 | -0.003 | -72.29 | -17.66 | 50.70 | Subduction InterSlab |
| 540510 | 1464 | 262 | 253 | 191 | 35627000 | 67447 | 606 | 0.121% | 825.08 | 8.35 | -1.105 | 0.801 | -0.584 | -0.456 | -71.88 | -17.90 | 53.19 | Subduction InterSlab |
| 403548 | 1537 | 255 | 205 | 206 | 35613500 | 53082 | 607 | 0.121% | 823.72 | 7.65 | -0.882 | 0.485 | 1.731 | -0.169 | -69.58 | -18.32 | 133.59 | Subduction IntraSlab |
| 539259 | 1717 | 224 | 226 | 188 | 35598700 | 67295 | 608 | 0.122% | 822.37 | 8.25 | -1.128 | 0.557 | 1.130 | -1.666 | -71.97 | -17.83 | 53.10 | Subduction InterSlab |
| 403586 | 1939 | 253 | 216 | 233 | 35594700 | 53117 | 609 | 0.122% | 821.02 | 7.75 | 1.311 | -0.386 | 0.264 | -0.647 | -70.29 | -19.26 | 97.41 | Subduction IntraSlab |
| 539034 | 1442 | 203 | 226 | 221 | 35559400 | 67257 | 610 | 0.122% | 819.67 | 8.25 | 0.684 | -1.128 | -2.183 | -0.537 | -71.98 | -17.90 | 50.97 | Subduction InterSlab |
| 403022 | 1337 | 209 | 227 | 221 | 35554600 | 52629 | 611 | 0.122% | 818.33 | 7.55 | 0.299 | -0.073 | 0.750 | 0.220 | -70.19 | -18.60 | 107.30 | Subduction IntraSlab |
| 540485 | 1541 | 218 | 239 | 203 | 35510200 | 67445 | 612 | 0.122% | 816.99 | 8.35 | 0.961 | 0.272 | 0.894 | -0.925 | -71.81 | -17.95 | 53.26 | Subduction InterSlab |
| 403709 | 1681 | 265 | 227 | 210 | 35459900 | 53225 | 613 | 0.123% | 815.66 | 7.75 | 2.110 | -0.556 | 0.669 | -0.866 | -69.89 | -18.44 | 120.62 | Subduction IntraSlab |
| 539775 | 1591 | 228 | 222 | 198 | 35426700 | 67381 | 614 | 0.123% | 814.33 | 8.35 | -0.742 | -2.295 | 0.176 | -0.117 | -72.09 | -17.84 | 50.17 | Subduction InterSlab |
| 538181 | 1974 | 264 | 239 | 194 | 35415300 | 67075 | 615 | 0.123% | 813.01 | 8.15 | 0.947 | -0.772 | 1.233 | 0.835 | -71.77 | -17.95 | 54.00 | Subduction InterSlab |
| 403420 | 1737 | 253 | 245 | 213 | 35414200 | 52969 | 616 | 0.123% | 811.69 | 7.65 | 1.910 | 0.077 | 0.518 | -0.789 | -70.01 | -18.68 | 113.24 | Subduction IntraSlab |
| 540683 | 1574 | 214 | 219 | 219 | 35398900 | 67464 | 617 | 0.123% | 810.37 | 8.35 | -1.071 | -0.960 | -0.180 | -1.316 | -71.8 | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 539642 | 1341 | 185 | 203 | 230 | 34801700 | 67364 | 667 | 0.133% | 749.63 | 8.25 | 0.740 | 0.593 | -0.047 | -0.084 | -71.74 | -17.92 | 55.46 | Subduction InterSlab |
| 540493 | 1652 | 235 | 212 | 212 | 34784400 | 67446 | 668 | 0.134% | 748.50 | 8.35 | 0.319 | -1.148 | 1.230 | 0.728 | -71.84 | -17.93 | 53.22 | Subduction InterSlab |
| 401528 | 1417 | 196 | 202 | 235 | 34772700 | 51443 | 669 | 0.134% | 747.38 | 7.25 | 0.776 | 1.105 | 0.287 | -0.943 | -70.11 | -18.45 | 112.30 | Subduction InterSlab |
| 402616 | 1595 | 281 | 274 | 180 | 34752600 | 52291 | 670 | 0.134% | 746.27 | 7.45 | 2.406 | -0.866 | 1.227 | 0.868 | -70.13 | -18.58 | 109.68 | Subduction IntraSlab |
| 403210 | 1514 | 248 | 250 | 188 | 34746200 | 52787 | 671 | 0.134% | 745.16 | 7.55 | -1.445 | 1.314 | 0.292 | 0.585 | -69.91 | -18.01 | 126.15 | Subduction InterSlab |
| 539429 | 1503 | 234 | 239 | 211 | 34695700 | 67328 | 672 | 0.134% | 744.05 | 8.25 | 1.282 | -0.154 | -0.119 | -0.875 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 539463 | 1624 | 221 | 228 | 199 | 34623500 | 67334 | 673 | 0.135% | 742.94 | 8.25 | 0.794 | 0.973 | -0.707 | 0.876 | -72.01 | -17.74 | 54.47 | Subduction InterSlab |
| 540536 | 1665 | 227 | 231 | 196 | 34615300 | 67450 | 674 | 0.135% | 741.84 | 8.35 | -1.074 | -0.362 | -0.403 | -0.343 | -71.99 | -17.81 | 53.09 | Subduction InterSlab |
| 402331 | 1446 | 242 | 202 | 209 | 34606900 | 52059 | 675 | 0.135% | 740.74 | 7.35 | -1.598 | 2.024 | -1.171 | 1.134 | -69.74 | -18.40 | 126.83 | Subduction IntraSlab |
| 402876 | 1581 | 233 | 193 | 217 | 34584100 | 52509 | 676 | 0.135% | 739.64 | 7.45 | 1.737 | -1.390 | -0.478 | 1.411 | -69.69 | -18.08 | 133.15 | Subduction IntraSlab |
| 400611 | 1431 | 211 | 192 | 242 | 34577300 | 50743 | 677 | 0.135% | 738.55 | 7.15 | 0.384 | 0.010 | 1.162 | -1.892 | -70.35 | -18.22 | 106.89 | Subduction IntraSlab |
| 403329 | 1490 | 231 | 224 | 216 | 34576900 | 52887 | 678 | 0.136% | 737.46 | 7.65 | 2.211 | -1.915 | 0.176 | -0.183 | -70.32 | -18.72 | 101.09 | Subduction IntraSlab |
| 401994 | 1701 | 229 | 255 | 221 | 34576200 | 51800 | 679 | 0.136% | 736.38 | 7.35 | -2.641 | -0.937 | -1.173 | 0.347 | -70.36 | -18.26 | 105.71 | Subduction IntraSlab |
| 402307 | 1571 | 225 | 219 | 252 | 34569500 | 52042 | 680 | 0.136% | 735.29 | 7.35 | -0.595 | -0.138 | 0.801 | -0.505 | -69.60 | -18.84 | 126.06 | Subduction IntraSlab |
| 539019 | 1380 | 196 | 208 | 214 | 34569100 | 67254 | 681 | 0.136% | 734.21 | 8.25 | -1.818 | 0.906 | 2.058 | 0.505 | -71.88 | -17.99 | 51.06 | Subduction InterSlab |
| 402600 | 1712 | 242 | 220 | 227 | 34559000 | 52278 | 682 | 0.136% | 733.14 | 7.45 | -0.658 | -0.035 | -0.429 | 0.524 | -70.21 | -18.35 | 110.21 | Subduction IntraSlab |
| 402902 | 1390 | 250 | 221 | 211 | 34548800 | 52531 | 683 | 0.137% | 732.06 | 7.45 | -0.667 | -0.637 | 1.104 | 0.617 | -69.62 | -18.09 | 135.62 | Subduction IntraSlab |
| 402843 | 1611 | 236 | 214 | 244 | 34547700 | 52482 | 684 | 0.137% | 730.99 | 7.45 | -1.105 | 0.664 | -0.581 | 0.456 | -69.70 | -18.25 | 130.08 | Subduction IntraSlab |
| 539042 | 1463 | 209 | 200 | 198 | 34543300 | 67259 | 685 | 0.137% | 729.93 | 8.25 | -0.910 | -0.272 | 0.457 | -0.763 | -72.04 | -17.83 | 51.63 | Subduction InterSlab |
| 402852 | 1607 | 235 | 246 | 221 | 34542200 | 52320 | 686 | 0.137% | 728.86 | 7.45 | -0.193 | 0.443 | 0.753 | -0.962 | -70.08 | -18.55 | 112.11 | Subduction IntraSlab |
| 540132 | 1632 | 220 | 222 | 195 | 34530800 | 67413 | 687 | 0.137% | 727.80 | 8.35 | 0.060 | -0.707 | -1.158 | -0.187 | -71.95 | -17.90 | 51.71 | Subduction InterSlab |
| 538803 | 1786 | 247 | 221 | 226 | 34501000 | 67217 | 688 | 0.138% | 726.74 | 8.25 | 1.888 | 0.387 | 1.114 | 0.132 | -71.91 | -18.02 | 49.61 | Subduction InterSlab |
| 402971 | 1698 | 234 | 223 | 210 | 34492100 | 52585 | 689 | 0.138% | 725.69 | 7.55 | -0.531 | -0.498 | -0.350 | -1.838 | -70.33 | -18.53 | 102.85 | Subduction IntraSlab |
| 537509 | 1837 | 274 | 250 | 224 | 34484300 | 66901 | 690 | 0.138% | 724.64 | 8.15 | 0.627 | 1.136 | 0.262 | 0.465 | -71.85 | -18.21 | 46.07 | Subduction InterSlab |
| 403030 | 1133 | 163 | 207 | 237 | 34471600 | 52636 | 691 | 0.138% | 723.59 | 7.55 | 1.143 | -1.768 | -0.686 | 0.105 | -70.13 | -18.88 | 106.62 | Subduction IntraSlab |
| 539750 | 1471 | 224 | 251 | 174 | 34471000 | 67379 | 692 | 0.138% | 722.54 | 8.35 | 0.993 | 0.793 | 0.216 | -0.013 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 537313 | 1372 | 175 | 203 | 224 | 34461200 | 66842 | 693 | 0.139% | 721.50 | 8.05 | -2.725 | -0.212 | -0.133 | 0.046 | -71.71 | -17.86 | 57.62 | Subduction InterSlab |
| 538183 | 1331 | 247 | 199 | 201 | 34450500 | 67075 | 694 | 0.139% | 720.46 | 8.15 | -0.662 | -0.348 | -1.084 | 0.393 | -71.77 | -17.95 | 54.00 | Subduction InterSlab |
| 402426 | 1657 | 224 | 234 | 227 | 34448800 | 52137 | 695 | 0.139% | 719.42 | 7.35 | -0.789 | -0.868 | -1.674 | 0.874 | -69.76 | -17.84 | 134.41 | Subduction IntraSlab |
| 539731 | 1598 | 214 | 238 | 179 | 34442100 | 67377 | 696 | 0.139% | 718.39 | 8.35 | -0.001 | -1.907 | -0.783 | 0.913 | -71.95 | -17.96 | 50.29 | Subduction InterSlab |
| 540526 | 1823 | 267 | 219 | 197 | 34440900 | 67449 | 697 | 0.139% | 717.36 | 8.35 | 0.683 | 0.664 | 0.569 | 0.213 | -71.95 | -17.84 | 53.12 | Subduction InterSlab |
| 403235 | 1402 | 201 | 229 | 205 | 34421200 | 52809 | 698 | 0.140% | 716.33 | 7.55 | -0.040 | -0.234 | -0.433 | -0.468 | -69.49 | -18.83 | 130.23 | Subduction IntraSlab |
| 537508 | 1614 | 220 | 230 | 213 | 34411400 | 66901 | 699 | 0.140% | 715.31 | 8.15 | -0.106 | 1.224 | -0.949 | 0.721 | -71.85 | -18.21 | 46.07 | Subduction InterSlab |
| 534516 | 1780 | 233 | 220 | 227 | 34403300 | 65941 | 700 | 0.140% | 714.29 | 7.85 | -0.672 | -1.040 | -0.376 | -0.002 | -71.46 | -18.19 | 54.31 | Subduction InterSlab |
| 403162 | 1606 | 229 | 238 | 187 | 34384800 | 52745 | 701 | 0.140% | 713.27 | 7.55 | 1.021 | 0.510 | 2.033 | 0.317 | -69.98 | -18.22 | 120.70 | Subduction IntraSlab |
| 403199 | 1518 | 269 | 243 | 191 | 34383500 | 52777 | 702 | 0.140% | 712.25 | 7.55 | -0.939 | -0.527 | 1.302 | 0.403 | -69.87 | -18.20 | 124.62 | Subduction IntraSlab |
| 402122 | 1671 | 240 | 224 | 208 | 34357100 | 51906 | 703 | 0.141% | 711.24 | 7.35 | -1.142 | -1.148 | -1.668 | -0.292 | -70.14 | -18.30 | 113.53 | Subduction IntraSlab |
| 403641 | 1468 | 251 | 218 | 205 | 34354100 | 53165 | 704 | 0.141% | 710.23 | 7.75 | 0.195 | -0.352 | -0.552 | 0.565 | -70.05 | -18.93 | 109.09 | Subduction IntraSlab |
| 537791 | 1394 | 202 | 205 | 213 | 34352900 | 66968 | 705 | 0.141% | 709.22 | 8.15 | 0.538 | -0.445 | 1.336 | 0.687 | -71.75 | -18.17 | 49.02 | Subduction InterSlab |
| 402899 | 1672 | 260 | 203 | 250 | 34326700 | 52528 | 706 | 0.141% | 708.22 | 7.45 | 1.031 | 0.336 | 1.016 | -2.704 | -69.49 | -18.39 | 136.01 | Subduction IntraSlab |
| 540170 | 1878 | 276 | 239 | 163 | 34315200 | 67416 | 707 | 0.141% | 707.21 | 8.35 | -0.505 | 0.396 | -0.200 | 1.260 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 402733 | 1636 | 177 | 232 | 202 | 34307100 | 52387 | 708 | 0.142% | 706.21 | 7.45 | 1.371 | 0.557 | 0.191 | -0.763 | -69.87 | -18.65 | 118.97 | Subduction IntraSlab |
| 540135 | 1469 | 241 | 213 | 218 | 34291700 | 67414 | 709 | 0.142% | 705.22 | 8.35 | 0.746 | -1.640 | -0.274 | 0.285 | -71.99 | -17.87 | 51.68 | Subduction InterSlab |
| 535012 | 1529 | 244 | 237 | 213 | 34254400 | 66103 | 710 | 0.142% | 704.23 | 7.85 | -0.561 | 2.369 | -2.761 | 1.184 | -71.35 | -17.96 | 62.31 | Subduction InterSlab |
| 403694 | 1720 | 280 | 218 | 199 | 34251900 | 53210 | 711 | 0.142% | 703.23 | 7.75 | -0.106 | 0.146 | 0.240 | 1.000 | -69.84 | -18.90 | 117.14 | Subduction IntraSlab |
| 538605 | 1935 | 247 | 224 | 226 | 34249000 | 67181 | 712 | 0.142% | 702.25 | 8.25 | 0.134 | 0.385 | -1.524 | -0.331 | -71.94 | -18.05 | 48.16 | Subduction InterSlab |
| 540527 | 1702 | 246 | 225 | 194 | 34247300 | 67449 | 713 | 0.143% | 701.26 | 8.35 | -1.782 | 0.956 | 1.662 | 0.685 | -71.95 | -17.84 | 53.12 | Subduction InterSlab |
| 403534 | 1756 | 267 | 222 | 204 | 34246700 | 53071 | 714 | 0.143% | 700.28 | 7.65 | -0.201 | 0.227 | -1.849 | 0.141 | -69.78 | -18.00 | 131.11 | Subduction IntraSlab |
| 539224 | 1576 | 234 | 230 | 176 | 34236300 | 67289 | 715 | 0.143% | 699.30 | 8.25 | 1.011 | -0.916 | -0.292 | -2.088 | -71.77 | -18.01 | 52.58 | Subduction InterSlab |
| 403262 | 1387 | 201 | 198 | 227 | 34235800 | 52830 | 716 | 0.143% | 698.32 | 7.55 | -2.087 | 0.849 | 0.328 | 0.146 | -69.48 | -18.68 | 132.58 | Subduction IntraSlab |
| 403269 | 1557 | 254 | 226 | 197 | 34223100 | 52837 | 717 | 0.143% | 697.35 | 7.55 | 1.211 | 0.606 | 0.338 | -0.212 | -69.75 | -18.03 | 131.80 | Subduction IntraSlab |
| 540093 | 1859 | 245 | 250 | 180 | 34216500 | 67410 | 718 | 0.144% | 696.38 | 8.35 | 0.283 | 0.643 | 0.036 | 0.634 | -71.84 | -17.98 | 51.80 | Subduction InterSlab |
| 403100 | 1687 | 240 | 259 | 206 | 34209500 | 52694 | 719 | 0.144% | 695.41 | 7.55 | -0.287 | -0.692 | -0.756 | -0.751 | -70.08 | -18.29 | 115.68 | Subduction IntraSlab |
| 401647 | 1461 | 198 | 195 | 244 | 34207900 | 51538 | 720 | 0.144% | 694.44 | 7.25 | 0.674 | -0.797 | -1.404 | -1.991 | -69.85 | -18.59 | 120.20 | Subduction IntraSlab |
| 402826 | 1501 | 254 | 241 | 204 | 34192700 | 52471 | 721 | 0.144% | 693.48 | 7.45 | 0.234 | -0.027 | -1.413 | -0.130 | -69.77 | -18.19 | 128.69 | Subduction IntraSlab |
| 403512 | 1487 | 237 | 236 | 199 | 34189400 | 53053 | 722 | 0.144% | 692.52 | 7.65 | 1.949 | 0.365 | -0.483 | -0.326 | -69.59 | -18.73 | 127.88 | Subduction IntraSlab |
| 539663 | 1617 | 242 | 220 | 184 | 34187200 | 67368 | 723 | 0.145% | 691.56 | 8.25 | 0.324 | -1.257 | 0.581 | -0.005 | -71.89 | -17.81 | 55.31 | Subduction InterSlab |
| 540588 | 1604 | 201 | 216 | 192 | 34162400 | 67455 | 724 | 0.145% | 690.61 | 8.35 | 0.837 | 1.652 | 0.042 | 0.036 | -72.17 | -17.67 | 52.91 | Subduction InterSlab |
| 402318 | 1728 | 260 | 241 | 214 | 34159500 | 52051 | 725 | 0.145% | 689.66 | 7.35 | 1.505 | 1.421 | -0.321 | -1.801 | -69.94 | -17.95 | 126.09 | Subduction IntraSlab |
| 539439 | 1568 | 231 | 211 | 215 | 34141000 | 67330 | 726 | 0.145% | 688.71 | 8.25 | 0.630 | -0.532 | -0.932 | 2.081 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 402144 | 1496 | 219 | 214 | 234 | 34139200 | 51925 | 727 | 0.145% | 687.76 | 7.35 | -0.130 | 0.473 | -0.069 | -1.120 | -70.06 | -18.40 | 114.73 | Subduction IntraSlab |
| 540500 | 1649 | 262 | 250 | 172 | 34135700 | 67446 | 728 | 0.146% | 686.81 | 8.35 | -1.591 | -1.128 | -1.032 | 0.326 | -71 | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 402814 | 1482 | 224 | 205 | 197 | 33643100 | 52461 | 778 | 0.156% | 642.67 | 7.45 | -1.261 | 1.105 | -0.894 | -68.81 | -18.16 | 127.47 | Subduction IntraSlab | |
| 401852 | 1632 | 258 | 229 | 185 | 33607400 | 51543 | 779 | 0.156% | 641.85 | 7.25 | -1.592 | 0.496 | 0.826 | 1.003 | -70.01 | -18.09 | 121.39 | Subduction IntraSlab |
| 401401 | 1393 | 194 | 216 | 232 | 33594800 | 51343 | 780 | 0.156% | 641.03 | 7.25 | 0.125 | -0.403 | -1.534 | 1.353 | -70.32 | -18.36 | 105.73 | Subduction IntraSlab |
| 403177 | 1702 | 256 | 218 | 208 | 33578000 | 52758 | 781 | 0.156% | 640.20 | 7.55 | -0.552 | -0.361 | 0.151 | -0.098 | -69.81 | -18.57 | 122.09 | Subduction IntraSlab |
| 540100 | 1753 | 240 | 231 | 232 | 33574500 | 67411 | 782 | 0.156% | 639.39 | 8.35 | -0.086 | -1.743 | -0.607 | -1.060 | -71.88 | -17.96 | 51.77 | Subduction InterSlab |
| 539782 | 1691 | 208 | 217 | 158 | 33568500 | 67382 | 783 | 0.157% | 638.57 | 8.35 | 0.587 | -1.009 | 0.258 | 0.081 | -72.13 | -17.82 | 50.14 | Subduction InterSlab |
| 535851 | 1374 | 192 | 218 | 212 | 33564900 | 67173 | 784 | 0.157% | 637.76 | 8.15 | -0.466 | -1.241 | 0.706 | 0.258 | -71.69 | -17.88 | 57.84 | Subduction InterSlab |
| 401936 | 1701 | 258 | 235 | 171 | 33547300 | 51754 | 785 | 0.157% | 636.94 | 7.25 | 0.108 | -0.635 | -1.914 | 1.362 | -69.52 | -18.05 | 139.81 | Subduction IntraSlab |
| 538317 | 1617 | 200 | 212 | 218 | 33526700 | 67113 | 786 | 0.157% | 636.13 | 8.15 | -2.958 | 0.117 | -1.032 | -0.158 | -71.81 | -17.87 | 55.38 | Subduction InterSlab |
| 538565 | 1720 | 256 | 247 | 174 | 33498300 | 67169 | 787 | 0.157% | 635.32 | 8.15 | -0.630 | 0.452 | -0.089 | 0.241 | -71.54 | -17.99 | 57.80 | Subduction InterSlab |
| 403768 | 1444 | 236 | 250 | 198 | 33489700 | 53278 | 788 | 0.158% | 634.52 | 7.75 | -0.565 | -1.258 | 1.449 | -0.747 | -69.65 | -18.25 | 131.97 | Subduction IntraSlab |
| 538299 | 1599 | 248 | 241 | 164 | 33480700 | 67107 | 789 | 0.158% | 633.71 | 8.15 | -1.048 | -0.568 | 0.371 | -0.623 | -71.61 | -18.05 | 54.88 | Subduction InterSlab |
| 402036 | 1600 | 230 | 232 | 197 | 33478000 | 51833 | 790 | 0.158% | 632.91 | 7.35 | 1.441 | -2.456 | -0.991 | -0.312 | -70.28 | -18.47 | 105.87 | Subduction IntraSlab |
| 538665 | 1597 | 246 | 233 | 232 | 33476700 | 67192 | 791 | 0.158% | 632.11 | 8.25 | -0.488 | 1.784 | 0.950 | -1.409 | -72.32 | -17.72 | 48.57 | Subduction InterSlab |
| 540185 | 1513 | 214 | 216 | 180 | 33475100 | 67418 | 792 | 0.158% | 631.31 | 8.35 | -0.047 | 1.322 | -0.777 | -0.400 | -72.13 | -17.76 | 51.55 | Subduction InterSlab |
| 538817 | 1767 | 247 | 228 | 206 | 33474100 | 67220 | 793 | 0.159% | 630.52 | 8.25 | 0.669 | -0.238 | -1.239 | 0.832 | -72.02 | -17.93 | 49.52 | Subduction InterSlab |
| 537804 | 1431 | 221 | 206 | 183 | 33469900 | 66971 | 794 | 0.159% | 629.72 | 8.15 | 0.982 | -2.406 | -0.731 | -0.233 | -71.85 | -18.09 | 48.94 | Subduction InterSlab |
| 402762 | 1596 | 227 | 213 | 235 | 33451000 | 52414 | 795 | 0.159% | 628.93 | 7.45 | 0.080 | -2.059 | 0.709 | 1.226 | -69.96 | -18.10 | 122.96 | Subduction IntraSlab |
| 401702 | 1271 | 187 | 194 | 233 | 33431800 | 51585 | 796 | 0.159% | 628.14 | 7.25 | 1.263 | -0.006 | 0.636 | -0.012 | -69.92 | -18.13 | 124.05 | Subduction IntraSlab |
| 537296 | 1581 | 251 | 219 | 169 | 33422400 | 66837 | 797 | 0.159% | 627.35 | 8.05 | 0.057 | -0.516 | -2.010 | 1.304 | -71.52 | -18.00 | 57.82 | Subduction InterSlab |
| 401704 | 1686 | 259 | 208 | 204 | 33413200 | 51587 | 798 | 0.160% | 626.57 | 7.25 | 1.677 | 0.288 | -0.080 | 0.375 | -69.96 | -18.00 | 124.55 | Subduction IntraSlab |
| 539802 | 1492 | 216 | 197 | 178 | 33400400 | 67384 | 799 | 0.160% | 625.78 | 8.35 | -0.370 | -0.907 | -0.654 | -1.182 | -72.20 | -17.76 | 50.08 | Subduction InterSlab |
| 401448 | 1495 | 203 | 186 | 220 | 33395200 | 51382 | 800 | 0.160% | 625.00 | 7.25 | 0.284 | 1.962 | -1.666 | 1.537 | -70.27 | -18.18 | 110.29 | Subduction IntraSlab |
| 538574 | 1863 | 274 | 215 | 186 | 33381200 | 67170 | 801 | 0.160% | 624.22 | 8.15 | -0.032 | 0.199 | 1.170 | 0.594 | -71.58 | -17.96 | 57.76 | Subduction InterSlab |
| 540138 | 1292 | 222 | 184 | 208 | 33373900 | 67414 | 802 | 0.160% | 623.44 | 8.35 | -1.913 | -0.762 | -1.222 | 0.364 | -71.99 | -17.87 | 51.68 | Subduction InterSlab |
| 538600 | 1344 | 233 | 225 | 178 | 33353500 | 67179 | 803 | 0.161% | 622.67 | 8.25 | -1.194 | -1.446 | 0.621 | 0.803 | -71.87 | -18.10 | 122.21 | Subduction IntraSlab |
| 402265 | 1369 | 226 | 221 | 193 | 33350800 | 52011 | 804 | 0.161% | 621.89 | 7.35 | 0.206 | 0.502 | -0.525 | -0.591 | -69.91 | -18.25 | 48.24 | Subduction IntraSlab |
| 540172 | 1973 | 227 | 222 | 166 | 33345600 | 67417 | 805 | 0.161% | 621.12 | 8.35 | 1.637 | 0.193 | 0.562 | -2.324 | -72.09 | -17.79 | 51.58 | Subduction InterSlab |
| 537488 | 1566 | 214 | 208 | 193 | 33337800 | 66896 | 806 | 0.161% | 620.35 | 8.05 | -0.908 | -0.014 | 0.380 | -0.549 | -71.51 | -17.93 | 59.98 | Subduction InterSlab |
| 539800 | 1754 | 222 | 193 | 195 | 33335200 | 67384 | 807 | 0.161% | 619.58 | 8.35 | -0.016 | -0.436 | 0.762 | 0.843 | -72.20 | -17.76 | 50.08 | Subduction InterSlab |
| 400034 | 1649 | 239 | 211 | 253 | 33325700 | 50350 | 808 | 0.162% | 618.81 | 7.05 | -2.160 | 0.959 | -1.619 | 0.664 | -69.92 | -18.44 | 119.38 | Subduction IntraSlab |
| 403315 | 1685 | 257 | 212 | 197 | 33322100 | 52876 | 809 | 0.162% | 618.05 | 7.55 | -2.317 | -0.126 | -0.860 | -0.521 | -69.56 | -18.08 | 138.06 | Subduction IntraSlab |
| 403286 | 1804 | 210 | 219 | 218 | 33314700 | 52852 | 810 | 0.162% | 617.28 | 7.55 | -1.515 | 0.280 | 0.390 | 1.394 | -69.72 | -17.96 | 133.83 | Subduction IntraSlab |
| 535119 | 1812 | 212 | 215 | 181 | 33290700 | 66141 | 811 | 0.162% | 616.52 | 7.85 | 0.746 | 0.786 | 1.130 | 0.397 | -71.55 | -17.78 | 62.76 | Subduction InterSlab |
| 540105 | 1616 | 239 | 205 | 188 | 33283900 | 67411 | 812 | 0.162% | 615.76 | 8.35 | 0.306 | 0.243 | 0.599 | -0.822 | -71.88 | -17.96 | 51.77 | Subduction InterSlab |
| 402672 | 1663 | 246 | 231 | 189 | 33252600 | 52339 | 813 | 0.163% | 615.01 | 7.45 | -0.571 | -0.675 | 0.694 | -1.251 | -70.08 | -18.36 | 114.89 | Subduction IntraSlab |
| 400150 | 1289 | 197 | 179 | 228 | 33239500 | 50428 | 814 | 0.163% | 614.25 | 7.05 | 0.732 | 2.115 | -0.818 | 1.358 | -69.85 | -18.29 | 124.06 | Subduction IntraSlab |
| 403126 | 1404 | 160 | 187 | 229 | 33235600 | 52718 | 815 | 0.163% | 613.50 | 7.55 | -1.430 | -0.323 | 0.508 | 0.380 | -69.83 | -19.01 | 116.37 | Subduction IntraSlab |
| 538592 | 1420 | 192 | 189 | 198 | 33225300 | 67176 | 816 | 0.163% | 612.75 | 8.15 | 1.017 | 0.883 | 0.130 | -1.735 | -71.80 | -17.79 | 57.52 | Subduction InterSlab |
| 540691 | 1571 | 247 | 227 | 186 | 33209500 | 67464 | 817 | 0.163% | 612.00 | 8.35 | 1.624 | -0.101 | -0.116 | -0.570 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 537930 | 1325 | 190 | 202 | 209 | 33202400 | 67005 | 818 | 0.164% | 611.25 | 8.15 | -1.257 | -0.984 | 0.009 | 1.352 | -71.82 | -18.06 | 50.40 | Subduction InterSlab |
| 540652 | 1384 | 179 | 186 | 206 | 33199100 | 67460 | 819 | 0.164% | 610.50 | 8.35 | 1.215 | 0.340 | 0.284 | -0.423 | -72.36 | -17.53 | 52.74 | Subduction InterSlab |
| 540704 | 1354 | 214 | 225 | 173 | 33186700 | 67466 | 820 | 0.164% | 609.76 | 8.35 | 0.529 | -0.272 | 0.007 | -0.887 | -71.90 | -17.85 | 53.88 | Subduction InterSlab |
| 401325 | 1625 | 221 | 223 | 210 | 33185100 | 51284 | 821 | 0.164% | 609.01 | 7.25 | 1.436 | 0.308 | -1.500 | 0.592 | -70.41 | -18.47 | 101.01 | Subduction IntraSlab |
| 402745 | 1554 | 228 | 189 | 238 | 33179000 | 52398 | 822 | 0.164% | 608.27 | 7.45 | 0.379 | 0.618 | -0.253 | 0.939 | -69.78 | -18.85 | 113.84 | Subduction IntraSlab |
| 540538 | 1717 | 220 | 227 | 195 | 33173100 | 67450 | 823 | 0.165% | 607.53 | 8.35 | 2.801 | -1.651 | -0.032 | -1.807 | -71.99 | -17.81 | 53.09 | Subduction InterSlab |
| 403313 | 1611 | 223 | 228 | 202 | 33171500 | 52874 | 824 | 0.165% | 606.80 | 7.55 | 0.455 | 1.019 | -0.673 | -0.812 | -69.44 | -18.28 | 139.40 | Subduction IntraSlab |
| 540539 | 1468 | 204 | 200 | 192 | 33170500 | 67450 | 825 | 0.165% | 606.06 | 8.35 | 0.517 | -0.393 | -0.986 | 0.559 | -71.99 | -17.81 | 53.09 | Subduction InterSlab |
| 540707 | 1783 | 276 | 211 | 167 | 33169900 | 67466 | 826 | 0.165% | 605.33 | 8.35 | 0.223 | 0.109 | 0.018 | 0.068 | -71.90 | -17.85 | 53.88 | Subduction InterSlab |
| 537667 | 1222 | 193 | 185 | 189 | 33164600 | 66938 | 827 | 0.165% | 604.59 | 8.15 | 0.931 | 1.555 | -1.641 | -0.667 | -71.91 | -18.08 | 48.18 | Subduction InterSlab |
| 540163 | 1449 | 214 | 198 | 201 | 33150800 | 67416 | 828 | 0.166% | 603.86 | 8.35 | 0.275 | -0.460 | 0.171 | -1.552 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 403756 | 1634 | 263 | 240 | 179 | 33147300 | 53266 | 829 | 0.166% | 603.14 | 7.75 | -1.171 | -0.907 | 0.678 | -1.418 | -69.78 | -18.06 | 130.14 | Subduction IntraSlab |
| 540207 | 1810 | 267 | 216 | 167 | 33125500 | 67420 | 830 | 0.166% | 602.41 | 8.35 | -0.177 | 0.053 | -0.311 | 0.486 | -72.19 | -17.69 | 52.20 | Subduction InterSlab |
| 539417 | 1815 | 256 | 226 | 186 | 33118900 | 67325 | 831 | 0.166% | 601.68 | 8.25 | -0.783 | -0.592 | -2.315 | -0.878 | -71.70 | -18.01 | 54.07 | Subduction InterSlab |
| 539741 | 1608 | 235 | 219 | 163 | 33117500 | 67377 | 832 | 0.166% | 600.96 | 8.35 | -1.011 | -1.245 | 0.214 | 0.730 | -71.95 | -17.96 | 50.29 | Subduction InterSlab |
| 402828 | 1688 | 257 | 218 | 177 | 33117000 | 52472 | 833 | 0.167% | 600.24 | 7.45 | 0.253 | -0.763 | -0.707 | -0.483 | -69.79 | -18.14 | 128.60 | Subduction IntraSlab |
| 55523 | 1184 | 172 | 176 | 235 | 33115800 | 9321 | 834 | 0.167% | 599.52 | 6.55 | 0.153 | 1.045 | 2.075 | -0.822 | -70.50 | -17.92 | 83.52 | Subduction IntraSlab |
| 538630 | 1475 | 215 | 217 | 184 | 33115600 | 67185 | 835 | 0.167% | 598.80 | 8.25 | -1.034 | 0.331 | 0.002 | -1.188 | -72.07 | -17.92 | 48.77 | Subduction InterSlab |
| 536051 | 1590 | 227 | 217 | 168 | 33111600 | 66444 | 836 | 0.167% | 598.09 | 7.95 | 1.019 | 0.197 | -0.017 | -1.118 | -71.56 | -18.00 | 57.07 | Subduction InterSlab |
| 402573 | 1298 | 222 | 210 | 223 | 33108500 | 52255 | 837 | 0.167% | 597.37 | 7.45 | -1.269 | -0.503 | -0.075 | 0.506 | -70.26 | -18.24 | 109.90 | Subduction IntraSlab |
| 539249 | 1729 | 230 | 192 | 192 | 33104400 | 67294 | 838 | 0.168% | 596.66 | 8.25 | -0.980 | -0.523 | 0.399 | -0.301 | -71.95 | -17.87 | 52.41 | Subduction InterSlab |
| 401363 | 1261 | 174 | 201 | 234 | 33103900 | 51313 | 839 | 0.168% | 595.95 | 7.25 | 1.235 | -1.693 | 0.596 | 0.357 | -70.36 | -18.43 | 103.2 | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 538176 | 1559 | 236 | 226 | 164 | 32599000 | 67073 | 889 | 0.178% | 562.43 | 8.15 | 1.048 | 0.579 | 0.410 | 1.262 | -71.72 | -18.02 | 53.34 | Subduction InterSlab |
| 538580 | 1528 | 228 | 223 | 175 | 32574800 | 67173 | 890 | 0.178% | 561.80 | 8.15 | -0.469 | -0.456 | 0.927 | -0.039 | -71.69 | -17.87 | 57.64 | Subduction InterSlab |
| 403576 | 1636 | 231 | 209 | 180 | 32571100 | 53109 | 891 | 0.178% | 561.17 | 7.65 | 0.743 | 1.324 | 0.641 | 2.132 | -69.46 | -18.28 | 138.64 | Subduction InterSlab |
| 399722 | 1440 | 191 | 231 | 202 | 32565700 | 50150 | 892 | 0.178% | 560.54 | 7.05 | 0.589 | 0.672 | 0.204 | 0.802 | -70.28 | -18.19 | 109.78 | Subduction IntraSlab |
| 537946 | 1269 | 180 | 194 | 218 | 32562700 | 67009 | 893 | 0.179% | 559.91 | 8.15 | 0.238 | -0.527 | -0.418 | -0.015 | -71.95 | -17.93 | 51.00 | Subduction InterSlab |
| 540214 | 1388 | 229 | 199 | 172 | 32560500 | 67421 | 894 | 0.179% | 559.28 | 8.35 | -0.412 | 0.287 | -0.515 | 0.551 | -72.22 | -17.66 | 52.16 | Subduction InterSlab |
| 403377 | 1669 | 231 | 209 | 200 | 32552100 | 52930 | 895 | 0.179% | 558.66 | 7.65 | 1.652 | 0.308 | -0.773 | 0.393 | -70.14 | -18.93 | 105.86 | Subduction IntraSlab |
| 402855 | 1387 | 240 | 200 | 196 | 32544500 | 52323 | 896 | 0.179% | 558.04 | 7.45 | -2.098 | 0.523 | 1.518 | -0.874 | -70.17 | -18.13 | 114.78 | Subduction InterSlab |
| 540572 | 1572 | 216 | 213 | 154 | 32539100 | 67453 | 897 | 0.179% | 557.41 | 8.35 | 1.886 | -1.048 | -0.642 | -1.130 | -72.10 | -17.73 | 52.98 | Subduction InterSlab |
| 402632 | 1465 | 214 | 213 | 211 | 32534700 | 52302 | 898 | 0.180% | 556.79 | 7.45 | -0.259 | -1.722 | -0.532 | 0.269 | -70.06 | -18.82 | 109.92 | Subduction InterSlab |
| 401789 | 1464 | 218 | 188 | 187 | 32524300 | 51644 | 899 | 0.180% | 556.17 | 7.25 | -0.818 | -1.214 | 0.900 | 2.243 | -69.88 | -17.85 | 130.07 | Subduction IntraSlab |
| 535573 | 1239 | 188 | 173 | 233 | 32524000 | 66286 | 900 | 0.180% | 555.56 | 7.95 | -0.267 | -1.606 | 1.750 | 0.799 | -71.62 | -18.24 | 49.84 | Subduction InterSlab |
| 532353 | 1486 | 189 | 208 | 200 | 32523400 | 65207 | 901 | 0.180% | 554.94 | 7.65 | -1.219 | 0.316 | -0.543 | -0.416 | -71.15 | -17.99 | 65.43 | Subduction InterSlab |
| 540133 | 1268 | 223 | 200 | 174 | 32516100 | 67413 | 902 | 0.180% | 554.32 | 8.35 | -0.672 | 0.316 | 0.784 | -1.113 | -71.95 | -17.99 | 51.71 | Subduction InterSlab |
| 403137 | 1713 | 247 | 203 | 199 | 32503000 | 52724 | 903 | 0.181% | 553.71 | 7.55 | 0.321 | 0.576 | -1.044 | 1.227 | -69.97 | -18.46 | 117.57 | Subduction IntraSlab |
| 403021 | 1606 | 240 | 214 | 180 | 32499000 | 52628 | 904 | 0.181% | 553.10 | 7.55 | 1.486 | -1.088 | 1.172 | -0.223 | -70.16 | -18.94 | 105.19 | Subduction InterSlab |
| 403203 | 1526 | 201 | 200 | 166 | 32496900 | 52781 | 905 | 0.181% | 552.49 | 7.55 | 1.944 | -1.144 | 0.555 | -0.839 | -69.58 | -18.92 | 126.10 | Subduction IntraSlab |
| 539723 | 1520 | 224 | 236 | 164 | 32496000 | 67376 | 906 | 0.181% | 551.88 | 8.35 | -1.719 | -1.747 | 0.357 | 0.125 | -71.91 | -17.99 | 50.32 | Subduction InterSlab |
| 403334 | 1615 | 216 | 243 | 170 | 32490500 | 52892 | 907 | 0.181% | 551.27 | 7.65 | 1.235 | -0.557 | 0.563 | 0.315 | -70.27 | -19.25 | 98.11 | Subduction IntraSlab |
| 533556 | 1207 | 159 | 209 | 211 | 32488500 | 65609 | 908 | 0.182% | 550.66 | 7.75 | 0.684 | 0.347 | -0.563 | 0.013 | -71.33 | -18.03 | 60.91 | Subduction InterSlab |
| 540690 | 1608 | 218 | 217 | 195 | 32480500 | 67464 | 909 | 0.182% | 550.06 | 8.35 | -1.215 | 0.445 | -0.161 | 0.420 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 402865 | 1360 | 195 | 218 | 184 | 32458200 | 52499 | 910 | 0.182% | 549.45 | 7.45 | -2.168 | 0.650 | 0.292 | -0.949 | -69.79 | -17.92 | 131.97 | Subduction InterSlab |
| 402567 | 1595 | 245 | 199 | 194 | 32455300 | 52250 | 911 | 0.182% | 548.85 | 7.45 | 0.846 | -0.391 | -0.613 | -1.779 | -70.21 | -18.67 | 105.92 | Subduction IntraSlab |
| 402358 | 1758 | 223 | 226 | 203 | 32445200 | 52084 | 912 | 0.182% | 548.25 | 7.35 | 2.171 | -0.144 | 0.889 | -0.118 | -69.83 | -18.03 | 128.94 | Subduction InterSlab |
| 402615 | 1216 | 191 | 166 | 252 | 32444900 | 52291 | 913 | 0.183% | 547.65 | 7.45 | 1.265 | 0.649 | -0.810 | 0.491 | -70.13 | -18.58 | 109.68 | Subduction IntraSlab |
| 538568 | 1747 | 238 | 222 | 197 | 32422700 | 67169 | 914 | 0.183% | 547.05 | 8.15 | -1.333 | 0.244 | -0.217 | 1.531 | -71.54 | -17.99 | 57.80 | Subduction InterSlab |
| 540576 | 1320 | 228 | 206 | 172 | 32419800 | 67453 | 915 | 0.183% | 546.45 | 8.35 | 0.650 | -0.070 | -0.425 | 0.999 | -72.10 | -17.73 | 52.98 | Subduction InterSlab |
| 402811 | 1608 | 208 | 213 | 175 | 32405100 | 52458 | 916 | 0.183% | 545.85 | 7.45 | -0.204 | -1.290 | 0.736 | -0.099 | -69.71 | -18.42 | 127.51 | Subduction IntraSlab |
| 539428 | 1654 | 235 | 183 | 229 | 32398000 | 67328 | 917 | 0.183% | 545.26 | 8.25 | -0.792 | -0.757 | -0.944 | 1.280 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 402293 | 1528 | 195 | 223 | 174 | 32389700 | 52035 | 918 | 0.184% | 544.66 | 7.35 | 0.106 | 0.045 | 1.255 | 0.976 | -69.91 | -18.09 | 125.13 | Subduction IntraSlab |
| 539635 | 1823 | 278 | 230 | 173 | 32381700 | 67363 | 919 | 0.184% | 544.07 | 8.25 | -0.059 | 1.147 | -0.946 | -0.607 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 402250 | 1570 | 213 | 221 | 199 | 32377100 | 51998 | 920 | 0.184% | 543.48 | 7.35 | -0.782 | 0.006 | 1.437 | -2.736 | -69.98 | -18.14 | 121.87 | Subduction IntraSlab |
| 536546 | 1554 | 208 | 226 | 199 | 32359700 | 66607 | 921 | 0.184% | 542.89 | 8.05 | 0.349 | 0.541 | -0.123 | -0.454 | -71.74 | -18.26 | 46.87 | Subduction InterSlab |
| 402162 | 1578 | 230 | 210 | 223 | 32353600 | 51939 | 922 | 0.184% | 542.30 | 7.35 | -1.540 | -0.801 | -0.586 | 0.673 | -70.11 | -18.13 | 117.23 | Subduction IntraSlab |
| 537491 | 1650 | 225 | 238 | 156 | 32352800 | 66897 | 923 | 0.185% | 541.71 | 8.05 | 0.235 | -0.482 | -0.829 | -0.448 | -71.55 | -17.90 | 59.93 | Subduction InterSlab |
| 540175 | 1496 | 232 | 226 | 153 | 32329900 | 67417 | 924 | 0.185% | 541.13 | 8.35 | 0.217 | -1.166 | -0.278 | 1.168 | -72.09 | -17.79 | 51.58 | Subduction InterSlab |
| 539421 | 1558 | 235 | 210 | 191 | 32329400 | 67325 | 925 | 0.185% | 540.54 | 8.25 | -1.111 | -0.699 | -0.546 | 1.384 | -71.70 | -18.01 | 54.07 | Subduction InterSlab |
| 539448 | 1615 | 217 | 247 | 186 | 32329400 | 67332 | 926 | 0.185% | 539.96 | 8.25 | -1.616 | 1.130 | -0.910 | -0.888 | -71.94 | -17.80 | 54.55 | Subduction InterSlab |
| 540206 | 1508 | 205 | 191 | 186 | 32313400 | 67420 | 927 | 0.185% | 539.37 | 8.35 | 0.123 | 1.234 | 1.904 | 0.221 | -72.19 | -17.69 | 52.20 | Subduction InterSlab |
| 533474 | 1331 | 189 | 179 | 226 | 32285600 | 65581 | 928 | 0.186% | 538.79 | 7.75 | 0.743 | -0.888 | 0.072 | -0.066 | -71.43 | -18.01 | 59.35 | Subduction InterSlab |
| 534835 | 1344 | 182 | 178 | 199 | 32280300 | 66043 | 929 | 0.186% | 538.21 | 7.85 | -0.559 | 1.076 | -1.434 | 1.238 | -71.56 | -17.91 | 59.20 | Subduction InterSlab |
| 402842 | 1682 | 273 | 228 | 179 | 32275100 | 52482 | 930 | 0.186% | 537.63 | 7.45 | 0.137 | -0.955 | -0.448 | 1.294 | -69.70 | -18.25 | 130.08 | Subduction InterSlab |
| 539247 | 1555 | 216 | 192 | 179 | 32257800 | 67294 | 931 | 0.186% | 537.06 | 8.25 | -0.180 | -1.510 | 1.282 | 0.051 | -71.95 | -17.87 | 52.41 | Subduction InterSlab |
| 403383 | 1268 | 199 | 182 | 215 | 32253800 | 52935 | 932 | 0.186% | 536.48 | 7.65 | -0.243 | 0.268 | 0.723 | 0.419 | -70.08 | -19.17 | 105.81 | Subduction InterSlab |
| 539627 | 1540 | 210 | 205 | 189 | 32253200 | 67362 | 933 | 0.187% | 535.91 | 8.25 | 0.916 | -1.188 | -0.722 | 1.332 | -71.67 | -17.98 | 55.53 | Subduction InterSlab |
| 538790 | 1357 | 220 | 177 | 196 | 32251800 | 67216 | 934 | 0.187% | 535.33 | 8.25 | 0.346 | 0.780 | 0.732 | -0.373 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 402720 | 1422 | 238 | 199 | 200 | 32245300 | 52378 | 935 | 0.187% | 534.76 | 7.45 | -0.279 | 1.102 | 0.603 | -0.784 | -70.01 | -18.19 | 119.66 | Subduction IntraSlab |
| 539416 | 1379 | 227 | 246 | 170 | 32239200 | 67325 | 936 | 0.187% | 534.19 | 8.25 | 0.125 | 0.353 | 0.977 | 0.198 | -71.70 | -18.01 | 54.07 | Subduction InterSlab |
| 402706 | 1427 | 181 | 230 | 193 | 32237500 | 52364 | 937 | 0.187% | 533.62 | 7.45 | 0.940 | -0.492 | -0.470 | 0.396 | -69.97 | -18.54 | 116.38 | Subduction IntraSlab |
| 540187 | 1560 | 247 | 216 | 155 | 32229500 | 67418 | 938 | 0.188% | 533.05 | 8.35 | 1.872 | -0.390 | 1.046 | -0.988 | -72.13 | -17.76 | 51.55 | Subduction InterSlab |
| 533638 | 1366 | 186 | 183 | 221 | 32219000 | 65640 | 939 | 0.188% | 532.48 | 7.75 | 1.174 | 0.082 | 0.206 | -0.641 | -71.29 | -18.00 | 62.38 | Subduction InterSlab |
| 401579 | 1573 | 222 | 239 | 198 | 32191200 | 51483 | 940 | 0.188% | 531.91 | 7.25 | 1.284 | 0.487 | 0.732 | 0.423 | -70.04 | -18.36 | 115.97 | Subduction InterSlab |
| 538818 | 1629 | 203 | 208 | 170 | 32185000 | 67221 | 941 | 0.188% | 531.35 | 8.25 | -0.840 | 0.423 | -0.639 | -0.065 | -72.04 | -17.89 | 50.22 | Subduction InterSlab |
| 540568 | 1667 | 241 | 227 | 158 | 32183200 | 67452 | 942 | 0.188% | 530.79 | 8.35 | 0.467 | -1.448 | 0.473 | 1.975 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 536756 | 1557 | 220 | 204 | 174 | 32172700 | 66672 | 943 | 0.189% | 530.22 | 8.05 | -0.378 | 0.067 | 0.044 | -0.221 | -71.69 | -18.16 | 50.50 | Subduction InterSlab |
| 538462 | 1610 | 225 | 199 | 173 | 32149800 | 67145 | 944 | 0.189% | 529.66 | 8.15 | -1.368 | 0.782 | 1.120 | -0.567 | -71.67 | -17.92 | 56.95 | Subduction InterSlab |
| 402570 | 1716 | 222 | 213 | 189 | 32136400 | 52253 | 945 | 0.189% | 529.10 | 7.45 | 0.557 | -2.188 | 1.129 | 0.596 | -70.24 | -18.46 | 107.43 | Subduction IntraSlab |
| 403504 | 1239 | 208 | 192 | 213 | 32122800 | 53045 | 946 | 0.189% | 528.54 | 7.65 | 0.164 | -0.216 | -0.447 | -0.077 | -69.77 | -18.32 | 126.56 | Subduction IntraSlab |
| 401842 | 1200 | 178 | 183 | 209 | 32122400 | 51681 | 947 | 0.189% | 527.98 | 7.25 | 0.353 | 0.722 | 0.556 | -1.205 | -69.58 | -18.32 | 133.59 | Subduction InterSlab |
| 401023 | 1567 | 228 | 223 | 190 | 32111900 | 51051 | 948 | 0.190% | 527.43 | 7.15 | -0.909 | -0.613 | -1.987 | -1.841 | -69.94 | -18.11 | 123.50 | Subduction IntraSlab |
| 540517 | 1578 | 234 | 204 | 178 | 32110700 | 67448 | 949 | 0.190% | 526.87 | 8.35 | -0.014 | 1.584 | 0.473 | -0.252 | -71.92 | -17.87 | 53.15 | Subduction InterSlab |
| 398148 | 1438 | 203 | 183 | 236 | 32094500 | 49213 | 950 | 0.190% | 526.32 | 6.95 | 0.134 | 0.962 | 0.411 | 0.823 | -70.44 | -18.25 | 102.78 | Subduction Intra |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_l | centroid_depth | trt |
| 536317 | 1394 | 193 | 189 | 190 | 31597500 | 66539 | 1000 | 0.200% | 500.00 | 7.95 | -0.737 | 1.382 | 0.984 | 0.412 | -71.46 | -17.91 | 61.46 | Subduction InterSlab |
| 540519 | 1354 | 190 | 210 | 179 | 31593500 | 67448 | 1001 | 0.200% | 499.50 | 8.35 | 2.394 | -1.147 | 0.294 | -0.480 | -71.92 | -17.87 | 53.15 | Subduction InterSlab |
| 538800 | 1285 | 186 | 182 | 211 | 31593100 | 67217 | 1002 | 0.200% | 499.00 | 8.25 | -0.603 | 0.442 | 0.870 | 0.133 | -71.91 | -18.02 | 49.61 | Subduction InterSlab |
| 401714 | 1544 | 213 | 203 | 197 | 31583200 | 51595 | 1003 | 0.201% | 498.50 | 7.25 | 0.315 | 0.795 | 0.446 | 1.364 | -69.77 | -18.45 | 125.04 | Subduction IntraSlab |
| 402510 | 1457 | 199 | 196 | 202 | 31576300 | 52202 | 1004 | 0.201% | 498.01 | 7.45 | -0.312 | 0.682 | 0.349 | 0.232 | -70.34 | -18.79 | 99.59 | Subduction IntraSlab |
| 536957 | 1401 | 191 | 184 | 193 | 31562900 | 66738 | 1005 | 0.201% | 497.51 | 8.05 | 0.527 | 0.582 | 0.021 | -1.022 | -71.66 | -18.07 | 53.40 | Subduction InterSlab |
| 539427 | 1462 | 213 | 220 | 160 | 31560500 | 67328 | 1006 | 0.201% | 497.02 | 8.25 | -1.194 | 1.253 | -0.261 | -0.780 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 403463 | 1707 | 243 | 222 | 215 | 31547300 | 53007 | 1007 | 0.201% | 496.52 | 7.65 | 0.880 | 1.622 | 0.462 | 1.282 | -69.77 | -18.92 | 119.20 | Subduction IntraSlab |
| 540543 | 1927 | 233 | 226 | 179 | 31523800 | 67450 | 1008 | 0.202% | 496.03 | 8.35 | 0.871 | -1.555 | -1.150 | 0.495 | -71.99 | -17.81 | 53.09 | Subduction InterSlab |
| 402437 | 1572 | 220 | 228 | 186 | 31519700 | 52144 | 1009 | 0.202% | 495.54 | 7.35 | 0.329 | -0.540 | -1.290 | -0.713 | -69.54 | -18.21 | 136.90 | Subduction IntraSlab |
| 538467 | 1461 | 206 | 207 | 185 | 31513800 | 67147 | 1010 | 0.202% | 495.05 | 8.15 | 0.228 | 1.187 | -0.829 | 0.531 | -71.74 | -17.86 | 56.87 | Subduction InterSlab |
| 540154 | 1366 | 227 | 199 | 157 | 31509800 | 67416 | 1011 | 0.202% | 494.56 | 8.35 | -2.664 | -0.165 | 0.119 | -0.481 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 402023 | 1525 | 177 | 211 | 217 | 31500800 | 51822 | 1012 | 0.202% | 494.07 | 7.35 | 1.809 | -0.876 | -1.341 | 1.726 | -70.28 | -18.69 | 102.92 | Subduction IntraSlab |
| 539691 | 1592 | 223 | 189 | 192 | 31497300 | 67372 | 1013 | 0.203% | 493.58 | 8.25 | 1.064 | -0.327 | 0.983 | -1.861 | -72.03 | -17.70 | 55.16 | Subduction InterSlab |
| 400131 | 1492 | 204 | 195 | 202 | 31496700 | 50516 | 1014 | 0.203% | 493.10 | 7.05 | 1.022 | 1.805 | -0.423 | -0.715 | -70.00 | -17.97 | 123.52 | Subduction IntraSlab |
| 402879 | 1317 | 217 | 193 | 181 | 31493100 | 52512 | 1015 | 0.203% | 492.61 | 7.45 | 0.054 | 0.969 | -1.650 | 0.225 | -69.81 | -17.83 | 132.68 | Subduction IntraSlab |
| 402006 | 1320 | 204 | 214 | 188 | 31492000 | 51810 | 1016 | 0.203% | 492.13 | 7.35 | 1.375 | -0.392 | 1.167 | -0.941 | -70.35 | -18.29 | 105.88 | Subduction IntraSlab |
| 538846 | 1519 | 173 | 193 | 178 | 31484300 | 67225 | 1017 | 0.203% | 491.64 | 8.25 | 0.529 | 0.084 | 2.214 | 0.076 | -72.18 | -17.77 | 50.09 | Subduction InterSlab |
| 403198 | 1415 | 229 | 195 | 188 | 31462400 | 52776 | 1018 | 0.204% | 491.16 | 7.55 | -1.386 | 0.406 | 1.166 | 0.397 | -69.80 | -18.37 | 124.82 | Subduction IntraSlab |
| 403277 | 1460 | 241 | 207 | 158 | 31461800 | 52845 | 1019 | 0.204% | 490.68 | 7.55 | 0.019 | -0.351 | 0.233 | -0.202 | -69.70 | -18.06 | 133.07 | Subduction IntraSlab |
| 402847 | 1503 | 221 | 209 | 185 | 31451400 | 52486 | 1020 | 0.204% | 490.20 | 7.45 | 0.455 | -0.856 | 0.738 | -0.332 | -69.87 | -17.87 | 130.13 | Subduction InterSlab |
| 540559 | 1437 | 213 | 182 | 173 | 31451400 | 67452 | 1021 | 0.204% | 489.72 | 8.35 | 0.443 | -0.707 | -0.541 | 0.075 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 539683 | 1555 | 207 | 195 | 167 | 31441000 | 67371 | 1022 | 0.204% | 489.24 | 8.25 | -1.466 | -0.734 | 1.202 | 0.598 | -72.00 | -17.73 | 55.19 | Subduction InterSlab |
| 403530 | 1512 | 209 | 203 | 202 | 31428700 | 53068 | 1023 | 0.205% | 488.76 | 7.65 | 1.325 | -0.886 | -0.424 | 0.236 | -69.51 | -18.64 | 131.74 | Subduction IntraSlab |
| 401859 | 1356 | 208 | 182 | 194 | 31428100 | 51695 | 1024 | 0.205% | 488.28 | 7.25 | 0.559 | -0.786 | -1.121 | 0.472 | -69.57 | -18.25 | 135.20 | Subduction IntraSlab |
| 403002 | 1262 | 192 | 210 | 196 | 31389100 | 52611 | 1025 | 0.205% | 487.80 | 7.55 | -0.059 | -0.266 | -1.629 | 0.028 | -70.23 | -18.71 | 104.63 | Subduction IntraSlab |
| 537923 | 1516 | 206 | 204 | 187 | 31378100 | 67003 | 1026 | 0.205% | 487.33 | 8.15 | -0.418 | -1.070 | -0.927 | 1.204 | -71.75 | -18.11 | 50.46 | Subduction InterSlab |
| 402673 | 1166 | 220 | 213 | 187 | 31375400 | 52340 | 1027 | 0.205% | 486.85 | 7.45 | -0.222 | -0.183 | 0.464 | 0.174 | -70.08 | -18.31 | 115.60 | Subduction IntraSlab |
| 534918 | 1440 | 218 | 198 | 199 | 31361600 | 66070 | 1028 | 0.206% | 486.38 | 7.85 | -1.841 | 0.387 | 1.355 | -1.772 | -71.32 | -18.06 | 60.20 | Subduction InterSlab |
| 538482 | 1312 | 210 | 178 | 188 | 31347200 | 67149 | 1029 | 0.206% | 485.91 | 8.15 | 0.207 | 0.167 | 0.910 | 0.248 | -71.82 | -17.81 | 56.79 | Subduction InterSlab |
| 402846 | 1664 | 235 | 214 | 182 | 31342000 | 52485 | 1030 | 0.206% | 485.44 | 7.45 | 0.874 | 1.921 | 0.233 | 0.706 | -69.84 | -17.96 | 129.85 | Subduction IntraSlab |
| 402171 | 1303 | 186 | 227 | 182 | 31341500 | 51947 | 1031 | 0.206% | 484.97 | 7.35 | 0.346 | -0.800 | 0.037 | 0.583 | -69.96 | -18.63 | 115.77 | Subduction IntraSlab |
| 539442 | 1686 | 263 | 206 | 148 | 31312600 | 67330 | 1032 | 0.206% | 484.50 | 8.25 | -1.453 | -1.090 | 0.261 | 0.030 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 403077 | 1355 | 233 | 223 | 162 | 31310300 | 52675 | 1033 | 0.207% | 484.03 | 7.55 | -0.906 | 0.915 | -0.475 | 1.614 | -70.14 | -18.23 | 114.35 | Subduction IntraSlab |
| 398590 | 1578 | 195 | 189 | 223 | 31292400 | 49463 | 1034 | 0.207% | 483.56 | 6.95 | -0.350 | 0.441 | -1.653 | 0.112 | -70.23 | -18.08 | 113.15 | Subduction IntraSlab |
| 403190 | 1279 | 222 | 213 | 190 | 31283200 | 52769 | 1035 | 0.207% | 483.09 | 7.55 | -1.751 | 0.811 | -0.013 | 1.402 | -69.83 | -18.38 | 123.61 | Subduction IntraSlab |
| 399563 | 1753 | 228 | 200 | 198 | 31267500 | 50048 | 1036 | 0.207% | 482.63 | 7.05 | -0.018 | -0.863 | -0.177 | -1.745 | -70.39 | -18.32 | 103.80 | Subduction IntraSlab |
| 537291 | 1640 | 211 | 209 | 193 | 31261700 | 68836 | 1037 | 0.207% | 482.16 | 8.05 | 1.020 | 0.847 | -0.683 | -1.025 | -71.49 | -18.03 | 57.86 | Subduction InterSlab |
| 401681 | 1398 | 198 | 220 | 191 | 31252000 | 51569 | 1038 | 0.208% | 481.70 | 7.25 | -0.895 | -0.725 | -0.082 | -1.280 | -69.94 | -18.14 | 122.95 | Subduction IntraSlab |
| 399593 | 1342 | 197 | 180 | 209 | 31229300 | 50067 | 1039 | 0.208% | 481.23 | 7.05 | 1.089 | 0.600 | -0.291 | 0.574 | -70.38 | -18.22 | 105.56 | Subduction IntraSlab |
| 536228 | 1665 | 223 | 201 | 173 | 31225400 | 66508 | 1040 | 0.208% | 480.77 | 7.95 | 1.897 | -0.544 | 0.338 | -1.098 | -71.51 | -17.90 | 60.68 | Subduction InterSlab |
| 401805 | 1818 | 269 | 212 | 174 | 31207200 | 51657 | 1041 | 0.208% | 480.31 | 7.25 | 0.490 | 0.653 | 0.244 | -2.029 | -69.80 | -17.96 | 130.98 | Subduction IntraSlab |
| 402160 | 1411 | 186 | 192 | 168 | 31205700 | 51938 | 1042 | 0.208% | 479.85 | 7.35 | 1.474 | 1.227 | 0.412 | 0.173 | -70.05 | -18.34 | 116.03 | Subduction IntraSlab |
| 402003 | 1514 | 210 | 229 | 152 | 31202400 | 51807 | 1043 | 0.209% | 479.39 | 7.35 | 1.492 | -2.195 | 0.192 | 0.206 | -70.31 | -18.58 | 102.89 | Subduction IntraSlab |
| 539032 | 1383 | 180 | 174 | 193 | 31198500 | 67256 | 1044 | 0.209% | 478.93 | 8.25 | 1.567 | 0.410 | -1.351 | 0.588 | -71.95 | -17.93 | 51.00 | Subduction InterSlab |
| 539227 | 1550 | 222 | 192 | 156 | 31180400 | 67289 | 1045 | 0.209% | 478.47 | 8.25 | -0.469 | -0.770 | 0.171 | -2.248 | -71.77 | -18.01 | 52.58 | Subduction InterSlab |
| 401803 | 1503 | 201 | 210 | 205 | 31178300 | 51566 | 1046 | 0.209% | 478.01 | 7.25 | 1.734 | -0.493 | 1.399 | 0.459 | -69.76 | -18.04 | 131.24 | Subduction IntraSlab |
| 402178 | 1505 | 206 | 206 | 179 | 31170500 | 51952 | 1047 | 0.209% | 477.55 | 7.35 | -0.437 | -0.335 | -0.206 | -0.489 | -70.07 | -18.20 | 117.52 | Subduction IntraSlab |
| 403639 | 1652 | 242 | 190 | 188 | 31145700 | 53163 | 1048 | 0.210% | 477.10 | 7.75 | -0.602 | 1.979 | -0.311 | -1.245 | -70.01 | -19.23 | 107.17 | Subduction IntraSlab |
| 539776 | 1516 | 189 | 189 | 182 | 31143400 | 67381 | 1049 | 0.210% | 476.64 | 8.35 | 0.610 | 0.423 | -1.001 | 1.883 | -72.09 | -17.84 | 50.17 | Subduction InterSlab |
| 402619 | 1750 | 215 | 207 | 177 | 31140600 | 52293 | 1050 | 0.210% | 476.19 | 7.45 | 0.900 | -0.953 | -1.114 | -1.563 | -70.16 | -18.41 | 110.87 | Subduction IntraSlab |
| 535014 | 1281 | 188 | 204 | 182 | 31140500 | 66105 | 1051 | 0.210% | 475.74 | 7.85 | 0.414 | -0.799 | 0.341 | 1.586 | -71.42 | -17.91 | 62.22 | Subduction InterSlab |
| 539621 | 1440 | 218 | 210 | 191 | 31131800 | 67362 | 1052 | 0.210% | 475.29 | 8.25 | 1.093 | 1.726 | 0.826 | 1.855 | -71.67 | -17.98 | 55.53 | Subduction InterSlab |
| 537432 | 1482 | 232 | 191 | 197 | 31112000 | 66877 | 1053 | 0.211% | 474.83 | 8.05 | 1.094 | 0.796 | 0.903 | 0.696 | -71.67 | -17.83 | 59.07 | Subduction InterSlab |
| 540193 | 1717 | 209 | 214 | 149 | 31111800 | 67419 | 1054 | 0.211% | 474.38 | 8.35 | -1.877 | -0.673 | 1.172 | -1.584 | -72.17 | -17.73 | 51.51 | Subduction InterSlab |
| 540586 | 1581 | 224 | 241 | 150 | 31095300 | 67455 | 1055 | 0.211% | 473.93 | 8.35 | -1.004 | 1.315 | 2.125 | 1.727 | -72.17 | -17.67 | 52.91 | Subduction InterSlab |
| 537082 | 1027 | 187 | 181 | 182 | 31082900 | 66776 | 1056 | 0.211% | 473.48 | 8.05 | 0.344 | -1.231 | -0.005 | -2.484 | -71.85 | -17.87 | 54.64 | Subduction InterSlab |
| 403098 | 1540 | 247 | 210 | 158 | 31055300 | 52694 | 1057 | 0.211% | 473.04 | 7.55 | 1.434 | 0.923 | -0.423 | -0.440 | -70.08 | -18.29 | 115.68 | Subduction IntraSlab |
| 402760 | 1629 | 252 | 210 | 172 | 31047500 | 52412 | 1058 | 0.212% | 472.59 | 7.45 | -0.596 | 1.095 | -0.082 | 0.108 | -69.87 | -18.40 | 121.80 | Subduction IntraSlab |
| 400803 | 1349 | 184 | 206 | 227 | 31046600 | 50882 | 1059 | 0.212% | 472.14 | 7.15 | -0.633 | -1.060 | 0.204 | 0.276 | -70.06 | -18.59 | 112.69 | Subduction IntraSlab |
| 539444 | 1590 | 202 | 189 | 176 | 31018400 | 67331 | 1060 | 0.212% | 471.70 | 8.25 | -0.854 | -0.866 | -0.268 | 0.004 | -71.90 | -17.82 | 54.58 | Subduction InterSlab |
| 539747 | 1553 | 256 | 211 | 141 | 31018000 | 67378 | 1061 | 0.212% | 471.25 | 8. | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 538458 | 1429 | 241 | 190 | 152 | 30648900 | 67145 | 1111 | 0.222% | 450.05 | 8.15 | -0.224 | 2.097 | 0.093 | -0.750 | -71.67 | -17.92 | 56.95 | Subduction InterSlab |
| 403386 | 1454 | 206 | 223 | 164 | 30642800 | 52938 | 1112 | 0.222% | 449.64 | 7.65 | -0.842 | -0.779 | -0.933 | -0.771 | -70.11 | -18.82 | 108.01 | Subduction IntraSlab |
| 403147 | 1559 | 247 | 216 | 169 | 30639000 | 52734 | 1113 | 0.223% | 449.24 | 7.55 | -0.580 | -1.062 | 1.137 | 0.926 | -89.95 | -18.40 | 118.74 | Subduction IntraSlab |
| 539241 | 1581 | 230 | 211 | 164 | 30629200 | 67292 | 1114 | 0.223% | 448.83 | 8.25 | 0.920 | 0.811 | 0.777 | 0.732 | -71.88 | -17.93 | 52.48 | Subduction InterSlab |
| 403666 | 1479 | 208 | 205 | 157 | 30628400 | 53185 | 1115 | 0.223% | 448.43 | 7.75 | -0.167 | -1.814 | 0.976 | 0.691 | -69.94 | -18.94 | 113.07 | Subduction IntraSlab |
| 539023 | 1680 | 246 | 225 | 191 | 30612200 | 67255 | 1116 | 0.223% | 448.03 | 8.25 | 0.766 | 2.681 | 0.827 | -1.860 | -71.91 | -17.96 | 51.03 | Subduction InterSlab |
| 400954 | 1481 | 212 | 226 | 167 | 30605200 | 51002 | 1117 | 0.223% | 447.63 | 7.15 | 0.489 | -0.449 | 0.913 | 0.414 | -70.01 | -18.11 | 120.84 | Subduction IntraSlab |
| 540091 | 1601 | 237 | 228 | 144 | 30604500 | 67410 | 1118 | 0.224% | 447.23 | 8.35 | -0.301 | 0.121 | 1.050 | -1.046 | -71.84 | -17.98 | 51.80 | Subduction InterSlab |
| 540518 | 1710 | 236 | 211 | 152 | 30589200 | 67448 | 1119 | 0.224% | 446.83 | 8.35 | -0.958 | -0.062 | 0.182 | 0.689 | -71.92 | -17.87 | 53.15 | Subduction InterSlab |
| 402707 | 1311 | 228 | 191 | 191 | 30584700 | 52365 | 1120 | 0.224% | 446.43 | 7.45 | -1.288 | 0.634 | -0.707 | 0.904 | -69.99 | -18.45 | 116.96 | Subduction IntraSlab |
| 403574 | 1511 | 216 | 187 | 172 | 30578800 | 53107 | 1121 | 0.224% | 446.03 | 7.65 | 0.696 | -0.783 | 0.298 | 1.016 | -69.36 | -18.44 | 139.71 | Subduction IntraSlab |
| 540495 | 1455 | 247 | 185 | 177 | 30564700 | 67446 | 1122 | 0.224% | 445.63 | 8.35 | 1.728 | 0.648 | 1.285 | -0.256 | -71.84 | -17.93 | 53.22 | Subduction InterSlab |
| 403158 | 1375 | 202 | 191 | 186 | 30562800 | 52743 | 1123 | 0.225% | 445.24 | 7.55 | -1.611 | -1.082 | -0.200 | -0.295 | -69.85 | -18.64 | 119.61 | Subduction IntraSlab |
| 536136 | 1647 | 191 | 211 | 150 | 30542100 | 66475 | 1124 | 0.225% | 444.84 | 7.95 | 0.239 | -1.108 | -0.122 | 0.616 | -71.55 | -17.93 | 59.22 | Subduction InterSlab |
| 539780 | 1550 | 238 | 204 | 163 | 30532700 | 67382 | 1125 | 0.225% | 444.44 | 8.35 | 0.310 | -0.022 | 0.259 | 0.446 | -72.13 | -17.82 | 50.14 | Subduction InterSlab |
| 402145 | 1402 | 218 | 212 | 184 | 30529500 | 51925 | 1126 | 0.225% | 444.05 | 7.35 | 1.263 | -0.943 | 1.551 | 0.107 | -70.06 | -18.40 | 114.73 | Subduction IntraSlab |
| 538304 | 1585 | 210 | 222 | 141 | 30527600 | 67109 | 1127 | 0.225% | 443.66 | 8.15 | 2.125 | -0.034 | -0.048 | 0.278 | -71.68 | -17.99 | 54.80 | Subduction InterSlab |
| 538791 | 1372 | 181 | 183 | 187 | 30526700 | 67216 | 1128 | 0.226% | 443.26 | 8.25 | -0.021 | -0.148 | -0.716 | -0.017 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 402803 | 1606 | 215 | 203 | 181 | 30525800 | 52451 | 1129 | 0.226% | 442.87 | 7.45 | 0.819 | -0.635 | 0.062 | 0.333 | -69.84 | -18.13 | 126.84 | Subduction IntraSlab |
| 538604 | 1622 | 249 | 226 | 145 | 30523300 | 67180 | 1130 | 0.226% | 442.48 | 8.25 | -0.472 | 1.753 | -1.130 | -0.203 | -71.91 | -18.08 | 48.18 | Subduction InterSlab |
| 401635 | 1436 | 238 | 219 | 181 | 30513700 | 51528 | 1131 | 0.226% | 442.09 | 7.25 | 0.773 | 0.868 | -0.297 | -1.526 | -70.05 | -18.01 | 120.98 | Subduction IntraSlab |
| 538711 | 1579 | 215 | 187 | 194 | 30511100 | 67072 | 1132 | 0.226% | 441.70 | 8.15 | -0.001 | 0.515 | -0.708 | -1.316 | -71.68 | -18.05 | 53.38 | Subduction InterSlab |
| 538613 | 1453 | 197 | 196 | 152 | 30501700 | 67182 | 1133 | 0.227% | 441.31 | 8.25 | -0.539 | 0.008 | 2.100 | 2.506 | -71.98 | -18.02 | 48.13 | Subduction InterSlab |
| 535961 | 1447 | 217 | 198 | 164 | 30494500 | 66409 | 1134 | 0.227% | 440.92 | 7.95 | 1.623 | 0.251 | -0.955 | 0.856 | -71.52 | -18.09 | 55.68 | Subduction InterSlab |
| 540149 | 1358 | 234 | 199 | 166 | 30494100 | 67415 | 1135 | 0.227% | 440.53 | 8.35 | 0.011 | -0.506 | -0.901 | 1.458 | -72.02 | -17.84 | 51.64 | Subduction InterSlab |
| 403230 | 1413 | 247 | 228 | 196 | 30488200 | 52805 | 1136 | 0.227% | 440.14 | 7.55 | 0.313 | 0.971 | 1.443 | 0.115 | -69.65 | -18.51 | 128.49 | Subduction IntraSlab |
| 402223 | 1508 | 247 | 216 | 160 | 30473200 | 51980 | 1137 | 0.227% | 439.75 | 7.35 | 0.686 | -0.743 | 0.208 | -1.622 | -69.99 | -18.25 | 119.55 | Subduction IntraSlab |
| 402361 | 1704 | 234 | 218 | 163 | 30471700 | 52086 | 1138 | 0.228% | 439.37 | 7.35 | -1.203 | -0.245 | 0.632 | -1.862 | -69.90 | -17.86 | 129.07 | Subduction IntraSlab |
| 402436 | 1214 | 211 | 183 | 173 | 30458000 | 52143 | 1139 | 0.228% | 438.98 | 7.35 | 0.300 | 0.995 | -0.667 | -1.349 | -69.46 | -18.38 | 137.28 | Subduction IntraSlab |
| 403482 | 1528 | 227 | 202 | 179 | 30454200 | 53023 | 1140 | 0.228% | 438.60 | 7.65 | -0.171 | 1.183 | 0.292 | -1.416 | -69.75 | -18.66 | 122.93 | Subduction IntraSlab |
| 534821 | 1319 | 172 | 186 | 165 | 30443000 | 66038 | 1141 | 0.228% | 438.21 | 7.85 | 0.701 | -0.440 | 0.240 | 0.530 | -71.38 | -18.05 | 59.42 | Subduction InterSlab |
| 400783 | 1442 | 199 | 220 | 145 | 30433800 | 50867 | 1142 | 0.228% | 437.83 | 7.15 | 0.264 | -1.127 | -0.547 | -0.417 | -70.10 | -18.52 | 111.55 | Subduction IntraSlab |
| 403440 | 1387 | 211 | 213 | 164 | 30432800 | 52988 | 1143 | 0.229% | 437.45 | 7.65 | -0.939 | -0.581 | 1.961 | -0.889 | -69.88 | -19.03 | 114.28 | Subduction IntraSlab |
| 539630 | 1804 | 244 | 195 | 173 | 30405500 | 67363 | 1144 | 0.229% | 437.06 | 8.25 | -0.496 | -0.052 | -0.100 | 0.070 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 402611 | 1424 | 184 | 190 | 186 | 30384600 | 52288 | 1145 | 0.229% | 436.68 | 7.45 | 0.861 | -1.135 | -0.807 | -1.508 | -70.09 | -18.84 | 108.62 | Subduction IntraSlab |
| 539468 | 1591 | 221 | 200 | 149 | 30359700 | 67334 | 1146 | 0.229% | 436.30 | 8.25 | -1.589 | -0.634 | 0.720 | 0.133 | -72.01 | -17.74 | 54.47 | Subduction InterSlab |
| 402687 | 1393 | 189 | 201 | 190 | 30346100 | 52348 | 1147 | 0.229% | 435.92 | 7.45 | 0.414 | -0.906 | 0.548 | 0.060 | -70.08 | -18.21 | 116.98 | Subduction IntraSlab |
| 402873 | 1586 | 211 | 195 | 210 | 30319900 | 52506 | 1148 | 0.230% | 435.54 | 7.45 | 1.005 | -1.597 | 0.677 | -1.146 | -69.57 | -18.34 | 133.69 | Subduction IntraSlab |
| 401986 | 1364 | 208 | 174 | 212 | 30316700 | 51793 | 1149 | 0.230% | 435.16 | 7.35 | 0.885 | -1.301 | -0.133 | -1.261 | -70.32 | -19.01 | 98.58 | Subduction InterSlab |
| 539839 | 1521 | 182 | 185 | 155 | 30313800 | 67388 | 1150 | 0.230% | 434.78 | 8.35 | 1.478 | 0.401 | -0.440 | 1.482 | -72.33 | -17.63 | 50.67 | Subduction InterSlab |
| 402852 | 1444 | 180 | 205 | 172 | 30304000 | 52489 | 1151 | 0.230% | 434.40 | 7.45 | -1.495 | -0.693 | -0.436 | -1.273 | -69.65 | -18.33 | 131.04 | Subduction IntraSlab |
| 403055 | 1587 | 192 | 173 | 183 | 30286800 | 52655 | 1152 | 0.230% | 434.03 | 7.55 | 0.050 | 0.045 | -1.666 | -2.054 | -70.07 | -18.85 | 109.23 | Subduction IntraSlab |
| 403388 | 1459 | 242 | 216 | 162 | 30286600 | 52939 | 1153 | 0.231% | 433.65 | 7.65 | -0.005 | 1.257 | -1.002 | 0.708 | -70.14 | -18.70 | 108.26 | Subduction IntraSlab |
| 536231 | 1557 | 199 | 210 | 162 | 30282300 | 66508 | 1154 | 0.231% | 433.28 | 7.95 | -0.080 | -1.769 | -0.849 | -0.739 | -71.51 | -17.90 | 60.68 | Subduction InterSlab |
| 540570 | 1436 | 180 | 196 | 165 | 30257900 | 67453 | 1155 | 0.231% | 432.90 | 8.35 | -0.020 | -0.846 | 0.413 | -0.265 | -72.10 | -17.73 | 52.98 | Subduction InterSlab |
| 540513 | 1534 | 223 | 187 | 150 | 30257000 | 67447 | 1156 | 0.231% | 432.53 | 8.35 | -1.266 | -1.419 | -0.732 | 0.044 | -71.88 | -17.90 | 53.19 | Subduction InterSlab |
| 402572 | 1392 | 188 | 179 | 193 | 30239500 | 52254 | 1157 | 0.231% | 432.15 | 7.45 | 0.055 | 0.432 | 1.403 | -0.183 | -70.26 | -18.29 | 109.10 | Subduction IntraSlab |
| 402177 | 1372 | 193 | 207 | 167 | 30236100 | 51951 | 1158 | 0.232% | 431.78 | 7.35 | 0.387 | 1.710 | -0.556 | 2.264 | -70.03 | -18.33 | 117.18 | Subduction IntraSlab |
| 537415 | 1243 | 239 | 182 | 180 | 30233500 | 66872 | 1159 | 0.232% | 431.41 | 8.05 | 0.094 | -0.057 | -0.193 | 0.507 | -71.49 | -17.97 | 59.29 | Subduction InterSlab |
| 402923 | 1170 | 192 | 192 | 173 | 30198000 | 52547 | 1160 | 0.232% | 431.03 | 7.45 | -1.835 | -1.953 | -0.291 | -2.034 | -69.38 | -18.42 | 139.58 | Subduction IntraSlab |
| 539753 | 1397 | 202 | 197 | 166 | 30195200 | 67379 | 1161 | 0.232% | 430.66 | 8.35 | 0.137 | 0.591 | 0.216 | -1.341 | -72.02 | -17.90 | 50.23 | Subduction InterSlab |
| 401535 | 1541 | 189 | 177 | 174 | 30194500 | 51448 | 1162 | 0.232% | 430.29 | 7.25 | -1.230 | 1.342 | -0.737 | -0.787 | -70.18 | -18.11 | 114.87 | Subduction IntraSlab |
| 540225 | 1514 | 196 | 198 | 169 | 30188100 | 67421 | 1163 | 0.233% | 429.92 | 8.35 | -1.271 | 0.774 | -1.497 | -0.225 | -72.22 | -17.66 | 52.16 | Subduction InterSlab |
| 540502 | 1478 | 270 | 174 | 172 | 30181900 | 67447 | 1164 | 0.233% | 429.55 | 8.35 | -1.071 | 0.960 | -0.350 | -0.547 | -71.88 | -17.90 | 53.19 | Subduction InterSlab |
| 539652 | 1787 | 237 | 208 | 170 | 30172100 | 67366 | 1165 | 0.233% | 429.18 | 8.25 | 0.355 | 0.080 | -0.998 | -0.201 | -71.81 | -17.87 | 55.38 | Subduction InterSlab |
| 540562 | 1489 | 237 | 185 | 151 | 30168900 | 67452 | 1166 | 0.233% | 428.82 | 8.35 | -1.215 | -0.400 | -0.462 | 0.273 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 402614 | 1554 | 220 | 174 | 198 | 30144500 | 52290 | 1167 | 0.233% | 428.45 | 7.45 | -0.345 | 1.024 | -1.989 | -1.060 | -70.12 | -18.62 | 109.61 | Subduction IntraSlab |
| 538584 | 1722 | 205 | 190 | 147 | 30140500 | 67174 | 1168 | 0.234% | 428.08 | 8.15 | -1.396 | -2.080 | 0.339 | 1.441 | -71.73 | -17.85 | 57.60 | Subduction InterSlab |
| 537412 | 1467 | 182 | 183 | 194 | 30139100 | 66871 | 1169 | 0.234% | 427.72 | 8.05 | -2.010 | -0.288 | -0.316 | -1.166 | -71.45 | -18.00 | 59.33 | Subduction InterSlab |
| 402050 | 1831 | 248 | 199 | 196 | 30130400 | 51845 | 1170 | 0.234% | 427.35 | 7.35 | 0.436 | 0.572 | -0.042 | 0.483 | -70.29 | -18.20 | 109.27 | Subduction IntraSlab |
| 538309 | 1705 | 225 | 205 | 137 | 30114400 | 67110 | 1171 | 0.234% | 426.99 | 8.15 | -0.808 | 1.118 | 0.269 | 1.396 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 539629 | 1446 | 204 | 209 | 133 | 30112500 | 67362 | 1172 | 0.234% | 426.62 | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
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TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 401754 | 1292 | 190 | 179 | 179 | 29793700 | 51623 | 1222 | 0.244% | 409.17 | 7.25 | -2.074 | -0.186 | 0.436 | 1.915 | -69.79 | -18.20 | 127.53 | Subduction IntraSlab |
| 540546 | 1706 | 215 | 194 | 158 | 29786500 | 67451 | 1223 | 0.245% | 408.83 | 8.35 | -1.780 | -1.341 | 2.377 | -1.657 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 400955 | 1629 | 221 | 162 | 184 | 29785200 | 51003 | 1224 | 0.245% | 408.50 | 7.15 | 1.333 | 0.980 | 0.546 | 1.352 | -70.04 | -18.03 | 120.95 | Subduction IntraSlab |
| 402950 | 1467 | 199 | 156 | 198 | 29780200 | 52566 | 1225 | 0.245% | 408.16 | 7.45 | 1.278 | -0.452 | -0.559 | 2.289 | -69.70 | -17.71 | 138.64 | Subduction IntraSlab |
| 402538 | 1564 | 223 | 209 | 158 | 29775400 | 52226 | 1226 | 0.245% | 407.83 | 7.45 | 1.343 | 0.231 | 0.445 | -0.437 | -70.28 | -18.45 | 106.03 | Subduction IntraSlab |
| 402179 | 1380 | 211 | 208 | 166 | 29758200 | 51953 | 1227 | 0.245% | 407.50 | 7.35 | -0.223 | 2.041 | 0.959 | -0.030 | -70.10 | -18.07 | 118.38 | Subduction InterSlab |
| 536315 | 1717 | 227 | 198 | 154 | 29753000 | 66538 | 1228 | 0.246% | 407.17 | 7.95 | -2.205 | 0.472 | -0.438 | -0.524 | -71.42 | -17.93 | 61.51 | Subduction InterSlab |
| 534613 | 1526 | 190 | 201 | 154 | 29751300 | 65974 | 1229 | 0.246% | 406.83 | 7.85 | 0.683 | 1.310 | 0.116 | -0.180 | -71.46 | -18.13 | 55.74 | Subduction InterSlab |
| 540699 | 1436 | 227 | 213 | 142 | 29746400 | 67465 | 1230 | 0.246% | 406.50 | 8.35 | 1.711 | 2.417 | -0.140 | -2.181 | -71.86 | -17.88 | 53.91 | Subduction InterSlab |
| 403439 | 1293 | 190 | 209 | 148 | 29745900 | 52987 | 1231 | 0.246% | 406.17 | 7.65 | 0.112 | -1.099 | 0.040 | 0.546 | -69.86 | -19.14 | 114.10 | Subduction InterSlab |
| 538585 | 1341 | 178 | 183 | 190 | 29733700 | 67175 | 1232 | 0.246% | 405.84 | 8.15 | -0.188 | 0.654 | 1.118 | -1.067 | -71.76 | -17.82 | 57.56 | Subduction InterSlab |
| 539435 | 1397 | 196 | 202 | 154 | 29733300 | 67330 | 1233 | 0.247% | 405.52 | 8.25 | -1.553 | 0.798 | -1.113 | 0.034 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 539632 | 1496 | 231 | 194 | 147 | 29727600 | 67363 | 1234 | 0.247% | 405.19 | 8.25 | -0.825 | 0.831 | -2.220 | 0.090 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 539787 | 1297 | 212 | 185 | 155 | 29721900 | 67383 | 1235 | 0.247% | 404.86 | 8.35 | 1.474 | 0.184 | -1.289 | -1.024 | -72.16 | -17.79 | 50.11 | Subduction InterSlab |
| 401345 | 1474 | 209 | 206 | 187 | 29716300 | 51299 | 1236 | 0.247% | 404.53 | 7.25 | 1.017 | 0.131 | 1.582 | 0.623 | -70.38 | -18.45 | 102.11 | Subduction IntraSlab |
| 539070 | 1426 | 195 | 199 | 138 | 29713800 | 67263 | 1237 | 0.247% | 404.20 | 8.25 | 1.899 | 0.612 | 1.309 | 0.694 | -72.19 | -17.71 | 51.50 | Subduction InterSlab |
| 402093 | 1361 | 223 | 196 | 167 | 29713200 | 51879 | 1238 | 0.248% | 403.88 | 7.35 | -0.185 | 1.291 | 0.434 | -1.830 | -70.14 | -18.54 | 109.75 | Subduction IntraSlab |
| 540561 | 1684 | 208 | 172 | 187 | 29705200 | 67452 | 1239 | 0.248% | 403.55 | 8.35 | -0.587 | -0.413 | 1.229 | 1.133 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 538053 | 1380 | 236 | 191 | 168 | 29700000 | 67038 | 1240 | 0.248% | 403.23 | 8.15 | -0.748 | 0.457 | 0.168 | -1.118 | -71.75 | -18.06 | 51.89 | Subduction InterSlab |
| 539826 | 1666 | 234 | 177 | 172 | 29695400 | 67386 | 1241 | 0.248% | 402.90 | 8.35 | 0.082 | -0.392 | 0.666 | -0.658 | -72.26 | -17.89 | 50.73 | Subduction InterSlab |
| 540703 | 1480 | 198 | 191 | 154 | 29694200 | 67466 | 1242 | 0.248% | 402.58 | 8.35 | 0.267 | 0.490 | 0.487 | -0.832 | -71.90 | -17.85 | 53.88 | Subduction InterSlab |
| 537197 | 1252 | 186 | 157 | 174 | 29688200 | 66809 | 1243 | 0.249% | 402.25 | 8.05 | 0.037 | 0.673 | 0.279 | -0.868 | -71.78 | -17.96 | 56.13 | Subduction InterSlab |
| 539811 | 1386 | 208 | 200 | 144 | 29686800 | 67385 | 1244 | 0.249% | 401.93 | 8.35 | 1.497 | -0.999 | 0.326 | 1.185 | -72.22 | -17.71 | 50.76 | Subduction InterSlab |
| 401154 | 1465 | 207 | 194 | 164 | 29678000 | 51154 | 1245 | 0.249% | 401.61 | 7.15 | 1.733 | -0.450 | -1.829 | -1.005 | -69.76 | -18.07 | 130.75 | Subduction IntraSlab |
| 536070 | 1222 | 184 | 155 | 188 | 29673800 | 66450 | 1246 | 0.249% | 401.28 | 7.95 | -0.548 | -0.342 | 0.986 | 0.504 | -71.76 | -17.82 | 57.56 | Subduction InterSlab |
| 402200 | 1395 | 212 | 221 | 149 | 29672300 | 51964 | 1247 | 0.249% | 400.96 | 7.35 | -0.578 | 0.753 | -0.778 | 0.327 | -70.02 | -18.27 | 118.42 | Subduction IntraSlab |
| 537075 | 1532 | 168 | 172 | 178 | 29665500 | 66775 | 1248 | 0.250% | 400.64 | 8.05 | 1.041 | -0.872 | 0.028 | -1.263 | -71.81 | -17.89 | 54.68 | Subduction InterSlab |
| 540511 | 1642 | 241 | 213 | 134 | 29657400 | 67447 | 1249 | 0.250% | 400.32 | 8.35 | -0.146 | -0.230 | 0.964 | -0.586 | -71.88 | -17.90 | 53.19 | Subduction InterSlab |
| 536639 | 1370 | 161 | 185 | 161 | 29656000 | 66640 | 1250 | 0.250% | 400.00 | 8.05 | 1.057 | -0.160 | 0.182 | 0.193 | -71.76 | -18.16 | 49.01 | Subduction InterSlab |
| 402660 | 1118 | 166 | 162 | 224 | 29649500 | 52328 | 1251 | 0.250% | 399.68 | 7.45 | 0.053 | 0.440 | 0.178 | -1.413 | -70.00 | -18.84 | 111.83 | Subduction IntraSlab |
| 402844 | 1388 | 183 | 194 | 181 | 29644800 | 52483 | 1252 | 0.250% | 399.36 | 7.45 | -0.883 | 0.696 | -0.017 | 0.237 | -69.77 | -18.13 | 129.74 | Subduction InterSlab |
| 538180 | 1566 | 220 | 211 | 132 | 29648000 | 67074 | 1253 | 0.251% | 399.04 | 8.15 | -1.401 | 1.528 | -0.446 | -1.231 | -71.74 | -17.98 | 54.04 | Subduction InterSlab |
| 538064 | 1491 | 216 | 198 | 152 | 29643400 | 67043 | 1254 | 0.251% | 398.72 | 8.15 | -0.129 | 0.354 | 1.672 | -0.565 | -71.95 | -17.87 | 52.41 | Subduction InterSlab |
| 536239 | 1276 | 201 | 200 | 167 | 29625000 | 66510 | 1255 | 0.251% | 398.41 | 7.95 | 1.358 | -1.083 | -0.624 | -1.283 | -71.59 | -17.84 | 60.59 | Subduction InterSlab |
| 402024 | 1406 | 200 | 191 | 171 | 29624700 | 51823 | 1256 | 0.251% | 398.09 | 7.35 | 0.474 | 1.427 | -0.669 | 2.196 | -70.30 | -18.57 | 103.48 | Subduction IntraSlab |
| 403095 | 1535 | 212 | 201 | 185 | 29619200 | 52691 | 1257 | 0.251% | 397.77 | 7.55 | -1.067 | -0.135 | 0.887 | -0.371 | -69.95 | -18.88 | 113.11 | Subduction IntraSlab |
| 540552 | 1328 | 193 | 170 | 172 | 29614200 | 67451 | 1258 | 0.252% | 397.46 | 8.35 | -0.254 | 0.673 | -1.431 | 0.434 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 402722 | 1359 | 226 | 199 | 179 | 29609500 | 52379 | 1259 | 0.252% | 397.14 | 7.45 | 0.743 | -0.540 | 0.668 | -0.015 | -70.03 | -18.15 | 119.73 | Subduction IntraSlab |
| 540218 | 1781 | 173 | 177 | 165 | 29594900 | 67421 | 1260 | 0.252% | 396.83 | 8.35 | -0.260 | 1.312 | -0.835 | -0.238 | -72.22 | -17.66 | 52.16 | Subduction InterSlab |
| 537487 | 1581 | 223 | 189 | 171 | 29580300 | 66895 | 1261 | 0.252% | 396.51 | 8.05 | 0.866 | 1.160 | -0.258 | 0.694 | -71.47 | -17.95 | 60.02 | Subduction InterSlab |
| 403144 | 1591 | 193 | 186 | 200 | 29569900 | 52731 | 1262 | 0.252% | 396.20 | 7.55 | -0.615 | -0.583 | -0.860 | 0.514 | -69.88 | -18.66 | 118.33 | Subduction IntraSlab |
| 540564 | 1830 | 279 | 225 | 155 | 29569200 | 67452 | 1263 | 0.253% | 395.88 | 8.35 | -0.905 | -0.145 | 0.293 | -0.830 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 537184 | 1436 | 210 | 182 | 163 | 29566500 | 66804 | 1264 | 0.253% | 395.57 | 8.05 | 0.583 | -0.112 | 0.903 | -0.365 | -71.56 | -18.03 | 56.36 | Subduction InterSlab |
| 538191 | 1563 | 236 | 190 | 147 | 29564800 | 67077 | 1265 | 0.253% | 395.26 | 8.15 | 0.029 | -0.695 | -0.329 | 1.282 | -71.85 | -17.90 | 53.93 | Subduction InterSlab |
| 539694 | 1395 | 200 | 190 | 149 | 29556000 | 67372 | 1266 | 0.253% | 394.94 | 8.25 | 0.411 | 2.271 | 0.185 | -1.745 | -72.03 | -17.70 | 55.16 | Subduction InterSlab |
| 537315 | 1583 | 204 | 219 | 144 | 29542400 | 66842 | 1267 | 0.253% | 394.63 | 8.05 | -1.914 | -1.169 | 0.826 | 1.059 | -71.71 | -17.86 | 57.62 | Subduction InterSlab |
| 401820 | 1365 | 167 | 176 | 189 | 29521900 | 51668 | 1268 | 0.254% | 394.32 | 7.25 | -0.394 | 0.586 | 0.591 | -0.717 | -69.71 | -18.12 | 132.08 | Subduction IntraSlab |
| 401841 | 1524 | 213 | 223 | 145 | 29509700 | 51681 | 1269 | 0.254% | 394.01 | 7.25 | 0.697 | 0.136 | 2.241 | -1.050 | -69.58 | -18.32 | 133.59 | Subduction IntraSlab |
| 537926 | 1536 | 208 | 196 | 151 | 29506800 | 67004 | 1270 | 0.254% | 393.70 | 8.15 | -0.742 | -1.338 | 1.703 | -0.531 | -71.78 | -18.09 | 50.43 | Subduction InterSlab |
| 401766 | 1343 | 191 | 192 | 204 | 29498100 | 51629 | 1271 | 0.254% | 393.39 | 7.25 | 0.682 | -0.317 | -1.312 | -1.589 | -69.70 | -18.33 | 129.13 | Subduction IntraSlab |
| 403275 | 1409 | 226 | 213 | 144 | 29497000 | 52843 | 1272 | 0.254% | 393.08 | 7.55 | -0.546 | 0.853 | -0.044 | -0.447 | -69.49 | -18.53 | 133.99 | Subduction IntraSlab |
| 402440 | 1479 | 187 | 188 | 182 | 29495200 | 52147 | 1273 | 0.255% | 392.77 | 7.35 | 0.460 | 1.132 | 1.036 | -0.838 | -69.71 | -17.87 | 135.67 | Subduction IntraSlab |
| 402108 | 1125 | 203 | 200 | 158 | 29493400 | 51893 | 1274 | 0.255% | 392.46 | 7.35 | 0.320 | 0.591 | 1.824 | -0.052 | -70.10 | -18.66 | 110.17 | Subduction IntraSlab |
| 537492 | 1468 | 226 | 207 | 141 | 29492500 | 66898 | 1275 | 0.255% | 392.16 | 8.05 | 0.021 | -0.832 | -0.837 | -1.325 | -71.58 | -17.87 | 59.89 | Subduction InterSlab |
| 537319 | 1459 | 162 | 164 | 190 | 29490700 | 66843 | 1276 | 0.255% | 391.85 | 8.05 | -1.824 | -1.129 | -0.525 | 2.474 | -71.74 | -17.83 | 57.58 | Subduction InterSlab |
| 402533 | 1667 | 199 | 181 | 177 | 29480500 | 52221 | 1277 | 0.255% | 391.54 | 7.45 | 0.379 | 1.452 | 0.036 | -0.973 | -70.25 | -18.07 | 102.26 | Subduction IntraSlab |
| 537066 | 1310 | 221 | 197 | 135 | 29478800 | 66771 | 1278 | 0.256% | 391.24 | 8.05 | -1.418 | -0.146 | -0.430 | -1.424 | -71.66 | -18.01 | 54.82 | Subduction InterSlab |
| 539279 | 1269 | 167 | 156 | 184 | 29469200 | 67301 | 1279 | 0.256% | 390.93 | 8.25 | 0.314 | 0.820 | 0.220 | 0.672 | -72.19 | -17.66 | 52.90 | Subduction InterSlab |
| 537956 | 1236 | 162 | 212 | 159 | 29456400 | 67011 | 1280 | 0.256% | 390.63 | 8.15 | 0.049 | 0.894 | -1.653 | 0.230 | -72.02 | -17.87 | 50.94 | Subduction InterSlab |
| 401910 | 1465 | 218 | 200 | 194 | 29448600 | 51737 | 1281 | 0.256% | 390.32 | 7.25 | 2.044 | -1.002 | -0.914 | 0.802 | -69.74 | -17.74 | 136.62 | Subduction IntraSlab |
| 402564 | 1593 | 226 | 214 | 148 | 29444800 | 52248 | 1282 | 0.256% | 390.02 | 7.45 | 0.307 | 0.368 | 1.606 | -1.022 | -70.19 | -18.84 | 104.83 | Subduction IntraSlab |
| 538464 | 1417 | 198 | 206 | 139 | 29427000 | 67146 | 1283 | 0.257% | 389.71 | 8.15 | 1.226 | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 539022 | 1521 | 240 | 216 | 132 | 29178500 | 67255 | 1333 | 0.267% | 375.09 | 8.25 | -0.016 | 0.843 | -0.485 | -0.434 | -71.91 | -17.96 | 51.03 | Subduction InterSlab |
| 535025 | 1324 | 193 | 176 | 159 | 29171300 | 66108 | 1334 | 0.267% | 374.81 | 7.85 | 0.557 | 1.168 | -0.733 | -0.848 | -71.53 | -17.82 | 62.07 | Subduction InterSlab |
| 540545 | 1409 | 189 | 195 | 159 | 29161300 | 67451 | 1335 | 0.267% | 374.53 | 8.35 | -0.912 | -0.417 | -0.195 | 0.909 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 402441 | 1401 | 180 | 183 | 187 | 29158000 | 52148 | 1336 | 0.267% | 374.25 | 7.35 | -0.405 | 1.661 | -0.715 | -1.161 | -69.74 | -17.83 | 135.45 | Subduction IntraSlab |
| 399850 | 1446 | 206 | 180 | 169 | 29145300 | 50237 | 1337 | 0.267% | 373.97 | 7.05 | -0.824 | -0.762 | -0.478 | -1.136 | -70.14 | -18.28 | 113.63 | Subduction InterSlab |
| 532280 | 1621 | 195 | 178 | 177 | 29137800 | 65181 | 1338 | 0.268% | 373.69 | 7.65 | 0.145 | 0.618 | 1.460 | -1.290 | -71.28 | -17.93 | 64.54 | Subduction InterSlab |
| 537293 | 1531 | 222 | 204 | 150 | 29137400 | 66837 | 1339 | 0.268% | 373.41 | 8.05 | 1.049 | -0.366 | -0.226 | -1.879 | -71.52 | -18.00 | 57.82 | Subduction InterSlab |
| 540152 | 1504 | 213 | 204 | 147 | 29132400 | 67415 | 1340 | 0.268% | 373.13 | 8.35 | 0.433 | 0.940 | -0.281 | 0.897 | -72.02 | -17.84 | 51.64 | Subduction InterSlab |
| 402854 | 1451 | 202 | 219 | 147 | 29130200 | 52491 | 1341 | 0.268% | 372.86 | 7.45 | -1.210 | -0.488 | -1.100 | -0.400 | -69.79 | -17.98 | 131.04 | Subduction IntraSlab |
| 537943 | 1293 | 210 | 183 | 164 | 29124900 | 67008 | 1342 | 0.268% | 372.58 | 8.15 | 1.535 | 2.214 | 1.501 | -0.449 | -71.91 | -17.96 | 51.03 | Subduction InterSlab |
| 402175 | 1548 | 248 | 207 | 163 | 29117500 | 51950 | 1343 | 0.269% | 372.30 | 7.35 | -0.561 | 1.426 | 1.851 | -0.466 | -70.02 | -18.37 | 116.48 | Subduction IntraSlab |
| 536129 | 1385 | 175 | 195 | 179 | 29111000 | 66473 | 1344 | 0.269% | 372.02 | 7.95 | -1.554 | -0.810 | 0.334 | 1.521 | -71.45 | -18.03 | 58.62 | Subduction InterSlab |
| 402004 | 1464 | 228 | 205 | 178 | 29096600 | 51808 | 1345 | 0.269% | 371.75 | 7.35 | 2.058 | -0.263 | 2.151 | 0.570 | -70.33 | -18.37 | 105.19 | Subduction IntraSlab |
| 539231 | 1478 | 201 | 210 | 166 | 29096000 | 67290 | 1346 | 0.269% | 371.47 | 8.25 | 0.781 | -0.374 | 0.698 | 0.204 | -71.81 | -17.98 | 52.55 | Subduction InterSlab |
| 402980 | 1388 | 229 | 197 | 154 | 29086300 | 52593 | 1347 | 0.269% | 371.20 | 7.55 | -0.637 | -0.042 | 0.480 | -0.069 | -70.27 | -18.95 | 100.73 | Subduction IntraSlab |
| 402111 | 1453 | 195 | 174 | 169 | 29082700 | 51896 | 1348 | 0.270% | 370.92 | 7.35 | -1.141 | 0.172 | -0.511 | 0.480 | -70.15 | -18.41 | 111.45 | Subduction IntraSlab |
| 539267 | 1603 | 248 | 180 | 178 | 29068500 | 67298 | 1349 | 0.270% | 370.64 | 8.25 | 0.145 | 0.614 | -0.102 | 0.029 | -72.08 | -17.74 | 53.00 | Subduction InterSlab |
| 539074 | 1344 | 184 | 191 | 148 | 29066600 | 67264 | 1350 | 0.270% | 370.37 | 8.25 | -0.466 | 0.349 | 0.428 | 0.284 | -72.22 | -17.69 | 51.46 | Subduction InterSlab |
| 403182 | 1591 | 246 | 184 | 137 | 29064500 | 52763 | 1351 | 0.270% | 370.10 | 7.55 | -0.443 | -1.376 | 0.124 | -0.869 | -69.73 | -18.72 | 123.05 | Subduction IntraSlab |
| 539677 | 1676 | 231 | 197 | 139 | 29057000 | 67370 | 1352 | 0.270% | 369.82 | 8.25 | 0.837 | -1.649 | 0.945 | 1.301 | -71.96 | -17.75 | 55.23 | Subduction InterSlab |
| 399689 | 1454 | 201 | 158 | 208 | 29055700 | 50128 | 1353 | 0.271% | 369.55 | 7.05 | 1.063 | -1.259 | 0.236 | -1.192 | -70.29 | -18.29 | 108.18 | Subduction IntraSlab |
| 401797 | 1461 | 181 | 172 | 167 | 29044100 | 51652 | 1354 | 0.271% | 369.28 | 7.25 | -0.430 | -0.431 | 1.078 | -0.355 | -69.67 | -18.26 | 131.37 | Subduction IntraSlab |
| 402204 | 1678 | 222 | 194 | 176 | 29026900 | 51967 | 1355 | 0.271% | 369.00 | 7.35 | 0.091 | 0.733 | -0.555 | -0.593 | -70.06 | -18.10 | 119.32 | Subduction IntraSlab |
| 540555 | 1495 | 247 | 213 | 120 | 29023300 | 67452 | 1356 | 0.271% | 368.73 | 8.35 | -0.571 | 0.589 | 0.907 | -1.402 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 536766 | 1347 | 196 | 174 | 155 | 29020800 | 66676 | 1357 | 0.271% | 368.46 | 8.05 | 0.315 | 0.097 | -0.095 | 0.086 | -71.84 | -18.04 | 50.38 | Subduction InterSlab |
| 402290 | 1349 | 180 | 206 | 160 | 29012800 | 52032 | 1358 | 0.272% | 368.19 | 7.35 | -0.505 | -0.214 | 0.520 | -1.190 | -69.81 | -18.39 | 124.26 | Subduction IntraSlab |
| 540688 | 1518 | 230 | 182 | 165 | 29010600 | 67464 | 1359 | 0.272% | 367.92 | 8.35 | 0.651 | -0.395 | 0.283 | 0.653 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 403239 | 1469 | 204 | 212 | 130 | 29005600 | 52813 | 1360 | 0.272% | 367.65 | 7.55 | 1.396 | 0.568 | 0.017 | -0.093 | -69.73 | -18.19 | 129.89 | Subduction IntraSlab |
| 540696 | 1454 | 234 | 210 | 146 | 29000900 | 67465 | 1361 | 0.272% | 367.38 | 8.35 | -0.644 | 1.833 | -0.793 | 0.629 | -71.86 | -17.88 | 53.91 | Subduction InterSlab |
| 402078 | 1546 | 223 | 200 | 161 | 28998900 | 51868 | 1362 | 0.272% | 367.11 | 7.35 | -0.364 | 0.363 | 1.177 | 0.958 | -70.19 | -18.48 | 108.90 | Subduction IntraSlab |
| 538188 | 1617 | 220 | 179 | 141 | 28993000 | 67076 | 1363 | 0.273% | 366.84 | 8.15 | -0.320 | 1.259 | 0.056 | 0.003 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 399087 | 850 | 128 | 146 | 223 | 28992100 | 49761 | 1364 | 0.273% | 366.57 | 6.95 | 0.754 | 0.140 | -0.444 | 0.297 | -69.99 | -18.72 | 126.44 | Subduction IntraSlab |
| 399972 | 1293 | 167 | 157 | 205 | 28984300 | 50313 | 1365 | 0.273% | 366.30 | 7.05 | -1.507 | 0.025 | 0.535 | -1.526 | -69.98 | -18.47 | 116.96 | Subduction InterSlab |
| 402357 | 1111 | 172 | 182 | 181 | 28981800 | 52083 | 1366 | 0.273% | 366.03 | 7.35 | 1.508 | 0.061 | 0.586 | 0.109 | -69.77 | -18.16 | 129.22 | Subduction IntraSlab |
| 539770 | 1508 | 235 | 186 | 180 | 28978800 | 67380 | 1367 | 0.273% | 365.76 | 8.35 | 0.533 | 0.702 | 0.220 | 0.269 | -72.06 | -17.87 | 50.20 | Subduction InterSlab |
| 540112 | 1275 | 205 | 180 | 162 | 28966200 | 67411 | 1368 | 0.274% | 365.50 | 8.35 | 0.450 | -0.098 | 0.525 | -1.133 | -71.88 | -17.96 | 51.77 | Subduction InterSlab |
| 403236 | 1375 | 198 | 198 | 157 | 28963000 | 52810 | 1369 | 0.274% | 365.23 | 7.55 | 0.381 | -0.026 | 0.264 | 1.010 | -69.58 | -18.58 | 130.09 | Subduction IntraSlab |
| 401649 | 1494 | 175 | 173 | 173 | 28941600 | 51540 | 1370 | 0.274% | 364.96 | 7.25 | 1.099 | 1.849 | -0.798 | -0.265 | -69.91 | -18.38 | 120.53 | Subduction IntraSlab |
| 539021 | 1400 | 210 | 186 | 145 | 28941600 | 67255 | 1371 | 0.274% | 364.70 | 8.25 | -0.749 | 0.922 | -0.488 | 1.847 | -71.91 | -17.96 | 51.03 | Subduction InterSlab |
| 537523 | 1328 | 183 | 164 | 186 | 28921500 | 66905 | 1372 | 0.274% | 364.43 | 8.15 | -0.508 | -0.404 | -0.151 | 0.709 | -71.98 | -18.08 | 46.70 | Subduction InterSlab |
| 402536 | 1251 | 163 | 190 | 178 | 28920000 | 52224 | 1373 | 0.275% | 364.17 | 7.45 | -0.851 | -0.234 | 0.318 | 0.715 | -70.26 | -18.70 | 103.47 | Subduction IntraSlab |
| 403642 | 1448 | 191 | 157 | 198 | 28918100 | 53166 | 1374 | 0.275% | 363.90 | 7.75 | 0.410 | 1.071 | 1.000 | -0.722 | -70.06 | -18.89 | 109.16 | Subduction InterSlab |
| 540634 | 1649 | 202 | 168 | 162 | 28917100 | 67459 | 1375 | 0.275% | 363.64 | 8.35 | 1.595 | 1.376 | 0.166 | 0.415 | -72.32 | -17.56 | 52.77 | Subduction InterSlab |
| 537438 | 1339 | 220 | 190 | 151 | 28905300 | 66879 | 1376 | 0.275% | 363.37 | 8.05 | -0.727 | -0.477 | 0.360 | -0.388 | -71.75 | -17.78 | 58.99 | Subduction InterSlab |
| 538597 | 1394 | 217 | 201 | 130 | 28903400 | 67178 | 1377 | 0.275% | 363.11 | 8.25 | -0.410 | -1.812 | 0.166 | -0.786 | -71.83 | -18.13 | 48.24 | Subduction InterSlab |
| 403396 | 1398 | 242 | 199 | 145 | 28903300 | 52946 | 1378 | 0.276% | 362.84 | 7.65 | 1.171 | 0.797 | -0.571 | -0.935 | -70.08 | -18.30 | 108.50 | Subduction IntraSlab |
| 403012 | 1484 | 220 | 182 | 186 | 28894100 | 52620 | 1379 | 0.276% | 362.58 | 7.55 | 0.114 | 0.017 | -0.034 | 1.082 | -70.23 | -18.48 | 107.29 | Subduction IntraSlab |
| 402674 | 1490 | 197 | 196 | 167 | 28892800 | 52341 | 1380 | 0.276% | 362.32 | 7.45 | 1.002 | -0.894 | 0.968 | 0.414 | -70.12 | -18.14 | 116.70 | Subduction IntraSlab |
| 402141 | 1305 | 194 | 184 | 177 | 28889300 | 51923 | 1381 | 0.276% | 362.06 | 7.35 | 1.667 | 0.071 | -1.343 | -2.119 | -70.02 | -18.61 | 113.90 | Subduction IntraSlab |
| 403175 | 1613 | 180 | 212 | 137 | 28875900 | 52756 | 1382 | 0.276% | 361.79 | 7.55 | 0.223 | 1.593 | 0.422 | 0.634 | -69.78 | -18.70 | 121.66 | Subduction InterSlab |
| 539626 | 1661 | 229 | 163 | 171 | 28875700 | 67362 | 1383 | 0.277% | 361.53 | 8.25 | 2.053 | -0.018 | 1.464 | -0.771 | -71.67 | -17.98 | 55.53 | Subduction InterSlab |
| 401060 | 1493 | 196 | 196 | 151 | 28867100 | 51083 | 1384 | 0.277% | 361.27 | 7.15 | 0.679 | -0.627 | 0.607 | 0.586 | -69.92 | -17.99 | 126.13 | Subduction IntraSlab |
| 540186 | 1563 | 234 | 209 | 123 | 28866000 | 67418 | 1385 | 0.277% | 361.01 | 8.35 | -0.134 | 0.595 | 0.700 | 0.926 | -72.13 | -17.76 | 51.55 | Subduction InterSlab |
| 402837 | 1244 | 233 | 198 | 160 | 28851900 | 52478 | 1386 | 0.277% | 360.75 | 7.45 | 0.629 | 0.508 | -1.134 | 0.792 | -69.62 | -18.47 | 130.32 | Subduction IntraSlab |
| 402158 | 1392 | 208 | 196 | 171 | 28848200 | 51936 | 1387 | 0.277% | 360.49 | 7.35 | 1.278 | -1.464 | -0.039 | -1.101 | -70.01 | -18.51 | 115.15 | Subduction IntraSlab |
| 538332 | 1510 | 238 | 214 | 131 | 28847000 | 67115 | 1388 | 0.278% | 360.23 | 8.15 | -1.848 | 1.131 | 0.279 | 0.693 | -71.89 | -17.81 | 55.31 | Subduction InterSlab |
| 540528 | 1353 | 224 | 185 | 153 | 28844300 | 67449 | 1389 | 0.278% | 359.97 | 8.35 | -1.615 | -0.126 | 0.886 | -0.627 | -71.95 | -17.84 | 53.12 | Subduction InterSlab |
| 532361 | 1404 | 167 | 155 | 182 | 28842700 | 65210 | 1390 | 0.278% | 359.71 | 7.65 | -0.392 | 0.348 | 1.298 | 0.742 | -71.26 | -17.91 | 65.28 | Subduction InterSlab |
| 538638 | 1402 | 194 | 187 | 152 | 28835500 | 67188 | 1391 | 0.278% | 359.45 | 8.25 | -0.967 | -0.153 | 0.255 | -1.883 | -72.18 | -17.83 | 48.69 | Subduction InterSlab |
| 540675 | 1549 | 223 | 206 | 147 | 28832300 | 67463 | 1392 | 0.278% | 359.20 | 8.35 | -0.873 | 0.222 | -1.081 | 0.235 | -71.79 | -17.94 | 53.98 | Subduction InterSlab |
| 401503 | 1416 | 204 | 178 | 174 | 28822200 | 51425 | 1393 | 0.279% | 358.94 | 7.25 | 0.251 | 1.856 | 0.007 | -0.790 | -70.12 | -18.14 | 110.99 | Subduction IntraSlab |
| 402539 | 1474 | 186 | 208 | 154 | 28819500 | 52227 | 1394 | 0.279% | 358.68 | 7.45 | -0. | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 539219 | 1513 | 240 | 178 | 134 | 28548000 | 67288 | 1444 | 0.289% | 346.26 | 8.25 | -0.909 | 0.189 | 0.460 | -1.073 | -71.73 | -18.04 | 52.61 | Subduction InterSlab |
| 540505 | 1524 | 222 | 187 | 139 | 28546500 | 67447 | 1445 | 0.289% | 346.02 | 8.35 | 2.086 | -0.946 | -0.982 | 1.501 | -71.88 | -17.90 | 53.19 | Subduction InterSlab |
| 535103 | 1480 | 192 | 178 | 170 | 28545200 | 66136 | 1446 | 0.289% | 345.78 | 8.55 | -0.126 | 0.008 | -0.730 | -0.098 | -71.37 | -17.92 | 63.00 | Subduction InterSlab |
| 402550 | 1431 | 198 | 176 | 152 | 28543000 | 52237 | 1447 | 0.289% | 345.54 | 7.45 | 0.248 | 0.804 | 0.676 | -0.532 | -70.23 | -18.82 | 103.68 | Subduction IntraSlab |
| 538603 | 1519 | 236 | 198 | 128 | 28535900 | 67180 | 1448 | 0.290% | 345.30 | 8.25 | 2.101 | -0.121 | -1.238 | -2.217 | -71.91 | -18.08 | 48.18 | Subduction InterSlab |
| 538056 | 1360 | 198 | 196 | 143 | 28512900 | 67040 | 1449 | 0.290% | 345.07 | 8.15 | 0.795 | -0.434 | -1.657 | 0.450 | -71.81 | -17.98 | 52.55 | Subduction InterSlab |
| 402664 | 1155 | 211 | 179 | 159 | 28512500 | 52332 | 1450 | 0.290% | 344.83 | 7.45 | -1.697 | -2.745 | -0.448 | 0.450 | -70.08 | -18.46 | 113.39 | Subduction IntraSlab |
| 402569 | 1542 | 210 | 202 | 156 | 28510500 | 52252 | 1451 | 0.290% | 344.59 | 7.45 | 0.905 | 1.670 | -0.291 | -1.959 | -70.22 | -18.54 | 106.87 | Subduction InterSlab |
| 539865 | 1339 | 174 | 185 | 149 | 28509500 | 67390 | 1452 | 0.290% | 344.35 | 8.35 | -0.422 | 1.590 | 1.941 | 1.478 | -72.40 | -17.58 | 50.61 | Subduction InterSlab |
| 537921 | 1492 | 204 | 195 | 150 | 28507400 | 67003 | 1453 | 0.291% | 344.12 | 8.15 | 0.660 | 1.281 | 0.343 | -1.027 | -71.75 | -18.11 | 50.46 | Subduction InterSlab |
| 537299 | 1331 | 233 | 187 | 151 | 28506400 | 66838 | 1454 | 0.291% | 343.88 | 8.05 | 0.453 | -1.324 | 0.407 | -0.452 | -71.56 | -17.97 | 57.78 | Subduction InterSlab |
| 402370 | 1457 | 212 | 207 | 161 | 28500000 | 52093 | 1455 | 0.291% | 343.64 | 7.35 | -0.334 | 0.424 | 1.508 | -0.436 | -69.69 | -18.27 | 130.17 | Subduction IntraSlab |
| 402761 | 1444 | 217 | 180 | 162 | 28489000 | 52413 | 1456 | 0.291% | 343.41 | 7.45 | -1.803 | 1.938 | 0.359 | 1.471 | -69.89 | -18.36 | 121.73 | Subduction IntraSlab |
| 402081 | 1265 | 239 | 178 | 147 | 28483400 | 51871 | 1457 | 0.291% | 343.17 | 7.35 | -0.575 | -0.234 | 0.893 | 0.528 | -70.23 | -18.16 | 111.70 | Subduction IntraSlab |
| 539685 | 1505 | 219 | 166 | 165 | 28483100 | 67371 | 1458 | 0.292% | 342.94 | 8.25 | -0.810 | -1.798 | -0.979 | 2.118 | -72.00 | -17.73 | 55.19 | Subduction InterSlab |
| 403204 | 1570 | 207 | 191 | 156 | 28472000 | 52782 | 1459 | 0.292% | 342.70 | 7.55 | -0.259 | -0.109 | 0.306 | 0.407 | -69.66 | -18.66 | 126.30 | Subduction InterSlab |
| 539240 | 1531 | 213 | 212 | 131 | 28470600 | 67292 | 1460 | 0.292% | 342.47 | 8.25 | 1.302 | -0.431 | 0.229 | 1.461 | -71.88 | -17.93 | 52.48 | Subduction InterSlab |
| 538177 | 1215 | 210 | 176 | 156 | 28464100 | 67073 | 1461 | 0.292% | 342.23 | 8.15 | 1.673 | -1.060 | 0.885 | 0.155 | -71.72 | -18.02 | 53.34 | Subduction InterSlab |
| 538192 | 1809 | 230 | 181 | 144 | 28462900 | 67077 | 1462 | 0.292% | 342.00 | 8.15 | -0.135 | -0.137 | -0.189 | -0.324 | -71.85 | -17.90 | 53.93 | Subduction InterSlab |
| 403326 | 1499 | 195 | 170 | 157 | 28456900 | 52884 | 1463 | 0.293% | 341.76 | 7.65 | -0.933 | -0.374 | 0.164 | 1.247 | -70.31 | -19.18 | 97.14 | Subduction InterSlab |
| 538796 | 1376 | 189 | 181 | 166 | 28452200 | 67216 | 1464 | 0.293% | 341.53 | 8.25 | 2.000 | -0.348 | -0.406 | 1.934 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 403044 | 1211 | 206 | 185 | 161 | 28447200 | 52647 | 1465 | 0.293% | 341.30 | 7.55 | 1.414 | -0.404 | 0.899 | 1.279 | -70.11 | -18.82 | 100.81 | Subduction InterSlab |
| 536663 | 1248 | 161 | 159 | 166 | 28441800 | 66644 | 1466 | 0.293% | 341.06 | 8.05 | -0.998 | 1.133 | 1.009 | 0.726 | -71.91 | -18.05 | 48.90 | Subduction InterSlab |
| 401787 | 1534 | 207 | 172 | 159 | 28423100 | 51644 | 1467 | 0.293% | 340.83 | 7.25 | 0.582 | 1.359 | -1.271 | 1.572 | -69.68 | -17.85 | 130.07 | Subduction IntraSlab |
| 400697 | 1399 | 201 | 196 | 171 | 28415300 | 50807 | 1468 | 0.294% | 340.60 | 7.15 | -1.435 | -0.586 | 0.456 | 0.155 | -70.24 | -18.37 | 108.55 | Subduction IntraSlab |
| 403402 | 1459 | 224 | 207 | 161 | 28414200 | 52952 | 1469 | 0.294% | 340.37 | 7.65 | 0.580 | 0.230 | -0.035 | 0.360 | -70.19 | -18.22 | 112.94 | Subduction IntraSlab |
| 539440 | 1493 | 206 | 199 | 127 | 28406900 | 67330 | 1470 | 0.294% | 340.14 | 8.25 | -1.554 | 1.256 | 0.649 | 1.916 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 403220 | 1535 | 204 | 188 | 209 | 28394000 | 52796 | 1471 | 0.294% | 339.90 | 7.55 | 2.262 | -0.175 | -2.372 | -0.899 | -69.68 | -18.53 | 127.22 | Subduction IntraSlab |
| 540615 | 1659 | 206 | 209 | 132 | 28390400 | 67457 | 1472 | 0.294% | 339.67 | 8.35 | -0.170 | 0.301 | 0.522 | 0.693 | -72.24 | -17.61 | 52.84 | Subduction InterSlab |
| 537055 | 1423 | 194 | 184 | 147 | 28388300 | 66769 | 1473 | 0.295% | 339.44 | 8.05 | 0.984 | -0.911 | 0.001 | -1.590 | -71.59 | -18.06 | 54.90 | Subduction InterSlab |
| 402670 | 1387 | 193 | 190 | 141 | 28388000 | 52337 | 1474 | 0.295% | 339.21 | 7.45 | -0.005 | -1.118 | 0.461 | 1.535 | -69.95 | -18.90 | 113.09 | Subduction IntraSlab |
| 538491 | 1534 | 222 | 219 | 124 | 28385500 | 67151 | 1475 | 0.295% | 338.98 | 8.15 | -0.385 | -1.088 | -0.293 | 0.593 | -71.89 | -17.75 | 56.71 | Subduction InterSlab |
| 536958 | 1264 | 183 | 173 | 158 | 28385200 | 66738 | 1476 | 0.295% | 338.75 | 8.05 | 0.539 | 1.487 | -0.876 | -0.714 | -71.66 | -18.07 | 53.40 | Subduction InterSlab |
| 403125 | 1398 | 223 | 213 | 126 | 28375000 | 52717 | 1477 | 0.295% | 338.52 | 7.55 | 0.515 | -0.922 | -0.024 | 0.586 | -69.82 | -19.05 | 116.31 | Subduction IntraSlab |
| 539688 | 1301 | 188 | 185 | 161 | 28356400 | 67371 | 1478 | 0.296% | 338.29 | 8.25 | 1.882 | 0.542 | 1.831 | 1.272 | -72.00 | -17.73 | 55.19 | Subduction InterSlab |
| 536052 | 1526 | 204 | 180 | 151 | 28355100 | 66444 | 1479 | 0.296% | 338.07 | 7.95 | -0.094 | 0.626 | -0.586 | 0.595 | -71.56 | -18.00 | 57.07 | Subduction InterSlab |
| 539037 | 1295 | 171 | 187 | 151 | 28330100 | 67258 | 1480 | 0.296% | 337.84 | 8.25 | 0.100 | 0.325 | -0.072 | 1.021 | -72.00 | -17.86 | 51.66 | Subduction InterSlab |
| 402201 | 1180 | 190 | 187 | 177 | 28315400 | 51965 | 1481 | 0.296% | 337.61 | 7.35 | -0.085 | 0.721 | -0.074 | -2.113 | -70.03 | -18.23 | 118.51 | Subduction IntraSlab |
| 539855 | 1185 | 184 | 168 | 154 | 28305400 | 67389 | 1482 | 0.296% | 337.38 | 8.35 | -0.096 | -0.759 | -0.905 | 0.140 | -72.37 | -17.60 | 50.64 | Subduction InterSlab |
| 402896 | 1403 | 214 | 177 | 171 | 28292600 | 52525 | 1483 | 0.297% | 337.15 | 7.45 | -0.668 | 1.461 | -0.617 | 1.170 | -69.79 | -17.81 | 133.70 | Subduction IntraSlab |
| 402618 | 1201 | 218 | 203 | 137 | 28288300 | 52293 | 1484 | 0.297% | 336.93 | 7.45 | -1.344 | -0.085 | 0.204 | -0.534 | -70.16 | -18.41 | 110.87 | Subduction IntraSlab |
| 537816 | 1607 | 197 | 179 | 151 | 28275700 | 66974 | 1485 | 0.297% | 336.70 | 8.15 | 0.400 | -0.677 | -0.691 | -0.712 | -71.95 | -17.99 | 49.58 | Subduction InterSlab |
| 538300 | 1544 | 208 | 181 | 149 | 28274900 | 67108 | 1486 | 0.297% | 336.47 | 8.15 | -2.443 | 0.975 | 1.382 | 1.132 | -71.65 | -18.02 | 54.84 | Subduction InterSlab |
| 539512 | 1176 | 136 | 161 | 163 | 28261700 | 67343 | 1487 | 0.297% | 336.25 | 8.25 | -0.098 | 0.266 | 1.060 | -1.167 | -72.34 | -17.49 | 54.14 | Subduction InterSlab |
| 402566 | 1624 | 194 | 194 | 149 | 28256700 | 52249 | 1488 | 0.298% | 336.02 | 7.45 | 0.978 | -0.885 | -1.191 | -0.827 | -70.20 | -18.80 | 104.95 | Subduction IntraSlab |
| 540534 | 1323 | 195 | 193 | 134 | 28255900 | 67450 | 1489 | 0.298% | 335.80 | 8.35 | 1.450 | 0.949 | 0.374 | -1.527 | -71.99 | -17.81 | 53.09 | Subduction InterSlab |
| 529151 | 1325 | 183 | 166 | 168 | 28253500 | 64158 | 1490 | 0.298% | 335.57 | 7.45 | 0.169 | -0.139 | 0.436 | -1.780 | -71.04 | -18.01 | 67.01 | Subduction InterSlab |
| 402583 | 1638 | 196 | 203 | 176 | 28243600 | 52263 | 1491 | 0.298% | 335.35 | 7.45 | 1.778 | -0.586 | 1.056 | -0.723 | -70.18 | -18.66 | 107.15 | Subduction IntraSlab |
| 540224 | 1404 | 196 | 197 | 128 | 28243200 | 67421 | 1492 | 0.298% | 335.12 | 8.35 | -0.119 | 0.398 | -1.768 | 0.787 | -72.22 | -17.66 | 52.16 | Subduction InterSlab |
| 534337 | 1256 | 162 | 164 | 160 | 28243100 | 65882 | 1493 | 0.299% | 334.90 | 7.85 | -0.948 | 0.792 | -0.765 | -0.249 | -71.53 | -18.26 | 51.36 | Subduction InterSlab |
| 403206 | 1477 | 188 | 195 | 152 | 28231100 | 52784 | 1494 | 0.299% | 334.67 | 7.55 | -0.687 | -1.317 | -0.128 | 0.863 | -69.77 | -18.40 | 125.54 | Subduction IntraSlab |
| 540164 | 1281 | 197 | 166 | 174 | 28226800 | 67416 | 1495 | 0.299% | 334.45 | 8.35 | -1.715 | -0.937 | -0.683 | 1.911 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 401399 | 1525 | 184 | 178 | 165 | 28221900 | 51341 | 1496 | 0.299% | 334.22 | 7.25 | 0.286 | 0.079 | -0.277 | -0.186 | -70.31 | -18.53 | 103.82 | Subduction IntraSlab |
| 399616 | 1311 | 185 | 180 | 167 | 28214400 | 50080 | 1497 | 0.299% | 334.00 | 7.05 | 0.551 | 0.500 | 1.079 | 0.571 | -70.34 | -18.38 | 104.65 | Subduction InterSlab |
| 538788 | 1635 | 182 | 188 | 150 | 28211700 | 67215 | 1498 | 0.300% | 333.78 | 8.25 | -0.794 | -1.159 | 0.068 | 0.770 | -71.84 | -18.07 | 49.67 | Subduction InterSlab |
| 538460 | 1609 | 200 | 176 | 148 | 28208900 | 67145 | 1499 | 0.300% | 333.56 | 8.15 | -2.568 | 1.991 | 0.364 | 0.282 | -71.67 | -17.92 | 56.95 | Subduction InterSlab |
| 539720 | 1448 | 205 | 196 | 136 | 28205300 | 67376 | 1500 | 0.300% | 333.33 | 8.35 | 1.038 | -0.567 | 2.363 | -0.092 | -71.91 | -17.99 | 50.32 | Subduction InterSlab |
| 534824 | 1522 | 195 | 196 | 141 | 28202600 | 66039 | 1501 | 0.300% | 333.11 | 7.85 | -0.768 | -1.103 | 0.392 | -0.597 | -71.42 | -18.02 | 59.37 | Subduction InterSlab |
| 402597 | 1515 | 211 | 191 | 160 | 28202200 | 52275 | 1502 | 0.300% | 332.89 | 7.45 | 0.544 | 1.082 | 0.132 | 0.191 | -70.15 | -18.64 | 108.38 | Subduction IntraSlab |
| 400630 | 1414 | 188 | 190 | 163 | 28185400 | 50758 | 1503 | 0.301% | 332.67 | 7.15 | 0.013 | -0.267 | 0.609 | 0.524 | -70.32 | -18.29 | 106.75 | Subduction IntraSlab |
| 538822 | 1258 | 201 | 185 | 171 | 28166500 | 67221 | 1504 | 0.301% | 332.45 | 8.25 | -0.614 | 0.490 | -0.576 | -1.445 | -72.04 | -17.89 | 50.22 | Subduction InterSlab |
| 538508 | 1432 | 171 | 198 | 143 | 28165700 | 67155 | 1505 | 0.301% | 332.23 | 8.15 | 0.265 | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | Tratamiento de Datos | | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------------------|--------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 537935 | 1307 | 204 | 172 | 135 | 27954100 | 67005 | 1555 | 0.311% | 321.54 | 8.15 | 0.016 | 1.109 | -0.995 | -0.791 | -71.82 | -18.06 | 50.40 | Subduction IntraSlab |
| 401130 | 1269 | 165 | 175 | 163 | 27942600 | 51135 | 1556 | 0.311% | 321.34 | 7.15 | 0.542 | -0.834 | 1.573 | 0.349 | -69.77 | -18.13 | 129.74 | Subduction IntraSlab |
| 400860 | 1365 | 216 | 164 | 181 | 27942300 | 50928 | 1557 | 0.311% | 321.13 | 7.15 | 0.879 | -0.888 | 0.210 | -0.672 | -70.10 | -18.18 | 116.57 | Subduction IntraSlab |
| 401320 | 1262 | 156 | 170 | 189 | 27939200 | 51280 | 1558 | 0.312% | 320.92 | 7.25 | -1.619 | 1.374 | -0.055 | -1.463 | -70.39 | -18.96 | 96.36 | Subduction IntraSlab |
| 400972 | 1408 | 203 | 179 | 193 | 27931900 | 51015 | 1559 | 0.312% | 320.72 | 7.15 | 0.931 | 0.552 | -0.709 | -1.018 | -69.99 | -18.10 | 121.91 | Subduction IntraSlab |
| 539053 | 1304 | 172 | 186 | 140 | 27931300 | 67261 | 1560 | 0.312% | 320.51 | 8.25 | -0.185 | 0.035 | 0.272 | -1.011 | -72.11 | -17.77 | 51.56 | Subduction IntraSlab |
| 401619 | 1431 | 185 | 200 | 162 | 27929000 | 51515 | 1561 | 0.312% | 320.31 | 7.25 | -1.313 | 0.165 | -0.082 | -1.121 | -70.07 | -18.03 | 119.96 | Subduction IntraSlab |
| 539887 | 1273 | 154 | 159 | 166 | 27927600 | 67392 | 1562 | 0.312% | 320.10 | 8.35 | 0.077 | 0.747 | -0.639 | 0.603 | -72.48 | -17.52 | 50.54 | Subduction IntraSlab |
| 402296 | 1200 | 196 | 202 | 146 | 27920300 | 52036 | 1563 | 0.313% | 319.90 | 7.35 | -0.026 | -0.152 | -0.607 | -0.056 | -69.92 | -18.05 | 125.11 | Subduction IntraSlab |
| 537216 | 1428 | 172 | 182 | 171 | 27913100 | 66813 | 1564 | 0.313% | 319.69 | 8.05 | 0.487 | -0.544 | 0.214 | -0.747 | -71.92 | -17.75 | 55.97 | Subduction IntraSlab |
| 539648 | 1396 | 187 | 184 | 155 | 27901100 | 67365 | 1565 | 0.313% | 319.49 | 8.25 | -1.437 | -0.884 | 0.866 | 0.448 | -71.78 | -17.89 | 55.42 | Subduction IntraSlab |
| 538305 | 1564 | 201 | 186 | 146 | 27891900 | 67109 | 1566 | 0.313% | 319.28 | 8.15 | -1.057 | -0.452 | -0.872 | 0.928 | -71.68 | -17.99 | 54.80 | Subduction IntraSlab |
| 527482 | 1193 | 184 | 156 | 167 | 27887700 | 63614 | 1567 | 0.313% | 319.08 | 7.35 | -1.880 | -2.032 | -1.871 | -0.991 | -70.98 | -18.02 | 67.81 | Subduction IntraSlab |
| 538625 | 1427 | 188 | 176 | 154 | 27883000 | 67184 | 1568 | 0.314% | 318.88 | 8.25 | -1.383 | 0.392 | 0.740 | 1.925 | -72.05 | -17.96 | 48.08 | Subduction IntraSlab |
| 402855 | 1598 | 236 | 191 | 133 | 27882600 | 52491 | 1569 | 0.314% | 318.67 | 7.45 | -0.167 | -1.736 | 0.593 | 0.698 | -69.79 | -17.98 | 134.04 | Subduction IntraSlab |
| 402405 | 1333 | 197 | 181 | 170 | 27877900 | 52121 | 1570 | 0.314% | 318.47 | 7.35 | -0.178 | -1.662 | -0.188 | 0.908 | -69.56 | -18.33 | 131.01 | Subduction IntraSlab |
| 537792 | 1703 | 205 | 184 | 115 | 27875200 | 66968 | 1571 | 0.314% | 318.27 | 8.15 | 0.745 | -0.036 | 0.264 | -0.113 | -71.75 | -18.17 | 49.02 | Subduction IntraSlab |
| 401081 | 1301 | 168 | 166 | 189 | 27865300 | 51098 | 1572 | 0.314% | 318.07 | 7.15 | -0.105 | -0.071 | -0.839 | -0.249 | -69.85 | -18.11 | 126.82 | Subduction IntraSlab |
| 539274 | 1239 | 156 | 169 | 160 | 27855800 | 67300 | 1573 | 0.315% | 317.86 | 8.25 | 0.981 | 0.965 | 1.191 | 1.387 | -72.15 | -17.69 | 52.93 | Subduction IntraSlab |
| 402925 | 1706 | 250 | 199 | 140 | 27856600 | 52549 | 1574 | 0.315% | 317.66 | 7.45 | -0.562 | 2.611 | -0.250 | -0.440 | -69.46 | -18.29 | 139.12 | Subduction IntraSlab |
| 401701 | 1394 | 213 | 193 | 155 | 27836400 | 51584 | 1575 | 0.315% | 317.46 | 7.25 | 1.230 | -1.070 | 0.438 | 0.685 | -69.90 | -18.17 | 124.05 | Subduction IntraSlab |
| 539426 | 1434 | 185 | 176 | 161 | 27836300 | 67328 | 1576 | 0.315% | 317.26 | 8.25 | 0.870 | 0.594 | -0.209 | 0.316 | -71.81 | -17.92 | 53.97 | Subduction IntraSlab |
| 403569 | 1428 | 213 | 207 | 142 | 27832500 | 53102 | 1577 | 0.315% | 317.06 | 7.65 | 0.029 | 0.405 | 0.389 | -0.574 | -69.57 | -18.11 | 137.00 | Subduction IntraSlab |
| 402433 | 1334 | 192 | 171 | 153 | 27824000 | 52142 | 1578 | 0.316% | 316.86 | 7.35 | 0.727 | -1.814 | 0.209 | -0.294 | -69.43 | -18.42 | 137.52 | Subduction IntraSlab |
| 401631 | 1435 | 207 | 185 | 152 | 27812500 | 51524 | 1579 | 0.316% | 316.66 | 7.25 | 0.691 | -1.017 | 0.503 | -0.888 | -69.95 | -18.36 | 119.36 | Subduction IntraSlab |
| 540582 | 1223 | 193 | 186 | 121 | 27786800 | 67454 | 1580 | 0.316% | 316.46 | 8.35 | 1.548 | -0.713 | -1.642 | -0.014 | -72.14 | -17.70 | 52.95 | Subduction IntraSlab |
| 402958 | 1403 | 203 | 196 | 129 | 27778600 | 52574 | 1581 | 0.316% | 316.26 | 7.55 | 1.144 | 0.884 | -0.583 | 0.661 | -70.35 | -18.88 | 98.59 | Subduction IntraSlab |
| 402075 | 1545 | 195 | 186 | 138 | 27778500 | 51866 | 1582 | 0.316% | 316.06 | 7.35 | -1.019 | -0.042 | 0.083 | -1.073 | -70.15 | -18.73 | 107.59 | Subduction IntraSlab |
| 400957 | 1396 | 175 | 189 | 158 | 27777200 | 51004 | 1583 | 0.317% | 315.86 | 7.15 | -0.897 | -0.193 | 0.098 | 0.062 | -70.07 | -17.94 | 121.55 | Subduction IntraSlab |
| 403263 | 1204 | 183 | 148 | 159 | 27759200 | 52831 | 1584 | 0.317% | 315.66 | 7.55 | 0.240 | 0.402 | 0.003 | -0.235 | -69.50 | -18.64 | 132.40 | Subduction IntraSlab |
| 535106 | 1269 | 189 | 158 | 161 | 27749300 | 66137 | 1585 | 0.317% | 315.46 | 7.85 | 0.311 | -1.589 | 1.209 | 1.318 | -71.40 | -17.89 | 62.95 | Subduction IntraSlab |
| 402732 | 1539 | 213 | 184 | 163 | 27748100 | 52387 | 1586 | 0.317% | 315.26 | 7.45 | -0.499 | -0.174 | -0.945 | -1.000 | -69.87 | -18.65 | 118.97 | Subduction IntraSlab |
| 535104 | 1437 | 189 | 189 | 134 | 27726400 | 66137 | 1587 | 0.317% | 315.06 | 7.85 | 0.121 | -0.433 | -1.901 | 1.498 | -71.40 | -17.89 | 62.95 | Subduction IntraSlab |
| 539454 | 1451 | 198 | 205 | 121 | 27725800 | 67332 | 1588 | 0.318% | 314.86 | 8.25 | -0.387 | -0.694 | -0.233 | -0.189 | -71.94 | -17.80 | 54.55 | Subduction IntraSlab |
| 403157 | 1563 | 228 | 198 | 139 | 27722700 | 52742 | 1589 | 0.318% | 314.66 | 7.55 | 1.349 | 0.840 | -0.292 | -1.145 | -69.82 | -18.72 | 119.70 | Subduction IntraSlab |
| 538564 | 1555 | 228 | 185 | 145 | 27699900 | 67169 | 1590 | 0.318% | 314.47 | 8.15 | -0.809 | 1.080 | 1.491 | -0.694 | -71.54 | -17.99 | 57.80 | Subduction IntraSlab |
| 536313 | 1499 | 214 | 182 | 165 | 27695800 | 66538 | 1591 | 0.318% | 314.27 | 7.95 | -0.558 | -0.519 | 1.728 | 0.364 | -71.42 | -17.93 | 61.51 | Subduction IntraSlab |
| 400103 | 1329 | 162 | 161 | 166 | 27695700 | 50395 | 1592 | 0.318% | 314.07 | 7.05 | 0.537 | -0.763 | 1.155 | 1.032 | -69.92 | -18.28 | 121.75 | Subduction IntraSlab |
| 539681 | 1638 | 223 | 165 | 151 | 27687400 | 67370 | 1593 | 0.319% | 313.87 | 8.25 | -0.038 | -1.377 | -0.188 | -0.976 | -71.96 | -17.75 | 55.23 | Subduction IntraSlab |
| 534335 | 1336 | 177 | 168 | 166 | 27686800 | 65882 | 1594 | 0.319% | 313.68 | 7.85 | -0.212 | -0.856 | -0.935 | 1.054 | -71.53 | -18.26 | 51.36 | Subduction IntraSlab |
| 401818 | 1321 | 193 | 170 | 154 | 27683800 | 51666 | 1595 | 0.319% | 313.48 | 7.25 | 0.539 | 0.190 | 0.430 | -0.582 | -69.66 | -18.20 | 132.37 | Subduction IntraSlab |
| 402332 | 1496 | 208 | 172 | 158 | 27672900 | 52060 | 1596 | 0.319% | 313.28 | 7.35 | 0.742 | 1.077 | 0.862 | 0.812 | -69.80 | -18.23 | 126.98 | Subduction IntraSlab |
| 537305 | 1360 | 192 | 190 | 150 | 27662800 | 66839 | 1597 | 0.319% | 313.09 | 8.05 | 0.640 | 0.075 | -0.021 | -0.193 | -71.60 | -17.94 | 57.74 | Subduction IntraSlab |
| 537414 | 1326 | 202 | 164 | 149 | 27654800 | 66872 | 1598 | 0.320% | 312.89 | 8.05 | -1.531 | 0.590 | 0.108 | -0.329 | -71.49 | -17.97 | 59.29 | Subduction IntraSlab |
| 537954 | 1358 | 195 | 193 | 158 | 27649100 | 67011 | 1599 | 0.320% | 312.70 | 8.15 | -0.501 | -1.052 | 0.826 | -1.085 | -72.02 | -17.87 | 50.94 | Subduction IntraSlab |
| 403464 | 1607 | 222 | 195 | 152 | 27643400 | 53008 | 1600 | 0.320% | 312.50 | 7.65 | -0.319 | 1.077 | -1.460 | 0.805 | -69.84 | -18.71 | 119.03 | Subduction IntraSlab |
| 403561 | 1442 | 231 | 215 | 130 | 27637900 | 53094 | 1601 | 0.320% | 312.30 | 7.65 | 0.173 | 0.158 | 0.313 | 0.994 | -69.55 | -18.21 | 136.29 | Subduction IntraSlab |
| 403587 | 1424 | 220 | 201 | 119 | 27636300 | 53118 | 1602 | 0.320% | 312.11 | 7.75 | 1.008 | 0.902 | -0.107 | -0.651 | -70.30 | -19.18 | 97.83 | Subduction IntraSlab |
| 537411 | 1495 | 177 | 189 | 129 | 27632600 | 66871 | 1603 | 0.321% | 311.92 | 8.05 | -0.716 | -0.030 | 1.089 | -2.214 | -71.45 | -18.00 | 59.33 | Subduction IntraSlab |
| 402170 | 1441 | 201 | 191 | 132 | 27629800 | 51946 | 1604 | 0.321% | 311.72 | 7.35 | -0.197 | -0.198 | 0.222 | -1.470 | -69.95 | -18.67 | 115.77 | Subduction IntraSlab |
| 59328 | 1371 | 172 | 147 | 193 | 27628100 | 11016 | 1605 | 0.321% | 311.53 | 6.75 | 1.580 | -0.086 | -1.406 | -0.252 | -70.50 | -17.76 | 90.68 | Subduction IntraSlab |
| 537937 | 1286 | 176 | 170 | 165 | 27627600 | 67006 | 1606 | 0.321% | 311.33 | 8.15 | 1.393 | -0.433 | 0.034 | -0.280 | -71.84 | -18.01 | 51.09 | Subduction IntraSlab |
| 401989 | 1237 | 177 | 180 | 153 | 27621900 | 51796 | 1607 | 0.321% | 311.14 | 7.35 | 0.136 | -0.707 | -0.666 | 0.289 | -70.33 | -18.76 | 100.30 | Subduction IntraSlab |
| 538329 | 1498 | 184 | 181 | 140 | 27615700 | 67115 | 1608 | 0.322% | 310.95 | 8.15 | 0.066 | -0.267 | -1.505 | 0.201 | -71.89 | -17.81 | 55.31 | Subduction IntraSlab |
| 539851 | 1569 | 176 | 193 | 138 | 27591300 | 67389 | 1609 | 0.322% | 310.75 | 8.35 | 1.076 | 0.490 | -1.941 | -0.966 | -72.37 | -17.60 | 50.64 | Subduction IntraSlab |
| 534716 | 1416 | 196 | 195 | 151 | 27583300 | 68004 | 1610 | 0.322% | 310.56 | 7.85 | -0.479 | -1.081 | -0.627 | -0.569 | -71.39 | -18.13 | 57.25 | Subduction IntraSlab |
| 536789 | 1233 | 178 | 163 | 156 | 27577800 | 66685 | 1611 | 0.322% | 310.37 | 8.05 | 1.364 | -0.792 | 1.212 | -0.110 | -72.16 | -17.79 | 50.11 | Subduction IntraSlab |
| 540573 | 1418 | 224 | 172 | 124 | 27576700 | 67453 | 1612 | 0.322% | 310.17 | 8.35 | 0.144 | 0.641 | 0.237 | -0.338 | -72.10 | -17.73 | 52.98 | Subduction IntraSlab |
| 539823 | 1331 | 193 | 165 | 151 | 27575500 | 67385 | 1613 | 0.323% | 309.98 | 8.35 | 1.086 | 0.337 | 0.314 | -0.795 | -72.22 | -17.71 | 50.76 | Subduction IntraSlab |
| 402019 | 1200 | 166 | 184 | 154 | 27573000 | 51819 | 1614 | 0.323% | 309.79 | 7.35 | -0.697 | 0.417 | 0.826 | -0.009 | -70.26 | -18.90 | 101.54 | Subduction IntraSlab |
| 403108 | 1466 | 211 | 214 | 159 | 27567100 | 52701 | 1615 | 0.323% | 309.60 | 7.55 | 0.425 | 0.584 | -0.914 | -0.178 | -69.98 | -18.66 | 114.50 | Subduction IntraSlab |
| 539649 | 1472 | 214 | 187 | 134 | 27566200 | 67366 | | | | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 534928 | 1322 | 202 | 165 | 130 | 27270900 | 66074 | 1666 | 0.333% | 300.12 | 7.85 | 1.284 | 1.746 | -1.679 | -71.49 | -17.91 | 60.71 | Subduction InterSlab | |
| 400896 | 1253 | 185 | 187 | 155 | 27280600 | 50807 | 1667 | 0.333% | 299.94 | 7.15 | -2.130 | -0.724 | 0.198 | 1.166 | -70.24 | -18.37 | 108.55 | Subduction IntraSlab |
| 401533 | 1568 | 207 | 183 | 158 | 27286200 | 51447 | 1668 | 0.334% | 299.76 | 7.25 | 0.077 | -1.615 | 0.885 | 0.002 | -70.17 | -18.15 | 114.70 | Subduction IntraSlab |
| 400835 | 1450 | 188 | 178 | 184 | 27249200 | 50910 | 1669 | 0.334% | 299.58 | 7.15 | 0.902 | 1.099 | 0.900 | -1.102 | -70.11 | -18.24 | 115.35 | Subduction IntraSlab |
| 400951 | 1210 | 205 | 186 | 149 | 27243700 | 51000 | 1670 | 0.334% | 299.40 | 7.15 | 0.897 | 0.728 | 0.743 | 0.367 | -69.99 | -18.20 | 120.17 | Subduction InterSlab |
| 537059 | 1480 | 169 | 168 | 152 | 27227800 | 66770 | 1671 | 0.334% | 299.22 | 8.05 | 0.646 | -0.058 | 0.816 | -0.940 | -71.63 | -18.03 | 54.86 | Subduction InterSlab |
| 401087 | 1307 | 206 | 198 | 152 | 27220700 | 51102 | 1672 | 0.334% | 299.04 | 7.15 | -0.125 | -1.603 | -1.220 | -0.159 | -69.94 | -17.89 | 127.05 | Subduction IntraSlab |
| 537495 | 1232 | 194 | 184 | 151 | 27209100 | 66899 | 1673 | 0.335% | 298.86 | 8.05 | 1.202 | 0.745 | 1.342 | -1.204 | -71.62 | -17.84 | 59.84 | Subduction InterSlab |
| 401125 | 1260 | 161 | 149 | 158 | 27208200 | 51132 | 1674 | 0.335% | 298.69 | 7.15 | -1.567 | -1.136 | -0.584 | -0.787 | -69.68 | -18.34 | 129.82 | Subduction IntraSlab |
| 534829 | 1509 | 191 | 181 | 128 | 27203900 | 66040 | 1675 | 0.335% | 298.51 | 7.85 | 1.273 | 0.308 | -1.153 | 0.521 | -71.45 | -18.00 | 59.33 | Subduction InterSlab |
| 402906 | 1488 | 222 | 190 | 141 | 27200500 | 52534 | 1676 | 0.335% | 298.33 | 7.45 | 0.858 | -1.232 | 1.014 | -0.483 | -69.73 | -17.88 | 135.14 | Subduction IntraSlab |
| 539838 | 1440 | 181 | 184 | 129 | 27200400 | 67387 | 1677 | 0.335% | 298.15 | 8.35 | -1.188 | 0.481 | 0.171 | -0.305 | -72.29 | -17.66 | 50.70 | Subduction InterSlab |
| 540547 | 1401 | 220 | 155 | 172 | 27195500 | 67451 | 1678 | 0.336% | 297.97 | 8.35 | -0.458 | 0.995 | -0.254 | 1.181 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 538060 | 1585 | 194 | 206 | 143 | 27184300 | 67042 | 1679 | 0.336% | 297.80 | 8.15 | 2.670 | -1.061 | 0.337 | -0.664 | -71.92 | -17.90 | 52.45 | Subduction InterSlab |
| 537185 | 1531 | 186 | 187 | 127 | 27183100 | 66805 | 1680 | 0.336% | 297.62 | 8.05 | 0.663 | -1.106 | -1.782 | -0.494 | -71.63 | -17.98 | 56.28 | Subduction InterSlab |
| 401362 | 1418 | 202 | 179 | 141 | 27179200 | 51312 | 1681 | 0.336% | 297.44 | 7.25 | -0.390 | 0.332 | 0.522 | 0.424 | -70.34 | -18.55 | 102.09 | Subduction InterSlab |
| 402773 | 1644 | 208 | 206 | 123 | 27179000 | 52423 | 1682 | 0.336% | 297.27 | 7.45 | 0.021 | -1.454 | 1.166 | -0.533 | -69.83 | -18.43 | 123.09 | Subduction IntraSlab |
| 402406 | 1652 | 185 | 167 | 157 | 27171500 | 52122 | 1683 | 0.337% | 297.09 | 7.35 | -0.390 | -0.798 | -0.416 | -0.361 | -69.57 | -18.28 | 134.71 | Subduction IntraSlab |
| 403579 | 1389 | 213 | 171 | 150 | 27162600 | 53112 | 1684 | 0.337% | 296.91 | 7.65 | -0.974 | -0.382 | -0.920 | 1.220 | -69.32 | -18.47 | 140.63 | Subduction IntraSlab |
| 400808 | 1395 | 185 | 165 | 150 | 27162400 | 50741 | 1685 | 0.337% | 296.74 | 7.15 | -0.803 | 0.313 | 0.527 | 0.881 | -70.34 | -18.35 | 105.36 | Subduction InterSlab |
| 402560 | 1387 | 185 | 172 | 171 | 27156100 | 52246 | 1686 | 0.337% | 296.56 | 7.45 | 1.054 | 1.853 | -1.260 | -1.628 | -70.18 | -18.92 | 104.59 | Subduction InterSlab |
| 540230 | 1388 | 194 | 183 | 134 | 27149400 | 67422 | 1687 | 0.337% | 296.38 | 8.35 | -0.107 | 0.075 | -0.920 | -1.092 | -72.28 | -17.63 | 52.13 | Subduction InterSlab |
| 402429 | 1418 | 203 | 158 | 137 | 27134200 | 52138 | 1688 | 0.338% | 296.21 | 7.35 | 0.850 | -0.777 | 0.128 | -0.082 | -69.77 | -17.79 | 134.71 | Subduction IntraSlab |
| 539057 | 1458 | 200 | 175 | 146 | 27130800 | 67262 | 1689 | 0.338% | 296.03 | 8.25 | -1.101 | -0.120 | -0.523 | -0.242 | -72.15 | -17.74 | 51.53 | Subduction InterSlab |
| 540211 | 1435 | 193 | 138 | 142 | 27128800 | 67420 | 1690 | 0.338% | 295.86 | 8.35 | 2.106 | 0.469 | 0.068 | 0.781 | -72.19 | -17.69 | 52.20 | Subduction InterSlab |
| 538795 | 1520 | 240 | 181 | 130 | 27126200 | 67216 | 1691 | 0.338% | 295.68 | 8.25 | -0.599 | 0.278 | -0.364 | 1.540 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 538805 | 1495 | 199 | 172 | 143 | 27122100 | 67217 | 1692 | 0.338% | 295.51 | 8.25 | 1.581 | -0.128 | 1.723 | 0.685 | -71.91 | -18.02 | 49.61 | Subduction InterSlab |
| 402551 | 1495 | 229 | 195 | 172 | 27116100 | 52238 | 1693 | 0.339% | 295.33 | 7.45 | -1.596 | -2.192 | 1.080 | 0.373 | -70.22 | -18.77 | 104.44 | Subduction IntraSlab |
| 403476 | 1369 | 221 | 162 | 147 | 27114500 | 53017 | 1694 | 0.339% | 295.16 | 7.65 | -0.454 | 0.990 | -0.734 | 1.069 | -69.78 | -18.68 | 121.63 | Subduction IntraSlab |
| 402048 | 1272 | 167 | 169 | 144 | 27107400 | 51843 | 1695 | 0.339% | 294.99 | 7.35 | -0.610 | -0.816 | -0.944 | 0.265 | -70.23 | -18.71 | 104.63 | Subduction IntraSlab |
| 538310 | 1287 | 233 | 161 | 152 | 27106600 | 67110 | 1696 | 0.339% | 294.81 | 8.15 | -0.411 | 1.061 | -0.495 | 0.259 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 538787 | 1486 | 186 | 221 | 167 | 27102900 | 67215 | 1697 | 0.339% | 294.64 | 8.25 | -0.253 | 0.234 | 0.322 | 0.301 | -71.84 | -18.07 | 49.67 | Subduction InterSlab |
| 403168 | 1542 | 211 | 185 | 131 | 27100400 | 52751 | 1698 | 0.340% | 294.46 | 7.55 | 0.412 | 0.795 | 0.759 | -0.192 | -69.97 | -18.11 | 122.43 | Subduction InterSlab |
| 539858 | 1229 | 168 | 156 | 148 | 27097500 | 67389 | 1699 | 0.340% | 294.29 | 8.35 | -0.823 | -0.037 | -0.644 | 0.508 | -72.37 | -17.60 | 50.64 | Subduction InterSlab |
| 534721 | 1597 | 224 | 192 | 122 | 27096000 | 66006 | 1700 | 0.340% | 294.12 | 7.85 | 0.924 | 0.897 | 0.645 | -1.681 | -71.45 | -18.06 | 57.91 | Subduction InterSlab |
| 402329 | 1373 | 196 | 195 | 153 | 27092000 | 52057 | 1701 | 0.340% | 293.94 | 7.35 | 1.112 | -1.480 | -0.682 | 1.485 | -69.66 | -18.62 | 126.83 | Subduction IntraSlab |
| 403343 | 1538 | 194 | 171 | 143 | 27088200 | 52901 | 1702 | 0.340% | 293.77 | 7.65 | 0.134 | -0.561 | 0.450 | -0.969 | -70.25 | -18.98 | 101.23 | Subduction IntraSlab |
| 402113 | 1517 | 212 | 186 | 154 | 27083800 | 51897 | 1703 | 0.341% | 293.60 | 7.35 | 0.497 | -2.652 | -0.642 | 0.509 | -70.19 | -18.20 | 113.04 | Subduction IntraSlab |
| 540607 | 1252 | 158 | 175 | 127 | 27083100 | 67457 | 1704 | 0.341% | 293.43 | 8.35 | -2.397 | -0.210 | 0.681 | 0.882 | -72.24 | -17.61 | 52.84 | Subduction InterSlab |
| 403122 | 1539 | 184 | 195 | 148 | 27083000 | 52714 | 1705 | 0.341% | 293.26 | 7.55 | -1.574 | -0.615 | 0.877 | -0.706 | -70.02 | -18.35 | 117.12 | Subduction IntraSlab |
| 539226 | 1578 | 246 | 194 | 121 | 27081900 | 67289 | 1706 | 0.341% | 293.08 | 8.25 | 0.950 | -1.254 | 0.883 | 0.334 | -71.77 | -18.01 | 52.58 | Subduction InterSlab |
| 402272 | 1414 | 197 | 192 | 129 | 27081700 | 52018 | 1707 | 0.341% | 292.91 | 7.35 | -1.078 | -0.070 | -1.805 | -0.868 | -69.91 | -18.20 | 123.49 | Subduction IntraSlab |
| 534638 | 1222 | 164 | 180 | 164 | 27081700 | 65982 | 1708 | 0.342% | 292.74 | 7.85 | -2.156 | -0.243 | -0.901 | 1.720 | -71.74 | -17.89 | 56.17 | Subduction InterSlab |
| 402109 | 1174 | 196 | 180 | 141 | 27081500 | 51894 | 1709 | 0.342% | 292.57 | 7.35 | -0.146 | 1.972 | 0.271 | 1.704 | -70.11 | -18.62 | 110.23 | Subduction IntraSlab |
| 401735 | 1287 | 172 | 195 | 156 | 27079100 | 51609 | 1710 | 0.342% | 292.40 | 7.25 | 0.189 | -1.130 | 0.685 | 0.414 | -69.71 | -18.51 | 125.52 | Subduction IntraSlab |
| 402790 | 1575 | 202 | 149 | 170 | 27075600 | 52439 | 1711 | 0.342% | 292.23 | 7.45 | 0.242 | -2.461 | 1.831 | -0.245 | -69.90 | -18.06 | 126.62 | Subduction IntraSlab |
| 403299 | 1462 | 207 | 180 | 147 | 27059100 | 52862 | 1712 | 0.342% | 292.06 | 7.55 | 0.503 | 0.033 | -0.478 | -0.043 | -69.55 | -18.18 | 136.77 | Subduction IntraSlab |
| 400738 | 1425 | 207 | 190 | 142 | 27055500 | 50835 | 1713 | 0.343% | 291.89 | 7.15 | 1.162 | -1.372 | 0.223 | -0.532 | -70.17 | -18.42 | 110.30 | Subduction IntraSlab |
| 402089 | 1312 | 172 | 167 | 150 | 27053500 | 51876 | 1714 | 0.343% | 291.72 | 7.35 | 1.409 | -0.669 | 1.015 | 1.216 | -70.09 | -18.93 | 107.80 | Subduction IntraSlab |
| 540544 | 1257 | 210 | 181 | 133 | 27052500 | 67451 | 1715 | 0.343% | 291.55 | 8.35 | 0.579 | 1.379 | 0.495 | -0.648 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 402348 | 1461 | 186 | 171 | 155 | 27049500 | 52074 | 1716 | 0.343% | 291.38 | 7.35 | -0.169 | 0.501 | -1.213 | 1.424 | -69.92 | -17.88 | 128.06 | Subduction IntraSlab |
| 401593 | 1279 | 194 | 188 | 147 | 27037800 | 51495 | 1717 | 0.343% | 291.21 | 7.25 | 0.203 | 1.555 | 0.516 | -0.817 | -69.98 | -18.47 | 116.96 | Subduction InterSlab |
| 538843 | 1357 | 215 | 164 | 148 | 27037600 | 67224 | 1718 | 0.344% | 291.04 | 8.25 | 0.054 | -1.694 | 0.990 | -0.561 | -72.15 | -17.80 | 50.12 | Subduction InterSlab |
| 530636 | 1359 | 162 | 152 | 150 | 27035100 | 64637 | 1719 | 0.344% | 290.87 | 7.55 | 1.878 | -0.958 | 0.242 | -0.652 | -71.12 | -18.09 | 63.31 | Subduction InterSlab |
| 538814 | 1344 | 189 | 173 | 124 | 27028400 | 67219 | 1720 | 0.344% | 290.70 | 8.25 | 1.579 | 0.723 | -2.187 | -0.983 | -71.98 | -17.96 | 49.55 | Subduction InterSlab |
| 534847 | 1267 | 186 | 164 | 178 | 27015200 | 68045 | 1721 | 0.344% | 290.53 | 7.85 | 1.091 | 0.596 | 0.392 | 1.329 | -71.64 | -17.86 | 59.12 | Subduction InterSlab |
| 402341 | 1353 | 183 | 164 | 166 | 27010800 | 52067 | 1722 | 0.344% | 290.36 | 7.35 | -0.439 | -1.545 | -0.748 | 0.750 | -69.63 | -18.60 | 128.13 | Subduction IntraSlab |
| 538628 | 1398 | 206 | 179 | 150 | 27002800 | 67185 | 1723 | 0.345% | 290.19 | 8.25 | 0.275 | 0.675 | 0.462 | -1.318 | -72.07 | -17.92 | 48.77 | Subduction InterSlab |
| 402188 | 1282 | 194 | 185 | 202 | 27000200 | 51958 | 1724 | 0.345% | 290.02 | 7.35 | -0.018 | -1.421 | 0.150 | 0.135 | -69.85 | -18.90 | 116.46 | Subduction IntraSlab |
| 402643 | 1436 | 192 | 180 | 153 | 26998200 | 52311 | 1725 | 0.345% | 289.86 | 7.45 | 1.993 | -1.526 | 0.791 | -1.017 | -70.18 | -18.19 | 113.56 | Subduction IntraSlab |
| 402080 | 1319 | 202 | 177 | 150 | 26996200 | 51870 | 1726 | 0.345% | 289.69 | 7.35 | 1.437 | -0.630 | -0.740 | 0.919 | -70.22 | -18.22 | 111.47 | Subduction IntraSlab |
| 402751 | 1283 | 193 | 185 | 142 | 26993100 | 52403 | 1727 | 0.345% | 289.52 | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | Tratamiento de Datos | | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------------------|--------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 401177 | 1255 | 211 | 180 | 156 | 26780300 | 51170 | 1777 | 0.355% | 281.37 | 7.15 | 0.890 | -0.150 | 0.750 | -0.105 | -68.86 | -17.80 | 131.51 | Subduction IntraSlab |
| 539258 | 1154 | 208 | 168 | 133 | 26777400 | 67295 | 1778 | 0.356% | 281.21 | 8.25 | -1.097 | -0.002 | -0.260 | 0.334 | -71.97 | -17.83 | 53.10 | Subduction InterSlab |
| 540677 | 1569 | 199 | 174 | 133 | 26775000 | 67463 | 1779 | 0.356% | 281.06 | 8.35 | 1.242 | 0.944 | -0.222 | 0.885 | -71.79 | -17.94 | 53.98 | Subduction InterSlab |
| 539009 | 1471 | 252 | 188 | 99 | 26773300 | 67252 | 1780 | 0.356% | 280.90 | 8.25 | 0.342 | -0.773 | -0.066 | 0.143 | -71.80 | -18.04 | 51.12 | Subduction InterSlab |
| 537662 | 1599 | 203 | 153 | 120 | 26772400 | 66937 | 1781 | 0.356% | 280.74 | 8.15 | -2.742 | 0.348 | -0.577 | -1.736 | -71.89 | -18.12 | 47.48 | Subduction InterSlab |
| 538617 | 1396 | 182 | 184 | 123 | 26770500 | 67183 | 1782 | 0.356% | 280.58 | 8.25 | -1.590 | 0.808 | 1.205 | 0.915 | -72.01 | -17.99 | 48.10 | Subduction InterSlab |
| 400049 | 1188 | 167 | 167 | 165 | 26757000 | 50357 | 1783 | 0.357% | 280.43 | 7.05 | -0.754 | 0.537 | 0.589 | -0.444 | -70.05 | -18.06 | 120.40 | Subduction IntraSlab |
| 536650 | 1046 | 135 | 135 | 181 | 26736900 | 66642 | 1784 | 0.357% | 280.27 | 8.05 | -1.908 | -1.009 | -0.523 | 0.759 | -71.84 | -18.10 | 48.95 | Subduction InterSlab |
| 538469 | 1248 | 193 | 163 | 142 | 26720600 | 67147 | 1785 | 0.357% | 280.11 | 8.15 | 0.459 | 1.129 | 0.650 | -0.415 | -71.74 | -17.86 | 56.87 | Subduction InterSlab |
| 538825 | 1541 | 186 | 168 | 127 | 26718800 | 67222 | 1786 | 0.357% | 279.96 | 8.25 | -1.089 | 0.726 | 0.938 | -0.017 | -72.07 | -17.86 | 50.18 | Subduction InterSlab |
| 539445 | 1386 | 176 | 178 | 138 | 26718600 | 67331 | 1787 | 0.357% | 279.80 | 8.25 | -0.052 | -0.228 | -0.637 | 0.638 | -71.90 | -17.82 | 54.58 | Subduction InterSlab |
| 402110 | 1186 | 195 | 149 | 161 | 26715000 | 51895 | 1788 | 0.358% | 279.64 | 7.35 | -0.186 | -2.012 | 0.591 | -0.397 | -70.13 | -18.49 | 111.02 | Subduction IntraSlab |
| 530825 | 1258 | 183 | 176 | 139 | 26713300 | 64695 | 1789 | 0.358% | 279.49 | 7.55 | 1.581 | -0.670 | 0.606 | -0.242 | -71.17 | -17.95 | 66.12 | Subduction InterSlab |
| 540217 | 1343 | 177 | 170 | 123 | 26709700 | 67421 | 1790 | 0.358% | 279.33 | 8.35 | -1.167 | 0.068 | 0.543 | 0.916 | -72.22 | -17.66 | 52.16 | Subduction InterSlab |
| 532162 | 1476 | 186 | 187 | 120 | 26705000 | 65145 | 1791 | 0.358% | 279.17 | 7.65 | -0.651 | -0.606 | 1.045 | 0.065 | -71.18 | -18.08 | 62.53 | Subduction InterSlab |
| 538327 | 1529 | 209 | 194 | 128 | 26705000 | 67114 | 1792 | 0.358% | 279.02 | 8.15 | 0.101 | -0.277 | -0.593 | -0.597 | -71.85 | -17.84 | 55.34 | Subduction InterSlab |
| 537417 | 1445 | 198 | 198 | 126 | 26703400 | 66872 | 1793 | 0.359% | 278.86 | 8.05 | -0.206 | 0.217 | -0.044 | -0.836 | -71.49 | -17.97 | 59.29 | Subduction InterSlab |
| 402449 | 1518 | 198 | 177 | 126 | 26683700 | 52155 | 1794 | 0.359% | 278.71 | 7.35 | 0.277 | -0.486 | -1.452 | 0.017 | -69.51 | -18.19 | 138.11 | Subduction IntraSlab |
| 401698 | 1627 | 219 | 162 | 159 | 26679000 | 51581 | 1795 | 0.359% | 278.55 | 7.25 | -0.401 | -0.071 | -0.050 | -1.470 | -69.76 | -18.54 | 123.99 | Subduction IntraSlab |
| 538563 | 1632 | 220 | 205 | 112 | 26666700 | 67169 | 1796 | 0.359% | 278.40 | 8.15 | -0.182 | 0.566 | -0.568 | -0.041 | -71.54 | -17.99 | 57.80 | Subduction InterSlab |
| 538320 | 1920 | 220 | 169 | 155 | 26661700 | 67113 | 1797 | 0.359% | 278.24 | 8.15 | 0.420 | -0.424 | -1.529 | -0.141 | -71.81 | -17.87 | 55.38 | Subduction InterSlab |
| 537813 | 1141 | 178 | 179 | 152 | 26661000 | 66973 | 1798 | 0.360% | 278.09 | 8.15 | 0.216 | -0.603 | 0.633 | 0.772 | -71.91 | -18.02 | 49.61 | Subduction InterSlab |
| 402459 | 1526 | 201 | 185 | 140 | 26657500 | 52163 | 1799 | 0.360% | 277.93 | 7.35 | -0.006 | -0.625 | -0.438 | 0.429 | -69.42 | -18.31 | 139.53 | Subduction IntraSlab |
| 403297 | 1557 | 221 | 169 | 145 | 26649100 | 52860 | 1800 | 0.360% | 277.78 | 7.55 | -1.024 | 0.894 | -0.990 | -0.074 | -69.41 | -18.49 | 137.24 | Subduction IntraSlab |
| 536755 | 1133 | 164 | 180 | 131 | 26644300 | 66672 | 1801 | 0.360% | 277.62 | 8.05 | -0.032 | 0.821 | 0.440 | -1.115 | -71.69 | -18.16 | 50.50 | Subduction InterSlab |
| 403066 | 1294 | 185 | 169 | 154 | 26643100 | 52665 | 1802 | 0.360% | 277.47 | 7.55 | -1.408 | -1.301 | 0.193 | 0.081 | -70.02 | -19.00 | 109.63 | Subduction IntraSlab |
| 402629 | 1416 | 171 | 184 | 145 | 26642700 | 52300 | 1803 | 0.361% | 277.32 | 7.45 | 0.639 | -0.972 | -0.227 | 0.977 | -70.04 | -18.99 | 108.99 | Subduction InterSlab |
| 403031 | 1360 | 190 | 181 | 142 | 26642400 | 52637 | 1804 | 0.361% | 277.16 | 7.55 | -0.448 | -1.065 | 0.637 | -0.346 | -70.14 | -18.75 | 107.54 | Subduction IntraSlab |
| 400973 | 1381 | 193 | 173 | 137 | 26633900 | 51016 | 1805 | 0.361% | 277.01 | 7.15 | 1.390 | -1.009 | -0.913 | -1.725 | -70.01 | -18.06 | 121.94 | Subduction IntraSlab |
| 535029 | 1404 | 199 | 169 | 133 | 26633100 | 66109 | 1806 | 0.361% | 276.85 | 7.85 | 1.008 | -0.544 | 0.742 | 1.355 | -71.57 | -17.80 | 62.03 | Subduction InterSlab |
| 537652 | 1535 | 189 | 170 | 132 | 26632300 | 66934 | 1807 | 0.361% | 276.70 | 8.15 | 2.429 | -0.646 | -0.269 | 0.017 | -71.78 | -18.21 | 47.56 | Subduction InterSlab |
| 539039 | 1213 | 181 | 174 | 131 | 26628000 | 67258 | 1808 | 0.362% | 276.55 | 8.25 | -1.362 | 0.517 | -0.150 | -0.925 | -72.00 | -17.86 | 51.66 | Subduction InterSlab |
| 402568 | 1393 | 166 | 182 | 150 | 26610900 | 52251 | 1809 | 0.362% | 276.40 | 7.45 | -1.108 | -0.722 | -0.935 | -0.567 | -70.22 | -18.63 | 106.04 | Subduction IntraSlab |
| 537668 | 1161 | 175 | 152 | 171 | 26599200 | 66938 | 1810 | 0.362% | 276.24 | 8.15 | -1.287 | 0.707 | -1.605 | 0.271 | -71.91 | -18.08 | 48.18 | Subduction InterSlab |
| 401778 | 1171 | 166 | 144 | 168 | 26597600 | 51640 | 1811 | 0.362% | 276.09 | 7.25 | 1.787 | -0.924 | 0.261 | 0.050 | -69.65 | -18.40 | 130.07 | Subduction IntraSlab |
| 540194 | 1278 | 203 | 182 | 127 | 26596200 | 67419 | 1812 | 0.362% | 275.94 | 8.35 | 0.966 | 1.142 | -0.467 | 1.228 | -72.17 | -17.73 | 51.51 | Subduction InterSlab |
| 399009 | 1107 | 155 | 163 | 152 | 26595100 | 49715 | 1813 | 0.363% | 275.79 | 6.95 | 0.906 | 1.433 | 0.975 | -1.948 | -69.96 | -18.03 | 124.04 | Subduction IntraSlab |
| 527477 | 1225 | 165 | 173 | 172 | 26589900 | 63613 | 1814 | 0.363% | 275.63 | 7.35 | -0.063 | 0.016 | -1.519 | -0.995 | -70.94 | -18.05 | 67.87 | Subduction InterSlab |
| 536327 | 1137 | 139 | 160 | 157 | 26584200 | 66542 | 1815 | 0.363% | 275.48 | 7.95 | -0.829 | 0.694 | 0.509 | 1.310 | -71.61 | -17.80 | 61.28 | Subduction InterSlab |
| 403675 | 1592 | 203 | 179 | 140 | 26578600 | 53193 | 1816 | 0.363% | 275.33 | 7.75 | 0.008 | -1.954 | 0.241 | -1.157 | -69.88 | -19.05 | 114.25 | Subduction IntraSlab |
| 399975 | 1360 | 166 | 170 | 159 | 26578100 | 50315 | 1817 | 0.363% | 275.18 | 7.05 | -0.548 | 0.925 | -1.329 | -0.887 | -70.03 | -18.31 | 117.24 | Subduction IntraSlab |
| 537290 | 1479 | 194 | 162 | 140 | 26576200 | 66836 | 1818 | 0.364% | 275.03 | 8.05 | -0.558 | 0.256 | 1.367 | -2.141 | -71.49 | -18.03 | 57.86 | Subduction InterSlab |
| 402863 | 1429 | 230 | 185 | 153 | 26563400 | 52331 | 1819 | 0.364% | 274.88 | 7.45 | -0.377 | -1.179 | 0.271 | -0.560 | -70.06 | -18.50 | 113.35 | Subduction IntraSlab |
| 537832 | 1455 | 204 | 182 | 126 | 26563300 | 66978 | 1820 | 0.364% | 274.73 | 8.15 | 0.724 | 1.818 | 0.474 | 0.180 | -72.09 | -17.87 | 49.46 | Subduction InterSlab |
| 532181 | 1244 | 186 | 158 | 140 | 26560700 | 65150 | 1821 | 0.364% | 274.57 | 7.65 | 0.610 | -0.576 | -0.484 | -0.552 | -71.35 | -17.93 | 63.02 | Subduction InterSlab |
| 536240 | 1685 | 193 | 169 | 133 | 26557900 | 66510 | 1822 | 0.364% | 274.42 | 7.95 | -0.069 | -2.147 | 0.006 | -0.186 | -71.59 | -17.84 | 60.59 | Subduction InterSlab |
| 402717 | 1374 | 199 | 178 | 135 | 26555200 | 52375 | 1823 | 0.365% | 274.27 | 7.45 | -0.521 | 0.545 | -0.731 | 0.749 | -69.88 | -18.71 | 117.71 | Subduction IntraSlab |
| 537413 | 1627 | 200 | 188 | 129 | 26551800 | 66871 | 1824 | 0.365% | 274.12 | 8.05 | 0.028 | -1.555 | 0.329 | -0.362 | -71.45 | -18.00 | 59.33 | Subduction InterSlab |
| 538447 | 1326 | 207 | 175 | 126 | 26548100 | 67142 | 1825 | 0.365% | 273.97 | 8.15 | -1.267 | -0.863 | -1.566 | -0.063 | -71.58 | -18.02 | 56.34 | Subduction InterSlab |
| 402892 | 1435 | 194 | 161 | 144 | 26547700 | 52522 | 1826 | 0.365% | 273.82 | 7.45 | 0.628 | -1.164 | -0.058 | -0.335 | -69.64 | -18.15 | 134.06 | Subduction IntraSlab |
| 538456 | 1601 | 201 | 191 | 117 | 26546300 | 67145 | 1827 | 0.365% | 273.67 | 8.15 | 1.975 | 1.328 | 1.189 | -0.371 | -71.67 | -17.92 | 56.95 | Subduction InterSlab |
| 401436 | 1271 | 171 | 156 | 182 | 26540500 | 51374 | 1828 | 0.366% | 273.52 | 7.25 | -0.386 | 1.739 | 1.127 | 1.068 | -70.22 | -18.61 | 106.09 | Subduction IntraSlab |
| 400659 | 1262 | 210 | 191 | 124 | 26536000 | 50779 | 1829 | 0.366% | 273.37 | 7.15 | -0.510 | 1.155 | -0.068 | -0.320 | -70.28 | -18.36 | 107.20 | Subduction IntraSlab |
| 532190 | 1283 | 164 | 161 | 155 | 26510900 | 65153 | 1830 | 0.366% | 273.22 | 7.65 | 0.129 | -1.111 | 0.489 | 0.989 | -71.46 | -17.85 | 62.88 | Subduction InterSlab |
| 538492 | 1367 | 205 | 180 | 132 | 26510600 | 67151 | 1831 | 0.366% | 273.07 | 8.15 | -0.055 | 1.359 | -0.025 | 1.407 | -71.89 | -17.75 | 56.71 | Subduction InterSlab |
| 537512 | 1466 | 190 | 172 | 145 | 26508800 | 66902 | 1832 | 0.366% | 272.93 | 8.15 | -0.033 | -0.127 | -1.614 | 1.270 | -71.89 | -18.18 | 46.05 | Subduction InterSlab |
| 401752 | 1495 | 189 | 163 | 147 | 26502900 | 51621 | 1833 | 0.367% | 272.78 | 7.25 | -0.219 | 0.471 | -1.351 | -1.443 | -69.75 | -18.33 | 127.23 | Subduction IntraSlab |
| 400831 | 1201 | 186 | 154 | 160 | 26498000 | 50907 | 1834 | 0.367% | 272.63 | 7.15 | 0.623 | -2.100 | 1.221 | -0.229 | -70.08 | -18.41 | 114.15 | Subduction IntraSlab |
| 540261 | 1239 | 187 | 148 | 142 | 26497000 | 67424 | 1835 | 0.367% | 272.48 | 8.35 | 0.399 | 2.320 | 0.620 | 1.102 | -72.34 | -17.58 | 52.06 | Subduction InterSlab |
| 402789 | 1409 | 177 | 174 | 135 | 26488100 | 52438 | 1836 | 0.367% | 272.33 | 7.45 | -1.372 | -0.654 | 0.825 | 0.216 | -69.81 | -18.32 | 125.31 | Subduction IntraSlab |
| 534925 | 1170 | 175 | 151 | 137 | 26480800 | 66072 | 1837 | 0.367% | 272.18 | 7.85 | 1.893 | -1.247 | -1.372 | -1.034 | -71.42 | -17.96 | 60.80 | Subduction InterSlab |
| 534611 | 1507 | 203 | 176 | 130 | 26478100 | 65974 | 1838 | 0.368% | 272.03 | 7.85 | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 535968 | 1677 | 206 | 154 | 139 | 26250100 | 66412 | 1888 | 0.378% | 264.83 | 7.95 | -1.408 | 1.310 | 1.243 | -0.194 | -71.65 | -17.96 | 56.26 | Subduction InterSlab |
| 403763 | 1474 | 207 | 163 | 134 | 26248000 | 53273 | 1889 | 0.378% | 264.69 | 7.75 | 0.768 | -1.465 | 0.446 | 0.129 | -69.41 | -18.83 | 133.03 | Subduction IntraSlab |
| 538326 | 1806 | 219 | 182 | 112 | 26247100 | 67114 | 1890 | 0.378% | 264.55 | 8.15 | 1.438 | 0.246 | -0.786 | 0.069 | -71.85 | -17.84 | 55.34 | Subduction InterSlab |
| 401339 | 1318 | 202 | 162 | 154 | 26243200 | 51294 | 1891 | 0.378% | 264.41 | 7.25 | -1.237 | 0.254 | 0.151 | -0.694 | -70.36 | -18.78 | 99.07 | Subduction IntraSlab |
| 538483 | 1457 | 184 | 162 | 130 | 26236200 | 67149 | 1892 | 0.378% | 264.27 | 8.15 | 1.434 | -0.500 | 0.740 | 0.257 | -71.82 | -17.81 | 56.79 | Subduction InterSlab |
| 403305 | 1431 | 208 | 179 | 145 | 26231700 | 52868 | 1893 | 0.379% | 264.13 | 7.55 | -0.264 | 0.917 | -0.878 | -0.114 | -69.38 | -18.47 | 138.55 | Subduction IntraSlab |
| 538507 | 1588 | 192 | 190 | 105 | 26229800 | 67154 | 1894 | 0.379% | 263.99 | 8.15 | -1.057 | 0.323 | 0.666 | -0.766 | -72.00 | -17.67 | 56.59 | Subduction InterSlab |
| 534529 | 1208 | 163 | 171 | 134 | 26229000 | 65944 | 1895 | 0.379% | 263.85 | 7.85 | -0.028 | -0.750 | -0.035 | 0.174 | -71.55 | -18.09 | 54.93 | Subduction InterSlab |
| 402403 | 1286 | 163 | 180 | 152 | 26226600 | 52119 | 1896 | 0.379% | 263.71 | 7.35 | 0.507 | 0.457 | -0.369 | 0.474 | -69.47 | -18.49 | 135.18 | Subduction IntraSlab |
| 536312 | 1823 | 203 | 196 | 148 | 26218600 | 66538 | 1897 | 0.379% | 263.57 | 7.95 | 1.503 | -0.908 | 0.618 | 0.927 | -71.42 | -17.93 | 61.51 | Subduction InterSlab |
| 400740 | 1116 | 144 | 168 | 164 | 26200200 | 50836 | 1898 | 0.380% | 263.44 | 7.15 | -1.360 | 1.001 | -1.117 | 2.538 | -70.20 | -18.30 | 111.00 | Subduction IntraSlab |
| 402372 | 1377 | 193 | 166 | 143 | 26199000 | 52095 | 1899 | 0.380% | 263.30 | 7.35 | -0.575 | -2.900 | -1.928 | -1.316 | -69.76 | -18.10 | 130.25 | Subduction IntraSlab |
| 400274 | 1052 | 163 | 137 | 168 | 26197400 | 50501 | 1900 | 0.380% | 263.16 | 7.05 | -1.347 | 1.607 | 0.292 | -0.399 | -69.87 | -17.98 | 128.27 | Subduction IntraSlab |
| 402565 | 1172 | 205 | 143 | 180 | 26195600 | 52248 | 1901 | 0.380% | 263.02 | 7.45 | -0.376 | 0.000 | -0.470 | 0.129 | -70.19 | -18.94 | 104.83 | Subduction IntraSlab |
| 536230 | 1944 | 172 | 194 | 125 | 26192300 | 66508 | 1902 | 0.380% | 262.88 | 7.95 | -0.299 | 0.509 | 0.017 | -1.924 | -71.51 | -17.90 | 60.68 | Subduction InterSlab |
| 539658 | 1398 | 179 | 182 | 123 | 26189400 | 67367 | 1903 | 0.381% | 262.74 | 8.25 | -0.624 | 2.118 | -1.694 | -0.564 | -71.85 | -17.84 | 55.34 | Subduction InterSlab |
| 532072 | 1287 | 166 | 158 | 141 | 26187700 | 65115 | 1904 | 0.381% | 262.61 | 7.65 | -1.022 | 1.311 | -0.611 | 0.096 | -71.25 | -18.09 | 61.00 | Subduction InterSlab |
| 401213 | 1638 | 199 | 175 | 150 | 26180700 | 51197 | 1905 | 0.381% | 262.47 | 7.15 | -0.017 | 0.442 | -0.051 | -0.317 | -69.70 | -18.03 | 133.54 | Subduction IntraSlab |
| 539684 | 1416 | 193 | 169 | 119 | 26176100 | 67371 | 1906 | 0.381% | 262.33 | 8.25 | -1.302 | -0.229 | 1.103 | 0.341 | -72.00 | -17.73 | 55.19 | Subduction InterSlab |
| 400677 | 1206 | 186 | 160 | 171 | 26162500 | 50792 | 1907 | 0.381% | 262.19 | 7.15 | 0.007 | 0.342 | -1.515 | 0.060 | -70.26 | -18.39 | 107.45 | Subduction IntraSlab |
| 402770 | 1641 | 190 | 166 | 149 | 26161100 | 52421 | 1908 | 0.382% | 262.05 | 7.45 | -0.061 | 1.236 | 0.458 | -1.036 | -69.78 | -18.60 | 122.81 | Subduction IntraSlab |
| 400971 | 1249 | 187 | 155 | 150 | 26154700 | 51014 | 1909 | 0.382% | 261.92 | 7.15 | -0.122 | 0.061 | -1.745 | 1.281 | -69.91 | -18.35 | 121.10 | Subduction IntraSlab |
| 399979 | 1264 | 176 | 162 | 151 | 26153400 | 50317 | 1910 | 0.382% | 261.78 | 7.05 | 0.700 | 1.127 | -0.268 | -1.164 | -70.09 | -18.09 | 118.33 | Subduction IntraSlab |
| 402473 | 1423 | 181 | 160 | 148 | 26150800 | 52174 | 1911 | 0.382% | 261.64 | 7.35 | 0.317 | -0.293 | 1.337 | 1.547 | -69.50 | -18.12 | 139.63 | Subduction IntraSlab |
| 402374 | 1213 | 176 | 153 | 148 | 26148900 | 52097 | 1912 | 0.382% | 261.51 | 7.35 | 0.605 | -0.861 | 1.339 | -0.520 | -69.80 | -18.02 | 130.02 | Subduction IntraSlab |
| 400859 | 1160 | 180 | 167 | 181 | 26132300 | 50927 | 1913 | 0.383% | 261.37 | 7.15 | -0.814 | 1.821 | 1.586 | 0.198 | -70.06 | -18.30 | 116.17 | Subduction IntraSlab |
| 537441 | 1269 | 179 | 151 | 130 | 26125500 | 66880 | 1914 | 0.383% | 261.23 | 8.05 | -0.410 | -0.938 | -1.106 | 0.841 | -71.79 | -17.75 | 58.94 | Subduction InterSlab |
| 539697 | 1326 | 160 | 151 | 145 | 26124100 | 67373 | 1915 | 0.383% | 261.10 | 8.25 | 0.344 | -0.604 | 0.922 | -0.389 | -72.07 | -17.67 | 55.12 | Subduction InterSlab |
| 539772 | 1402 | 150 | 182 | 130 | 26120300 | 67381 | 1916 | 0.383% | 260.96 | 8.35 | -0.603 | -0.264 | 0.648 | 0.563 | -72.09 | -17.84 | 50.17 | Subduction InterSlab |
| 537321 | 1356 | 176 | 173 | 128 | 26119200 | 66843 | 1917 | 0.383% | 260.82 | 8.05 | 0.615 | -0.061 | -0.673 | 0.426 | -71.74 | -17.83 | 57.58 | Subduction InterSlab |
| 535109 | 1332 | 186 | 159 | 138 | 26108400 | 66138 | 1918 | 0.384% | 260.69 | 7.85 | -1.388 | -0.720 | 0.699 | -0.916 | -71.44 | -17.86 | 62.90 | Subduction InterSlab |
| 536247 | 1498 | 198 | 166 | 114 | 26107900 | 66513 | 1919 | 0.384% | 260.55 | 7.95 | -0.201 | 0.997 | 1.664 | 0.947 | -71.70 | -17.76 | 60.46 | Subduction InterSlab |
| 398138 | 1265 | 159 | 138 | 171 | 26099900 | 49207 | 1920 | 0.384% | 260.42 | 6.95 | -1.678 | 0.704 | -0.856 | 2.253 | -70.44 | -18.55 | 98.70 | Subduction IntraSlab |
| 402242 | 1486 | 175 | 148 | 153 | 26098000 | 51993 | 1921 | 0.384% | 260.28 | 7.35 | -1.027 | -0.019 | 0.370 | -1.556 | -69.74 | -18.90 | 120.57 | Subduction IntraSlab |
| 401135 | 1380 | 192 | 166 | 141 | 26091700 | 51138 | 1922 | 0.384% | 260.15 | 7.15 | -0.829 | -0.285 | 0.139 | -0.479 | -69.85 | -17.96 | 129.32 | Subduction IntraSlab |
| 540686 | 1328 | 184 | 161 | 158 | 26081300 | 67464 | 1923 | 0.385% | 260.01 | 8.35 | -0.542 | -0.614 | 0.049 | 0.085 | -71.83 | -17.91 | 53.95 | Subduction InterSlab |
| 539229 | 1545 | 216 | 165 | 112 | 26079000 | 67289 | 1924 | 0.385% | 259.88 | 8.25 | -0.301 | -0.276 | -1.762 | 0.543 | -71.77 | -18.01 | 52.58 | Subduction InterSlab |
| 400926 | 1226 | 194 | 173 | 145 | 26073500 | 50981 | 1925 | 0.385% | 259.74 | 7.15 | -2.437 | 0.203 | 0.124 | -1.836 | -69.99 | -18.30 | 118.90 | Subduction IntraSlab |
| 400179 | 1299 | 165 | 171 | 135 | 26070300 | 50445 | 1926 | 0.385% | 259.61 | 7.05 | 0.938 | 0.018 | -0.502 | 0.808 | -69.77 | -18.45 | 125.04 | Subduction InterSlab |
| 537301 | 1178 | 167 | 152 | 139 | 26069700 | 66839 | 1927 | 0.385% | 259.47 | 8.05 | 0.525 | 0.488 | 0.335 | -0.208 | -71.60 | -17.94 | 57.74 | Subduction InterSlab |
| 536050 | 1583 | 227 | 167 | 145 | 26058900 | 66443 | 1928 | 0.386% | 259.34 | 7.95 | -1.130 | 1.528 | -1.328 | -1.201 | -71.52 | -18.03 | 57.11 | Subduction InterSlab |
| 401557 | 1195 | 146 | 142 | 167 | 26057700 | 51466 | 1929 | 0.386% | 259.20 | 7.25 | 0.340 | 0.454 | -2.165 | 1.663 | -69.93 | -18.96 | 113.04 | Subduction IntraSlab |
| 535692 | 1311 | 160 | 173 | 108 | 26057100 | 66323 | 1930 | 0.386% | 259.07 | 7.95 | -0.253 | -1.442 | -0.102 | -1.568 | -71.79 | -18.03 | 51.85 | Subduction InterSlab |
| 533368 | 1398 | 192 | 186 | 124 | 26045400 | 65546 | 1931 | 0.386% | 258.93 | 7.75 | -0.289 | -1.186 | 1.199 | 1.317 | -71.36 | -18.12 | 58.01 | Subduction InterSlab |
| 537316 | 1259 | 165 | 177 | 130 | 26041900 | 66842 | 1932 | 0.386% | 258.80 | 8.05 | 0.434 | -0.021 | 0.097 | -0.901 | -71.71 | -17.86 | 57.62 | Subduction InterSlab |
| 539835 | 1539 | 181 | 177 | 163 | 26036600 | 67387 | 1933 | 0.387% | 258.67 | 8.35 | -0.746 | -1.268 | -1.088 | -1.460 | -72.29 | -17.66 | 50.70 | Subduction InterSlab |
| 403083 | 1253 | 206 | 173 | 128 | 26028200 | 52680 | 1934 | 0.387% | 258.53 | 7.55 | -0.492 | 1.385 | 0.296 | 1.559 | -69.98 | -18.99 | 111.00 | Subduction IntraSlab |
| 533654 | 1261 | 170 | 153 | 145 | 26026500 | 65644 | 1935 | 0.387% | 258.40 | 7.75 | 1.405 | 0.405 | -0.150 | 0.475 | -71.50 | -17.82 | 62.83 | Subduction InterSlab |
| 403403 | 1509 | 216 | 177 | 129 | 26022300 | 52953 | 1936 | 0.387% | 258.26 | 7.65 | -0.762 | -1.448 | 1.717 | 1.508 | -70.06 | -18.84 | 109.89 | Subduction IntraSlab |
| 534719 | 1453 | 175 | 165 | 159 | 26017200 | 66006 | 1937 | 0.387% | 258.13 | 7.85 | 1.255 | 1.046 | 0.740 | -0.182 | -71.45 | -18.06 | 57.91 | Subduction InterSlab |
| 401172 | 1400 | 185 | 161 | 153 | 26015300 | 51167 | 1938 | 0.388% | 258.00 | 7.15 | 0.245 | -1.049 | -0.934 | -0.905 | -69.78 | -17.97 | 131.58 | Subduction IntraSlab |
| 401772 | 1395 | 205 | 171 | 154 | 26012000 | 51634 | 1939 | 0.388% | 257.86 | 7.25 | 0.120 | -1.848 | 0.368 | 1.152 | -69.85 | -17.99 | 128.84 | Subduction IntraSlab |
| 535872 | 1245 | 162 | 183 | 134 | 26009600 | 66379 | 1940 | 0.388% | 257.73 | 7.95 | 0.818 | -0.869 | 0.191 | -0.041 | -71.59 | -18.09 | 54.18 | Subduction InterSlab |
| 534816 | 1524 | 207 | 190 | 126 | 26006900 | 66037 | 1941 | 0.388% | 257.60 | 7.85 | 1.815 | -0.259 | 0.194 | 0.310 | -71.36 | -18.09 | 58.72 | Subduction InterSlab |
| 402851 | 1287 | 214 | 162 | 143 | 25994200 | 52489 | 1942 | 0.388% | 257.47 | 7.45 | -1.930 | 0.071 | -1.044 | 2.795 | -69.65 | -18.33 | 131.04 | Subduction IntraSlab |
| 402260 | 1307 | 198 | 159 | 164 | 25980700 | 52008 | 1943 | 0.389% | 257.33 | 7.35 | -0.390 | 0.788 | 0.176 | 0.832 | -69.82 | -18.55 | 122.06 | Subduction IntraSlab |
| 402226 | 1310 | 231 | 180 | 138 | 25979300 | 51882 | 1944 | 0.389% | 257.20 | 7.35 | 0.153 | 0.560 | 1.778 | 1.533 | -70.06 | -18.04 | 120.43 | Subduction IntraSlab |
| 400661 | 1370 | 184 | 176 | 142 | 25974700 | 50780 | 1945 | 0.389% | 257.07 | 7.15 | 2.653 | -0.674 | -1.752 | 2.340 | -70.30 | -18.23 | 108.62 | Subduction IntraSlab |
| 401377 | 1329 | 172 | 161 | 161 | 25956700 | 51323 | 1946 | 0.389% | 256.94 | 7.25 | 0.823 | -0.445 | -1.024 | 1.134 | -70.33 | -18.50 | 103.60 | Subduction IntraSlab |
| 539275 | 1259 | 186 | 152 | 145 | 25956100 | 67300 | 1947 | 0.389% | 256.81 | 8.25 | -0.345 | 0.139 | -0.889 | -0.098 | -72.15 | -17.69 | 52.93 | Subduction InterSlab |
| 539742 | 1514 | 196 | 162 | 137 | 25951500 | 67378 | 1948 | 0.390% | 256.67 | 8.35 | 0.808 | 1.145 | -0.237 | 0.231 | -71.98 | -17.93 | 50.26 | Subduction InterSlab |
| 402424 | 1257 | 207 | 213 | 121 | 25948900 | 52136 | 1949 | 0.390% | 256.5 | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | Tratamiento de Datos | | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------------------|--------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 532187 | 1362 | 175 | 164 | 140 | 25666300 | 65152 | 1999 | 0.400% | 250.13 | 7.65 | 0.295 | 0.559 | -0.489 | -2.082 | -71.42 | -17.88 | 62.93 | Subduction InterSlab |
| 535856 | 1177 | 181 | 158 | 129 | 25665600 | 67175 | 2000 | 0.400% | 250.00 | 8.15 | -0.166 | 0.170 | -0.522 | -0.026 | -71.76 | -17.82 | 57.56 | Subduction InterSlab |
| 540143 | 1319 | 223 | 174 | 115 | 25659700 | 67414 | 2001 | 0.400% | 249.88 | 8.35 | -0.062 | 0.983 | 0.922 | -1.640 | -71.99 | -17.87 | 51.68 | Subduction InterSlab |
| 537660 | 1460 | 190 | 162 | 128 | 25651500 | 66936 | 2002 | 0.400% | 249.75 | 8.15 | -0.137 | 0.298 | -2.251 | -1.112 | -71.85 | -18.15 | 47.51 | Subduction InterSlab |
| 403638 | 1567 | 190 | 180 | 131 | 25649800 | 53162 | 2003 | 0.401% | 249.63 | 7.75 | -0.717 | 1.046 | -0.484 | -0.641 | -70.01 | -19.27 | 107.54 | Subduction IntraSlab |
| 530364 | 986 | 111 | 127 | 185 | 25645800 | 64552 | 2004 | 0.401% | 249.50 | 7.55 | -1.181 | 0.568 | -0.143 | -0.411 | -71.34 | -18.11 | 58.75 | Subduction InterSlab |
| 539816 | 1393 | 225 | 158 | 129 | 25638500 | 67385 | 2005 | 0.401% | 249.38 | 8.35 | 0.344 | -1.707 | 0.098 | -0.144 | -72.22 | -17.71 | 50.76 | Subduction InterSlab |
| 400952 | 1453 | 197 | 176 | 142 | 25630600 | 51000 | 2006 | 0.401% | 249.25 | 7.15 | 0.044 | 0.952 | 0.958 | 0.599 | -69.99 | -18.20 | 120.17 | Subduction IntraSlab |
| 402685 | 1376 | 176 | 172 | 124 | 25625200 | 52347 | 2007 | 0.401% | 249.13 | 7.45 | -1.255 | -0.332 | 0.204 | 0.127 | -69.95 | -18.77 | 114.47 | Subduction IntraSlab |
| 536553 | 1467 | 191 | 148 | 151 | 25621600 | 66609 | 2008 | 0.402% | 249.00 | 8.05 | 0.337 | -0.728 | 0.838 | 0.524 | -71.80 | -18.19 | 47.55 | Subduction InterSlab |
| 538500 | 1422 | 192 | 161 | 122 | 25615600 | 67153 | 2009 | 0.402% | 248.88 | 8.15 | 0.277 | -1.414 | -0.019 | 0.812 | -71.96 | -17.70 | 56.63 | Subduction InterSlab |
| 538854 | 1254 | 167 | 158 | 124 | 25609000 | 67226 | 2010 | 0.402% | 248.76 | 8.25 | 0.492 | 1.406 | -0.640 | -0.026 | -72.22 | -17.74 | 50.06 | Subduction InterSlab |
| 537519 | 1205 | 184 | 162 | 127 | 25607200 | 66904 | 2011 | 0.402% | 248.63 | 8.15 | -0.638 | 0.299 | 1.237 | -0.784 | -71.94 | -18.11 | 46.73 | Subduction InterSlab |
| 538611 | 1351 | 203 | 160 | 141 | 25602600 | 67182 | 2012 | 0.402% | 248.51 | 8.25 | 0.169 | 1.480 | 1.140 | 0.504 | -71.98 | -18.02 | 48.13 | Subduction InterSlab |
| 536318 | 1513 | 198 | 189 | 106 | 25600900 | 66539 | 2013 | 0.403% | 248.39 | 7.95 | 0.797 | -0.607 | 1.175 | 0.549 | -71.46 | -17.91 | 61.46 | Subduction InterSlab |
| 401844 | 1141 | 165 | 172 | 143 | 25595300 | 51682 | 2014 | 0.403% | 248.26 | 7.25 | 1.192 | 0.757 | 0.195 | -0.214 | -69.61 | -18.22 | 133.77 | Subduction IntraSlab |
| 539678 | 1074 | 163 | 165 | 141 | 25584400 | 67370 | 2015 | 0.403% | 248.14 | 8.25 | -1.361 | -0.704 | 1.582 | -0.620 | -71.96 | -17.75 | 55.23 | Subduction InterSlab |
| 535780 | 1417 | 238 | 162 | 154 | 25577800 | 66351 | 2016 | 0.403% | 248.02 | 7.95 | 1.286 | 0.553 | 1.418 | -0.460 | -71.72 | -18.02 | 53.34 | Subduction InterSlab |
| 400778 | 1349 | 160 | 172 | 153 | 25576200 | 50863 | 2017 | 0.403% | 247.89 | 7.15 | 0.020 | 0.519 | 0.568 | 1.277 | -70.07 | -18.73 | 110.68 | Subduction IntraSlab |
| 402460 | 1266 | 175 | 164 | 145 | 25575400 | 52164 | 2018 | 0.404% | 247.77 | 7.35 | 0.421 | -0.101 | 0.292 | 1.605 | -69.45 | -18.26 | 139.28 | Subduction IntraSlab |
| 535675 | 1311 | 165 | 190 | 128 | 25574000 | 66319 | 2019 | 0.404% | 247.65 | 7.95 | 0.679 | 0.179 | -0.366 | -0.311 | -71.66 | -18.16 | 51.25 | Subduction InterSlab |
| 537677 | 1261 | 165 | 164 | 116 | 25565300 | 66941 | 2020 | 0.404% | 247.52 | 8.15 | 0.634 | 0.205 | 0.627 | 1.482 | -72.01 | -17.99 | 48.10 | Subduction InterSlab |
| 539687 | 1264 | 181 | 147 | 133 | 25551500 | 67371 | 2021 | 0.404% | 247.40 | 8.25 | 1.107 | 0.818 | -0.759 | 0.453 | -72.00 | -17.73 | 55.19 | Subduction InterSlab |
| 403418 | 1461 | 192 | 169 | 137 | 25549200 | 52967 | 2022 | 0.404% | 247.28 | 7.65 | 0.487 | -0.474 | -0.366 | -0.734 | -69.93 | -19.19 | 111.22 | Subduction IntraSlab |
| 401921 | 1363 | 173 | 159 | 160 | 25541900 | 51743 | 2023 | 0.405% | 247.16 | 7.25 | 0.761 | -0.204 | -2.515 | 1.800 | -69.61 | -17.94 | 138.44 | Subduction IntraSlab |
| 539471 | 1288 | 211 | 149 | 123 | 25541300 | 67334 | 2024 | 0.405% | 247.04 | 8.25 | 0.455 | -0.852 | -1.140 | 0.499 | -72.01 | -17.74 | 54.47 | Subduction InterSlab |
| 399717 | 1074 | 141 | 153 | 174 | 25537900 | 50147 | 2025 | 0.405% | 246.91 | 7.05 | 0.155 | -0.911 | -1.570 | -0.228 | -70.25 | -18.31 | 108.96 | Subduction IntraSlab |
| 534830 | 1290 | 174 | 183 | 122 | 25532000 | 66041 | 2026 | 0.405% | 246.79 | 7.85 | -0.452 | 0.903 | -1.378 | 0.000 | -71.49 | -17.97 | 59.29 | Subduction InterSlab |
| 400885 | 1257 | 173 | 160 | 164 | 25530700 | 50945 | 2027 | 0.405% | 246.67 | 7.15 | 0.133 | 0.326 | -1.515 | -0.289 | -70.02 | -18.37 | 116.48 | Subduction IntraSlab |
| 540560 | 1521 | 205 | 179 | 107 | 25522300 | 67452 | 2028 | 0.406% | 246.55 | 8.35 | -0.176 | -0.238 | 0.306 | -1.532 | -72.06 | -17.76 | 53.02 | Subduction InterSlab |
| 539013 | 1213 | 205 | 168 | 121 | 25518600 | 67253 | 2029 | 0.406% | 246.43 | 8.25 | -1.199 | 0.016 | -1.225 | 0.255 | -71.84 | -18.01 | 51.09 | Subduction InterSlab |
| 537821 | 1234 | 178 | 171 | 122 | 25492400 | 66975 | 2030 | 0.406% | 246.31 | 8.15 | 0.118 | -1.902 | 0.235 | 0.934 | -71.98 | -17.96 | 49.55 | Subduction InterSlab |
| 401132 | 1441 | 209 | 162 | 156 | 25484800 | 51135 | 2031 | 0.406% | 246.18 | 7.15 | 0.300 | 0.959 | 1.103 | 0.094 | -69.77 | -18.13 | 129.74 | Subduction IntraSlab |
| 402970 | 1355 | 205 | 179 | 120 | 25479700 | 52584 | 2032 | 0.406% | 246.06 | 7.55 | 1.334 | -0.645 | -0.465 | -1.904 | -70.32 | -18.70 | 101.18 | Subduction IntraSlab |
| 402526 | 1346 | 215 | 192 | 132 | 25477300 | 52216 | 2033 | 0.407% | 245.94 | 7.45 | -0.444 | -0.947 | 0.189 | 0.600 | -70.30 | -18.50 | 104.57 | Subduction IntraSlab |
| 400577 | 1122 | 154 | 161 | 152 | 25468600 | 50719 | 2034 | 0.407% | 245.82 | 7.15 | -1.335 | 0.114 | 0.461 | -1.130 | -70.33 | -18.65 | 101.35 | Subduction IntraSlab |
| 535387 | 1430 | 190 | 160 | 122 | 25467900 | 66229 | 2035 | 0.407% | 245.70 | 7.95 | 1.396 | 0.404 | -0.576 | -1.299 | -71.80 | -18.22 | 46.83 | Subduction InterSlab |
| 402148 | 1314 | 217 | 173 | 123 | 25462900 | 51927 | 2036 | 0.407% | 245.58 | 7.35 | -0.767 | -1.190 | 0.152 | 1.852 | -70.13 | -18.15 | 116.18 | Subduction IntraSlab |
| 534923 | 1325 | 163 | 155 | 136 | 25452400 | 66071 | 2037 | 0.407% | 245.46 | 7.85 | 0.556 | 0.971 | 0.716 | 1.536 | -71.34 | -18.02 | 60.89 | Subduction InterSlab |
| 402287 | 1371 | 182 | 150 | 148 | 25437500 | 52029 | 2038 | 0.408% | 245.34 | 7.35 | 0.250 | 0.199 | -0.655 | -0.180 | -69.76 | -18.52 | 124.57 | Subduction IntraSlab |
| 536567 | 1292 | 173 | 144 | 138 | 25435300 | 66613 | 2039 | 0.408% | 245.22 | 8.05 | 1.459 | 0.674 | -2.129 | 0.924 | -71.94 | -18.08 | 47.44 | Subduction InterSlab |
| 403174 | 1380 | 180 | 166 | 121 | 25434200 | 52755 | 2040 | 0.408% | 245.10 | 7.55 | 0.745 | -1.937 | 0.382 | 0.249 | -69.69 | -18.95 | 121.92 | Subduction IntraSlab |
| 538582 | 1583 | 186 | 201 | 125 | 25433900 | 67173 | 2041 | 0.408% | 244.98 | 8.15 | 0.308 | -0.195 | 0.119 | -0.593 | -71.69 | -17.88 | 57.64 | Subduction InterSlab |
| 540122 | 1372 | 200 | 170 | 108 | 25433700 | 67413 | 2042 | 0.408% | 244.86 | 8.35 | 0.410 | 0.313 | 1.297 | 0.208 | -71.95 | -17.90 | 51.71 | Subduction InterSlab |
| 539018 | 1394 | 202 | 181 | 138 | 25427600 | 67254 | 2043 | 0.409% | 244.74 | 8.25 | -1.177 | 1.152 | 0.604 | 1.258 | -71.88 | -17.99 | 51.63 | Subduction InterSlab |
| 530541 | 1118 | 143 | 128 | 171 | 25415800 | 64607 | 2044 | 0.409% | 244.62 | 7.55 | -0.846 | 0.377 | -0.423 | 0.988 | -71.16 | -18.13 | 61.06 | Subduction InterSlab |
| 402269 | 1427 | 188 | 171 | 157 | 25413600 | 52015 | 2045 | 0.409% | 244.50 | 7.35 | -0.408 | 1.058 | -1.176 | 0.051 | -69.82 | -18.45 | 123.14 | Subduction IntraSlab |
| 538650 | 1197 | 172 | 155 | 133 | 25412300 | 67190 | 2046 | 0.409% | 244.38 | 8.25 | 0.195 | -0.815 | 0.650 | -1.317 | -72.25 | -17.77 | 48.63 | Subduction InterSlab |
| 536054 | 1475 | 184 | 176 | 139 | 25411200 | 66445 | 2047 | 0.409% | 244.26 | 7.95 | -0.496 | -0.893 | 0.327 | -0.629 | -71.58 | -17.96 | 57.76 | Subduction InterSlab |
| 399764 | 971 | 155 | 109 | 192 | 25407100 | 50176 | 2048 | 0.410% | 244.14 | 7.05 | 0.363 | -1.322 | -1.194 | 0.948 | -70.17 | -18.49 | 109.36 | Subduction IntraSlab |
| 538189 | 1378 | 188 | 190 | 102 | 25401800 | 67077 | 2049 | 0.410% | 244.02 | 8.15 | 0.379 | -0.906 | 0.277 | -0.391 | -71.85 | -17.90 | 53.93 | Subduction InterSlab |
| 402734 | 1181 | 177 | 172 | 138 | 25388800 | 52388 | 2050 | 0.410% | 243.90 | 7.45 | -0.006 | -1.028 | 1.507 | 0.508 | -69.88 | -18.61 | 118.93 | Subduction IntraSlab |
| 539824 | 1325 | 158 | 178 | 119 | 25385300 | 67385 | 2051 | 0.410% | 243.78 | 8.35 | -1.164 | 1.076 | -0.074 | 1.021 | -72.22 | -17.71 | 50.76 | Subduction InterSlab |
| 403511 | 1588 | 199 | 175 | 152 | 25384200 | 53052 | 2052 | 0.410% | 243.66 | 7.65 | -0.066 | -1.208 | -0.174 | 1.931 | -69.55 | -18.81 | 128.11 | Subduction IntraSlab |
| 540136 | 1548 | 207 | 166 | 126 | 25382800 | 67414 | 2053 | 0.411% | 243.55 | 8.35 | 1.183 | -0.494 | 1.721 | -2.743 | -71.99 | -17.87 | 51.68 | Subduction InterSlab |
| 537073 | 1211 | 141 | 169 | 149 | 25377400 | 66775 | 2054 | 0.411% | 243.43 | 8.05 | -0.346 | 0.621 | 1.171 | 0.277 | -71.81 | -17.99 | 54.68 | Subduction InterSlab |
| 402176 | 1188 | 166 | 140 | 150 | 25376600 | 51951 | 2055 | 0.411% | 243.31 | 7.35 | 1.227 | -1.360 | 0.439 | 1.117 | -70.03 | -18.33 | 117.18 | Subduction IntraSlab |
| 530637 | 1549 | 195 | 171 | 159 | 25372600 | 64638 | 2056 | 0.411% | 243.19 | 7.55 | -1.709 | 1.187 | -1.284 | -0.110 | -71.20 | -18.04 | 63.22 | Subduction InterSlab |
| 538610 | 1443 | 216 | 174 | 144 | 25358100 | 67182 | 2057 | 0.411% | 243.07 | 8.25 | 0.199 | 1.110 | 0.713 | 0.440 | -71.98 | -18.02 | 48.13 | Subduction InterSlab |
| 528710 | 912 | 149 | 130 | 173 | 25350000 | 64019 | 2058 | 0.412% | 242.95 | 7.45 | 0.248 | 0.929 | 1.143 | 0.044 | -71.40 | -18.04 | 59.40 | Subduction InterSlab |
| 399592 | 1328 | 177 | 174 | 170 | 25344600 | 50067 | 2059 | 0.412% | 242.84 | 7.05 | 0.482 | -0.309 | 0.997 | 0.769 | -70.38 | -18.22 | 105.56 | Subduction IntraSlab |
| 402810 | 1222 | 170 | 169 | 138 | 25344700 | 52457 | 2060 | 0.412% | 242.72 | 7.45 | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 537517 | 1362 | 185 | 182 | 113 | 25185500 | 66904 | 2110 | 0.422% | 236.97 | 8.15 | 0.938 | -1.880 | 0.283 | 0.022 | -71.94 | -18.11 | 46.73 | Subduction InterSlab |
| 400626 | 1257 | 202 | 168 | 124 | 25180800 | 50755 | 2111 | 0.422% | 236.85 | 7.15 | 1.293 | -0.053 | 0.885 | 0.591 | -70.30 | -18.46 | 104.90 | Subduction IntraSlab |
| 402779 | 1259 | 170 | 156 | 162 | 25178400 | 52429 | 2112 | 0.422% | 236.74 | 7.45 | -0.509 | 1.119 | 0.507 | -0.582 | -69.68 | -18.80 | 123.89 | Subduction IntraSlab |
| 403602 | 1355 | 198 | 157 | 159 | 25177200 | 53131 | 2113 | 0.423% | 236.63 | 7.75 | -0.445 | 0.561 | -0.571 | 1.682 | -70.25 | -18.81 | 103.11 | Subduction IntraSlab |
| 402298 | 1225 | 198 | 170 | 151 | 25166700 | 52037 | 2114 | 0.423% | 236.52 | 7.35 | 0.424 | 0.025 | 0.329 | 1.252 | -69.94 | -18.01 | 125.08 | Subduction IntraSlab |
| 402333 | 1585 | 184 | 162 | 148 | 25166400 | 52061 | 2115 | 0.423% | 236.41 | 7.35 | -1.266 | 0.184 | -1.162 | -0.488 | -69.85 | -18.11 | 126.82 | Subduction IntraSlab |
| 402723 | 1433 | 216 | 165 | 131 | 25166300 | 52379 | 2116 | 0.423% | 236.29 | 7.45 | -0.231 | -0.579 | 0.387 | 1.654 | -70.03 | -18.15 | 119.73 | Subduction IntraSlab |
| 535024 | 1424 | 195 | 157 | 120 | 25162300 | 66108 | 2117 | 0.423% | 236.18 | 7.85 | 0.341 | -0.252 | 1.172 | 1.063 | -71.53 | -18.72 | 62.07 | Subduction IntraSlab |
| 537826 | 1182 | 183 | 186 | 107 | 25157800 | 66976 | 2118 | 0.424% | 236.07 | 8.15 | -0.596 | 0.726 | 0.517 | -0.506 | -72.02 | -17.93 | 49.52 | Subduction InterSlab |
| 532005 | 1272 | 173 | 162 | 134 | 25156900 | 65091 | 2119 | 0.424% | 235.96 | 7.65 | -1.362 | 0.595 | 1.598 | 0.039 | -71.53 | -17.91 | 59.95 | Subduction InterSlab |
| 536125 | 1318 | 182 | 210 | 95 | 25154300 | 66473 | 2120 | 0.424% | 235.85 | 7.95 | 1.058 | 0.119 | 0.483 | 2.017 | -71.45 | -18.03 | 58.62 | Subduction InterSlab |
| 401499 | 1190 | 181 | 167 | 139 | 25150300 | 51423 | 2121 | 0.424% | 235.74 | 7.25 | 2.073 | 0.574 | 0.633 | 1.208 | -70.07 | -18.80 | 109.95 | Subduction IntraSlab |
| 400072 | 1247 | 172 | 144 | 142 | 25145400 | 50373 | 2122 | 0.424% | 235.63 | 7.05 | 0.323 | 0.923 | 0.953 | 1.460 | -69.96 | -18.26 | 120.65 | Subduction IntraSlab |
| 536767 | 1315 | 183 | 171 | 111 | 25143100 | 66677 | 2123 | 0.425% | 235.52 | 8.05 | -1.091 | -0.667 | 1.134 | -0.009 | -71.87 | -18.01 | 50.35 | Subduction InterSlab |
| 403700 | 1368 | 180 | 168 | 135 | 25140200 | 51583 | 2124 | 0.425% | 235.40 | 7.25 | -0.918 | -2.098 | -0.740 | -0.013 | -69.89 | -18.21 | 124.46 | Subduction IntraSlab |
| 537096 | 1398 | 209 | 151 | 109 | 25140100 | 66780 | 2125 | 0.425% | 235.29 | 8.05 | -1.412 | -0.458 | -1.166 | -0.394 | -71.99 | -17.75 | 54.49 | Subduction InterSlab |
| 534336 | 1378 | 179 | 148 | 135 | 25117400 | 65882 | 2126 | 0.425% | 235.18 | 7.85 | 0.150 | -1.810 | -0.420 | 0.399 | -71.53 | -18.26 | 51.36 | Subduction InterSlab |
| 402167 | 1254 | 198 | 164 | 131 | 25106800 | 51944 | 2127 | 0.425% | 235.07 | 7.35 | 0.981 | -0.610 | 0.339 | 0.342 | -69.92 | -18.75 | 115.77 | Subduction IntraSlab |
| 539488 | 1319 | 175 | 168 | 113 | 25102800 | 67339 | 2128 | 0.426% | 234.96 | 8.25 | -0.405 | 1.144 | -1.165 | 0.901 | -72.19 | -17.60 | 54.29 | Subduction InterSlab |
| 401226 | 1242 | 137 | 165 | 142 | 25098700 | 51208 | 2129 | 0.426% | 234.85 | 7.15 | 1.192 | -0.270 | -1.894 | -1.623 | -69.66 | -18.06 | 134.85 | Subduction IntraSlab |
| 401502 | 1463 | 206 | 148 | 139 | 25098000 | 51425 | 2130 | 0.426% | 234.74 | 7.25 | -1.196 | 1.638 | -0.323 | -1.414 | -70.12 | -18.51 | 110.99 | Subduction IntraSlab |
| 402238 | 1442 | 211 | 161 | 141 | 25096500 | 51990 | 2131 | 0.426% | 234.63 | 7.35 | -1.254 | 1.447 | 0.935 | 0.233 | -70.00 | -18.16 | 120.78 | Subduction IntraSlab |
| 401782 | 1346 | 200 | 144 | 142 | 25082800 | 51641 | 2132 | 0.426% | 234.52 | 7.25 | 1.187 | -0.325 | -1.282 | -0.065 | -69.65 | -18.35 | 130.52 | Subduction IntraSlab |
| 539481 | 1071 | 152 | 143 | 158 | 25081200 | 67337 | 2133 | 0.427% | 234.41 | 8.25 | -0.698 | -0.897 | -0.969 | -0.887 | -72.12 | -17.66 | 54.36 | Subduction InterSlab |
| 535115 | 1395 | 174 | 158 | 129 | 25077800 | 66139 | 2134 | 0.427% | 234.30 | 7.85 | -0.273 | -0.628 | -1.561 | 0.077 | -71.48 | -17.84 | 62.85 | Subduction InterSlab |
| 398221 | 1060 | 167 | 148 | 162 | 25072700 | 49254 | 2135 | 0.427% | 234.19 | 6.95 | 0.605 | 0.376 | 0.785 | 0.160 | -70.40 | -18.35 | 103.09 | Subduction IntraSlab |
| 403247 | 1366 | 164 | 161 | 141 | 25064900 | 52821 | 2136 | 0.427% | 234.08 | 7.55 | -0.157 | -0.484 | -0.613 | -0.099 | -69.55 | -18.56 | 131.39 | Subduction IntraSlab |
| 540236 | 1451 | 175 | 155 | 113 | 25060900 | 67422 | 2137 | 0.427% | 233.97 | 8.35 | -0.804 | 0.793 | -0.499 | -0.017 | -72.26 | -17.63 | 52.13 | Subduction InterSlab |
| 400676 | 1193 | 166 | 156 | 147 | 25060800 | 50791 | 2138 | 0.428% | 233.86 | 7.15 | 0.182 | -0.183 | -1.627 | -1.214 | -70.25 | -18.47 | 106.86 | Subduction IntraSlab |
| 400761 | 1261 | 179 | 148 | 162 | 25058400 | 50851 | 2139 | 0.428% | 233.75 | 7.15 | -0.573 | 0.843 | -0.029 | 0.282 | -70.18 | -18.24 | 112.83 | Subduction IntraSlab |
| 401485 | 1253 | 167 | 151 | 165 | 25046600 | 51412 | 2140 | 0.428% | 233.64 | 7.25 | 0.071 | -0.209 | 0.628 | -0.425 | -70.22 | -18.14 | 112.83 | Subduction IntraSlab |
| 399043 | 1369 | 182 | 139 | 160 | 25046000 | 49735 | 2141 | 0.428% | 233.54 | 6.95 | -2.209 | -0.443 | 1.016 | -0.208 | -69.94 | -18.01 | 125.08 | Subduction IntraSlab |
| 401380 | 1413 | 198 | 172 | 140 | 25043000 | 51325 | 2142 | 0.428% | 233.43 | 7.25 | -0.122 | -0.056 | -0.817 | 0.458 | -70.34 | -18.33 | 105.53 | Subduction IntraSlab |
| 539462 | 1451 | 191 | 155 | 127 | 25039300 | 67334 | 2143 | 0.429% | 233.32 | 8.25 | -1.684 | 0.716 | 0.423 | -1.222 | -72.01 | -17.74 | 54.47 | Subduction InterSlab |
| 402193 | 1199 | 145 | 159 | 136 | 25038300 | 51960 | 2144 | 0.429% | 233.21 | 7.35 | 0.266 | -0.263 | -1.460 | 1.319 | -69.90 | -18.69 | 117.06 | Subduction IntraSlab |
| 536870 | 1521 | 212 | 180 | 118 | 25034900 | 66709 | 2145 | 0.429% | 233.10 | 8.05 | -0.591 | 1.202 | -0.999 | -1.454 | -71.84 | -17.98 | 51.80 | Subduction InterSlab |
| 401716 | 1615 | 186 | 147 | 154 | 25030300 | 51596 | 2146 | 0.429% | 232.99 | 7.25 | -0.719 | 0.848 | -0.558 | 0.592 | -69.79 | -18.41 | 124.93 | Subduction IntraSlab |
| 399769 | 1386 | 183 | 163 | 130 | 25028400 | 50180 | 2147 | 0.429% | 232.88 | 7.05 | 0.765 | 2.001 | -0.309 | -0.218 | -70.23 | -18.20 | 111.58 | Subduction IntraSlab |
| 533551 | 1307 | 163 | 173 | 129 | 25024800 | 65607 | 2148 | 0.430% | 232.77 | 7.75 | 1.059 | -0.207 | 0.916 | 0.299 | -71.25 | -18.09 | 61.00 | Subduction InterSlab |
| 537434 | 1216 | 176 | 152 | 141 | 25023400 | 66878 | 2149 | 0.430% | 232.67 | 8.05 | -0.641 | 1.582 | -0.248 | 0.281 | -71.71 | -17.80 | 59.03 | Subduction InterSlab |
| 402552 | 1296 | 188 | 167 | 123 | 25022900 | 52238 | 2150 | 0.430% | 232.56 | 7.45 | -2.041 | -0.759 | 0.586 | 1.060 | -70.22 | -18.77 | 104.44 | Subduction IntraSlab |
| 401564 | 1495 | 217 | 159 | 136 | 25021900 | 51472 | 2151 | 0.430% | 232.45 | 7.25 | 0.451 | -0.180 | 0.320 | -0.533 | -70.07 | -18.38 | 114.81 | Subduction IntraSlab |
| 538801 | 1112 | 163 | 153 | 153 | 25018800 | 67217 | 2152 | 0.430% | 232.34 | 8.25 | 0.113 | -1.143 | 0.092 | -0.816 | -71.91 | -18.02 | 49.61 | Subduction InterSlab |
| 403314 | 1223 | 193 | 162 | 136 | 25016800 | 52875 | 2153 | 0.431% | 232.23 | 7.55 | -0.647 | 0.142 | -0.089 | 1.836 | -69.53 | -18.12 | 138.30 | Subduction IntraSlab |
| 402034 | 1447 | 205 | 160 | 132 | 25014300 | 51831 | 2154 | 0.431% | 232.13 | 7.35 | 0.197 | -1.252 | -0.623 | -1.207 | -70.25 | -18.72 | 104.01 | Subduction IntraSlab |
| 539877 | 1580 | 185 | 161 | 117 | 25011600 | 67391 | 2155 | 0.431% | 232.02 | 8.35 | 2.183 | -1.300 | -0.495 | 1.004 | -72.44 | -17.55 | 50.58 | Subduction InterSlab |
| 400826 | 1322 | 178 | 162 | 145 | 25009500 | 50903 | 2156 | 0.431% | 231.91 | 7.15 | -0.864 | -1.782 | 1.429 | -1.302 | -70.03 | -18.62 | 113.28 | Subduction IntraSlab |
| 536135 | 1291 | 177 | 153 | 106 | 25008700 | 66475 | 2157 | 0.431% | 231.80 | 7.95 | -0.360 | 1.426 | -1.802 | 2.108 | -71.55 | -17.93 | 59.22 | Subduction InterSlab |
| 401026 | 1209 | 170 | 162 | 140 | 25008500 | 51054 | 2158 | 0.432% | 231.70 | 7.15 | 0.452 | -1.702 | -0.272 | -0.603 | -70.02 | -17.90 | 124.02 | Subduction IntraSlab |
| 537207 | 1303 | 176 | 141 | 136 | 25008100 | 66811 | 2159 | 0.432% | 231.59 | 8.05 | -1.630 | -1.513 | -0.922 | -0.751 | -71.85 | -17.81 | 56.05 | Subduction InterSlab |
| 402641 | 1347 | 190 | 166 | 117 | 25003900 | 52309 | 2160 | 0.432% | 231.48 | 7.45 | 1.440 | 0.171 | -1.582 | 0.164 | -70.15 | -18.36 | 112.22 | Subduction IntraSlab |
| 401192 | 1023 | 142 | 139 | 154 | 25003300 | 51181 | 2161 | 0.432% | 231.37 | 7.15 | -1.150 | -0.175 | -0.077 | 0.309 | -69.68 | -18.13 | 132.73 | Subduction IntraSlab |
| 530545 | 1486 | 188 | 157 | 131 | 24998000 | 64608 | 2162 | 0.432% | 231.27 | 7.55 | -0.530 | 0.916 | -0.377 | 0.118 | -71.20 | -18.10 | 61.79 | Subduction InterSlab |
| 401210 | 1308 | 173 | 184 | 136 | 24997000 | 51195 | 2163 | 0.433% | 231.16 | 7.15 | -0.060 | 0.826 | 0.170 | -1.390 | -69.66 | -18.11 | 133.89 | Subduction IntraSlab |
| 536147 | 1325 | 182 | 164 | 122 | 24991300 | 66480 | 2164 | 0.433% | 231.05 | 7.95 | 0.231 | -0.412 | 1.616 | -0.040 | -71.73 | -17.79 | 59.01 | Subduction InterSlab |
| 402312 | 1292 | 185 | 153 | 162 | 24988100 | 52045 | 2165 | 0.433% | 230.95 | 7.35 | -0.663 | 0.056 | 0.434 | 1.303 | -69.71 | -18.54 | 125.95 | Subduction IntraSlab |
| 532180 | 1374 | 178 | 175 | 124 | 24976100 | 65150 | 2166 | 0.433% | 230.84 | 7.65 | -0.095 | -2.174 | 0.280 | 2.001 | -71.35 | -17.93 | 63.02 | Subduction InterSlab |
| 533475 | 1407 | 190 | 177 | 115 | 24976100 | 65582 | 2167 | 0.433% | 230.73 | 7.75 | 0.086 | 0.813 | 1.175 | 0.799 | -71.47 | -17.98 | 59.31 | Subduction InterSlab |
| 536146 | 1526 | 188 | 151 | 132 | 24971000 | 66479 | 2168 | 0.434% | 230.63 | 7.95 | -0.076 | -1.778 | -0.272 | 0.826 | -71.69 | -17.82 | 59.35 | Subduction InterSlab |
| 533468 | 1355 | 165 | 180 | 123 | 24963800 | 65578 | 2169 | 0.434% | 230.52 | 7.75 | 0.454 | 0.486 | -0.315 | -0.550 | -71.32 | -18.09 | 59.48 | Subduction InterSlab |
| 536137 | 1195 | 183 | 161 | 127 | 24961400 | 66476 | 2170 | 0.434% | 230.41 | 7.95 | 1.328 | 0.299 | 0.115 | -1.489 | -71.58 | -17.90 | 59.18 | Subduction InterSlab |
| 540611 | 1393 | 190 | 170 | 96 | 24940400 | 67457 | 2171 | 0.434% | | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|---------------|--------|----------------------------------------------------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | eps_inter_PGA | | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 534940 | 1365 | 187 | 158 | 108 | 24718400 | 66078 | 2221 | 0.444% | 225.12 | 7.85 | -0.514 | 1.873 | 1.022 | 0.449 | -71.64 | -17.80 | 60.53 | Subduction InterSlab |
| 539500 | 1067 | 163 | 157 | 124 | 24711300 | 67341 | 2222 | 0.444% | 225.02 | 8.25 | -0.678 | -0.503 | -1.608 | 1.498 | -72.27 | -17.55 | 54.22 | Subduction InterSlab |
| 398583 | 1428 | 165 | 164 | 137 | 24706300 | 49460 | 2223 | 0.445% | 224.92 | 6.95 | 0.742 | -0.481 | -0.352 | 0.174 | -70.21 | -18.21 | 111.99 | Subduction InterSlab |
| 403165 | 1542 | 184 | 175 | 124 | 24700000 | 52748 | 2224 | 0.445% | 224.82 | 7.55 | 0.719 | 1.157 | 2.167 | 0.179 | -69.72 | -18.96 | 120.53 | Subduction IntraSlab |
| 401750 | 1485 | 220 | 181 | 136 | 24694000 | 51621 | 2225 | 0.445% | 224.72 | 7.25 | 0.956 | 0.717 | 0.114 | -0.667 | -69.75 | -18.33 | 127.23 | Subduction IntraSlab |
| 399855 | 1382 | 151 | 183 | 131 | 24683000 | 50239 | 2226 | 0.445% | 224.62 | 7.05 | 1.948 | -0.066 | 0.687 | -0.153 | -70.16 | -18.20 | 113.99 | Subduction IntraSlab |
| 400307 | 1095 | 190 | 176 | 159 | 24675400 | 50529 | 2227 | 0.445% | 224.52 | 7.05 | 0.256 | 1.732 | -0.375 | 1.104 | -69.86 | -17.83 | 131.08 | Subduction IntraSlab |
| 399982 | 1304 | 165 | 147 | 142 | 24665500 | 50318 | 2228 | 0.446% | 224.42 | 7.05 | 1.272 | -0.489 | -0.451 | -0.748 | -70.09 | -18.05 | 118.94 | Subduction IntraSlab |
| 402271 | 1182 | 176 | 165 | 129 | 24664900 | 52017 | 2229 | 0.446% | 224.32 | 7.35 | -2.760 | 0.926 | -0.704 | 0.497 | -69.86 | -18.32 | 123.47 | Subduction IntraSlab |
| 534920 | 1542 | 220 | 171 | 124 | 24664700 | 66071 | 2230 | 0.446% | 224.22 | 7.85 | -0.397 | -0.646 | -1.071 | -0.793 | -71.34 | -18.02 | 60.89 | Subduction IntraSlab |
| 538315 | 1173 | 176 | 149 | 124 | 24651000 | 67112 | 2231 | 0.446% | 224.11 | 8.15 | 0.052 | -1.295 | 2.252 | -1.694 | -71.78 | -17.89 | 55.42 | Subduction InterSlab |
| 398586 | 1310 | 192 | 165 | 152 | 24646900 | 49461 | 2232 | 0.446% | 224.01 | 6.95 | 0.840 | -0.853 | 1.131 | 0.296 | -70.22 | -18.17 | 112.21 | Subduction IntraSlab |
| 540273 | 1335 | 152 | 153 | 115 | 24644800 | 67425 | 2233 | 0.447% | 223.91 | 8.35 | -0.547 | -0.827 | 1.168 | -1.107 | -72.37 | -17.55 | 52.03 | Subduction InterSlab |
| 402261 | 1138 | 180 | 171 | 145 | 24635800 | 52008 | 2234 | 0.447% | 223.81 | 7.35 | 1.903 | -1.099 | 2.158 | -1.264 | -69.82 | -18.52 | 122.06 | Subduction IntraSlab |
| 401506 | 1322 | 193 | 162 | 141 | 24629000 | 51428 | 2235 | 0.447% | 223.71 | 7.25 | -0.439 | -0.002 | 1.248 | 1.321 | -70.16 | -18.30 | 112.53 | Subduction IntraSlab |
| 402683 | 1500 | 186 | 154 | 129 | 24624900 | 52346 | 2236 | 0.447% | 223.61 | 7.45 | -0.609 | 1.431 | -0.546 | 0.311 | -69.91 | -18.86 | 115.11 | Subduction IntraSlab |
| 402174 | 1520 | 208 | 156 | 107 | 24615800 | 51949 | 2237 | 0.447% | 223.51 | 7.35 | -0.061 | -2.325 | 0.168 | 1.594 | -69.99 | -18.50 | 116.37 | Subduction IntraSlab |
| 537655 | 1735 | 200 | 171 | 105 | 24609900 | 66935 | 2238 | 0.448% | 223.41 | 8.15 | -0.181 | 0.153 | 0.473 | -0.958 | -71.82 | -18.18 | 47.53 | Subduction InterSlab |
| 400904 | 1197 | 143 | 150 | 151 | 24609500 | 50963 | 2239 | 0.448% | 223.31 | 7.15 | -1.125 | 2.039 | 0.070 | -1.003 | -69.96 | -18.53 | 116.99 | Subduction IntraSlab |
| 401850 | 1459 | 248 | 173 | 137 | 24597500 | 51541 | 2240 | 0.448% | 223.21 | 7.25 | 0.473 | 0.752 | -0.567 | 0.736 | -69.94 | -18.30 | 120.59 | Subduction IntraSlab |
| 534610 | 1287 | 158 | 167 | 130 | 24592200 | 65973 | 2241 | 0.448% | 223.11 | 7.85 | 0.160 | 0.861 | 1.745 | 0.283 | -71.43 | -18.16 | 55.78 | Subduction InterSlab |
| 536326 | 1391 | 190 | 176 | 125 | 24587000 | 66542 | 2242 | 0.448% | 223.02 | 7.95 | 0.360 | 1.645 | -0.648 | 0.130 | -71.61 | -17.80 | 61.28 | Subduction InterSlab |
| 397397 | 1309 | 181 | 145 | 160 | 24580900 | 48832 | 2243 | 0.449% | 222.92 | 6.85 | 0.090 | -0.334 | -0.161 | 0.651 | -69.98 | -18.17 | 121.30 | Subduction IntraSlab |
| 533495 | 1319 | 166 | 157 | 117 | 24580600 | 65589 | 2244 | 0.449% | 222.82 | 7.75 | -0.241 | 0.781 | 0.786 | 0.588 | -71.75 | -17.75 | 59.69 | Subduction InterSlab |
| 539817 | 1085 | 148 | 141 | 138 | 24578800 | 67385 | 2245 | 0.449% | 222.72 | 8.35 | 0.135 | -0.130 | -0.715 | 0.933 | -72.22 | -17.71 | 50.76 | Subduction InterSlab |
| 540280 | 1203 | 159 | 136 | 129 | 24578100 | 67426 | 2246 | 0.449% | 222.62 | 8.35 | 0.964 | 0.000 | -0.350 | -0.816 | -72.41 | -17.52 | 52.00 | Subduction InterSlab |
| 396672 | 1259 | 154 | 164 | 137 | 24575200 | 48446 | 2247 | 0.449% | 222.52 | 6.85 | -0.006 | -0.206 | -0.656 | 0.256 | -70.37 | -18.24 | 105.89 | Subduction IntraSlab |
| 403300 | 1370 | 191 | 185 | 128 | 24570900 | 52863 | 2248 | 0.450% | 222.42 | 7.55 | 0.274 | 1.972 | -1.516 | -0.220 | -69.60 | -18.10 | 136.31 | Subduction IntraSlab |
| 400079 | 1286 | 171 | 168 | 132 | 24568300 | 50378 | 2249 | 0.450% | 222.32 | 7.05 | 1.206 | -1.729 | 1.934 | 1.067 | -70.04 | -18.00 | 121.48 | Subduction IntraSlab |
| 536047 | 1691 | 216 | 159 | 111 | 24568000 | 66443 | 2250 | 0.450% | 222.22 | 7.95 | -0.457 | 1.594 | 0.333 | 0.591 | -71.52 | -18.03 | 57.11 | Subduction InterSlab |
| 402888 | 1445 | 177 | 154 | 107 | 24567800 | 52519 | 2251 | 0.450% | 222.12 | 7.45 | -0.062 | 2.186 | -1.115 | -1.909 | -69.49 | -18.45 | 134.97 | Subduction IntraSlab |
| 535099 | 1311 | 168 | 174 | 113 | 24563200 | 66133 | 2252 | 0.450% | 222.02 | 7.85 | -0.688 | 0.019 | 0.754 | 0.391 | -71.26 | -18.00 | 63.14 | Subduction InterSlab |
| 537800 | 1265 | 181 | 158 | 109 | 24554500 | 69699 | 2253 | 0.451% | 221.93 | 8.15 | 0.823 | 0.236 | -0.382 | -0.361 | -71.78 | -18.15 | 49.00 | Subduction InterSlab |
| 401070 | 1190 | 140 | 139 | 147 | 24554300 | 51090 | 2254 | 0.451% | 221.83 | 7.15 | -0.458 | 0.406 | 1.826 | 0.297 | -69.58 | -18.75 | 127.94 | Subduction IntraSlab |
| 539763 | 1436 | 210 | 167 | 113 | 24546300 | 67380 | 2255 | 0.451% | 221.73 | 8.35 | -0.533 | -0.133 | -1.218 | 1.228 | -72.06 | -17.87 | 50.20 | Subduction InterSlab |
| 402172 | 1410 | 219 | 156 | 138 | 24545500 | 51947 | 2256 | 0.451% | 221.63 | 7.35 | 0.011 | -0.811 | 1.260 | -0.992 | -69.96 | -18.63 | 115.77 | Subduction IntraSlab |
| 533467 | 1422 | 209 | 160 | 125 | 24543500 | 65578 | 2257 | 0.451% | 221.53 | 7.75 | 0.001 | -1.734 | 0.384 | 1.690 | -71.32 | -18.09 | 59.48 | Subduction InterSlab |
| 535976 | 1484 | 193 | 162 | 121 | 24542500 | 66414 | 2258 | 0.452% | 221.43 | 7.95 | 1.034 | -0.594 | -1.108 | -0.347 | -71.72 | -17.91 | 56.18 | Subduction InterSlab |
| 401338 | 1364 | 184 | 166 | 132 | 24535200 | 51293 | 2259 | 0.452% | 221.34 | 7.25 | -0.286 | 0.845 | 0.671 | 0.961 | -70.37 | -18.83 | 98.25 | Subduction IntraSlab |
| 537070 | 1295 | 203 | 172 | 123 | 24530900 | 66774 | 2260 | 0.452% | 221.24 | 8.05 | -0.137 | -2.008 | -1.498 | -0.034 | -71.77 | -17.92 | 54.71 | Subduction InterSlab |
| 400039 | 1170 | 160 | 167 | 150 | 24521300 | 50352 | 2261 | 0.452% | 221.14 | 7.05 | -0.384 | -0.696 | -0.495 | 0.153 | -69.98 | -18.27 | 119.51 | Subduction IntraSlab |
| 540664 | 1446 | 168 | 156 | 109 | 24520700 | 67462 | 2262 | 0.452% | 221.04 | 8.35 | 0.253 | -0.807 | 0.619 | 0.673 | -72.43 | -17.48 | 52.67 | Subduction InterSlab |
| 539653 | 1288 | 209 | 151 | 118 | 24519200 | 67366 | 2263 | 0.453% | 220.95 | 8.25 | 1.769 | -0.078 | 1.590 | -0.408 | -71.81 | -17.87 | 55.38 | Subduction InterSlab |
| 537320 | 1599 | 218 | 171 | 119 | 24517900 | 66843 | 2264 | 0.453% | 220.85 | 8.05 | 0.574 | 0.537 | 0.933 | 0.299 | -71.74 | -17.83 | 57.58 | Subduction InterSlab |
| 401717 | 1251 | 166 | 154 | 143 | 24512500 | 51596 | 2265 | 0.453% | 220.75 | 7.25 | 2.096 | -0.133 | 2.386 | -0.141 | -69.79 | -18.41 | 124.93 | Subduction IntraSlab |
| 402388 | 1427 | 199 | 166 | 117 | 24511600 | 52109 | 2266 | 0.453% | 220.65 | 7.35 | -0.565 | 1.256 | 1.804 | -1.221 | -69.48 | -18.55 | 134.09 | Subduction IntraSlab |
| 402192 | 1419 | 197 | 169 | 107 | 24511400 | 51959 | 2267 | 0.453% | 220.56 | 7.35 | -0.897 | -0.888 | -0.372 | 0.748 | -69.88 | -18.82 | 116.44 | Subduction IntraSlab |
| 529144 | 1340 | 177 | 159 | 131 | 24511400 | 64157 | 2268 | 0.454% | 220.46 | 7.45 | 0.743 | 0.781 | 0.271 | 0.886 | -71.00 | -18.04 | 67.07 | Subduction InterSlab |
| 539840 | 1546 | 194 | 150 | 119 | 24511400 | 67388 | 2269 | 0.454% | 220.36 | 8.35 | -0.733 | 1.604 | -0.347 | -0.995 | -72.33 | -17.63 | 50.67 | Subduction InterSlab |
| 403189 | 1528 | 193 | 169 | 118 | 24511300 | 52768 | 2270 | 0.454% | 220.26 | 7.55 | 2.077 | -0.207 | 0.344 | 0.145 | -69.83 | -18.43 | 123.09 | Subduction IntraSlab |
| 536641 | 1344 | 154 | 145 | 141 | 24498400 | 66640 | 2271 | 0.454% | 220.17 | 8.05 | -0.766 | -1.541 | 0.227 | -1.409 | -71.76 | -18.16 | 49.01 | Subduction InterSlab |
| 539680 | 1627 | 201 | 175 | 109 | 24498200 | 67370 | 2272 | 0.454% | 220.07 | 8.25 | -0.421 | 0.580 | 1.056 | -0.920 | -71.96 | -17.75 | 55.23 | Subduction InterSlab |
| 533567 | 1297 | 175 | 180 | 126 | 24497700 | 65611 | 2273 | 0.455% | 219.97 | 7.75 | 0.901 | 0.637 | 0.459 | -0.742 | -71.40 | -17.98 | 60.82 | Subduction InterSlab |
| 402749 | 1270 | 171 | 160 | 143 | 24495900 | 52401 | 2274 | 0.455% | 219.88 | 7.45 | -1.464 | -0.199 | -0.922 | -0.324 | -69.84 | -18.63 | 120.25 | Subduction IntraSlab |
| 535008 | 1320 | 189 | 168 | 123 | 24491100 | 66102 | 2275 | 0.455% | 219.78 | 7.85 | -1.850 | -0.973 | 1.207 | 0.913 | -71.31 | -17.99 | 62.36 | Subduction InterSlab |
| 540156 | 1279 | 227 | 148 | 96 | 24476800 | 67416 | 2276 | 0.455% | 219.68 | 8.35 | 2.170 | 1.133 | -0.255 | -1.501 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 537983 | 1144 | 144 | 144 | 114 | 24470500 | 67016 | 2277 | 0.455% | 219.59 | 8.15 | -2.235 | 1.352 | 0.050 | 1.247 | -72.20 | -17.73 | 50.78 | Subduction InterSlab |
| 537340 | 1549 | 162 | 150 | 127 | 24469900 | 66849 | 2278 | 0.456% | 219.49 | 8.05 | -0.428 | 1.202 | 0.340 | 0.544 | -71.97 | -17.67 | 57.33 | Subduction InterSlab |
| 403497 | 1246 | 216 | 177 | 115 | 24465800 | 53038 | 2279 | 0.456% | 219.39 | 7.65 | 0.945 | -0.519 | 0.701 | 1.499 | -69.60 | -18.93 | 125.40 | Subduction IntraSlab |
| 533637 | 1270 | 175 | 163 | 141 | 24464100 | 65639 | 2280 | 0.456% | 219.30 | 7.75 | 0.401 | 0.344 | 0.206 | 0.596 | -71.25 | -18.03 | 62.43 | Subduction InterSlab |
| 539433 | 1621 | 194 | 156 | 111 | 24461200 | 67329 | 2281 | 0.456% | 219.20 | 8.25 | -0.765 | 0.269 | 0.845 | 1.081 | -71.85 | -17.90 | 53.93 | Subduction InterSlab |
| 398712 | 1348 | 149 | 170 | 148 | 24452300 | 49537 | 2282 | 0.456% | 219.11 | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 539790 | 1384 | 201 | 160 | 96 | 24256700 | 67383 | 2332 | 0.466% | 214.41 | 8.35 | -0.611 | 1.615 | -0.740 | -2.153 | -72.16 | -17.79 | 50.11 | Subduction InterSlab |
| 539739 | 1343 | 194 | 162 | 125 | 24253600 | 67377 | 2333 | 0.467% | 214.32 | 8.35 | -2.861 | -0.214 | 0.331 | 0.533 | -71.95 | -17.96 | 50.29 | Subduction InterSlab |
| 399014 | 1109 | 155 | 165 | 139 | 24246600 | 49717 | 2334 | 0.467% | 214.22 | 6.95 | 0.687 | 0.437 | -0.772 | -2.646 | -70.02 | -17.85 | 124.50 | Subduction IntraSlab |
| 58889 | 1340 | 156 | 144 | 170 | 24240800 | 10792 | 2335 | 0.467% | 214.13 | 6.75 | -0.005 | -0.369 | -0.282 | 1.366 | -70.62 | -18.00 | 74.77 | Subduction IntraSlab |
| 532279 | 1297 | 189 | 165 | 125 | 24240600 | 65180 | 2336 | 0.467% | 214.04 | 7.65 | 1.476 | -0.253 | 2.269 | 1.393 | -71.24 | -17.95 | 64.59 | Subduction InterSlab |
| 403394 | 1703 | 219 | 179 | 126 | 24237000 | 52944 | 2337 | 0.467% | 213.95 | 7.65 | -0.633 | -0.198 | -0.637 | -0.863 | -70.06 | -19.07 | 107.47 | Subduction IntraSlab |
| 402508 | 1398 | 219 | 174 | 110 | 24236700 | 52201 | 2338 | 0.468% | 213.86 | 7.45 | 0.699 | 0.129 | 1.071 | 1.139 | -70.33 | -19.08 | 97.63 | Subduction IntraSlab |
| 539631 | 1372 | 214 | 160 | 103 | 24233300 | 67363 | 2339 | 0.468% | 213.77 | 8.25 | -0.900 | 0.661 | 0.559 | -0.778 | -71.70 | -17.95 | 55.50 | Subduction InterSlab |
| 540155 | 1374 | 190 | 163 | 121 | 24231200 | 67416 | 2340 | 0.468% | 213.68 | 8.35 | -0.274 | -0.178 | 0.649 | 1.273 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 402589 | 1599 | 207 | 159 | 118 | 24231000 | 52268 | 2341 | 0.468% | 213.58 | 7.45 | -0.743 | -0.482 | 0.392 | -0.313 | -70.25 | -18.24 | 110.42 | Subduction IntraSlab |
| 539452 | 1393 | 193 | 197 | 86 | 24229800 | 67332 | 2342 | 0.468% | 213.49 | 8.25 | 0.364 | -0.529 | -0.508 | -0.606 | -71.94 | -17.80 | 54.55 | Subduction InterSlab |
| 402423 | 1390 | 174 | 169 | 114 | 24217600 | 52135 | 2343 | 0.469% | 213.40 | 7.35 | -0.093 | -0.169 | -1.122 | -0.941 | -69.67 | -18.01 | 135.22 | Subduction IntraSlab |
| 402294 | 1269 | 188 | 162 | 125 | 24213100 | 52035 | 2344 | 0.469% | 213.31 | 7.35 | 2.571 | 0.967 | -0.418 | 0.029 | -69.91 | -18.09 | 125.13 | Subduction IntraSlab |
| 535688 | 1308 | 193 | 186 | 100 | 24213100 | 66322 | 2345 | 0.469% | 213.22 | 7.95 | -0.292 | 1.981 | 1.749 | -0.074 | -71.75 | -18.06 | 51.89 | Subduction InterSlab |
| 540257 | 1217 | 151 | 153 | 121 | 24210600 | 67424 | 2346 | 0.469% | 213.13 | 8.35 | -0.075 | 2.087 | -0.602 | 0.948 | -72.34 | -17.58 | 52.06 | Subduction InterSlab |
| 401290 | 1511 | 178 | 168 | 128 | 24204400 | 51257 | 2347 | 0.469% | 213.04 | 7.15 | 1.139 | -1.635 | -1.519 | 0.192 | -69.53 | -18.03 | 139.67 | Subduction IntraSlab |
| 536883 | 1302 | 146 | 177 | 117 | 24198300 | 66712 | 2348 | 0.470% | 212.95 | 8.05 | -0.955 | -1.448 | 1.225 | 1.266 | -71.95 | -17.90 | 51.71 | Subduction InterSlab |
| 533719 | 1230 | 159 | 142 | 118 | 24193300 | 65669 | 2349 | 0.470% | 212.86 | 7.75 | -1.362 | -0.441 | -0.458 | -0.443 | -71.26 | -17.97 | 63.86 | Subduction InterSlab |
| 537298 | 1139 | 163 | 156 | 123 | 24190600 | 66838 | 2350 | 0.470% | 212.77 | 8.05 | 0.843 | 1.459 | -0.024 | -0.459 | -71.56 | -17.97 | 57.78 | Subduction InterSlab |
| 538358 | 1129 | 163 | 128 | 136 | 24185600 | 67121 | 2351 | 0.470% | 212.68 | 8.15 | -0.415 | -0.239 | 0.201 | 0.009 | -72.14 | -17.61 | 55.04 | Subduction InterSlab |
| 537067 | 1363 | 207 | 163 | 105 | 24179700 | 66772 | 2352 | 0.470% | 212.59 | 8.05 | 2.191 | 0.494 | 1.060 | 0.874 | -71.70 | -17.98 | 54.79 | Subduction InterSlab |
| 402263 | 1464 | 195 | 166 | 134 | 24179400 | 52010 | 2353 | 0.471% | 212.49 | 7.35 | 0.280 | 1.114 | -0.403 | 0.235 | -69.86 | -18.43 | 121.83 | Subduction IntraSlab |
| 403184 | 1308 | 221 | 171 | 102 | 24177300 | 52764 | 2354 | 0.471% | 212.40 | 7.55 | -0.122 | -0.466 | -1.884 | 0.762 | -69.74 | -18.68 | 122.97 | Subduction IntraSlab |
| 402235 | 1265 | 203 | 157 | 143 | 24176800 | 51987 | 2355 | 0.471% | 212.31 | 7.35 | 0.309 | -1.895 | -1.628 | -0.624 | -69.87 | -18.58 | 119.54 | Subduction IntraSlab |
| 400714 | 1280 | 214 | 161 | 132 | 24167800 | 50817 | 2356 | 0.471% | 212.22 | 7.15 | -1.783 | 0.421 | -1.172 | -0.871 | -70.18 | -18.61 | 107.86 | Subduction IntraSlab |
| 539222 | 1235 | 199 | 176 | 102 | 24165000 | 67288 | 2357 | 0.471% | 212.13 | 8.25 | -1.138 | 0.654 | 1.238 | -0.611 | -71.73 | -18.04 | 52.61 | Subduction InterSlab |
| 402731 | 1347 | 161 | 128 | 148 | 24162600 | 52386 | 2358 | 0.472% | 212.04 | 7.45 | -2.174 | -0.584 | 0.393 | 0.249 | -69.81 | -18.86 | 118.48 | Subduction IntraSlab |
| 401668 | 1332 | 224 | 159 | 134 | 24161000 | 51556 | 2359 | 0.472% | 211.95 | 7.25 | 0.910 | 1.078 | 1.012 | -0.416 | -69.97 | -18.11 | 122.43 | Subduction IntraSlab |
| 402425 | 1296 | 199 | 188 | 118 | 24155400 | 52137 | 2360 | 0.472% | 211.86 | 7.35 | -1.911 | -0.031 | 0.324 | 0.506 | -69.76 | -17.84 | 134.41 | Subduction IntraSlab |
| 400989 | 1221 | 185 | 138 | 137 | 24152600 | 51026 | 2361 | 0.472% | 211.77 | 7.15 | 0.768 | -0.101 | -1.299 | -0.924 | -69.86 | -18.43 | 121.83 | Subduction IntraSlab |
| 540492 | 1441 | 184 | 162 | 121 | 24149400 | 67446 | 2362 | 0.472% | 211.69 | 8.35 | -0.216 | 0.347 | 0.196 | 0.447 | -71.84 | -17.93 | 53.22 | Subduction InterSlab |
| 403489 | 1262 | 197 | 137 | 125 | 24146400 | 53030 | 2363 | 0.473% | 211.60 | 7.65 | -0.113 | 2.251 | 0.011 | 0.822 | -69.61 | -19.03 | 124.02 | Subduction IntraSlab |
| 537490 | 1400 | 180 | 157 | 103 | 24143300 | 66897 | 2364 | 0.473% | 211.51 | 8.05 | -0.486 | 1.357 | 0.184 | 0.339 | -71.55 | -17.90 | 59.93 | Subduction InterSlab |
| 401545 | 1163 | 189 | 159 | 132 | 24142700 | 51455 | 2365 | 0.473% | 211.42 | 7.25 | -0.360 | 0.756 | 0.359 | -0.176 | -70.00 | -18.77 | 112.54 | Subduction IntraSlab |
| 539873 | 1119 | 150 | 132 | 148 | 24142000 | 67391 | 2366 | 0.473% | 211.33 | 8.35 | -0.503 | -0.951 | -0.813 | 0.858 | -72.44 | -17.55 | 50.58 | Subduction InterSlab |
| 539298 | 1210 | 146 | 153 | 123 | 24141100 | 67303 | 2367 | 0.473% | 211.24 | 8.25 | -1.530 | 1.493 | 0.696 | 1.093 | -72.26 | -17.60 | 52.83 | Subduction InterSlab |
| 539035 | 1633 | 206 | 169 | 103 | 24140900 | 67257 | 2368 | 0.474% | 211.15 | 8.25 | 1.423 | 0.000 | -1.254 | -1.595 | -71.98 | -17.90 | 50.97 | Subduction InterSlab |
| 537919 | 1363 | 182 | 163 | 127 | 24137900 | 67002 | 2369 | 0.474% | 211.06 | 8.15 | -1.313 | -1.250 | -0.632 | 0.615 | -71.71 | -18.14 | 50.49 | Subduction InterSlab |
| 402311 | 1141 | 170 | 161 | 117 | 24136600 | 52044 | 2370 | 0.474% | 210.97 | 7.35 | 0.789 | -0.389 | -2.120 | -0.300 | -69.69 | -18.63 | 125.53 | Subduction IntraSlab |
| 540158 | 1352 | 203 | 157 | 110 | 24132200 | 67416 | 2371 | 0.474% | 210.88 | 8.35 | 0.042 | -0.557 | 0.446 | -0.064 | -72.06 | -17.81 | 51.61 | Subduction InterSlab |
| 533286 | 1445 | 196 | 159 | 122 | 24126700 | 65516 | 2372 | 0.474% | 210.79 | 7.75 | 0.535 | 0.333 | 1.517 | 0.557 | -71.39 | -18.16 | 56.53 | Subduction InterSlab |
| 538169 | 1204 | 177 | 165 | 104 | 24126000 | 67071 | 2373 | 0.475% | 210.70 | 8.15 | -0.978 | 0.658 | -1.327 | -0.595 | -71.64 | -18.08 | 53.41 | Subduction InterSlab |
| 400198 | 1457 | 187 | 147 | 158 | 24122400 | 50453 | 2374 | 0.475% | 210.61 | 7.05 | -0.168 | -1.137 | -0.735 | -0.330 | -69.98 | -17.90 | 125.52 | Subduction IntraSlab |
| 400656 | 1369 | 182 | 167 | 129 | 24118400 | 50777 | 2375 | 0.475% | 210.53 | 7.15 | 0.632 | -1.197 | 0.880 | -1.338 | -70.27 | -18.53 | 105.40 | Subduction IntraSlab |
| 401027 | 1400 | 195 | 153 | 128 | 24116800 | 51054 | 2376 | 0.475% | 210.44 | 7.15 | 0.431 | -0.041 | 0.975 | -0.265 | -70.02 | -17.90 | 124.02 | Subduction IntraSlab |
| 400908 | 1374 | 196 | 133 | 129 | 24114900 | 50967 | 2377 | 0.475% | 210.35 | 7.15 | -0.762 | -0.198 | 0.742 | -0.509 | -70.00 | -18.36 | 117.65 | Subduction IntraSlab |
| 537796 | 1226 | 178 | 175 | 106 | 24111600 | 66969 | 2378 | 0.476% | 210.26 | 8.15 | 0.959 | -0.119 | -1.328 | -0.023 | -71.78 | -18.15 | 49.00 | Subduction InterSlab |
| 402634 | 1250 | 182 | 162 | 129 | 24109300 | 52303 | 2379 | 0.476% | 210.17 | 7.45 | -0.175 | 0.033 | 0.624 | 1.127 | -70.07 | -18.78 | 109.98 | Subduction IntraSlab |
| 538076 | 1369 | 177 | 148 | 106 | 24100400 | 67045 | 2380 | 0.476% | 210.08 | 8.15 | -0.803 | -0.256 | -0.803 | -0.537 | -72.02 | -17.81 | 52.35 | Subduction InterSlab |
| 530641 | 1155 | 140 | 141 | 151 | 24096000 | 64639 | 2381 | 0.476% | 210.00 | 7.55 | 0.452 | -1.325 | 0.965 | 0.929 | -71.24 | -18.01 | 63.17 | Subduction InterSlab |
| 536631 | 1222 | 140 | 150 | 120 | 24095800 | 66638 | 2382 | 0.476% | 209.91 | 8.05 | -0.395 | 1.376 | -0.504 | 0.093 | -71.71 | -18.23 | 48.33 | Subduction InterSlab |
| 399719 | 1351 | 153 | 169 | 133 | 24095000 | 50148 | 2383 | 0.477% | 209.82 | 7.05 | 0.498 | -1.029 | 0.903 | -0.074 | -70.26 | -18.27 | 109.24 | Subduction IntraSlab |
| 538342 | 1096 | 166 | 166 | 111 | 24089100 | 67118 | 2384 | 0.477% | 209.73 | 8.15 | 0.545 | 0.311 | 0.060 | -0.020 | -72.00 | -17.73 | 55.19 | Subduction InterSlab |
| 538187 | 1147 | 156 | 169 | 135 | 24088200 | 67076 | 2385 | 0.477% | 209.64 | 8.15 | -0.771 | -0.106 | 0.449 | -0.328 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 402679 | 1091 | 156 | 145 | 143 | 24087500 | 52344 | 2386 | 0.477% | 209.56 | 7.45 | 1.124 | 0.579 | 0.663 | 0.488 | -69.88 | -18.94 | 115.09 | Subduction IntraSlab |
| 538490 | 1361 | 167 | 186 | 100 | 24086000 | 67151 | 2387 | 0.477% | 209.47 | 8.15 | -1.444 | -0.049 | 0.599 | 0.101 | -71.89 | -17.75 | 56.71 | Subduction InterSlab |
| 534511 | 1253 | 188 | 150 | 117 | 24081300 | 65941 | 2388 | 0.478% | 209.38 | 7.85 | 0.101 | 0.701 | -1.905 | 0.175 | -71.46 | -18.19 | 54.31 | Subduction InterSlab |
| 400928 | 1246 | 162 | 143 | 139 | 24061700 | 50983 | 2389 | 0.478% | 209.29 | 7.15 | -0.623 | 0.182 | 0.674 | -1.804 | -70.04 | -18.13 | 119.77 | Subduction IntraSlab |
| 401133 | 1152 | 141 | 143 | 157 | 24060500 | 51136 | 2390 | 0.478% | 209.21 | 7.15 | -1.591 | -2.813 | 0.881 | 0.746 | -69.79 | -18.09 | 129.63 | Subduction IntraSlab |
| 537537 | 1390 | 161 | 156 | 127 | 24058400 | 66907 | 2391 | 0.478% | 209.12 | 8.15 | 0.778 | 1.166 | -0.354 | 0.246 | -72.05 | -18.02 | 46.65 | Subduction InterSlab |
| 401280 | 1182 | 146 | 165 | 151 | 24057200 | 51249 | 2392 | 0.478% | 209.03 | 7.15 | 0.065 | 0.170 | 1.661 | 0.650 | -69.72 | -17.75 | 137.26 | Subduction IntraSlab |
| 53969 | 1231 | 179 | 147 | 133 | 24049500 | 11036 | 2393 | 0.479% | 208.94 | 6 | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 538620 | 1204 | 187 | 165 | 94 | 23812400 | 67184 | 2443 | 0.489% | 204.67 | 8.25 | 1.418 | -0.690 | -0.194 | -0.490 | -72.05 | -17.96 | 48.08 | Subduction InterSlab |
| 536221 | 1331 | 200 | 173 | 115 | 23802400 | 66504 | 2444 | 0.489% | 204.58 | 7.95 | 1.267 | 0.175 | -0.793 | -0.909 | -71.38 | -18.02 | 60.13 | Subduction InterSlab |
| 533634 | 1270 | 170 | 162 | 112 | 23802200 | 65638 | 2445 | 0.489% | 204.50 | 7.75 | -0.198 | 1.815 | -0.780 | -1.162 | -71.22 | -18.06 | 62.48 | Subduction InterSlab |
| 532346 | 1257 | 214 | 143 | 138 | 23799900 | 65206 | 2446 | 0.489% | 204.42 | 7.65 | 1.150 | 0.508 | -0.981 | 0.127 | -71.11 | -18.02 | 65.48 | Subduction InterSlab |
| 536128 | 1594 | 182 | 155 | 129 | 23798200 | 66473 | 2447 | 0.489% | 204.33 | 7.95 | -1.311 | 0.100 | -1.533 | -1.328 | -71.45 | -18.03 | 58.62 | Subduction InterSlab |
| 539437 | 1190 | 163 | 176 | 95 | 23797100 | 67330 | 2448 | 0.490% | 204.25 | 8.25 | -0.884 | 0.959 | -0.637 | 1.373 | -71.88 | -17.87 | 53.90 | Subduction InterSlab |
| 537673 | 1243 | 169 | 139 | 121 | 23791300 | 66939 | 2449 | 0.490% | 204.16 | 8.15 | -0.920 | -0.176 | -1.356 | -0.869 | -71.94 | -18.05 | 48.16 | Subduction InterSlab |
| 534518 | 1323 | 184 | 164 | 110 | 23778300 | 65942 | 2450 | 0.490% | 204.08 | 7.85 | 1.834 | 0.536 | -0.671 | 0.283 | -71.50 | -18.16 | 54.27 | Subduction InterSlab |
| 536154 | 1465 | 168 | 179 | 90 | 23775900 | 66482 | 2451 | 0.490% | 204.00 | 7.95 | -0.855 | 0.988 | -1.573 | 2.412 | -71.80 | -17.73 | 58.92 | Subduction InterSlab |
| 534818 | 1208 | 163 | 132 | 120 | 23765900 | 66038 | 2452 | 0.490% | 203.92 | 7.85 | 1.466 | 0.459 | -0.038 | -0.512 | -71.38 | -18.05 | 59.42 | Subduction InterSlab |
| 540693 | 1247 | 187 | 174 | 120 | 23760800 | 67465 | 2453 | 0.491% | 203.83 | 8.35 | 0.054 | -0.137 | 1.423 | -0.827 | -71.86 | -17.88 | 53.91 | Subduction InterSlab |
| 402870 | 1077 | 187 | 167 | 108 | 23751900 | 65203 | 2454 | 0.491% | 203.75 | 7.45 | 1.791 | 0.294 | 0.206 | -0.619 | -69.42 | -18.67 | 134.70 | Subduction IntraSlab |
| 537302 | 1269 | 182 | 161 | 112 | 23748100 | 66839 | 2455 | 0.491% | 203.67 | 8.05 | -1.286 | 2.148 | 1.073 | -0.889 | -71.60 | -17.94 | 57.74 | Subduction InterSlab |
| 532366 | 1285 | 138 | 165 | 116 | 23728400 | 65212 | 2456 | 0.491% | 203.58 | 7.65 | -0.421 | 0.113 | -0.026 | 0.591 | -71.60 | -17.86 | 65.17 | Subduction InterSlab |
| 529239 | 1170 | 182 | 157 | 114 | 23726600 | 64187 | 2457 | 0.491% | 203.50 | 7.45 | -0.141 | 1.191 | 0.116 | 0.688 | -70.98 | -18.02 | 67.81 | Subduction InterSlab |
| 533657 | 1106 | 155 | 125 | 142 | 23725300 | 65645 | 2458 | 0.492% | 203.42 | 7.75 | -0.345 | 0.446 | -1.577 | -0.180 | -71.54 | -17.79 | 62.78 | Subduction InterSlab |
| 536857 | 1166 | 211 | 171 | 94 | 23720800 | 66705 | 2459 | 0.492% | 203.33 | 8.05 | 0.380 | 0.923 | -0.058 | 0.661 | -71.70 | -18.10 | 51.93 | Subduction InterSlab |
| 398418 | 1359 | 185 | 148 | 132 | 23719700 | 49369 | 2460 | 0.492% | 203.25 | 6.95 | -1.313 | 0.372 | -0.614 | 0.227 | -70.27 | -18.44 | 106.59 | Subduction IntraSlab |
| 537518 | 1319 | 162 | 137 | 97 | 23713200 | 66904 | 2461 | 0.492% | 203.17 | 8.15 | 2.531 | -2.224 | -0.454 | 2.332 | -71.94 | -18.11 | 46.73 | Subduction InterSlab |
| 539458 | 1132 | 165 | 137 | 104 | 23709400 | 67333 | 2462 | 0.492% | 203.09 | 8.25 | -1.635 | -0.549 | 0.132 | 0.092 | -71.98 | -17.77 | 54.51 | Subduction InterSlab |
| 540209 | 1271 | 180 | 157 | 121 | 23707800 | 67420 | 2463 | 0.493% | 203.00 | 8.35 | -0.161 | 0.496 | 0.149 | -1.206 | -72.19 | -17.69 | 52.20 | Subduction InterSlab |
| 402286 | 1238 | 175 | 159 | 123 | 23700200 | 52028 | 2464 | 0.493% | 202.92 | 7.35 | -1.578 | -1.256 | -0.869 | -2.981 | -69.72 | -18.65 | 124.23 | Subduction IntraSlab |
| 400829 | 1265 | 181 | 143 | 133 | 23699100 | 50906 | 2465 | 0.493% | 202.84 | 7.15 | 1.523 | -1.579 | 0.146 | 0.228 | -70.06 | -18.45 | 113.98 | Subduction IntraSlab |
| 539254 | 1260 | 215 | 172 | 89 | 23699000 | 67295 | 2466 | 0.493% | 202.76 | 8.25 | 1.648 | -1.774 | -0.775 | -0.076 | -71.97 | -17.83 | 53.10 | Subduction InterSlab |
| 537071 | 1211 | 160 | 164 | 109 | 23698900 | 66774 | 2467 | 0.493% | 202.68 | 8.05 | 1.135 | -0.583 | -1.175 | -0.278 | -71.77 | -17.92 | 54.71 | Subduction InterSlab |
| 399614 | 1034 | 151 | 157 | 138 | 23696900 | 50079 | 2468 | 0.494% | 202.59 | 7.05 | -0.172 | -0.096 | 0.042 | -0.018 | -70.33 | -18.46 | 103.95 | Subduction IntraSlab |
| 401393 | 1377 | 192 | 171 | 104 | 23694600 | 51338 | 2469 | 0.494% | 202.51 | 7.25 | 1.756 | -1.462 | 0.065 | -1.322 | -70.29 | -18.65 | 103.07 | Subduction IntraSlab |
| 399842 | 1145 | 161 | 158 | 129 | 23693400 | 50231 | 2470 | 0.494% | 202.43 | 7.05 | -0.660 | -1.103 | -0.860 | 0.129 | -70.04 | -18.70 | 111.97 | Subduction IntraSlab |
| 533127 | 1122 | 145 | 174 | 114 | 23691900 | 65462 | 2471 | 0.494% | 202.35 | 7.75 | 0.749 | -2.106 | 0.314 | 1.214 | -71.61 | -18.11 | 53.45 | Subduction InterSlab |
| 537501 | 1302 | 185 | 159 | 104 | 23689500 | 66900 | 2472 | 0.494% | 202.27 | 8.15 | -0.429 | 0.520 | 0.193 | -0.294 | -71.81 | -18.24 | 46.10 | Subduction InterSlab |
| 403683 | 1330 | 200 | 171 | 115 | 23687800 | 53201 | 2473 | 0.495% | 202.18 | 7.75 | -1.872 | 1.439 | 0.224 | 0.593 | -69.85 | -19.09 | 114.88 | Subduction IntraSlab |
| 402343 | 1148 | 152 | 135 | 137 | 23685800 | 52069 | 2474 | 0.495% | 202.10 | 7.35 | -0.163 | 0.278 | 1.647 | 1.252 | -69.65 | -18.51 | 128.49 | Subduction IntraSlab |
| 538572 | 1146 | 225 | 167 | 103 | 23685700 | 67170 | 2475 | 0.495% | 202.02 | 8.15 | 0.942 | -0.584 | 0.571 | -0.307 | -71.58 | -17.96 | 57.76 | Subduction InterSlab |
| 531989 | 1459 | 163 | 147 | 114 | 23685600 | 65086 | 2476 | 0.495% | 201.94 | 7.65 | -0.676 | -1.007 | 0.524 | -1.232 | -71.32 | -18.09 | 59.48 | Subduction InterSlab |
| 539055 | 1289 | 177 | 169 | 118 | 23681000 | 67261 | 2477 | 0.495% | 201.86 | 8.25 | 0.476 | 0.090 | 2.182 | 1.389 | -72.11 | -17.77 | 51.56 | Subduction InterSlab |
| 534618 | 1277 | 198 | 158 | 101 | 23680500 | 65975 | 2478 | 0.496% | 201.78 | 7.85 | 1.742 | 0.363 | 0.192 | 0.363 | -71.48 | -18.09 | 56.44 | Subduction InterSlab |
| 401825 | 1351 | 162 | 144 | 132 | 23684800 | 51520 | 2479 | 0.496% | 201.69 | 7.25 | 2.125 | 0.907 | 0.117 | -1.574 | -69.85 | -18.69 | 119.01 | Subduction IntraSlab |
| 401866 | 1259 | 157 | 147 | 149 | 23684100 | 51701 | 2480 | 0.496% | 201.61 | 7.25 | -0.647 | -0.840 | 1.003 | -1.264 | -69.81 | -17.79 | 133.60 | Subduction IntraSlab |
| 533465 | 1396 | 196 | 157 | 127 | 23684800 | 65577 | 2481 | 0.496% | 201.53 | 7.75 | -1.235 | 0.760 | 1.079 | -0.859 | -71.29 | -18.12 | 59.53 | Subduction InterSlab |
| 398144 | 940 | 111 | 140 | 161 | 23683900 | 49213 | 2482 | 0.496% | 201.45 | 6.95 | -0.577 | -0.152 | 2.212 | -0.188 | -70.44 | -18.25 | 102.78 | Subduction IntraSlab |
| 540616 | 1424 | 168 | 153 | 120 | 23683400 | 67457 | 2483 | 0.497% | 201.37 | 8.35 | -0.867 | 0.732 | -1.769 | 0.583 | -72.24 | -17.61 | 52.84 | Subduction InterSlab |
| 401843 | 1233 | 172 | 173 | 109 | 23625500 | 51535 | 2484 | 0.497% | 201.29 | 7.25 | 1.442 | -1.809 | 0.531 | 0.628 | -69.79 | -18.80 | 119.79 | Subduction IntraSlab |
| 535873 | 1387 | 201 | 144 | 115 | 23625400 | 66379 | 2485 | 0.497% | 201.21 | 7.95 | -0.826 | -0.263 | -0.551 | 0.627 | -71.59 | -18.09 | 54.18 | Subduction InterSlab |
| 536053 | 1260 | 164 | 147 | 115 | 23620600 | 66445 | 2486 | 0.497% | 201.13 | 7.95 | -0.592 | -2.265 | 0.024 | -0.391 | -71.58 | -17.96 | 57.76 | Subduction InterSlab |
| 539830 | 1072 | 185 | 160 | 114 | 23619100 | 67386 | 2487 | 0.497% | 201.05 | 8.35 | 0.844 | -1.293 | -0.650 | -0.050 | -72.26 | -17.69 | 50.73 | Subduction InterSlab |
| 539702 | 1140 | 170 | 143 | 109 | 23617300 | 67374 | 2488 | 0.498% | 200.96 | 8.25 | -1.114 | 1.040 | 0.009 | -0.886 | -72.11 | -17.64 | 55.08 | Subduction InterSlab |
| 539280 | 1343 | 193 | 145 | 101 | 23612500 | 67301 | 2489 | 0.498% | 200.88 | 8.25 | 0.098 | -0.958 | 0.070 | 1.176 | -72.19 | -17.66 | 52.90 | Subduction InterSlab |
| 539844 | 1410 | 180 | 142 | 100 | 23608600 | 67388 | 2490 | 0.498% | 200.80 | 8.35 | -0.004 | 2.035 | -0.007 | -1.094 | -72.33 | -17.63 | 50.67 | Subduction InterSlab |
| 539669 | 1239 | 218 | 188 | 91 | 23607200 | 67369 | 2491 | 0.498% | 200.72 | 8.25 | -0.807 | -0.915 | 0.324 | 1.355 | -71.92 | -17.78 | 55.27 | Subduction InterSlab |
| 402509 | 1377 | 197 | 164 | 104 | 23607100 | 52202 | 2492 | 0.498% | 200.64 | 7.45 | -0.138 | 1.241 | 1.096 | 1.175 | -70.34 | -18.79 | 99.59 | Subduction IntraSlab |
| 533559 | 1493 | 209 | 148 | 115 | 23605100 | 65609 | 2493 | 0.499% | 200.56 | 7.75 | 0.158 | 1.649 | -0.876 | -0.330 | -71.33 | -18.03 | 60.91 | Subduction InterSlab |
| 532270 | 1269 | 155 | 146 | 129 | 23604400 | 65178 | 2494 | 0.499% | 200.48 | 7.65 | -1.353 | -0.502 | -1.722 | -0.494 | -71.18 | -18.02 | 63.95 | Subduction InterSlab |
| 539434 | 1321 | 205 | 155 | 102 | 23599100 | 67329 | 2495 | 0.499% | 200.40 | 8.25 | -2.685 | -0.459 | -1.172 | 0.396 | -71.85 | -17.90 | 53.93 | Subduction InterSlab |
| 400812 | 1146 | 171 | 138 | 154 | 23592800 | 50890 | 2496 | 0.499% | 200.32 | 7.15 | -1.085 | 0.940 | -0.080 | 0.382 | -70.15 | -18.16 | 115.13 | Subduction IntraSlab |
| 402356 | 1196 | 162 | 166 | 124 | 23591800 | 52082 | 2497 | 0.499% | 200.24 | 7.35 | 1.516 | 0.269 | 0.243 | -0.347 | -69.72 | -18.29 | 128.96 | Subduction IntraSlab |
| 537807 | 1244 | 167 | 166 | 110 | 23589200 | 66972 | 2498 | 0.500% | 200.16 | 8.15 | -0.507 | -0.053 | 0.717 | -0.677 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 535013 | 1446 | 171 | 144 | 127 | 23588900 | 66104 | 2499 | 0.500% | 200.08 | 7.85 | -0.103 | 1.053 | -0.386 | -0.144 | -71.38 | -17.93 | 62.26 | Subduction InterSlab |
| 536229 | 1374 | 201 | 151 | 95 | 23579500 | 66508 | 2500 | 0.500% | 200.00 | 7.95 | 0.620 | -0.011 | -1.134 | -0.332 | -71.51 | -17.90 | 60.68 | Subduction InterSlab |
| 398752 | 1131 | 189 | 151 | 136 | 23579200 | 49562 | 2501 | 0.500% | 199.92 | 6.95 | -0.910 | -0.108 | -0.133 | 0.953 | -70.05 | -18.34 | 116.03 | Subduction IntraSlab |
| 538472 | 1228 | 155 | 129 | 132 | 23578300 | 67148 | 2502 | 0.500% | 199.84 | 8.15 | -1.441 | 0.337 | 1.033 | -0.381 | -71.78 | -17.83 | 56.83 | Subduction InterSlab |
| 401340 | 1229 | 166 | 149 | 128 | 23577200 | 51295 | 2503 | 0.501% | 199.76 | 7.25 | -0.302 | 0.141 | 1.151 | -1.633 | -70.36 | -18.74 | 99.26 | Subduction IntraSlab |
| 401665 | 1330 | 233 | 164 | 126 | 23571400 | 51553 | 2504 | 0.501% | 199.68 | 7.25 | 1.117 | -0.025 | -0.235 | -0 | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | | Tratamiento de Datos | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | trt |
|----------------------------|--------|----------|-----------|----------|----------|----------------------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | |
| 537328 | 1346 | 151 | 152 | 96 | 23390900 | 66845 | 2554 | 0.511% | 195.77 | 8.05 | 1.514 | 1.091 | 0.545 | -0.165 | -71.82 | -17.78 | 57.50 | Subduction IntraSlab |
| 400710 | 1287 | 182 | 159 | 113 | 23390100 | 50816 | 2556 | 0.511% | 195.69 | 7.15 | -0.396 | -0.415 | 1.246 | 0.079 | -70.17 | -18.65 | 107.77 | Subduction IntraSlab |
| 540129 | 1386 | 189 | 155 | 100 | 23389200 | 67413 | 2555 | 0.511% | 195.62 | 8.35 | 0.060 | 0.037 | 0.799 | -0.110 | -71.95 | -17.90 | 51.71 | Subduction IntraSlab |
| 536461 | 1310 | 176 | 171 | 108 | 23387300 | 66584 | 2557 | 0.511% | 195.54 | 8.05 | -0.439 | -0.630 | 1.112 | -0.267 | -72.08 | -18.02 | 45.92 | Subduction IntraSlab |
| 401101 | 1389 | 189 | 150 | 128 | 23380900 | 51114 | 2558 | 0.512% | 195.47 | 7.15 | 1.166 | -0.071 | 1.897 | -2.028 | -69.78 | -18.19 | 128.11 | Subduction IntraSlab |
| 540656 | 1436 | 187 | 187 | 79 | 23380800 | 67461 | 2559 | 0.512% | 195.39 | 8.35 | -0.307 | -0.243 | 0.415 | -1.346 | -72.39 | -17.51 | 52.70 | Subduction IntraSlab |
| 402345 | 1238 | 186 | 154 | 112 | 23373600 | 52071 | 2560 | 0.512% | 195.31 | 7.35 | 0.832 | 2.413 | 0.507 | -1.273 | -69.79 | -18.17 | 128.07 | Subduction IntraSlab |
| 534822 | 1239 | 158 | 147 | 124 | 23373600 | 66038 | 2561 | 0.512% | 195.24 | 7.85 | -0.527 | -1.686 | -0.453 | -1.754 | -71.38 | -18.05 | 59.42 | Subduction IntraSlab |
| 401727 | 1247 | 171 | 159 | 117 | 23371100 | 51603 | 2562 | 0.512% | 195.16 | 7.25 | 0.643 | 1.950 | -0.282 | -1.503 | -69.96 | -17.94 | 125.56 | Subduction IntraSlab |
| 401645 | 1157 | 155 | 161 | 124 | 23368700 | 51537 | 2563 | 0.513% | 195.08 | 7.25 | -1.969 | 1.225 | 0.589 | -0.523 | -69.82 | -18.67 | 120.30 | Subduction IntraSlab |
| 403496 | 1297 | 172 | 149 | 135 | 23366800 | 53037 | 2564 | 0.513% | 195.01 | 7.65 | 0.648 | -2.389 | 0.710 | -1.024 | -69.59 | -18.98 | 125.42 | Subduction IntraSlab |
| 57338 | 1300 | 187 | 144 | 135 | 23365700 | 10048 | 2565 | 0.513% | 194.93 | 6.65 | 1.380 | -1.976 | -0.333 | -1.314 | -70.64 | -17.92 | 77.95 | Subduction IntraSlab |
| 401863 | 1103 | 166 | 149 | 131 | 23359700 | 51699 | 2566 | 0.513% | 194.86 | 7.25 | -0.029 | -0.081 | -0.478 | -0.710 | -69.70 | -18.00 | 134.01 | Subduction IntraSlab |
| 539740 | 1225 | 188 | 155 | 107 | 23351800 | 67377 | 2567 | 0.513% | 194.78 | 8.35 | -0.945 | 0.274 | 0.749 | 1.413 | -71.95 | -17.96 | 50.29 | Subduction IntraSlab |
| 401562 | 1470 | 178 | 143 | 139 | 23349800 | 51470 | 2568 | 0.514% | 194.70 | 7.25 | 0.080 | -0.437 | 1.758 | -1.897 | -70.04 | -18.46 | 114.57 | Subduction IntraSlab |
| 401979 | 1450 | 203 | 140 | 125 | 23347200 | 51787 | 2569 | 0.514% | 194.63 | 7.35 | -0.069 | 1.968 | 0.086 | 1.102 | -70.38 | -18.36 | 103.42 | Subduction IntraSlab |
| 532345 | 1432 | 183 | 151 | 111 | 23343700 | 65206 | 2570 | 0.514% | 194.55 | 7.65 | 2.220 | 1.049 | 0.047 | -0.400 | -71.11 | -18.02 | 65.48 | Subduction IntraSlab |
| 539235 | 1464 | 215 | 176 | 115 | 23343200 | 67291 | 2571 | 0.514% | 194.48 | 8.25 | -1.923 | 0.928 | -0.166 | 1.430 | -71.84 | -17.95 | 52.51 | Subduction IntraSlab |
| 532173 | 1179 | 183 | 136 | 130 | 23328000 | 65147 | 2572 | 0.514% | 194.40 | 7.65 | -0.965 | 1.911 | -0.028 | -0.241 | -71.25 | -18.03 | 62.43 | Subduction IntraSlab |
| 537428 | 1456 | 221 | 169 | 79 | 23325700 | 66876 | 2573 | 0.515% | 194.33 | 8.05 | 0.491 | 2.672 | 0.100 | 0.031 | -71.64 | -17.86 | 59.12 | Subduction IntraSlab |
| 537292 | 1347 | 173 | 157 | 122 | 23312600 | 66836 | 2574 | 0.515% | 194.25 | 8.05 | 2.104 | 0.979 | 0.658 | -0.913 | -71.49 | -18.03 | 57.86 | Subduction IntraSlab |
| 530822 | 1637 | 201 | 150 | 120 | 23303200 | 64694 | 2575 | 0.515% | 194.17 | 7.55 | -0.817 | 0.343 | 0.036 | 0.653 | -71.13 | -17.97 | 66.17 | Subduction IntraSlab |
| 534616 | 1171 | 199 | 140 | 123 | 23299000 | 65975 | 2576 | 0.515% | 194.10 | 7.85 | 0.391 | -0.364 | 1.307 | -1.014 | -71.48 | -18.09 | 56.44 | Subduction IntraSlab |
| 59499 | 1075 | 161 | 148 | 146 | 23296100 | 11101 | 2577 | 0.515% | 194.02 | 6.75 | -0.405 | 1.335 | -1.474 | -0.030 | -70.46 | -17.66 | 97.05 | Subduction IntraSlab |
| 537809 | 1420 | 164 | 156 | 115 | 23295000 | 66972 | 2578 | 0.516% | 193.95 | 8.15 | 0.210 | -1.004 | -0.764 | -0.704 | -71.87 | -18.04 | 49.64 | Subduction IntraSlab |
| 540223 | 1173 | 147 | 140 | 108 | 23292400 | 67421 | 2579 | 0.516% | 193.87 | 8.35 | 0.802 | 0.857 | 0.127 | 0.502 | -72.22 | -17.66 | 52.16 | Subduction IntraSlab |
| 540625 | 1283 | 140 | 128 | 118 | 23288500 | 67458 | 2580 | 0.516% | 193.80 | 8.35 | -0.344 | 0.037 | -1.204 | 0.184 | -72.28 | -17.59 | 52.81 | Subduction IntraSlab |
| 400517 | 1175 | 187 | 160 | 115 | 23288300 | 50675 | 2581 | 0.516% | 193.72 | 7.15 | -0.157 | 0.804 | -0.850 | 0.941 | -70.42 | -18.41 | 101.63 | Subduction IntraSlab |
| 537314 | 1418 | 159 | 153 | 132 | 23286300 | 66842 | 2582 | 0.516% | 193.65 | 8.05 | -1.506 | 0.825 | -0.300 | -0.820 | -71.71 | -17.86 | 57.62 | Subduction IntraSlab |
| 538054 | 1484 | 218 | 159 | 85 | 23283700 | 67039 | 2583 | 0.517% | 193.57 | 8.15 | 0.156 | -0.010 | -0.510 | -0.204 | -71.77 | -18.01 | 52.58 | Subduction IntraSlab |
| 539459 | 1371 | 193 | 168 | 105 | 23274500 | 67333 | 2584 | 0.517% | 193.50 | 8.25 | -0.149 | 0.609 | 0.160 | 0.488 | -71.98 | -17.77 | 54.51 | Subduction IntraSlab |
| 400585 | 1518 | 174 | 166 | 135 | 23271700 | 50724 | 2585 | 0.517% | 193.42 | 7.15 | -2.075 | -0.455 | -0.203 | -0.344 | -70.35 | -18.45 | 103.57 | Subduction IntraSlab |
| 402259 | 1600 | 183 | 151 | 121 | 23264300 | 52007 | 2586 | 0.517% | 193.35 | 7.35 | 1.092 | -1.470 | -2.241 | 0.911 | -69.75 | -18.76 | 121.76 | Subduction IntraSlab |
| 534340 | 1088 | 149 | 148 | 119 | 23263500 | 65883 | 2587 | 0.517% | 193.27 | 7.85 | 0.677 | 1.184 | 0.782 | -0.214 | -71.57 | -18.23 | 51.33 | Subduction IntraSlab |
| 401669 | 1095 | 185 | 147 | 118 | 23254900 | 51557 | 2588 | 0.518% | 193.20 | 7.25 | 1.789 | -0.571 | 0.155 | 0.473 | -70.02 | -17.99 | 122.50 | Subduction IntraSlab |
| 396723 | 1143 | 141 | 148 | 159 | 23253600 | 48472 | 2589 | 0.518% | 193.12 | 6.85 | -0.472 | -0.085 | 0.370 | 1.424 | -70.35 | -18.13 | 108.04 | Subduction IntraSlab |
| 539255 | 1264 | 171 | 144 | 124 | 23252500 | 67295 | 2590 | 0.518% | 193.05 | 8.25 | 2.216 | 0.953 | 1.092 | -0.040 | -71.97 | -17.83 | 53.10 | Subduction IntraSlab |
| 400991 | 1360 | 207 | 150 | 134 | 23247000 | 51027 | 2591 | 0.518% | 192.98 | 7.15 | -0.833 | 1.927 | -0.865 | -2.180 | -69.88 | -18.34 | 122.29 | Subduction IntraSlab |
| 400541 | 1262 | 174 | 158 | 108 | 23245600 | 50691 | 2592 | 0.518% | 192.90 | 7.15 | 1.432 | 0.853 | 1.259 | 0.926 | -70.40 | -18.35 | 103.09 | Subduction IntraSlab |
| 534846 | 1275 | 143 | 141 | 119 | 23239600 | 66045 | 2593 | 0.519% | 192.83 | 7.85 | -0.964 | -0.085 | 1.140 | -0.415 | -71.64 | -17.86 | 59.12 | Subduction IntraSlab |
| 398183 | 1089 | 124 | 138 | 168 | 23232700 | 49233 | 2594 | 0.519% | 192.75 | 6.95 | -0.946 | 0.712 | -0.497 | 1.465 | -70.42 | -18.33 | 102.45 | Subduction IntraSlab |
| 534536 | 1208 | 155 | 169 | 117 | 23232500 | 65945 | 2595 | 0.519% | 192.68 | 7.85 | -1.707 | 0.148 | -1.503 | -0.836 | -71.59 | -18.06 | 54.90 | Subduction IntraSlab |
| 400048 | 1261 | 159 | 148 | 117 | 23223900 | 50357 | 2596 | 0.519% | 192.60 | 7.05 | -1.459 | 0.801 | 0.084 | 0.467 | -70.05 | -18.06 | 120.40 | Subduction IntraSlab |
| 531908 | 1129 | 143 | 154 | 120 | 23222600 | 65058 | 2597 | 0.519% | 192.53 | 7.65 | -0.996 | -2.156 | 0.655 | -0.878 | -71.41 | -18.05 | 58.66 | Subduction IntraSlab |
| 537972 | 1354 | 158 | 164 | 112 | 23219700 | 67013 | 2598 | 0.520% | 192.46 | 8.15 | -0.680 | 0.124 | -0.133 | 0.371 | -72.09 | -17.81 | 50.87 | Subduction IntraSlab |
| 402905 | 1131 | 177 | 158 | 119 | 23219500 | 52533 | 2599 | 0.520% | 192.38 | 7.45 | 0.222 | -0.860 | 1.662 | -0.084 | -69.67 | -18.01 | 135.22 | Subduction IntraSlab |
| 402977 | 1028 | 158 | 124 | 157 | 23218500 | 52591 | 2600 | 0.520% | 192.31 | 7.55 | 0.134 | -2.551 | -2.169 | -0.509 | -70.27 | -19.29 | 97.91 | Subduction IntraSlab |
| 532094 | 1329 | 172 | 142 | 107 | 23216000 | 65121 | 2601 | 0.520% | 192.23 | 7.65 | -0.816 | -0.532 | 1.084 | 0.684 | -71.46 | -17.91 | 61.46 | Subduction IntraSlab |
| 403194 | 1169 | 167 | 188 | 100 | 23214300 | 52773 | 2602 | 0.520% | 192.16 | 7.55 | -0.089 | -0.510 | -0.138 | 0.310 | -69.65 | -18.81 | 124.61 | Subduction IntraSlab |
| 537970 | 1473 | 194 | 145 | 109 | 23213300 | 67013 | 2603 | 0.521% | 192.09 | 8.15 | -1.243 | 0.329 | 0.779 | -0.917 | -72.09 | -17.81 | 50.87 | Subduction IntraSlab |
| 401247 | 1377 | 192 | 161 | 117 | 23210100 | 51223 | 2604 | 0.521% | 192.01 | 7.15 | 1.268 | 0.582 | -0.807 | 0.486 | -69.61 | -18.08 | 136.20 | Subduction IntraSlab |
| 401629 | 1094 | 153 | 137 | 133 | 23209500 | 51523 | 2605 | 0.521% | 191.94 | 7.25 | -1.249 | -0.967 | 1.504 | -0.678 | -69.90 | -18.57 | 118.89 | Subduction IntraSlab |
| 537200 | 1371 | 177 | 151 | 105 | 23208100 | 66810 | 2606 | 0.521% | 191.86 | 8.05 | 0.129 | -0.781 | 1.475 | -0.106 | -71.81 | -17.84 | 56.09 | Subduction IntraSlab |
| 537924 | 1276 | 184 | 152 | 107 | 23205200 | 67003 | 2607 | 0.521% | 191.79 | 8.15 | -0.410 | 0.376 | -1.062 | -2.217 | -71.75 | -18.11 | 50.46 | Subduction IntraSlab |
| 398801 | 1163 | 202 | 156 | 142 | 23198900 | 49590 | 2608 | 0.522% | 191.72 | 6.95 | -0.641 | -0.574 | -0.740 | 1.037 | -70.10 | -18.07 | 118.38 | Subduction IntraSlab |
| 536960 | 1443 | 173 | 152 | 109 | 23195600 | 66739 | 2609 | 0.522% | 191.64 | 8.05 | 0.465 | 1.289 | 2.095 | 0.232 | -71.70 | -18.04 | 53.36 | Subduction IntraSlab |
| 539705 | 1130 | 161 | 155 | 102 | 23192500 | 67374 | 2610 | 0.522% | 191.57 | 8.25 | -0.246 | -0.402 | 0.957 | 0.075 | -72.11 | -17.64 | 55.08 | Subduction IntraSlab |
| 540608 | 1113 | 170 | 174 | 100 | 23180500 | 67457 | 2611 | 0.522% | 191.50 | 8.35 | 0.143 | -1.032 | 0.344 | -0.507 | -72.24 | -17.61 | 52.84 | Subduction IntraSlab |
| 402134 | 1269 | 168 | 157 | 115 | 23179500 | 51916 | 2612 | 0.522% | 191.42 | 7.35 | 0.415 | 0.759 | 0.933 | -0.943 | -70.01 | -18.80 | 111.87 | Subduction IntraSlab |
| 401613 | 1164 | 176 | 176 | 109 | 23179000 | 51511 | 2613 | 0.523% | 191.35 | 7.25 | 0.528 | 0.193 | -1.270 | -0.113 | -69.95 | -18.45 | 118.17 | Subduction IntraSlab |
| 534852 | 1405 | 168 | 148 | 113 | 23169200 | 66047 | 2614 | 0.523% | 191.28 | 7.85 | -0.027 | -0.852 | -0.386 | 0.342 | -71.71 | -17.80 | 59.03 | Subduction IntraSlab |
| 537190 | 1185 | 179 | 134 | 120 | 23168400 | 66807 | | | | | | | | | | | | |



UNIVERSIDAD PRIVADA DE TACNA
ESCUELA PROFESIONAL DE INGENIERIA CIVIL

TEMA: "Estimación del riesgo sísmico probabilístico implementando la metodología GEM en la plataforma OpenQuake Engine: EventBased Damage, para el distrito Alto de la Alianza – Tacna, 2023"

PERDIDAS MAXIMAS PROBABLES POR PERIODO DE RETORNO (PML)

| Pérdida por Evento Sísmico | | | | | Tratamiento de Datos | | | | | Mw | Desviación Estándar de Errores en la Aceleración del Suelo (g) | | | | Epicentro | | | |
|----------------------------|--------|----------|-----------|----------|----------------------|--------|------|--------------------------|---------------------------|------|----------------------------------------------------------------|-------------------|-------------------|-------------------|-------------|--------------|----------------|----------------------|
| event_id | slight | moderate | extensive | collapse | losses | rup_id | Rank | Tasa Anual de Excedencia | Periodo de Retorno (años) | | eps_inter_PGA | eps_inter_SA(0.3) | eps_inter_SA(0.4) | eps_inter_SA(1.0) | centroid_on | centroid_lat | centroid_depth | trt |
| 535799 | 1047 | 132 | 117 | 146 | 22989700 | 66356 | 2665 | 0.533% | 187.62 | 7.95 | -1.367 | 1.913 | -0.285 | -0.786 | -71.90 | -17.88 | 53.17 | Subduction InterSlab |
| 535659 | 1145 | 164 | 157 | 111 | 22979900 | 66286 | 2666 | 0.533% | 187.55 | 7.95 | 0.113 | 1.316 | -1.513 | -0.665 | -71.62 | -18.24 | 49.84 | Subduction InterSlab |
| 538629 | 1096 | 158 | 137 | 140 | 22978600 | 67185 | 2667 | 0.533% | 187.48 | 8.25 | -0.957 | -0.470 | -1.272 | 0.382 | -72.07 | -17.92 | 48.77 | Subduction InterSlab |
| 537802 | 1108 | 165 | 154 | 113 | 22975700 | 66970 | 2668 | 0.534% | 187.41 | 8.15 | 0.287 | 1.748 | 0.485 | -0.791 | -71.82 | -18.12 | 48.97 | Subduction InterSlab |
| 539276 | 1257 | 164 | 146 | 113 | 22972600 | 67300 | 2669 | 0.534% | 187.34 | 8.25 | -0.022 | 2.417 | 1.089 | -0.647 | -72.15 | -17.69 | 52.93 | Subduction InterSlab |
| 397495 | 1053 | 161 | 127 | 140 | 22971900 | 48883 | 2670 | 0.534% | 187.27 | 6.85 | 0.012 | 1.522 | 0.784 | -0.544 | -70.01 | -17.92 | 124.02 | Subduction InterSlab |
| 528952 | 1289 | 173 | 133 | 112 | 22966500 | 64099 | 2671 | 0.534% | 187.20 | 7.45 | -1.273 | -1.653 | -0.053 | 1.132 | -71.07 | -18.10 | 64.10 | Subduction InterSlab |
| 536868 | 1537 | 210 | 153 | 95 | 22966100 | 66708 | 2672 | 0.534% | 187.13 | 8.05 | 0.296 | -0.977 | 1.235 | -0.889 | -71.80 | -18.01 | 51.84 | Subduction InterSlab |
| 400606 | 1354 | 159 | 148 | 120 | 22953000 | 50740 | 2673 | 0.535% | 187.06 | 7.15 | -0.169 | 1.260 | 0.602 | -0.615 | -70.32 | -18.43 | 104.68 | Subduction IntraSlab |
| 540553 | 1453 | 183 | 147 | 91 | 22947900 | 67451 | 2674 | 0.535% | 186.99 | 8.35 | -0.013 | 0.828 | -0.687 | 1.593 | -72.03 | -17.78 | 53.05 | Subduction InterSlab |
| 537502 | 1291 | 164 | 178 | 88 | 22941800 | 66901 | 2675 | 0.535% | 186.92 | 8.15 | -0.133 | 0.925 | 1.005 | 0.162 | -71.85 | -18.21 | 46.07 | Subduction InterSlab |
| 398940 | 968 | 152 | 134 | 137 | 22941400 | 49674 | 2676 | 0.535% | 186.85 | 6.95 | -0.505 | -0.854 | -1.790 | 0.196 | -69.99 | -18.10 | 121.91 | Subduction IntraSlab |
| 59285 | 1123 | 153 | 130 | 161 | 22941100 | 10992 | 2677 | 0.535% | 186.78 | 7.75 | -0.664 | -0.642 | 0.006 | 0.773 | -70.45 | -17.83 | 89.89 | Subduction IntraSlab |
| 538340 | 1600 | 206 | 170 | 111 | 22937200 | 67118 | 2678 | 0.536% | 186.71 | 8.15 | -1.241 | 0.441 | -0.574 | -0.081 | -72.00 | -17.73 | 55.19 | Subduction IntraSlab |
| 398445 | 1367 | 160 | 147 | 126 | 22934600 | 49387 | 2679 | 0.536% | 186.64 | 6.95 | -0.067 | 2.135 | -0.441 | 1.170 | -70.21 | -18.67 | 105.92 | Subduction IntraSlab |
| 59292 | 1337 | 167 | 135 | 153 | 22930700 | 10995 | 2680 | 0.536% | 186.57 | 6.75 | 0.260 | 0.507 | 0.664 | 0.512 | -70.56 | -17.75 | 89.09 | Subduction IntraSlab |
| 399041 | 1152 | 174 | 129 | 144 | 22928500 | 49733 | 2681 | 0.536% | 186.50 | 6.95 | -1.017 | 1.290 | -0.273 | 0.336 | -69.91 | -18.09 | 125.13 | Subduction IntraSlab |
| 533375 | 1355 | 171 | 166 | 116 | 22922400 | 65548 | 2682 | 0.536% | 186.43 | 7.75 | 0.779 | -0.083 | 0.153 | -0.160 | -71.43 | -18.07 | 57.93 | Subduction IntraSlab |
| 401510 | 1120 | 153 | 155 | 115 | 22921900 | 51431 | 2683 | 0.537% | 186.36 | 7.25 | -1.638 | -0.592 | -0.223 | 1.669 | -70.19 | -18.17 | 113.66 | Subduction IntraSlab |
| 534929 | 1236 | 166 | 157 | 104 | 22921800 | 66074 | 2684 | 0.537% | 186.29 | 7.85 | 1.912 | 0.338 | -0.444 | 0.527 | -71.49 | -17.91 | 60.71 | Subduction IntraSlab |
| 539431 | 1109 | 209 | 159 | 101 | 22921300 | 67328 | 2685 | 0.537% | 186.22 | 8.25 | -1.426 | -0.193 | 0.940 | -0.462 | -71.81 | -17.92 | 53.97 | Subduction InterSlab |
| 402168 | 1291 | 179 | 152 | 105 | 22919600 | 51944 | 2686 | 0.537% | 186.15 | 7.35 | -0.717 | 0.982 | 0.463 | 0.888 | -69.92 | -18.75 | 115.77 | Subduction IntraSlab |
| 528958 | 1292 | 170 | 140 | 130 | 22918700 | 64100 | 2687 | 0.537% | 186.08 | 7.45 | 0.043 | 0.605 | 0.087 | -0.218 | -71.11 | -18.08 | 64.05 | Subduction InterSlab |
| 539049 | 1162 | 175 | 152 | 95 | 22915000 | 67280 | 2688 | 0.538% | 186.01 | 8.25 | -0.114 | -1.419 | -0.130 | 1.302 | -72.08 | -17.80 | 51.59 | Subduction InterSlab |
| 536636 | 1274 | 162 | 151 | 122 | 22905800 | 66639 | 2689 | 0.538% | 185.94 | 8.05 | -2.343 | 0.174 | -0.495 | -1.598 | -71.73 | -18.19 | 49.04 | Subduction IntraSlab |
| 402409 | 1294 | 146 | 147 | 141 | 22901000 | 52123 | 2690 | 0.538% | 185.87 | 7.35 | 0.739 | -0.541 | -2.027 | 0.086 | -69.66 | -18.11 | 133.89 | Subduction IntraSlab |
| 59245 | 1018 | 160 | 144 | 146 | 22892300 | 10973 | 2691 | 0.538% | 185.80 | 6.75 | -1.953 | -1.639 | 0.768 | 1.308 | -70.50 | -17.82 | 88.30 | Subduction IntraSlab |
| 539478 | 1214 | 179 | 153 | 100 | 22892200 | 67336 | 2692 | 0.538% | 185.74 | 8.25 | -1.304 | 0.396 | -0.139 | 0.179 | -72.08 | -17.68 | 54.40 | Subduction InterSlab |
| 399637 | 1317 | 163 | 152 | 126 | 22890100 | 50095 | 2693 | 0.539% | 185.67 | 7.05 | -0.073 | -0.788 | -0.565 | 0.210 | -70.29 | -18.65 | 103.07 | Subduction IntraSlab |
| 399797 | 1284 | 166 | 136 | 122 | 22890000 | 50197 | 2694 | 0.539% | 185.60 | 7.05 | 0.489 | -0.323 | 0.858 | -1.729 | -70.20 | -18.22 | 112.41 | Subduction IntraSlab |
| 539885 | 1266 | 151 | 137 | 103 | 22887200 | 67391 | 2695 | 0.539% | 185.53 | 8.35 | 1.591 | -0.846 | -0.211 | -0.571 | -72.44 | -17.55 | 50.58 | Subduction IntraSlab |
| 401546 | 1098 | 156 | 155 | 115 | 22887100 | 51456 | 2696 | 0.539% | 185.46 | 7.25 | 1.175 | 1.331 | -0.745 | -1.317 | -70.06 | -18.52 | 113.34 | Subduction IntraSlab |
| 398287 | 1018 | 149 | 150 | 126 | 22885700 | 49297 | 2697 | 0.539% | 185.39 | 6.95 | -0.090 | 0.139 | 1.090 | 0.113 | -70.35 | -18.41 | 103.93 | Subduction IntraSlab |
| 398370 | 1076 | 219 | 134 | 150 | 22880600 | 49343 | 2698 | 0.540% | 185.32 | 6.95 | 0.812 | 2.177 | -0.934 | -0.322 | -70.29 | -18.45 | 105.46 | Subduction IntraSlab |
| 401660 | 1297 | 138 | 142 | 148 | 22878500 | 51549 | 2699 | 0.540% | 185.25 | 7.25 | -0.404 | 1.108 | -0.928 | 0.716 | -69.74 | -18.83 | 121.19 | Subduction IntraSlab |
| 529048 | 1428 | 179 | 163 | 107 | 22875000 | 64128 | 2700 | 0.540% | 185.19 | 7.45 | 0.052 | -1.066 | 0.062 | 0.379 | -71.07 | -18.04 | 65.53 | Subduction InterSlab |
| 535867 | 1504 | 194 | 139 | 103 | 22868800 | 66378 | 2701 | 0.540% | 185.12 | 7.95 | 1.129 | -0.286 | -1.408 | -1.242 | -71.52 | -18.15 | 54.25 | Subduction IntraSlab |
| 540666 | 1256 | 153 | 145 | 100 | 22868500 | 67462 | 2702 | 0.540% | 185.05 | 8.35 | 1.427 | 0.812 | 0.441 | 1.436 | -72.43 | -17.48 | 52.67 | Subduction InterSlab |
| 402586 | 1365 | 173 | 153 | 118 | 22861400 | 52266 | 2703 | 0.541% | 184.98 | 7.45 | 0.642 | 0.191 | 0.142 | 0.316 | -70.21 | -18.45 | 108.58 | Subduction IntraSlab |
| 530638 | 1635 | 180 | 150 | 124 | 22855200 | 64638 | 2704 | 0.541% | 184.91 | 7.55 | 2.892 | -0.804 | 0.469 | -0.058 | -71.20 | -18.04 | 63.22 | Subduction InterSlab |
| 533639 | 1228 | 164 | 166 | 89 | 22854200 | 65640 | 2705 | 0.541% | 184.84 | 7.75 | -0.644 | -0.432 | 0.196 | 0.238 | -71.29 | -18.00 | 62.38 | Subduction InterSlab |
| 401457 | 1475 | 170 | 151 | 105 | 22847500 | 51389 | 2706 | 0.541% | 184.77 | 7.25 | 0.583 | -1.387 | -0.085 | -0.364 | -70.22 | -18.43 | 108.71 | Subduction IntraSlab |
| 402352 | 1068 | 153 | 148 | 127 | 22842500 | 52078 | 2707 | 0.541% | 184.71 | 7.35 | -0.573 | -2.108 | -0.758 | 1.654 | -69.52 | -18.75 | 130.05 | Subduction IntraSlab |
| 538624 | 1402 | 192 | 139 | 125 | 22841700 | 67184 | 2708 | 0.542% | 184.64 | 8.25 | 0.837 | -0.933 | 2.098 | 0.476 | -72.05 | -17.96 | 48.08 | Subduction InterSlab |
| 531810 | 1069 | 156 | 138 | 108 | 22836100 | 65026 | 2709 | 0.542% | 184.57 | 7.65 | 0.302 | 0.685 | -1.713 | 1.371 | -71.36 | -18.18 | 56.57 | Subduction InterSlab |
| 539472 | 1603 | 196 | 136 | 117 | 22834300 | 67335 | 2710 | 0.542% | 184.50 | 8.25 | -0.741 | 0.615 | 1.049 | -0.728 | -72.05 | -17.71 | 54.44 | Subduction InterSlab |
| 402496 | 1148 | 184 | 154 | 105 | 22830000 | 52190 | 2711 | 0.542% | 184.43 | 7.45 | 0.772 | -0.649 | -0.259 | -0.872 | -70.37 | -18.81 | 98.35 | Subduction IntraSlab |
| 538642 | 1474 | 178 | 148 | 99 | 22830000 | 67189 | 2712 | 0.542% | 184.37 | 8.25 | 0.836 | -1.109 | 0.430 | -0.492 | -72.21 | -17.80 | 48.66 | Subduction InterSlab |
| 399034 | 1042 | 140 | 135 | 131 | 22829200 | 49728 | 2713 | 0.543% | 184.30 | 6.95 | 0.340 | -0.800 | 1.335 | -0.913 | -69.78 | -18.43 | 124.98 | Subduction IntraSlab |
| 535694 | 1232 | 167 | 139 | 103 | 22825100 | 66323 | 2714 | 0.543% | 184.23 | 7.95 | -0.565 | 0.406 | 1.485 | 1.460 | -71.79 | -18.03 | 51.85 | Subduction InterSlab |
| 535105 | 1376 | 173 | 174 | 87 | 22820000 | 66137 | 2715 | 0.543% | 184.16 | 7.85 | 0.152 | 1.331 | 0.265 | -0.464 | -71.40 | -17.89 | 62.95 | Subduction InterSlab |
| 537920 | 1399 | 188 | 137 | 111 | 22819500 | 67003 | 2716 | 0.543% | 184.09 | 8.15 | 1.727 | 0.537 | -1.588 | 0.772 | -71.75 | -18.11 | 50.46 | Subduction InterSlab |
| 399814 | 1143 | 152 | 128 | 146 | 22818700 | 50210 | 2717 | 0.543% | 184.03 | 7.05 | 2.271 | 0.530 | 0.414 | -0.672 | -70.11 | -18.55 | 110.92 | Subduction IntraSlab |
| 538063 | 1361 | 183 | 162 | 91 | 22815300 | 67043 | 2718 | 0.544% | 183.96 | 8.15 | -0.017 | -0.160 | 0.518 | 0.908 | -71.95 | -17.87 | 52.41 | Subduction InterSlab |
| 539666 | 1272 | 174 | 137 | 115 | 22815300 | 67369 | 2719 | 0.544% | 183.89 | 8.25 | 2.192 | -0.096 | 1.223 | -1.400 | -71.92 | -17.78 | 55.27 | Subduction InterSlab |
| 59295 | 1134 | 154 | 154 | 138 | 22811500 | 10997 | 2720 | 0.544% | 183.82 | 6.75 | -0.929 | 0.383 | 0.051 | 1.203 | -70.63 | -17.69 | 89.09 | Subduction IntraSlab |
| 402638 | 1180 | 150 | 153 | 139 | 22811500 | 52306 | 2721 | 0.544% | 183.76 | 7.45 | -0.768 | -1.590 | 0.029 | 0.108 | -70.12 | -18.53 | 110.95 | Subduction IntraSlab |
| 537193 | 1227 | 135 | 139 | 114 | 22807100 | 66807 | 2722 | 0.544% | 183.69 | 8.05 | -0.529 | 0.720 | 0.760 | -1.233 | -71.70 | -17.92 | 56.20 | Subduction InterSlab |
| 538797 | 1270 | 206 | 140 | 103 | 22805600 | 67216 | 2723 | 0.545% | 183.62 | 8.25 | 1.348 | -0.254 | 0.489 | -0.871 | -71.87 | -18.04 | 49.64 | Subduction InterSlab |
| 402142 | 1228 | 177 | 130 | 139 | 22791200 | 51923 | 2724 | 0.545% | 183.55 | 7.35 | 0.627 | -2.055 | -1.301 | 1.231 | -70.02 | -18.61 | 113.90 | Subduction IntraSlab |
| 537664 | 1489 | 171 | 159 | 98 | 22788900 | 66937 | 2725 | 0.545% | 183.49 | 8.15 | -0.675 | 1.185 | 1.307 | 0.892 | -71.89 | -18.12 | 47.48 | Subduction InterSlab |
| 540246 | 1197 | 158 | 145 | 113 | 22783700 | 67423 | 2726 | 0.545% | 183.42 | 8.35 | -1.426</ | | | | | | | |