CITY OF BROKEN ARROW
Where opportunity lives

# MONTHLY OPERATIONAL REPORT

## City of Broken Arrow Lynn Lane Water Reclamation Facility

December-24

### WEATHER / INFLUENT

| Date | Day | °F | Rain | Cloud Conditions | Flow (MGD) | RAS (MGD) | °C | pH | Alk. | Sett. Solids | TSS (mg/L) | BOD (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Sun | 47 | 0.00 | Cloudy | 5.519 | 8.482 | 20 | 7.4 | 258 | 27 | | |
| 2 | Mon | 49 | 0.00 | Clear | 5.722 | 8.096 | 19 | 7.3 | 225 | 22 | 272 | 237 |
| 3 | Tue | 49 | 0.00 | Clear | 5.865 | 8.364 | 19 | 7.4 | 248 | 22 | 234 | 235 |
| 4 | Wed | 64 | 0.00 | Clear | 5.322 | 8.307 | 19 | 7.4 | 245 | 23 | 272 | 206 |
| 5 | Thu | 47 | 0.00 | Clear | 5.673 | 8.241 | 18 | 7.3 | 251 | 24 | 350 | 212 |
| 6 | Fri | 49 | 0.00 | Clear | 5.417 | 8.656 | 18 | 7.3 | 250 | 26 | 318 | 295 |
| 7 | Sat | 61 | 0.00 | Clear | 5.259 | 8.281 | 19 | 7.4 | 255 | 32 | | |
| 8 | Sun | 49 | 0.04 | Rain | 5.324 | 8.150 | 18 | 7.4 | 251 | 28 | | |
| 9 | Mon | 51 | 0.09 | Cloudy | 5.566 | 8.267 | 19 | 7.3 | 251 | 7.5 | 238 | 183 |
| 10 | Tue | 47 | 0.00 | Cloudy | 5.377 | 8.353 | 18 | 7.3 | 248 | 30 | 540 | 423 |
| 11 | Wed | 50 | 0.00 | Clear | 5.279 | 8.181 | 18 | 7.3 | 248 | 25 | 384 | 283 |
| 12 | Thu | 62 | 0.00 | Clear | 5.455 | 8.201 | 19 | 7.4 | 240 | 35 | 362 | 369 |
| 13 | Fri | 52 | 0.08 | Cloudy | 4.280 | 8.418 | 19 | 7.3 | 239 | 29 | 356 | 398 |
| 14 | Sat | 59 | 0.09 | Cloudy | 4.794 | 8.181 | 19 | 7.3 | 283 | 35 | | |
| 15 | Sun | 61 | 0.00 | P Cloudy | 5.255 | 8.119 | 18 | 7.3 | 287 | 29 | | |
| 16 | Mon | 67 | 0.04 | P Cloudy | 5.631 | 8.127 | 20 | 7.3 | 265 | 2 | 272 | 216 |
| 17 | Tue | 59 | 0.00 | Cloudy | 4.924 | 8.146 | 20 | 7.2 | 250 | 25 | 302 | 274 |
| 18 | Wed | 54 | 0.00 | P Cloudy | 5.332 | 7.960 | 19 | 7.4 | 233 | 5 | 125 | 125 |
| 19 | Thu | 57 | 0.00 | Clear | 5.231 | 7.940 | 19 | 7.4 | 263 | 29 | 344 | 284 |
| 20 | Fri | 44 | 0.00 | Clear | 5.029 | 7.446 | 19 | 7.4 | 251 | 4 | 158 | 218 |
| 21 | Sat | 47 | 0.00 | Clear | 5.022 | 8.467 | 19 | 7.4 | 270 | 10 | | |
| 22 | Sun | 55 | 0.00 | Clear | 5.125 | 8.264 | 19 | 7.4 | 266 | 13 | | |
| 23 | Mon | 59 | 0.00 | Cloudy | 5.248 | 8.290 | 19 | 7.2 | 263 | 15 | 316 | 268 |
| 24 | Tue | 52 | 0.75 | Cloudy | 5.607 | 8.315 | 18 | 7.0 | 163 | 24 | 358 | 171 |
| 25 | Wed | 47 | 0.01 | Cloudy | 6.762 | 8.198 | 18 | 7.3 | 271 | 20 | 314 | 278 |
| 26 | Thu | 54 | 0.10 | Cloudy | 5.540 | 8.263 | 19 | 7.2 | 266 | 25 | 332 | 343 |
| 27 | Fri | 54 | 0.00 | Cloudy | 5.995 | 8.172 | 18 | 7.3 | 239 | 25 | 304 | 467 |
| 28 | Sat | 58 | 0.00 | Cloudy | 5.863 | 8.192 | 19 | 7.3 | 273 | 26 | | |
| 29 | Sun | 62 | 0.02 | Cloudy | 5.782 | 8.185 | 19 | 7.3 | 280 | 24 | | |
| 30 | Mon | 67 | 0.00 | Cloudy | 5.690 | 8.299 | 19 | 7.3 | 257 | 23 | 360 | 243 |
| 31 | Tue | 54 | 0.00 | Cloudy | 5.714 | 8.293 | 18 | 7.3 | 260 | 26 | 348 | 273 |
| TOTAL : | | | 1.22 | | 168.602 | | | | | | | |
| MIN : | | 44 | 0.00 | | 4.280 | 7.446 | 18 | 7.0 | 163 | 2 | 125 | 125 |
| MAX : | | 67 | 0.75 | | 6.762 | 8.656 | 20 | 7.4 | 287 | 35 | 540 | 467 |
| AVG : | | 54 | | | 5.439 | 8.221 | 19 | | | 22 | 312 | 273 |

### EAST OXIDATION DITCH / WEST OXIDATION DITCH

| Date | East D.O. (mg/L) | East 30 Min. Settl. | East SVI (ml/gm) | East MLSS (mg/L) | East Sl. Age (Days) | West D.O. (mg/L) | West 30 Min. Settl. | West SVI (ml/gm) | West MLSS (mg/L) | West Sl. Age (Days) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2.9 | 310 | | | | 3.3 | 310 | | | |
| 2 | 1.5 | 340 | 74 | 4,610 | 24 | 2.6 | 340 | 84 | 4,050 | 21 |
| 3 | 2.9 | 360 | 80 | 4,490 | 26 | 3.3 | 380 | 85 | 4,460 | 26 |
| 4 | 2.8 | 340 | 80 | 4,240 | 23 | 2.4 | 340 | 75 | 4,520 | 25 |
| 5 | 2.4 | 340 | 75 | 4,530 | 18 | 3.0 | 340 | 73 | 4,650 | 19 |
| 6 | 3.1 | 310 | 64 | 4,840 | 22 | 3.0 | 340 | 76 | 4,460 | 21 |
| 7 | 3.7 | 350 | | | | 3.7 | 340 | | | |
| 8 | 2.4 | 320 | | | | 2.7 | 320 | | | |
| 9 | 1.3 | 360 | 86 | 4,180 | 25 | 2.1 | 350 | 86 | 4,080 | 25 |
| 10 | 1.9 | 350 | 83 | 4,210 | 12 | 2.7 | 380 | 90 | 4,230 | 12 |
| 11 | 2.4 | 340 | 82 | 4,160 | 16 | 2.3 | 360 | 85 | 4,240 | 17 |
| 12 | 3.2 | 310 | 80 | 3,890 | 16 | 3.7 | 340 | 87 | 3,930 | 16 |
| 13 | 3.8 | 300 | 75 | 4,010 | 21 | 4.1 | 310 | 73 | 4,230 | 22 |
| 14 | 3.0 | 320 | | | | 3.4 | 330 | | | |
| 15 | 3.0 | 310 | | | | 2.9 | 300 | | | |
| 16 | 1.8 | 310 | 81 | 3,850 | 20 | 2.6 | 300 | 75 | 4,020 | 21 |
| 17 | 0.9 | 280 | 75 | 3,720 | 20 | 1.5 | 280 | 73 | 3,850 | 21 |
| 18 | 1.7 | 290 | 73 | 4,000 | 48 | 3.0 | 290 | 73 | 3,980 | 48 |
| 19 | 1.8 | 270 | 73 | 3,690 | 16 | 2.7 | 270 | 67 | 4,050 | 18 |
| 20 | 2.3 | 270 | 70 | 3,830 | 39 | 3.3 | 270 | 68 | 3,980 | 40 |
| 21 | 2.7 | 260 | | | | 3.8 | 260 | | | |
| 22 | 2.2 | 270 | | | | 3.2 | 260 | | | |
| 23 | 1.2 | 270 | 58 | 4,680 | 23 | 2.3 | 270 | 66 | 4,120 | 20 |
| 24 | 1.2 | 270 | 69 | 3,890 | 16 | 1.7 | 280 | 71 | 3,940 | 16 |
| 25 | 1.5 | 290 | 68 | 4,250 | 16 | 2.1 | 290 | 68 | 4,260 | 16 |
| 26 | 1.2 | 280 | 65 | 4,290 | 19 | 2.3 | 280 | 66 | 4,220 | 18 |
| 27 | 1.3 | 270 | 68 | 3,950 | 17 | 2.2 | 290 | 66 | 4,370 | 19 |
| 28 | 1.4 | 290 | | | | 2.1 | 290 | | | |
| 29 | 1.5 | 290 | | | | 2.4 | 290 | | | |
| 30 | 1.3 | 290 | 73 | 3,980 | 16 | 2.0 | 290 | 67 | 4,310 | 17 |
| 31 | 1.6 | 290 | 62 | 4,660 | 19 | 2.5 | 300 | 66 | 4,520 | 18 |
| TOTAL : | | | | | | | | | | |
| MIN : | 0.9 | | 58 | 3,690 | 12 | 1.5 | | 66 | 3,850 | 12 |
| MAX : | 3.8 | | 86 | 4,840 | 48 | 4.1 | | 90 | 4,650 | 48 |
| AVG : | | | 73 | 4,180 | | | | 75 | 4,203 | |

### SLUDGE WASTING / DIGESTER

| Date | WAS (MGD) | WAS MLSS (mg/L) | CAKE ( % ) | LANDFILL (Tons) | LANDFILL (D.M. Tons) | THK EFFL MLVSS (mg/L) | BP FEED MLVSS (mg/L) | VECTOR ATT RED. ( % ) |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.115 | | | | | | | |
| 2 | 0.115 | 6,340 | 17 | 18.32 | 2.83 | 15,350 | 7,950 | 48 |
| 3 | 0.115 | 6,310 | | | | | | |
| 4 | 0.115 | 6,130 | 17 | 31.90 | 4.92 | 14,825 | 8,475 | 43 |
| 5 | 0.115 | 6,120 | 17 | 18.01 | 2.78 | | | |
| 6 | 0.115 | 8,830 | | | | | | |
| 7 | 0.115 | | | | | | | |
| 8 | 0.115 | | | | | | | |
| 9 | 0.115 | 6,260 | 18 | | | 14,625 | 8,525 | 42 |
| 10 | 0.115 | 5,900 | 18 | 34.19 | 5.58 | | | |
| 11 | 0.115 | 11,260 | 17 | | | 11,200 | 8,725 | 22 |
| 12 | 0.115 | | 17 | 15.38 | 2.37 | | | |
| 13 | 0.115 | 4,990 | 17 | 14.39 | 2.22 | 11,000 | 9,250 | 16 |
| 14 | 0.115 | | | | | | | |
| 15 | 0.115 | | | | | | | |
| 16 | 0.115 | 5,710 | 17 | 27.71 | 4.27 | 11,750 | 9,000 | 23 |
| 17 | 0.115 | 5,610 | 17 | 32.82 | 5.06 | | | |
| 18 | 0.115 | 5,760 | 17 | 18.92 | 2.92 | 10,950 | 8,850 | 19 |
| 19 | 0.115 | 4,940 | 17 | 15.42 | 2.38 | | | |
| 20 | 0.115 | 5,350 | 17 | 14.99 | 2.31 | 11,075 | 9,600 | 13 |
| 21 | 0.115 | | | | | | | |
| 22 | 0.115 | | | | | | | |
| 23 | 0.115 | 6,500 | 17 | 12.46 | 1.92 | 13,725 | 9,100 | 34 |
| 24 | 0.115 | 7,310 | | | | | | |
| 25 | 0.115 | 5,630 | | | | 15,850 | 8,175 | 48 |
| 26 | 0.115 | 6,250 | 17 | 33.81 | 5.21 | | | |
| 27 | 0.115 | 6,280 | 17 | 36.20 | 5.58 | 14,575 | 9,850 | 32 |
| 28 | 0.115 | | | | | | | |
| 29 | 0.115 | | | | | | | |
| 30 | 0.115 | 5,650 | 17 | 17.66 | 2.72 | 12,450 | 10,325 | 17 |
| 31 | 0.115 | 5,790 | 18 | 38.54 | 6.29 | | | |
| TOTAL : | 3.565 | | | 380.72 | 59.38 | | | |
| MIN : | 0.115 | 4,940 | 17 | 29.00 | | | | 13 |
| MAX : | 0.115 | 11,260 | 18 | 38.54 | 6.29 | | | 48 |
| AVG : | 0.115 | 6,330 | 17 | 23.80 | 3.71 | | | 30 |

### FINAL EFFLUENT

| Date | °C | D.O. (mg/L) | TDS (mg/L) | TDS (lbs) | pH | Alk. | TSS (mg/L) | TSS (lbs) | BOD (mg/L) | BOD (lbs) | Hg (mg/L) | Hg (lbs.) | E.Coli | Cl2 Res | CL2 lbs/day | Effl. Flow (MGD) | Non-Potable (MGD) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 7.9 | 499 | 21,137 | 7.2 | 73 | 2.00 | 84.72 | 3.20 | 135.55 | 0.00005 | 0.0021 | | 0.03 | 0 | 5.079 | 0.189 |
| 2 | 18 | 8.1 | | | 7.2 | 79 | 2.00 | 87.04 | 2.00 | 87.04 | | | 1.0 | 0.03 | 0 | 5.218 | 0.191 |
| 3 | 17 | 8.1 | | | 7.1 | 75 | 2.00 | 88.60 | 2.00 | 88.60 | | | | 0.02 | 0 | 5.312 | 0.227 |
| 4 | 19 | 7.9 | | | 7.1 | 69 | 2.00 | 82.77 | 2.00 | 82.77 | | | | 0.02 | 0 | 4.962 | 0.184 |
| 5 | 18 | 8.0 | | | 7.1 | 62 | 2.00 | 84.73 | 2.00 | 84.73 | | | | 0.02 | 0 | 5.080 | 0.322 |
| 6 | 17 | 8.1 | | | 7.0 | 58 | | | | | | | | 0.02 | 0 | 3.852 | 0.217 |
| 7 | 18 | 8.1 | | | 7.0 | 59 | | | | | | | | 0.03 | 0 | 3.810 | 0.190 |
| 8 | 18 | 7.8 | | | 7.0 | 52 | 2.00 | 66.69 | 2.00 | 66.69 | | | | 0.03 | 0 | 3.998 | 0.191 |
| 9 | 19 | 7.7 | | | 7.1 | 63 | 2.00 | 73.48 | 2.00 | 73.48 | | | 2.0 | 0.02 | 0 | 4.405 | 0.191 |
| 10 | 18 | 7.9 | | | 7.1 | 62 | 2.00 | 70.46 | 2.00 | 70.46 | | | | 0.02 | 0 | 4.224 | 0.216 |
| 11 | 18 | 7.9 | | | 7.0 | 56 | 2.00 | 64.85 | 2.00 | 64.85 | | | | 0.02 | 0 | 3.888 | 0.201 |
| 12 | 18 | 8.1 | | | 7.0 | 57 | 2.00 | 53.44 | 2.40 | 64.13 | | | | 0.02 | 0 | 3.204 | 0.213 |
| 13 | 18 | 8.2 | | | 7.0 | 54 | | | | | | | | 0.02 | 0 | 2.819 | 0.233 |
| 14 | 19 | 6.8 | | | 6.9 | 56 | | | | | | | | 0.04 | 0 | 3.271 | 0.381 |
| 15 | 18 | 7.8 | | | 7.0 | 52 | 2.00 | 58.03 | 2.00 | 58.03 | | | | 0.02 | 0 | 3.479 | 0.188 |
| 16 | 20 | 7.5 | | | 7.1 | 65 | 2.00 | 68.47 | 2.00 | 68.47 | | | 12.2 | 0.02 | 0 | 4.105 | 0.195 |
| 17 | 19 | 7.4 | | | 7.2 | 80 | | | | | | | | 0.03 | 0 | 3.193 | 0.192 |
| 18 | 19 | 8.0 | | | 7.2 | 70 | 2.00 | 65.27 | 2.10 | 68.53 | | | | 0.02 | 0 | 3.913 | 0.185 |
| 19 | 18 | 7.9 | | | 7.1 | 69 | 2.00 | 51.27 | 2.00 | 51.27 | | | | 0.02 | 0 | 3.074 | 0.152 |
| 20 | 18 | 8.1 | | | 7.1 | 64 | | | | | | | | 0.02 | 0 | 3.498 | 0.121 |
| 21 | 16 | 8.1 | | | 7.1 | 64 | 2.00 | 56.31 | 2.00 | 56.31 | | | | 0.02 | 0 | 3.376 | 0.111 |
| 22 | 17 | 8.0 | | | 7.1 | 62 | 2.00 | 59.75 | 2.00 | 59.75 | | | | 0.02 | 0 | 3.582 | 0.114 |
| 23 | 18 | 7.8 | | | 7.1 | 73 | 2.00 | 65.39 | 2.00 | 65.39 | | | 7.5 | 0.02 | 0 | 3.920 | 0.118 |
| 24 | 18 | 7.5 | | | 7.1 | 91 | 2.00 | 74.06 | 2.00 | 74.06 | | | | 0.02 | 0 | 4.440 | 0.147 |
| 25 | 18 | 7.7 | | | 7.3 | 105 | 2.00 | 89.17 | 2.00 | 89.17 | | | | 0.02 | 0 | 5.346 | 0.114 |
| 26 | 18 | 7.6 | | | 7.3 | 107 | 2.00 | 71.31 | 2.00 | 71.31 | | | | 0.03 | 0 | 4.275 | 0.119 |
| 27 | 18 | 7.5 | | | 7.3 | 106 | | | | | | | | 0.02 | 0 | 4.690 | 0.186 |
| 28 | 19 | 7.5 | | | 7.3 | 109 | | | | | | | | 0.02 | 0 | 4.532 | 0.189 |
| 29 | 19 | 7.7 | | | 7.3 | 110 | 2.00 | 73.29 | 2.00 | 73.29 | | | | 0.04 | 0 | 4.394 | 0.168 |
| 30 | 19 | 7.5 | | | 7.3 | 110 | 2.00 | 70.74 | 2.00 | 70.74 | | | 122.3 | 0.02 | 0 | 4.241 | 0.167 |
| 31 | 18 | 7.8 | | | 7.3 | 115 | 2.00 | 71.86 | 2.10 | 75.45 | | | | 0.03 | 0 | 4.308 | 0.203 |
| TOTAL : | | | | | | | | | | | | | 7.4 | | 0 | 127.488 | 5.815 |
| MIN : | 16 | 6.8 | | | 6.9 | 52 | 2.00 | | 2.00 | | | | 1.0 | 0.02 | | 2.819 | 0.111 |
| MAX : | 20 | 8.2 | 499 | | 7.3 | 115 | 2.00 | | 2.24 | | 0.05000 | | 122.3 | 0.04 | | 5.346 | 0.381 |
| AVG : | | | 499 | 21,137 | | | 2.00 | 70.94 | 2.08 | 73.92 | 0.05000 | 0.0021 | | | | 4.113 | 0.188 |

### NOTES

| | |
|---|---|
| Electrical Usage : | 42,826 |
| Labor : | 72,411 |
| Natural Gas : | 483 |
| Communications: | 501.94 |
| Chemical, Laboratory Supplies & Services : | 14,238 |
| Repairs, Maintenance, Services & Admin. : | 90,918 |
| Sludge (Generation & Transportation) : | 16,828 |
| TOTAL COSTS : | 238,206 |
| COSTS - 1,000 GAL. TREATED : | 1.87 |
| Non-Potable Water Use Savings : | 4,861 |

PARTIAL WEEKLY AVG.NO.'s

| Date | Week No. | TSS | BOD |
|---|---|---|---|
| 1-Jan | 5 | 2.00 | 2.00 |
| 2-Jan | 5 | 2.00 | 2.00 |

| WEEK | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| TSS | 2.00 | 2.00 | 2.00 | 2.00 | 2.00 |
| BOD | 2.24 | 2.08 | 2.02 | 2.00 | 2.02 |

*I hereby certify the above to be correct to the best of my knowledge.*

*Signed :* [signature]

*Title :* *Lynn Lane Water Reclamation Facility Manager (WRF)*