



**DEPARTAMENTO MUNICIPAL AMBIENTAL
MUNICIPALIDAD DE PUERTO CORTÉS
BASE DE DATOS RESULTADOS DE ANÁLISIS DE CALIDAD DE AGUA LAGUNA DE ALVARADO 2012-2018**

| PUNTO DE MUESTREO | GEOREFERENCIA | AÑO | PARÁMETROS | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|----------------------------|------|------------|------|------------------|-------|----------------|-------|-------------------------|------|---------------|------|------------|-------|---------------|------|--------------------|-------|--------------------------------|------|----------------------------|------|--------------------------|-------|------------------------|-------|--------------------------------|----------|--------------------------------|----------|--------|
| | | | PH | | Temperatura (°C) | | Turbidez (NTU) | | Oxígeno disuelto (mg/L) | | DBO5,20(mg/L) | | DQO (mg/L) | | Salinidad (%) | | Conductividad (µS) | | Sólidos Sedimentables (ml.L/h) | | Sólidos suspendidos (mg/L) | | Sólidos Disueltos (mg/L) | | Sólidos Totales (mg/L) | | Coliformes Fecales (NMP/100ml) | | Coliformes Totales (NMP/100ml) | | |
| MACROCANAL | 16P 0401045 UTM 1752181 | 2012 | 8.2 | 8.1 | 27.80 | 28.50 | 7.04 | 14.54 | 5.5 | 0.95 | 0.95 | 0.31 | 21 | 97 | | | | | | | | | | | | | | 151000 | 120.3.3 | 151000 | 1203.3 |
| | | 2013 | 7.82 | 7.39 | 25.8 | 27.1 | 8.17 | 10.30 | 6.69 | 5.07 | 4.05 | 3.66 | 27 | 38 | 20.00 | | | | | | | | | | | | | 53.1 | 10.0 | 53.1 | 10.0 |
| | | 2014 | 7.64 | | 28.9 | | 35.8 | | 4.3 | | 3.1 | | 112 | | | | | | | | | | | | | | | 4,375.80 | | 4,555.80 | |
| | | 2015 | 7.92 | 7.52 | 16.1 | 17.6 | | 55.12 | 6.8 | 7.2 | 3.91 | 3.0 | 61.33 | 49.95 | 33.2 | 9.0 | 47.7 | 511.0 | | <0.1 | | 2.59 | | 38.58 | | 41.17 | 78.3 | 571700 | 41.1 | 7100 | |
| | | 2016 | 8.21 | | 31.8 | | 4.62 | | 10.51 | | 167.67 | | 2570.66 | | 32.8 | | 55 | | <0.1 | | 45.3 | | 1255 | | 1300.3 | | 41300 | | 77600 | | |
| | | 2018 | 8.15 | 8.11 | 21.5 | 21.3 | 2.84 | 5.57 | 2.18 | | 6.4 | 38.9 | 143 | 295.1 | 31.5 | 27.5 | 112.8 | 44.45 | <0.5 | 0.1 | 6.1 | 8.6 | 32.6 | 29.6 | 38.7 | 38.2 | 1,396 | 2,046 | | >24,196 | |
| DESCARGA PTAR | 16P 0401632 UTM 1753024 | 2012 | 5.2 | 7.5 | 22.90 | 26.00 | 24.71 | 11.83 | 5.16 | 1.20 | 3.98 | 0.32 | 21.00 | 29.00 | | | | | | | | | | | | | 461.10 | 1553.10 | 461.10 | 1553.10 | |
| | | 2013 | 8.15 | 7.18 | 23.6 | 27.4 | 16.07 | 7.56 | 7.9 | 5.07 | 5.17 | 4.86 | 31.0 | 59.0 | | | | | | | | | | | | | 11.1 | 40.0 | 11.1 | 40.0 | |
| | | 2014 | 7.93 | | | | 27.05 | | | | 6.7 | | 142 | | | | | | | | | | | | | | 198 | | 68409 | | |
| | | 2015 | 7.85 | 7.38 | 16.2 | 13.4 | | 11.39 | | | 5.3 | 3 | 61.33 | 27.78 | 33.8 | 22.0 | 49.7 | 127.3 | | 0.2 | | | | 37.82 | | 39.23 | 12.00 | 547500 | 24.3 | 20200 | |
| | | 2016 | 8.18 | | 31.8 | | 66.87 | | 8.90 | | 320.3 | | 5194.66 | | 22.5 | | 39.00 | | <0.1 | | 62.1 | | 537.9 | | 600 | | 46600 | | 102200 | | |
| | | 2018 | 8.17 | 8.25 | 21.7 | 21.2 | 3.77 | 96.38 | 8.00 | 5.17 | 5.2 | 41.2 | 73 | 216 | 31.2 | 17.6 | 96.93 | 30.04 | <0.1 | 0.4 | 3.0 | 31.7 | 37.3 | 44.7 | 40.3 | 76.4 | 31 | 4,884 | >24,196 | >24,196 | |
| CANAL DE CHAMBER | 16P 0403563 UTM 1752772 | 2012 | 7.7 | 8.4 | 25.1 | 26.4 | 5.22 | 13.74 | 4.2 | 3.28 | 29.00 | 2.32 | 23.00 | 12.00 | | | | | | | | | | | | | 8,600 | 331.4 | 8,600 | 331.4 | |
| | | 2013 | 7.89 | 6.62 | 26.4 | 28.0 | 8.58 | 10.42 | 0.00 | 5.07 | 3.45 | 4.46 | 21.0 | 32.0 | | | | | | | | | | | | | 15.0 | 64.0 | 15.0 | 64.0 | |
| | | 2014 | 7.70 | | 17.8 | | 14.16 | | 5.3 | | 5.00 | | 258 | | | | | | | | | | | | | | 792 | | 5,553.9 | | |
| | | 2015 | 7.38 | 7.48 | 26.5 | 17.3 | 5.30 | 3.37 | 6.1 | 5.3 | 4.1 | 3.5 | 202.67 | 25.92 | 22.8 | 13.3 | 34.6 | 85.5 | 0.2 | <0.1 | | 119 | | 25.92 | | 27.11 | 18.1 | 11000 | 63.9 | 70000 | |
| | | 2016 | 7.70 | | 31.4 | | 7.36 | | 10.51 | | 151.88 | | 2944 | | 22.5 | | 39.5 | | <0.1 | | 37.1 | | 615.18 | | 652.28 | | 9800 | | 103600 | | |
| | | 2018 | 7.57 | 2.26 | 20.4 | 21.6 | 5.31 | 3.8 | 7.4 | 8.04 | 5.7 | 27.9 | 51.00 | 90.50 | 31.8 | 16 | 101.16 | 27.89 | <0.1 | 0.2 | 4.5 | 12.9 | 38.4 | 21.8 | 42.9 | 34.7 | 256 | 63 | >24,196 | 10,462 | |



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| PUNTO DE MUESTREO | GEOREFERENCIA | AÑO | PARÁMETROS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------|----------------------------|------|------------|------|------------------|------|----------------|-------|-------------------------|------|---------------|-------|------------|--------|---------------|------|--------------------|-------|--------------------------------|------|----------------------------|------|--------------------------|-------|------------------------|---------|--------------------------------|---------|--------------------------------|---------|--------|-------|
| | | | PH | | Temperatura (°C) | | Turbidez (NTU) | | Oxígeno disuelto (mg/L) | | DBO5,20(mg/L) | | DQO (mg/L) | | Salinidad (%) | | Conductividad (µs) | | Sólidos Sedimentables (ml.L/h) | | Sólidos suspendidos (mg/L) | | Sólidos Disueltos (mg/L) | | Sólidos Totales (mg/L) | | Coliformes Fecales (NMP/100ml) | | Coliformes Totales (NMP/100ml) | | | |
| PUEBLO NUEVO | 16P 0401717 UTM 1750302 | 2012 | 8.1 | 8.3 | 25.1 | 26.3 | 5.21 | 9.45 | 6.60 | 1.60 | 1.98 | 1.00 | 26.00 | 105.00 | | | | | | | | | | | | | | | 35,000 | 130.5 | 35,000 | 130.5 |
| | | 2013 | 7.89 | 7.39 | 20.5 | 22.5 | 9.18 | 8.88 | 6.89 | 5.87 | 3.24 | 0.20 | | | | | | | | | | | | | | | | 59.1 | 31.0 | 59.1 | 31.0 | |
| | | 2014 | 8.10 | | 18.60 | | 12.58 | | 6.7 | | 5.7 | | 264 | | | | | | | | | | | | | | | 396 | | 6,177.6 | | |
| | | 2015 | 8.01 | 8.26 | 26.9 | 17.9 | 4.06 | 3.78 | 6.2 | 6.16 | 3.00 | 3.6 | 64 | 16.73 | 34.4 | 26.9 | 50.9 | 110.0 | | 20.1 | | 1.69 | | 17.78 | | 19.47 | 15.5 | 26300 | 38.3 | 155900 | | |
| | | 2016 | 8.27 | | 31.7 | | 7.92 | | 9.98 | | 121.80 | | 3408 | | 28.2 | | 46.6 | | <0.1 | | 52.2 | | 925.47 | | 977.67 | | 30500 | | 54300 | | | |
| | | 2018 | 8.20 | 8.12 | 20.6 | 22.1 | 8.98 | 5.85 | 8.7 | 5.96 | 5.90 | 36.80 | 221 | 143.9 | 31.3 | 29.2 | 96.11 | 47.15 | <0.1 | 0.3 | 1.7 | 32.1 | 30.7 | 5.96 | 32.4 | 96.7 | 15,531 | 241 | >24,196 | 7,701 | | |
| PUEBLO NUEVO MUELLECITO | 16P 0400985 UTM 1750634 | 2012 | 8.1 | 8.1 | 19.6 | 24.8 | 6.01 | 8.62 | 7.01 | 1.76 | 2.18 | 1.34 | 23 | 84 | | | | | | | | | | | | | 7,500 | 648.8 | 7,500 | 648.8 | | |
| | | 2013 | 7.92 | 7.79 | 21.2 | 23.7 | 9.18 | 14.33 | 5.67 | 6.28 | 5.7 | 0.61 | | | 0.00 | | | | | | | | | | | | 200.5 | 10.0 | 200.5 | 10.0 | | |
| | | 2014 | 8.01 | | 28.7 | | 37.02 | | 5.6 | | 3.6 | | 116 | | | | | | | | | | | | | | 2950.20 | | 3,890.7 | | | |
| | | 2015 | 8.08 | 8.31 | 25.6 | 18.0 | 4.9 | 3.37 | 6.9 | 5.3 | 3.4 | 3.5 | 84.0 | 25.92 | 33.3 | 13.3 | 46.3 | 85.5 | | <0.1 | | 1.9 | | 25.21 | | 27.11 | 4.0 | 11000 | 593.8 | 7000 | | |
| | | 2016 | 8.21 | | 32 | | 5.9 | | 7.82 | | 15.79 | | 389.34 | | 27.5 | | 54.5 | | <0.1 | | 42.8 | | 902.95 | | 945.75 | | 920800 | | 12100 | | | |
| | | 2018 | 8.24 | 8.06 | 20.9 | 22.2 | 6.74 | 1.97 | 10.9 | 6.91 | 7.6 | 30.04 | 185 | 92.4 | 31.5 | 27.9 | 103.15 | 45.83 | <0.1 | 0.3 | 1.0 | 32.1 | 29.1 | 64.6 | 30.1 | 96.7 | <10 | 17,329 | 6,867 | >24,196 | | |
| RÍO MEDINA | 16P 0400791 UTM 1750369 | 2012 | 7.7 | 8.1 | 19.6 | 24.2 | 96.6 | 8.88 | 5.31 | 3.3 | 0.55 | 1.9 | 18 | 105 | | | | | | | | | | | | 461,100 | 1046 | 461,100 | 1046 | | | |
| | | 2013 | 7.65 | 7.34 | 25.3 | 27.6 | 4.58 | 10.40 | 4.45 | 6.48 | 3.25 | 0.41 | | | 0.2 | | | | | | | | | | | 144.5 | 10.0 | 144.5 | 10.0 | | | |
| | | 2014 | 8.02 | | 27.2 | | 27.25 | | 5.5 | | 4.8 | | 312 | | | | | | | | | | | | | | 2,841.30 | | 4,613.40 | | | |
| | | 2015 | 8.14 | 8.32 | 34.7 | 18.9 | | 3.13 | | | 3.4 | 3.7 | 30.67 | 21.49 | 34.7 | 27.4 | 49.3 | 148.5 | | <0.1 | | 1.0 | | 25.1 | | 26.1 | 16.1 | 11000 | 45.7 | 11000 | | |
| | | 2016 | 8.6 | | 31.2 | | 3.39 | | 9.70 | | 121.80 | | 3594.66 | | 27.2 | | 45.2 | | <0.1 | | 37.2 | | 1216.01 | | 1253.21 | | 13200 | | 574800 | | | |
| | | 2018 | 7.72 | 8 | 21.5 | 22.5 | 5.35 | 3.15 | 11.13 | 7.24 | 7.2 | 49.7 | 47.00 | 136.60 | 31.7 | 23.5 | 111.37 | 38.89 | <0.10 | 0.3 | 1.3 | 38.3 | 37.80 | 7.24 | 39.10 | 79.30 | 8,164 | 15,531 | >24,196 | >24,196 | | |



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|------------------------|----------------------------|------|------------|------|------------------|------|----------------|------|-------------------------|------|---------------|------|------------|-------|---------------|------|--------------------|-------|--------------------------------|------|----------------------------|------|--------------------------|-------|------------------------|------|--------------------------------|-------|--------------------------------|--------|
| | | | PH | | Temperatura (°C) | | Turbidez (NTU) | | Oxígeno disuelto (mg/L) | | DBO5,20(mg/L) | | DQO (mg/L) | | Salinidad (%) | | Conductividad (µs) | | Sólidos Sedimentables (ml.L/h) | | Sólidos suspendidos (mg/L) | | Sólidos Disueltos (mg/L) | | Sólidos Totales (mg/L) | | Coliformes Fecales (NMP/100ml) | | Coliformes Totales (NMP/100ml) | |
| EL DELFÍN | 16P 0400419 UTM 1750102 | 2012 | 8.4 | | 24.7 | 27.3 | 10.81 | | 6.94 | | 1.68 | | 35 | | | | | | | | | | | | | | 23,300 | 64.0 | 23,300 | 64.0 |
| | | 2013 | 7.86 | 8.01 | 26.2 | 28.4 | 4.82 | 3.34 | 6.28 | 5.67 | 2.28 | 1.82 | | | | | | | | | | | | | | | 12.4 | | 12.4 | |
| | | 2014 | 8.06 | | 24.3 | | 12.43 | | 5 | | 5 | | 316 | | | | | | | | | | | | | | 2,405.7 | | 4,504.5 | |
| | | 2015 | 8.14 | 8.28 | | 19.5 | | 4.48 | | | 4.9 | 3.5 | 547.43 | 21.49 | 35.2 | 26.8 | 52.2 | 14.3 | | | <0.1 | 0.9 | | 34.9 | | 36.8 | 11.1 | 73300 | 51.2 | 60200 |
| | | 2016 | 8.05 | | 31.4 | | 1.85 | | 9.44 | | 46.62 | | 2768 | | 38.2 | | 56.6 | | <0.1 | | 35.1 | | 1321.8 | | 1,356.90 | | 10400 | | 315100 | |
| | | 2018 | 8.23 | 8.2 | 21.7 | 22.9 | 6.24 | 0.58 | 11.63 | 6.81 | 6.9 | 58.2 | 408 | 113 | 31.3 | 28.1 | 116.93 | 45.17 | <0.1 | <0.1 | 2.4 | 19.4 | 38.10 | 52.50 | 40.56 | 71.9 | 583 | 63 | 19,863 | 504 |
| EL CENTRO DE LA LAGUNA | 4024431751857 | 2012 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2013 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2014 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2015 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2016 | 8.33 | | 31.5 | | 5.39 | | 11.58 | | 212.78 | | 3189.34 | | 32.6 | | 55.7 | | <0.1 | | 46.2 | | 1274.98 | | 1321.18 | | 161500 | | 3200 | |
| | | 2018 | 8.3 | 8.25 | 20 | 22 | 2.61 | 2.09 | 12.1 | 6.19 | 8 | 27.9 | 196 | 90.5 | 31.1 | 16 | 98.73 | 27.89 | <0.10 | 0.2 | 0.9 | 12.9 | 28.7 | 21.8 | 29.6 | 34.7 | <10 | 63 | 185 | 10,462 |

**NOTAS: LA PRIMER COLUMNA CORRESPONDE A LA TEMPORADA SECA Y LA SEGUNDA A LA TEMPORADA LLUVIOSA DE CADA AÑO.
MUESTREOS HECHOS POR PERSONAL DEL DMA
ANÁLISIS EJECUTADOS EN LABORATORIO AMBIENTAL 22 DE MARZO**

DADO EN PUERTO CORTÉS A LOS CINCO DÍAS DE NOVIEMBRE DEL DOS MIL DIECIOCHO


 Ing. Kay Regina Boddan Heusch
 Jefe del Departamento Municipal Ambiental