

APPENDIX

Site 0658/ 1C:

DO

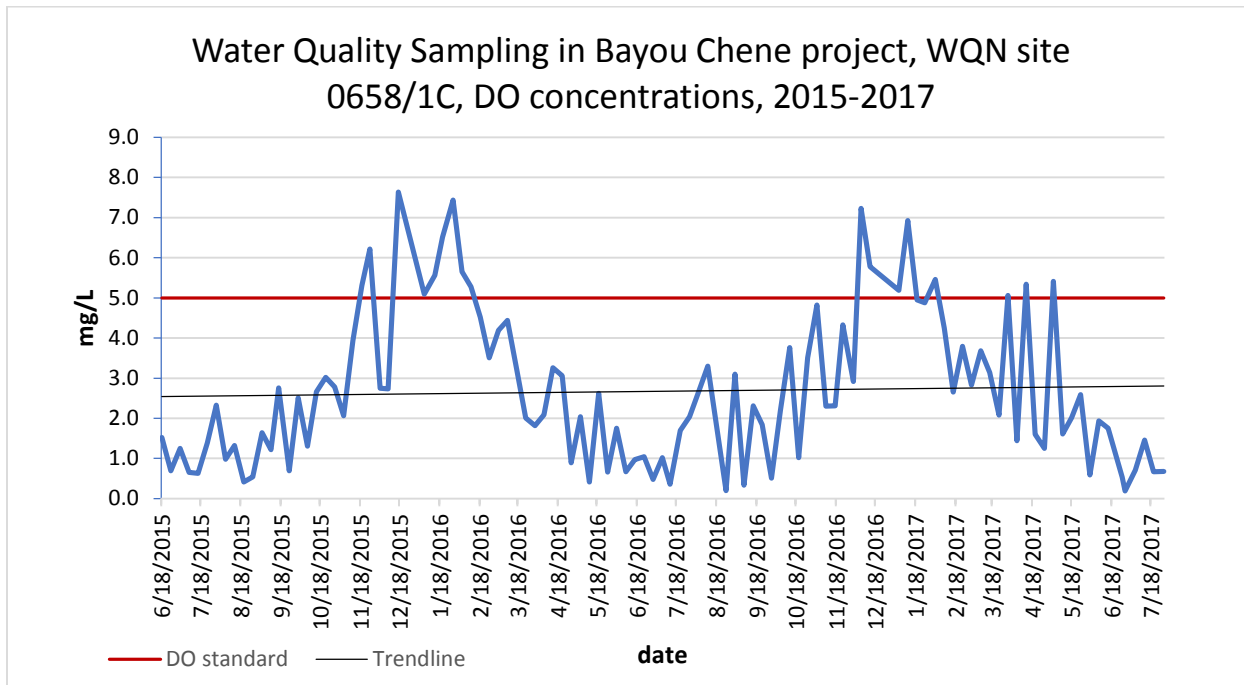


Figure 1 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, DO concentrations, 2015-2017

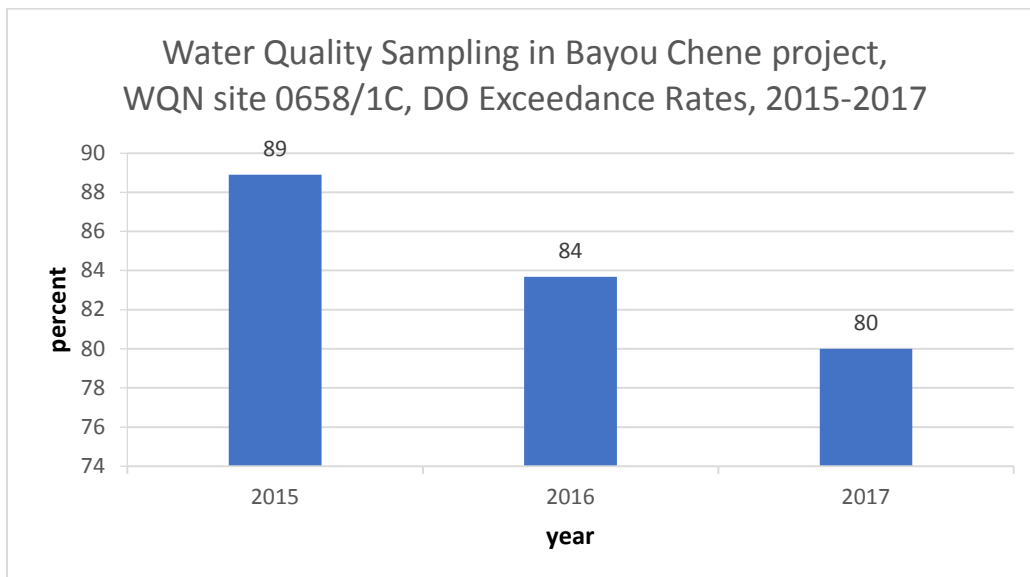


Figure 2 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at WQN site 0658/1C. The DO standard is shown by a red line on the graph. DO concentration ranged from 0.19 mg/L (June 2017) to

7.64 mg/L (December 2015). The trendline shows DO concentrations are slightly increasing. Data also shows DO levels were highest in the cooler months (October through March) and lowest in the warmer months (May through September) of each year. The exceedance rates were calculated for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 89 percent in 2015 and as low as 80 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 24 samples did not meet the standard. In 2016, there 49 samples taken, of which 41 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 24 samples did not meet the standard. Only 17 of the 106 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

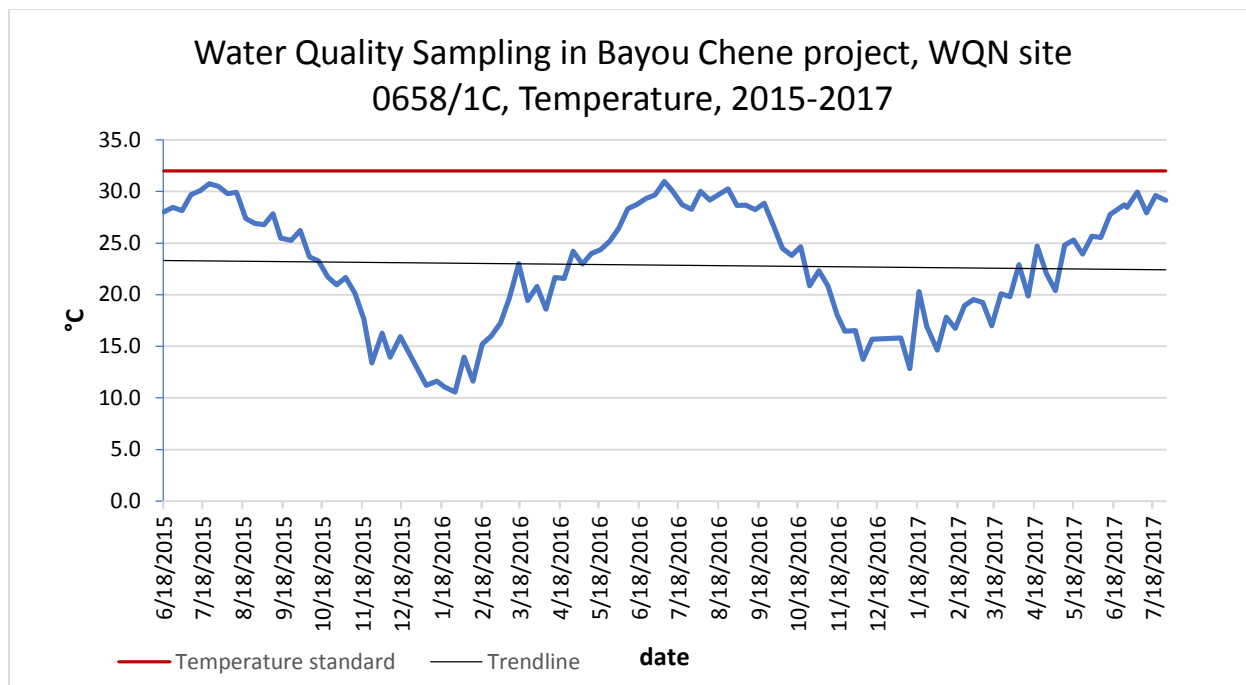


Figure 3 Water Quality Sampling in the Bayou Chene project, WQN site 0658/1C, Temperature, 2015-2017

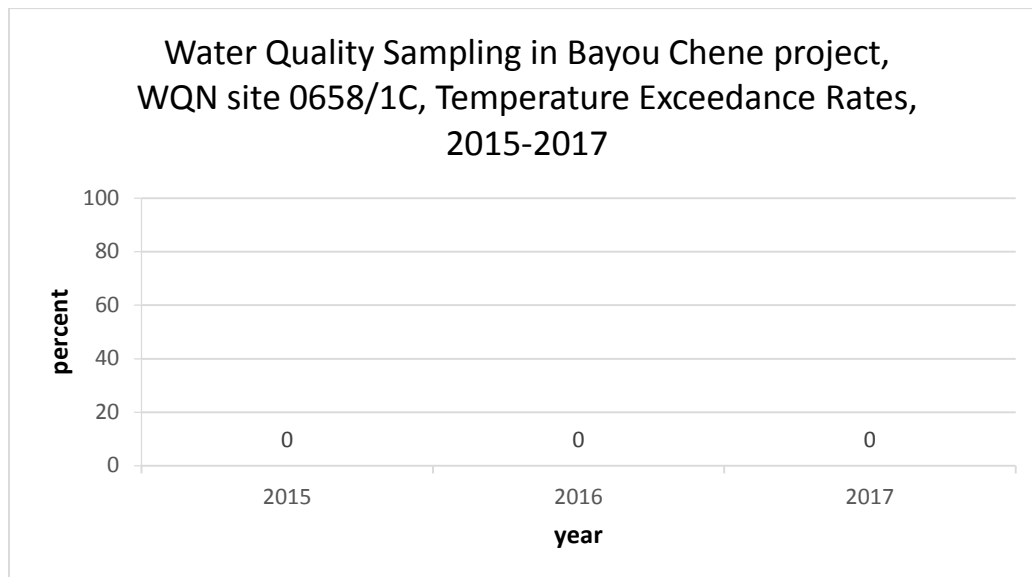


Figure 4 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, Temperature Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the WQN site 0658/1C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 10.58°C (January 2016) to 30.96°C (July 2016). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest

in the winter months (December through February). The exceedance rates were calculated for temperature from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

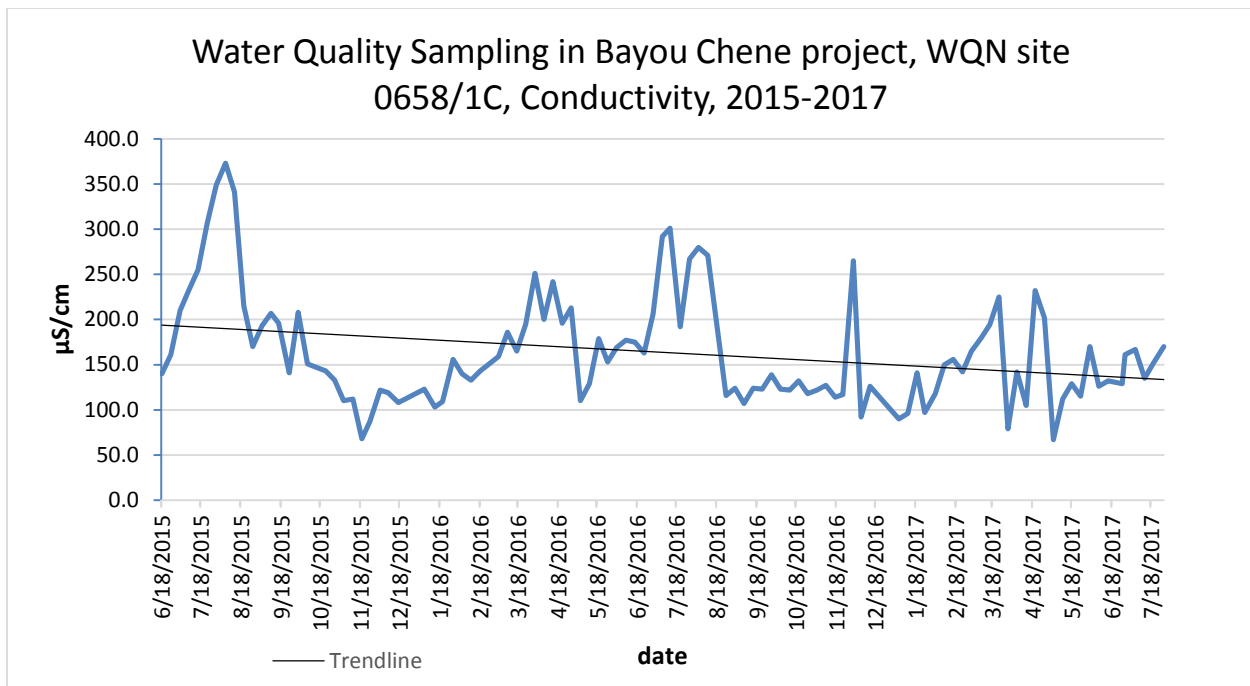


Figure 5 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for conductivity. Conductivity values ranged from 67 $\mu\text{S/cm}$ (May 2017) to 373 $\mu\text{S/cm}$ (August 2015). The trendline shows conductivity values are slightly decreasing.

pH

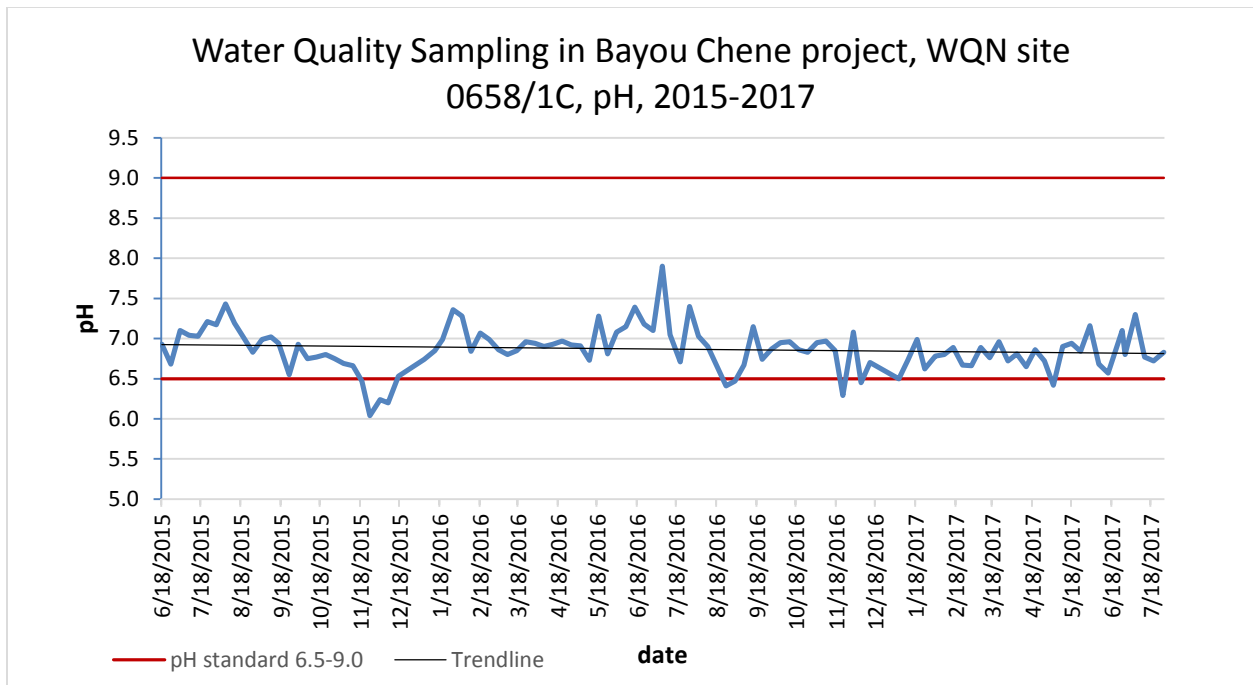


Figure 6 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, pH, 2015-2017; pH exceedance rate ranges from 6.5 to 9.0

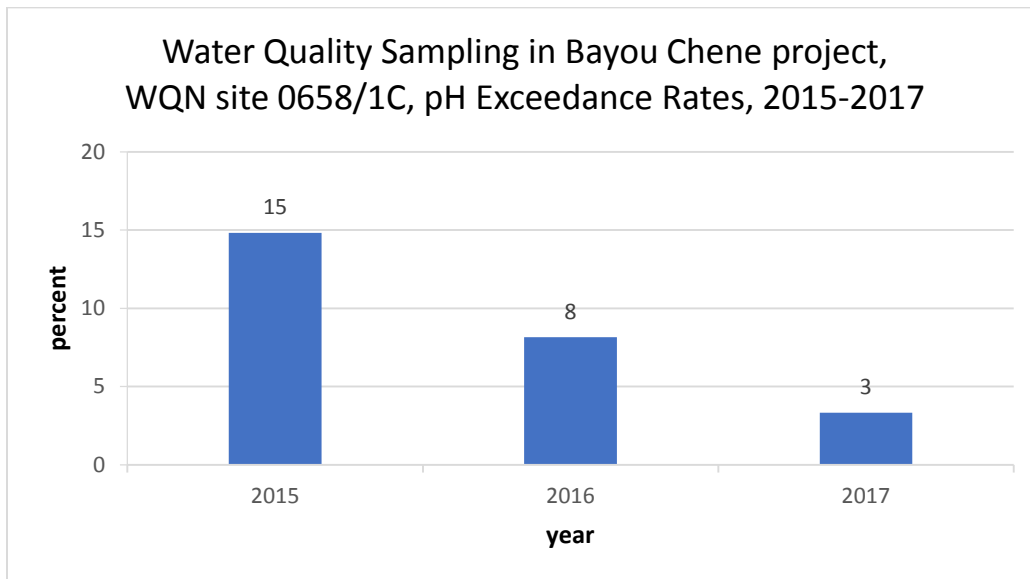


Figure 7 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the WQN site 0658/1C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.04 (November 2015) to 7.90 (July 2016). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 15 percent in 2015 and as low as 3

percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 4 samples were below the state's standard. In 2016, there 49 samples taken, of which 4 were below the standard. In 2017, there were a total of 30 samples taken, of which 1 sample did not meet the standard. 97 of the 106 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

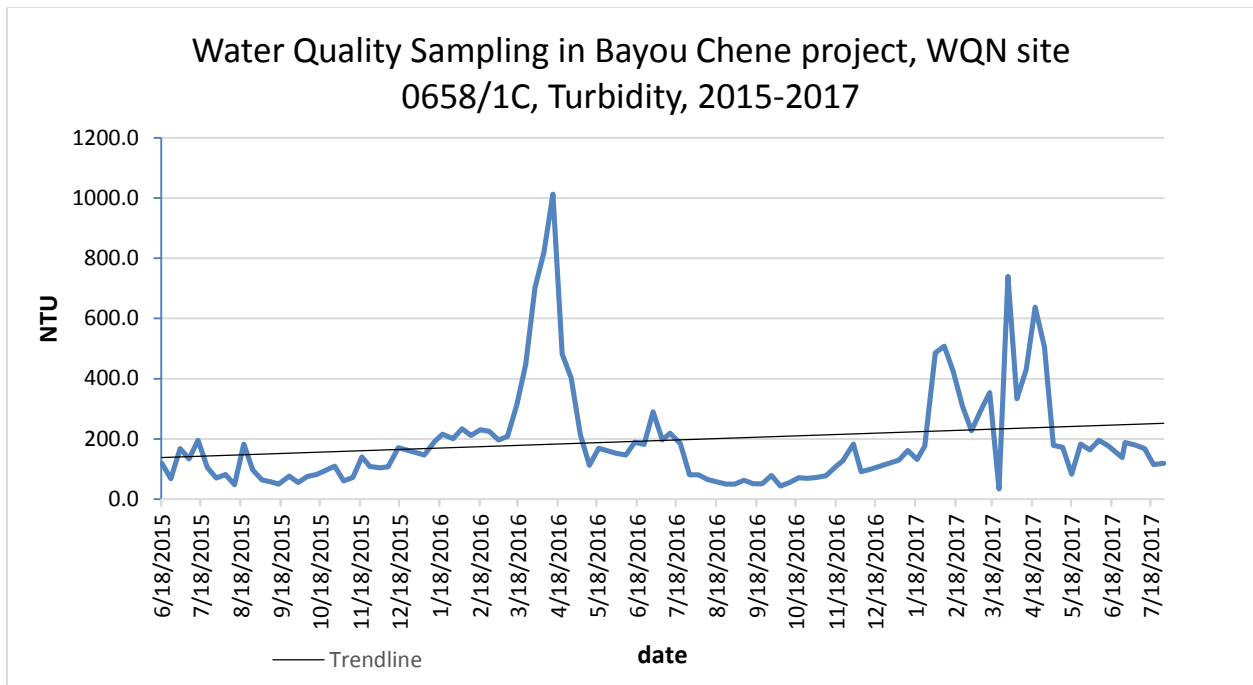


Figure 8 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for turbidity. Turbidity values ranged from 34.1 NTU (March 2017) to 1012.7 NTU (April 2016). The trendline shows turbidity values are slightly increasing. Data also shows higher levels in the spring months (March through May).

TSS

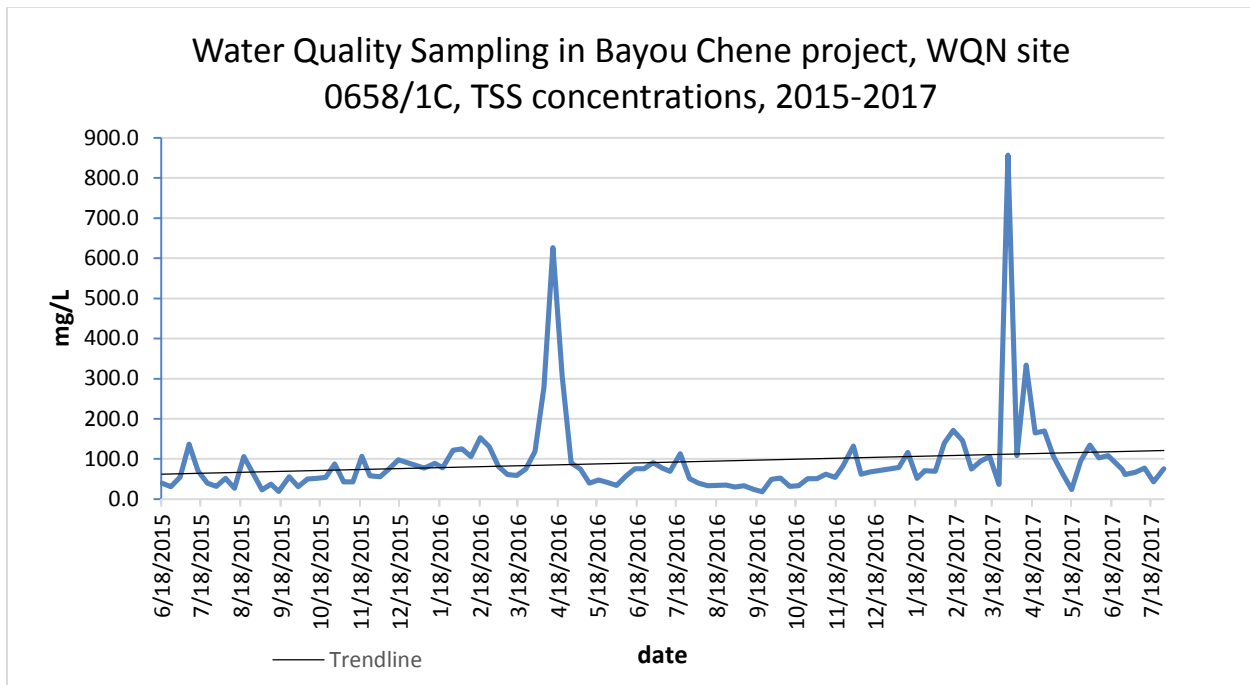


Figure 9 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for TSS. TSS concentrations ranged from 18 mg/L (September 2016) to 857 mg/L (March 2017). The trendline shows TSS concentrations are slightly increasing. Data also shows TSS levels are highest during spring months (March through May).

TDS

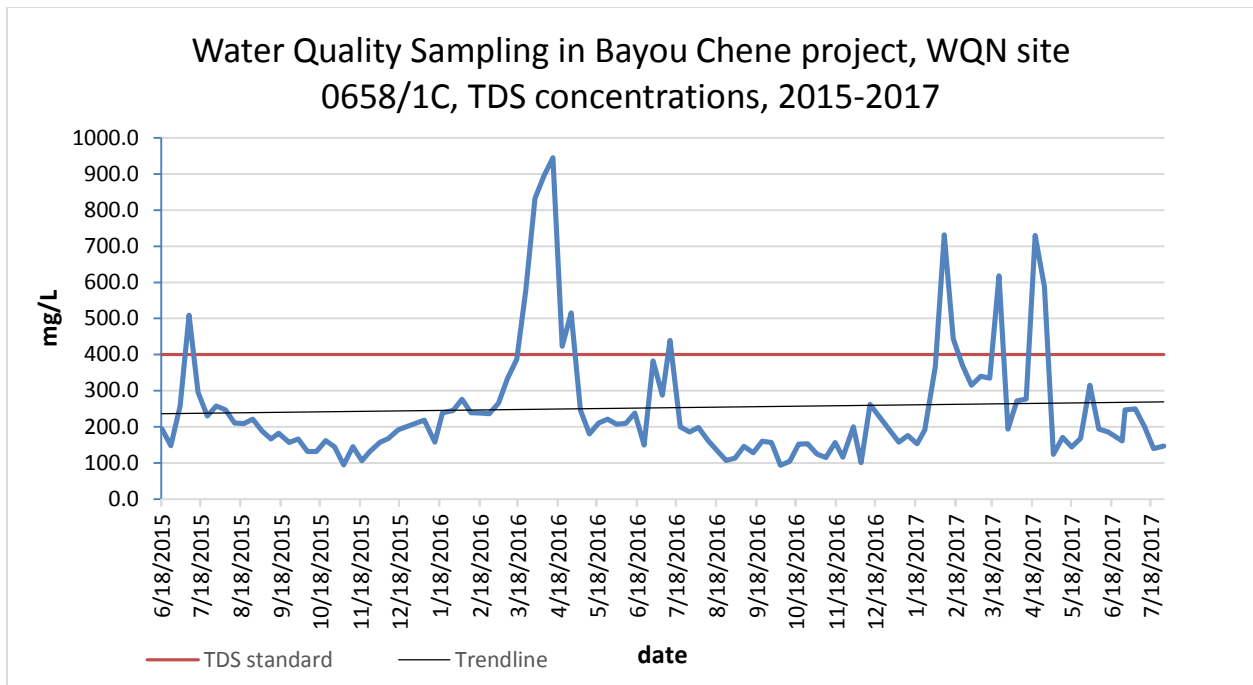


Figure 10 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, TDS concentrations, 2015-2017

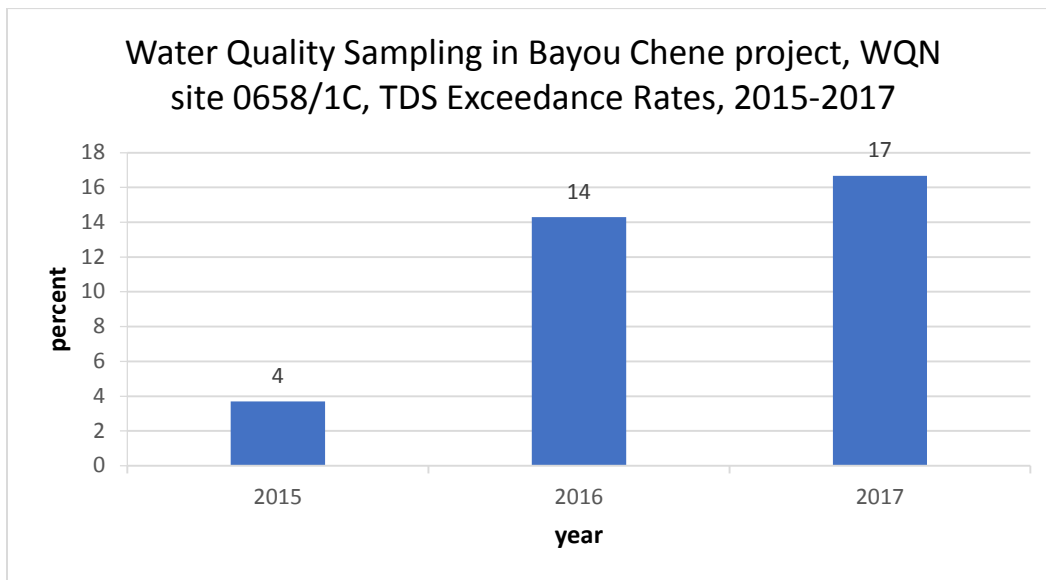


Figure 11 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the WQN site 0658/1C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 94 mg/L (October 2016) to 945.1 mg/L (April 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows lowest TDS values occur in the Fall months (September through November)

of each year. The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 4 percent in 2015 and as high as 17 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 1 sample did not meet the state's standard. In 2016, there 49 samples taken, of which 7 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 5 samples did not meet the standard. Only 13 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

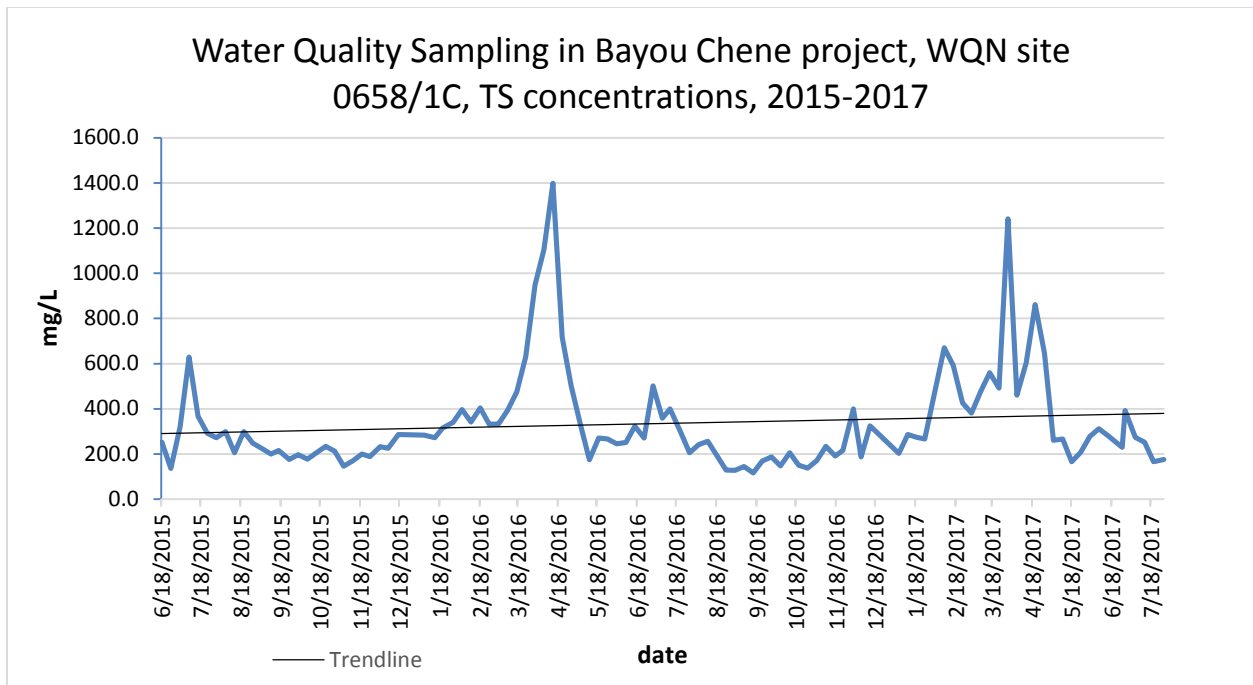


Figure 12 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for TS. TS concentrations ranged from 116 mg/L (September 2016) to 1398 mg/L (April 2016). The trendline shows TS concentrations are slightly increasing. Data also shows TS levels are highest during spring months (March through May).

NO₃-N

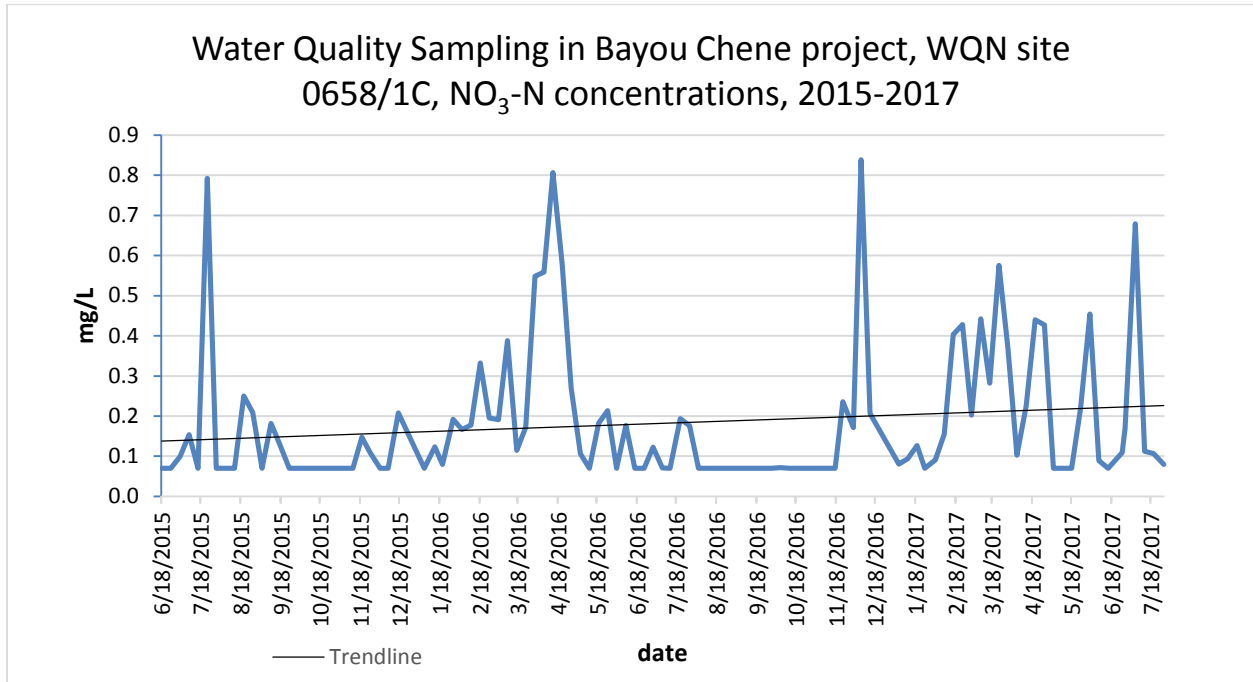


Figure 13 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-July, September-December 2015; January, May-July, August-November 2016; January, May-June 2017) to 0.84 mg/L (December 2016). The trendline shows NO₃-N concentrations are slightly increasing. Data also shows NO₃-N levels are lower in Fall months (September through November).

NO₂-N

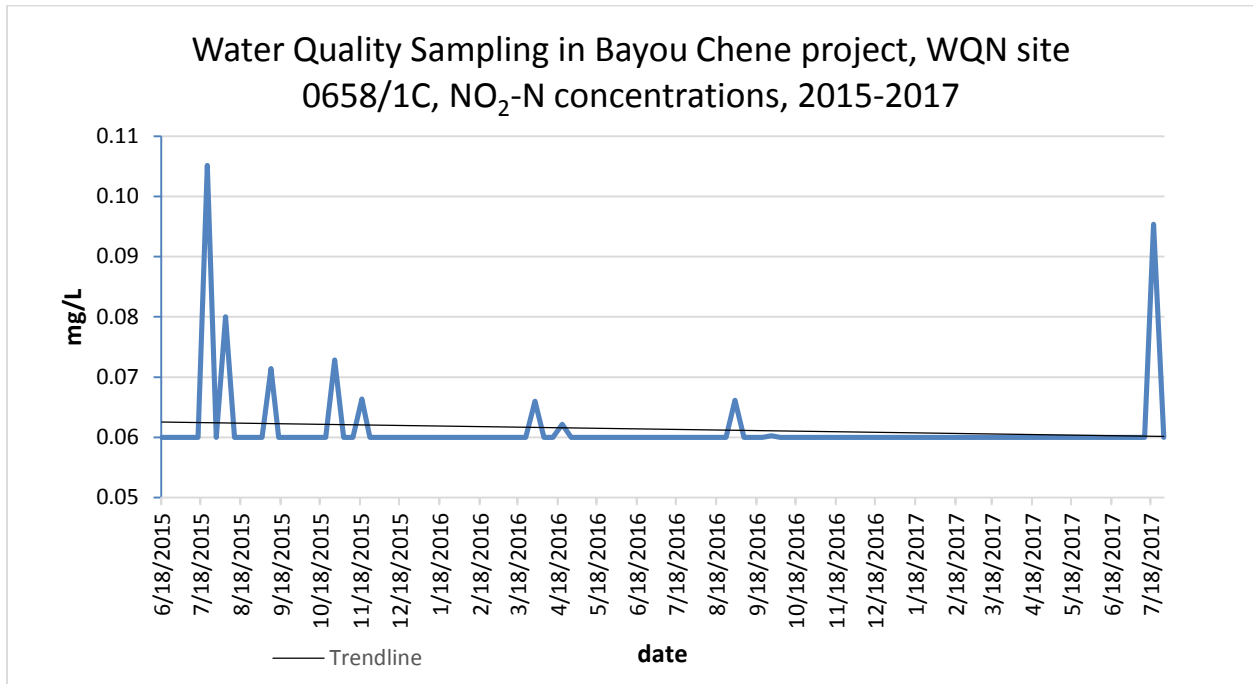


Figure 14 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.11 mg/L (July 2015). The trendline shows NO₂-N concentrations are slightly decreasing. Data also shows higher values in the month of July, apart from 2016.

NO₃/NO₂-N

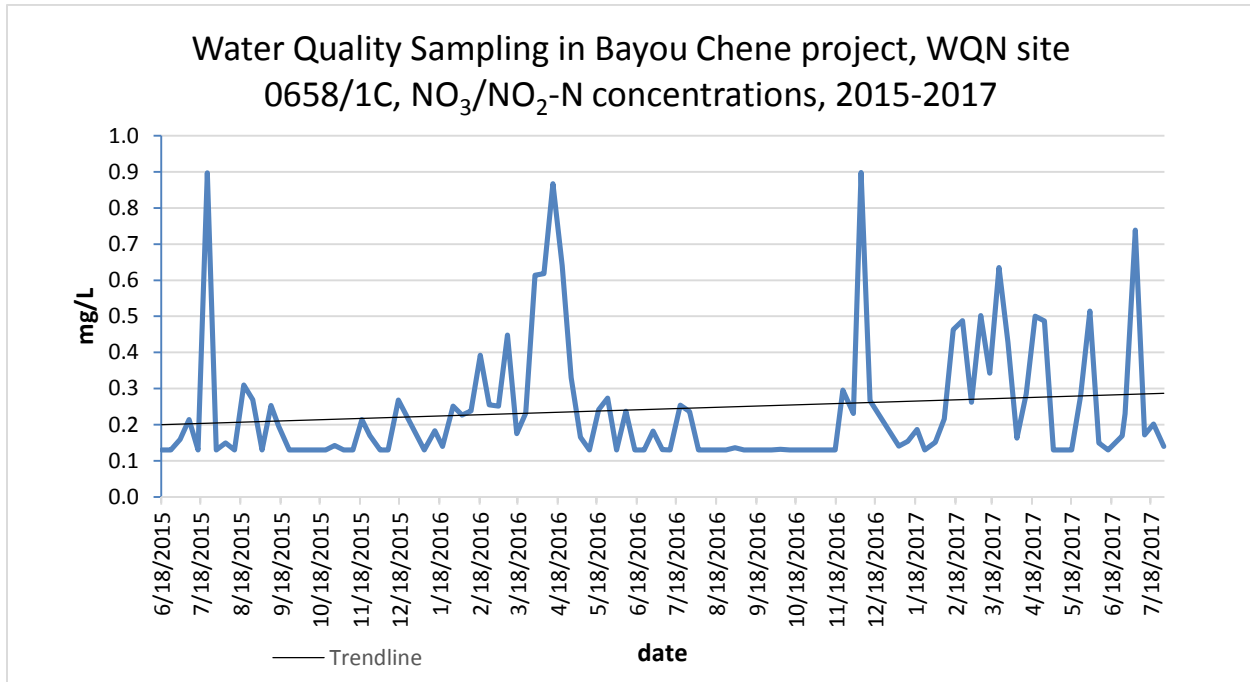


Figure 15 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; January, May-November 2016; January, May-June 2017) to 0.90 mg/L (July 2015; December 2016). The trendline shows NO₃/NO₂-N concentrations are slightly increasing. Data also shows NO₃/NO₂-N levels are lower in Fall months (September through November).

Cl

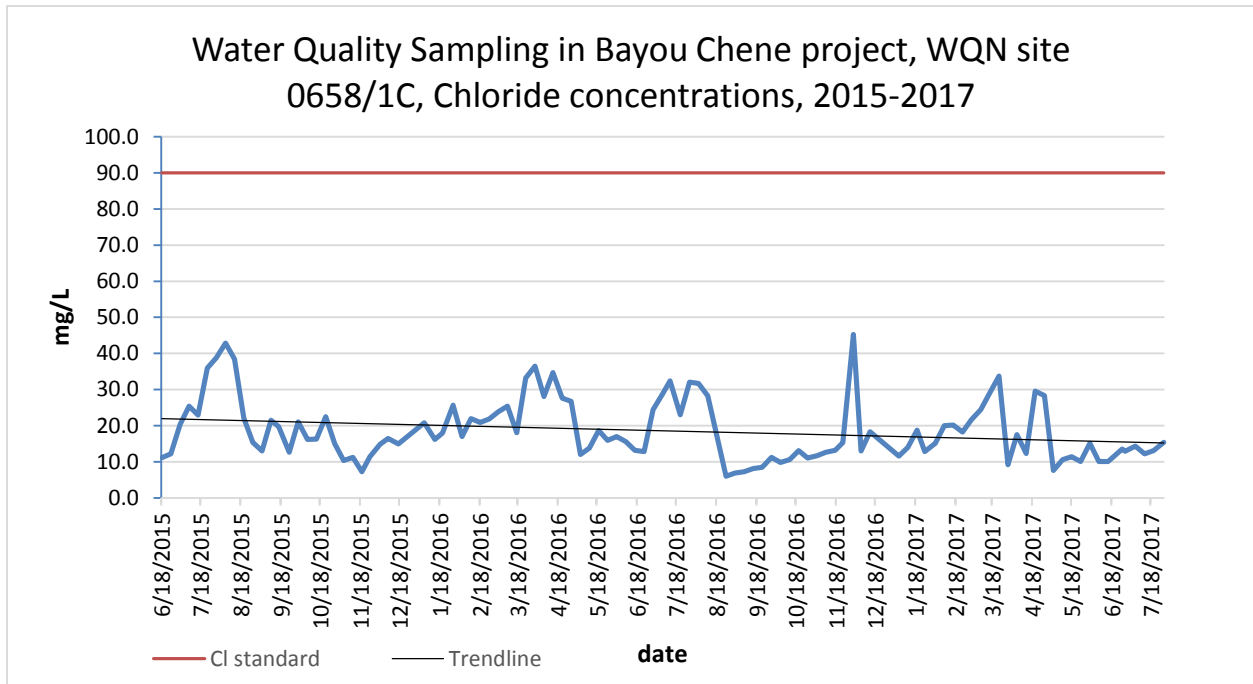


Figure 16 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, Chloride concentrations, 2015-2017

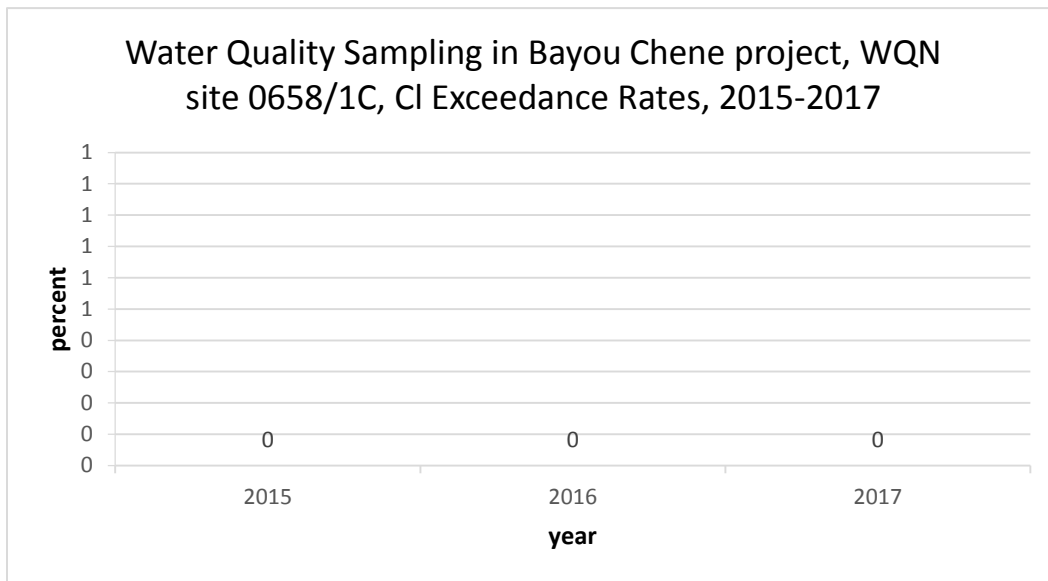


Figure 17 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, Cl Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the WQN site 0658/1C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 6.05 mg/L (August 2016) to 45.26 mg/L (December 2016). The trendline shows Cl concentrations are decreasing. Data also shows that Cl levels drop after summer (August) and again in Spring (March through May). The exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from

2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

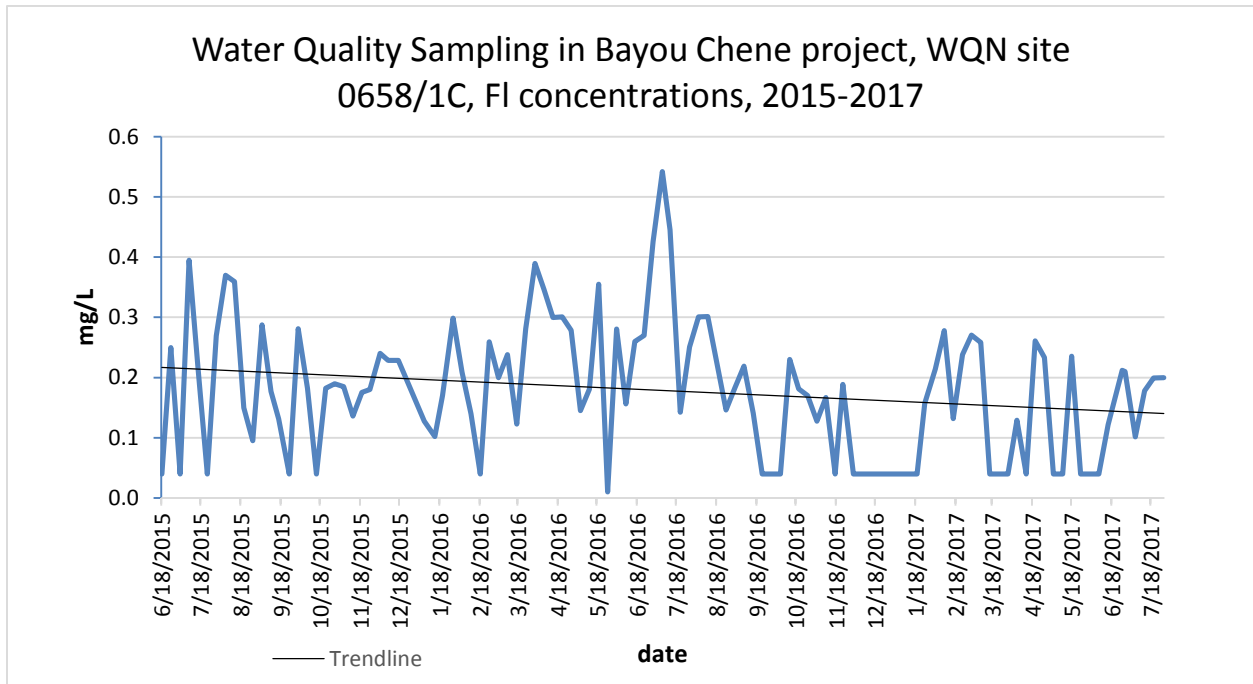


Figure 18 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at WQN site 0658/1C. There is no standard for FI. FI concentrations ranged from 0.01 mg/L (May 2016) to 0.54 mg/L (July 2016). The trendline shows FI concentrations are slightly decreasing.

SO₄

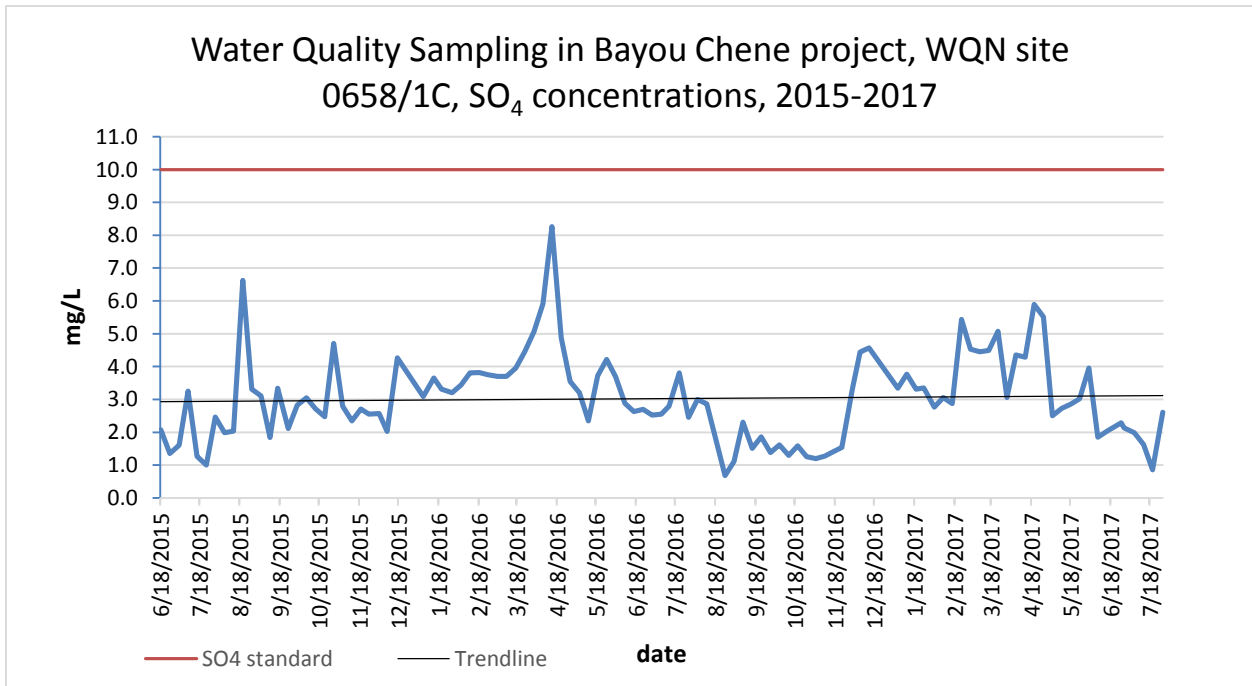


Figure 19 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, SO₄ concentrations, 2015-2017

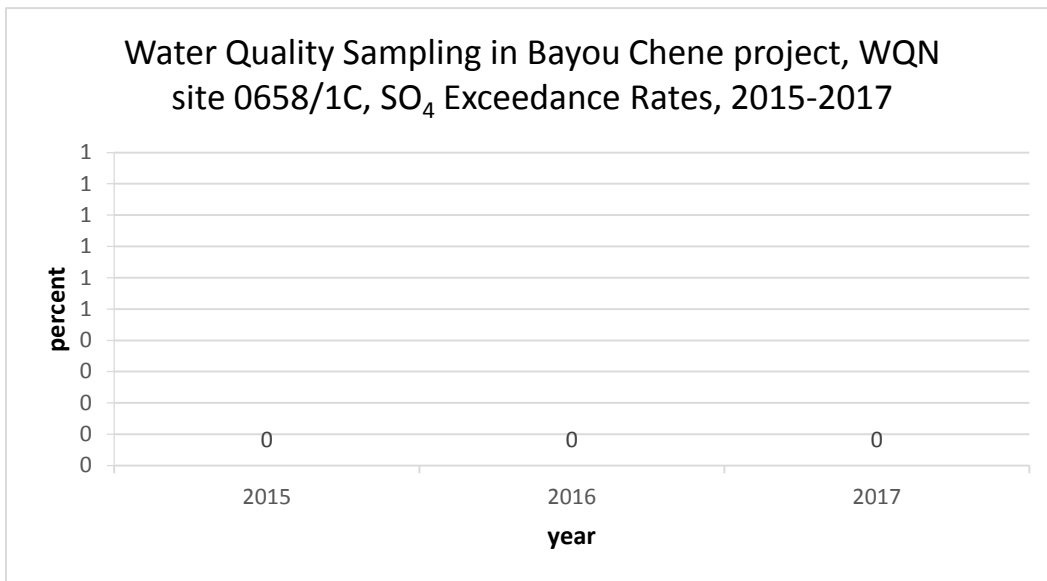


Figure 20 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, SO₄ Exceedance Rates, 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the WQN site 0658/1C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.68 mg/L (August 2016) to 8.26 mg/L (April 2016). The trendline shows SO₄ concentrations are slightly increasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). None of the samples collected from 2015 through 2017 exceeded the SO₄ standard of 10 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

SRP

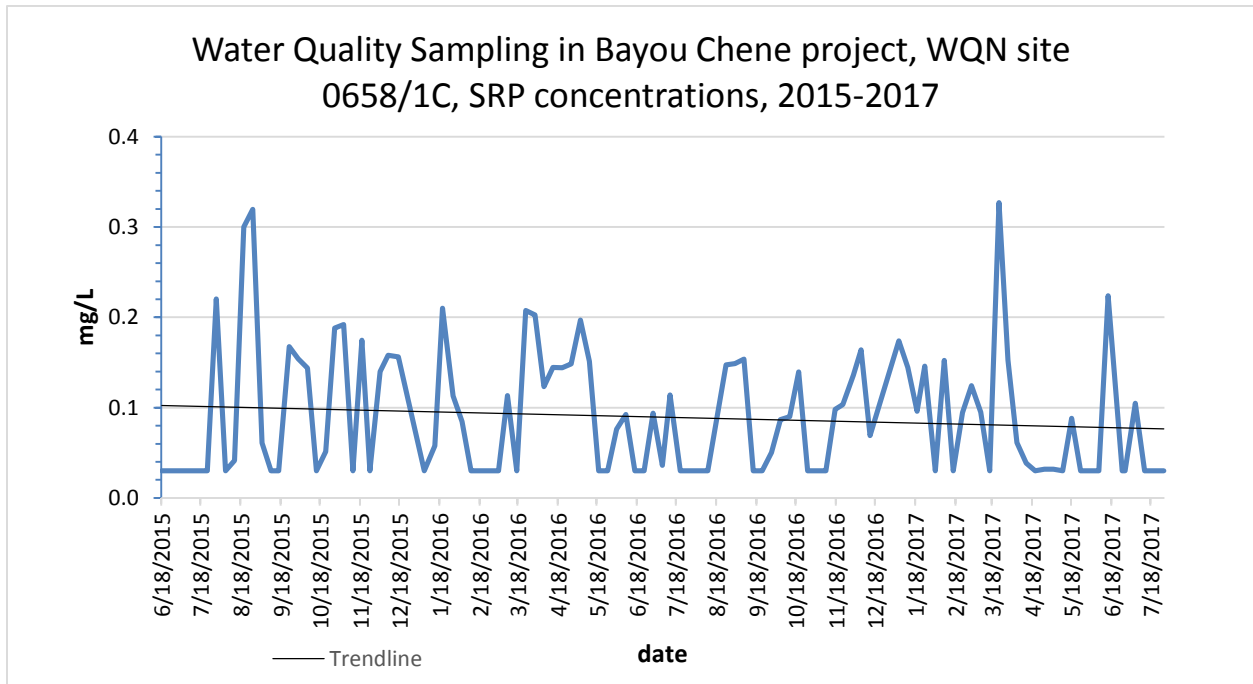


Figure 21 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for SRP. SRP concentrations ranged from 0.03 mg/L (value found intermittently through: June-November 2015; January-March, May-November 2016; January-July 2017) to 0.33 mg/L (March 2017). The trendline shows SRP concentrations are slightly decreasing.

TP

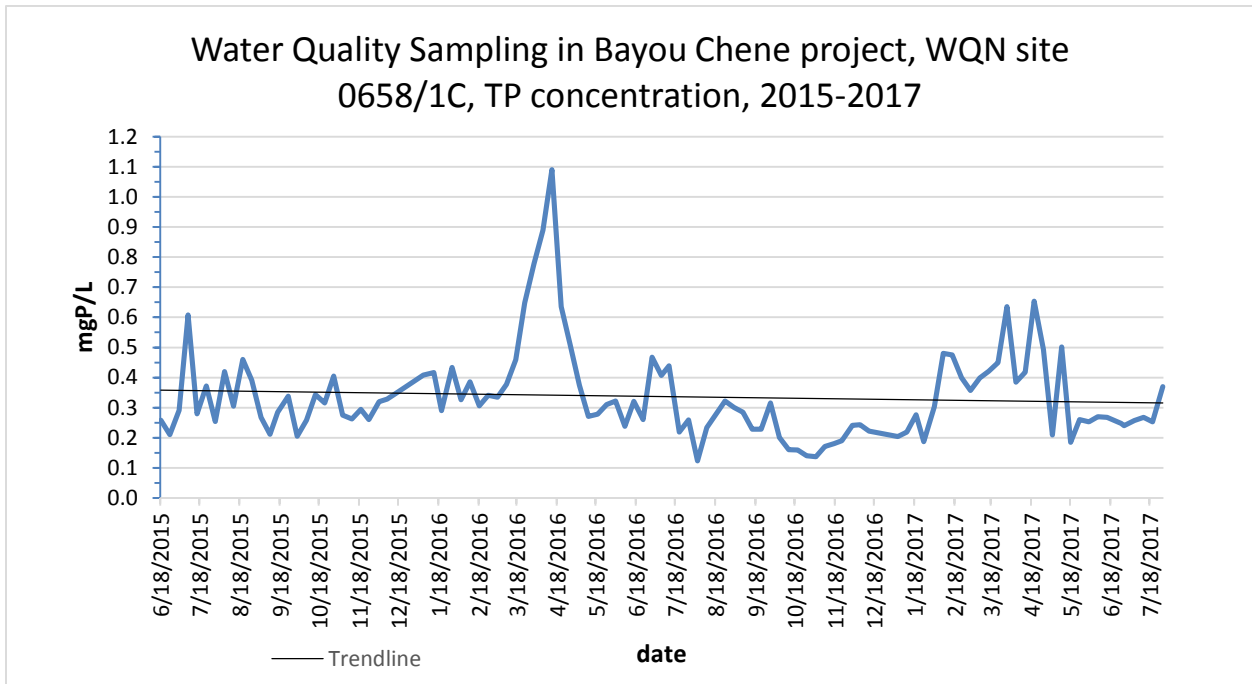


Figure 22 Water Quality Sampling Bayou Chene project, WQN site 0658/1C, TP concentrations, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for TP. TP concentrations ranged from 0.12 mgP/L (August 2016) to 1.09 mgP/L (April 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in early spring months (March through May).

TKN

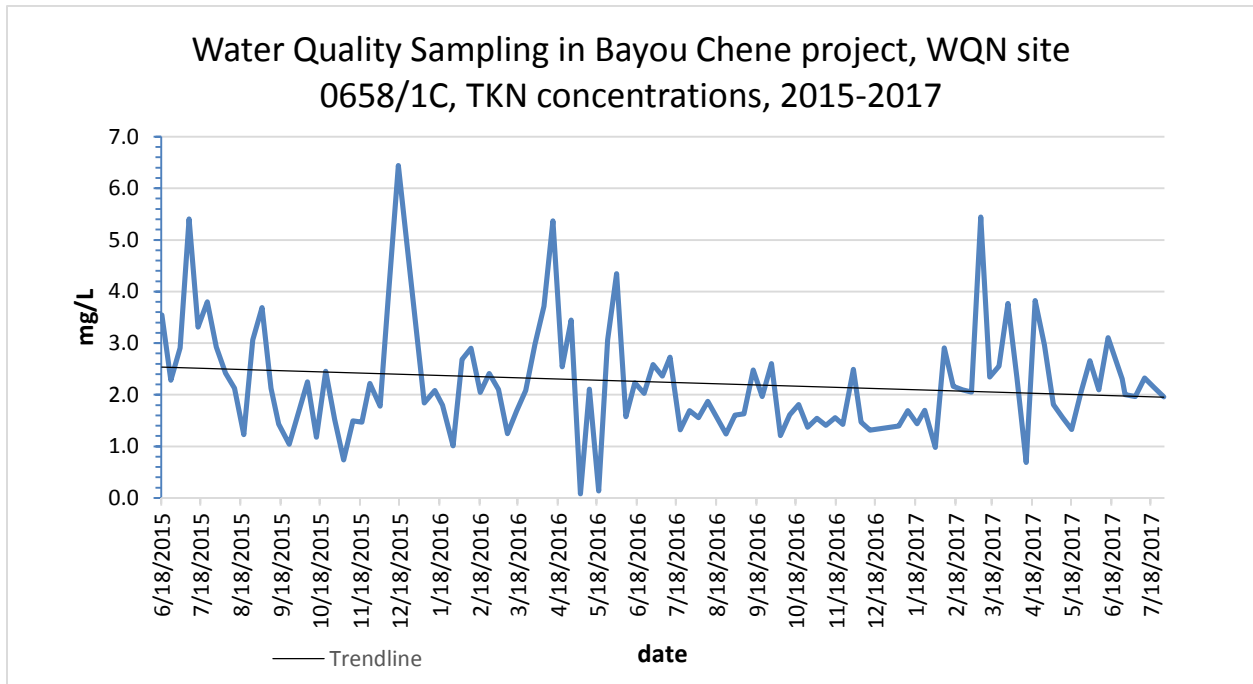


Figure 23 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for TKN. TKN concentrations ranged from 0.08 mg/L (May 2016) to 6.44 mg/L (December 2015). The trendline shows TKN concentrations are slightly decreasing. Only 105 samples were collected. Sample date October 1, 2015 was not accounted for; Figure 23 accounts for this nulled data point and connected the empty point with a line.

BOD₅

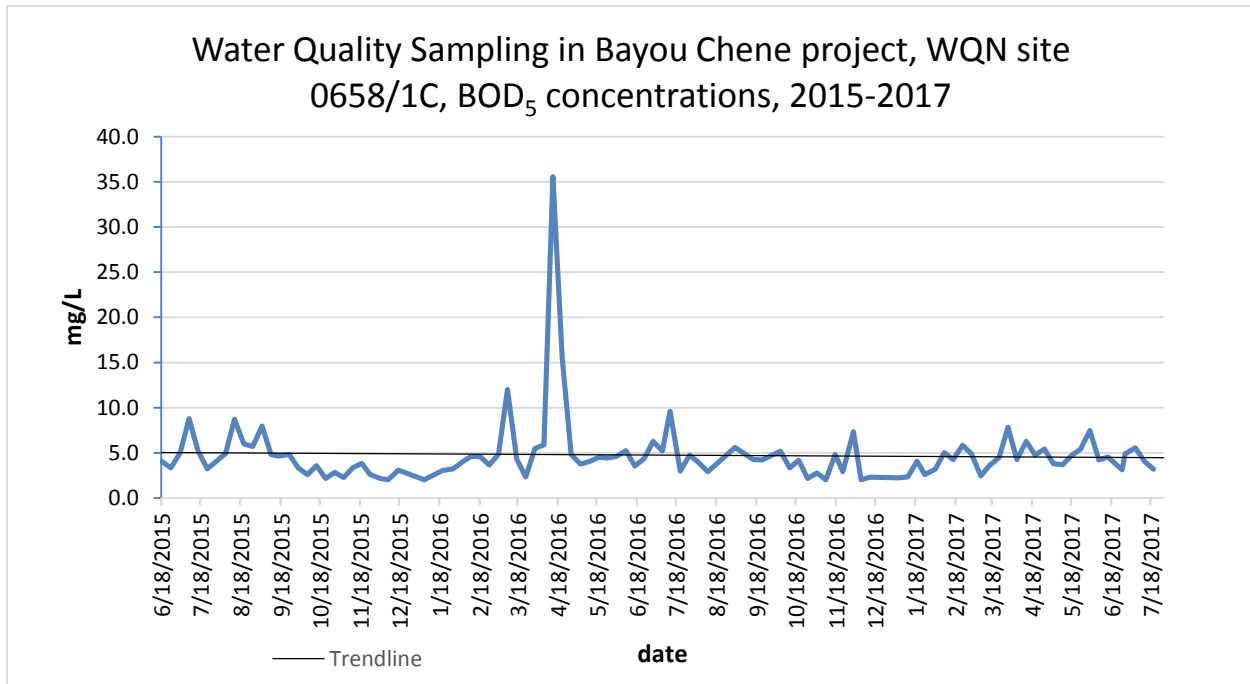


Figure 24 Water Quality Sampling in Bayou Chene project, WQN site 0658/1C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the WQN site 0658/1C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (December 2015; January and December 2016) to 35.59 mg/L (April 2016). The trendline shows BOD₅ concentrations are slightly decreasing. Only 102 samples were collected. Sample dates July 30, 2015, August 25 and September 8, 2016, and July 28, 2017 were not accounted for; Figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4289/ 2C

DO

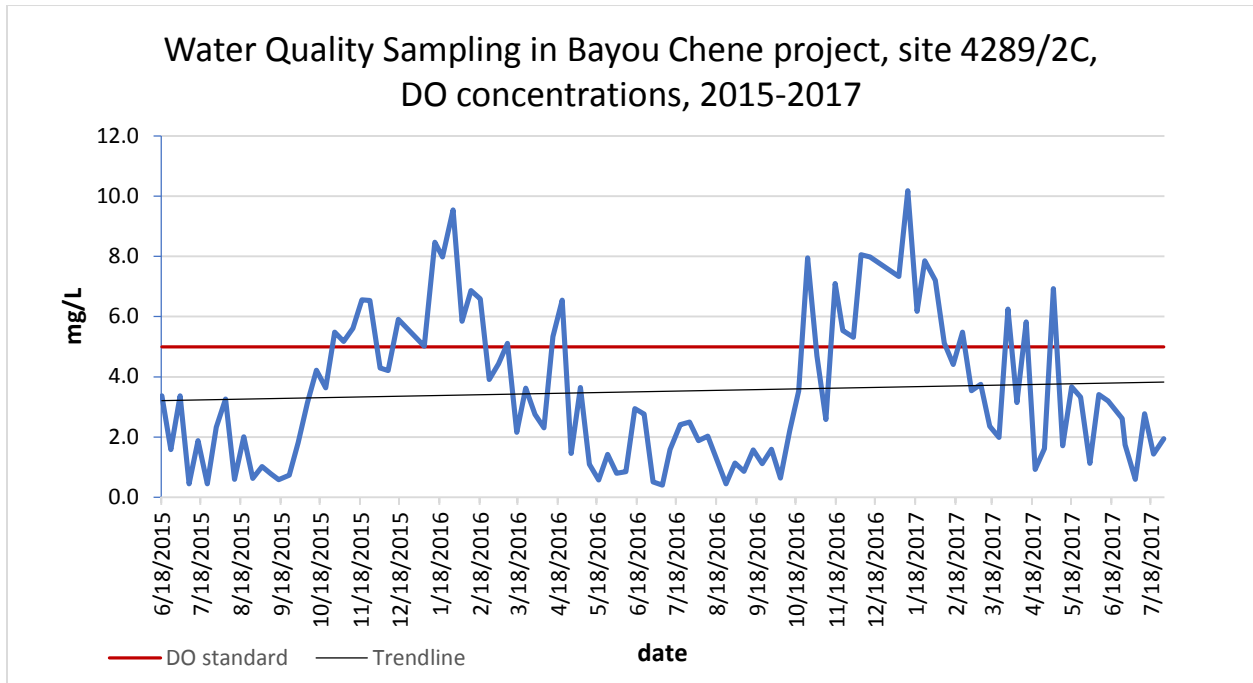


Figure 25 Water Quality Sampling in Bayou Chene project, site 4289/2C, DO concentrations, 2015-2017

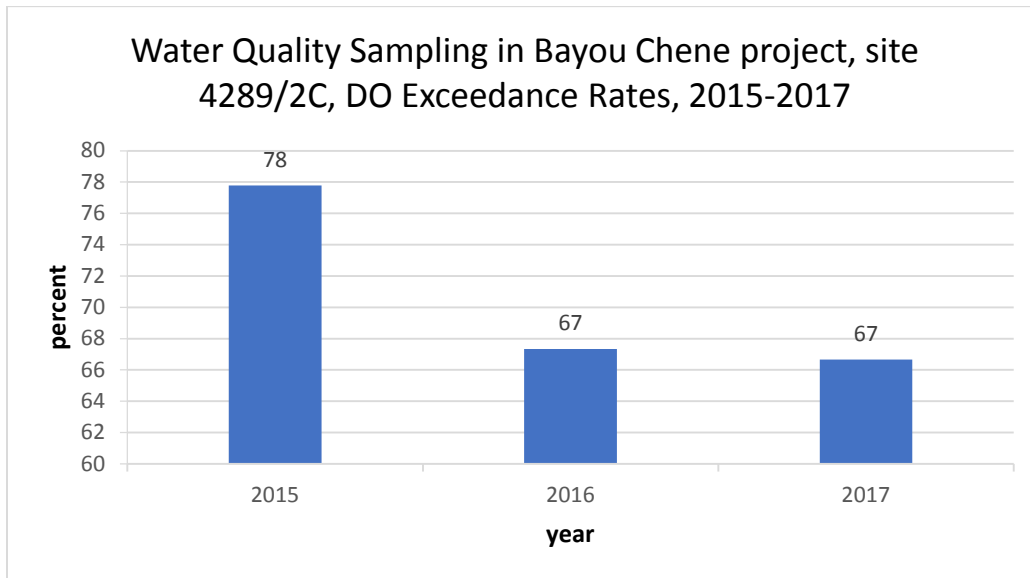


Figure 26 Water Quality Sampling in Bayou Chene project, site 4289/2C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at site 4289/2C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.40 mg/L (July 2016) to 10.18 mg/L (January 2017). The trendline shows DO concentrations are slightly increasing. Data also shows DO levels were highest in the cooler months (October through March). The exceedance rates

were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 78 percent in 2015 and as low as 67 percent in 2016 and 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 21 samples did not meet the standard. In 2016, there 49 samples taken, of which 33 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 20 samples did not meet the standard. Only 32 of the 106 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

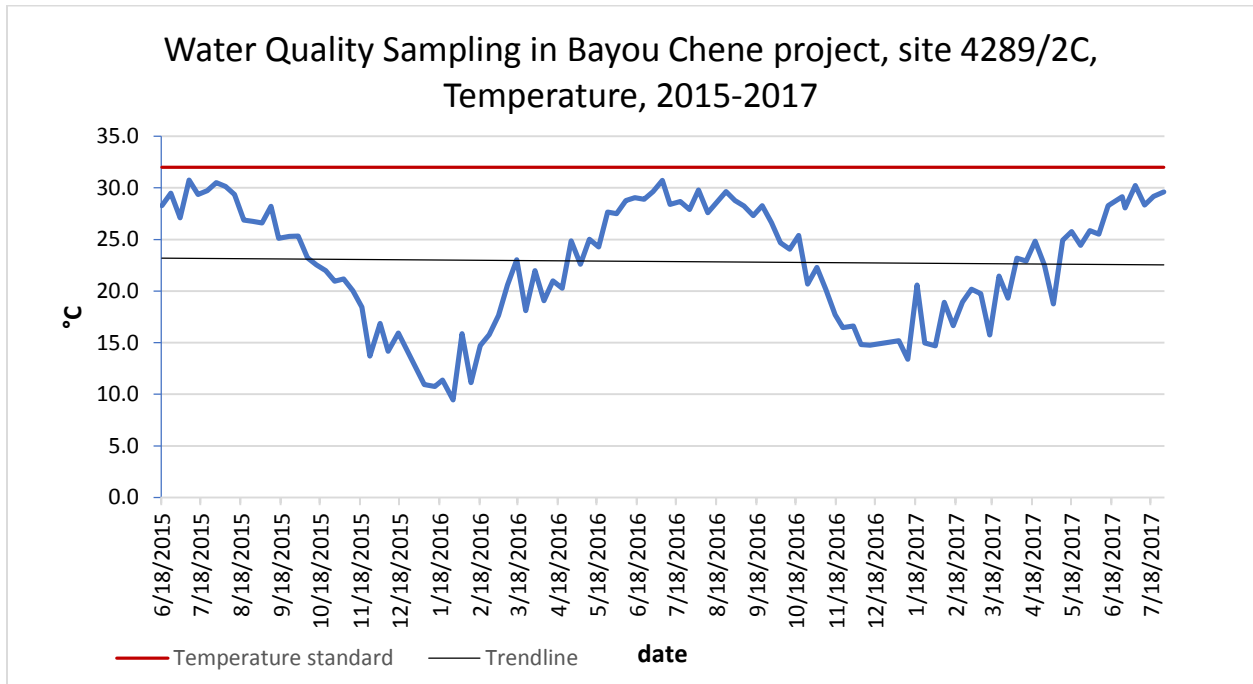


Figure 27 Water Quality Sampling in Bayou Chene project, site 4289/2C, Temperature, 2015-2017

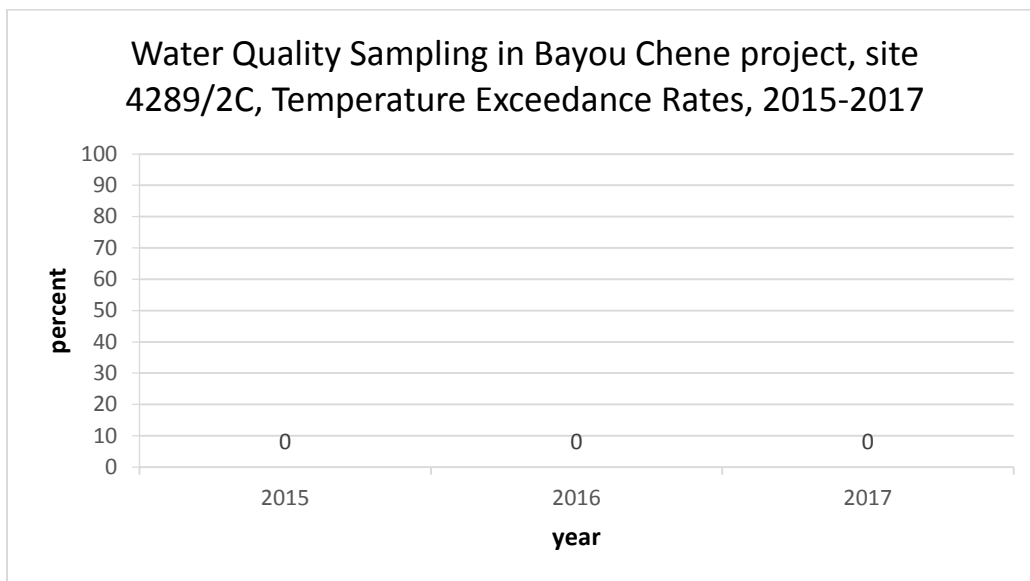


Figure 28 Water Quality Sampling in Bayou Chene project, site 4289/2C, Temperature Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 4289/2C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 9.44 °C (January 2016) to 30.75 °C (July 2015). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the winter months (December through February). The exceedance rates were calculated for temperature

from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

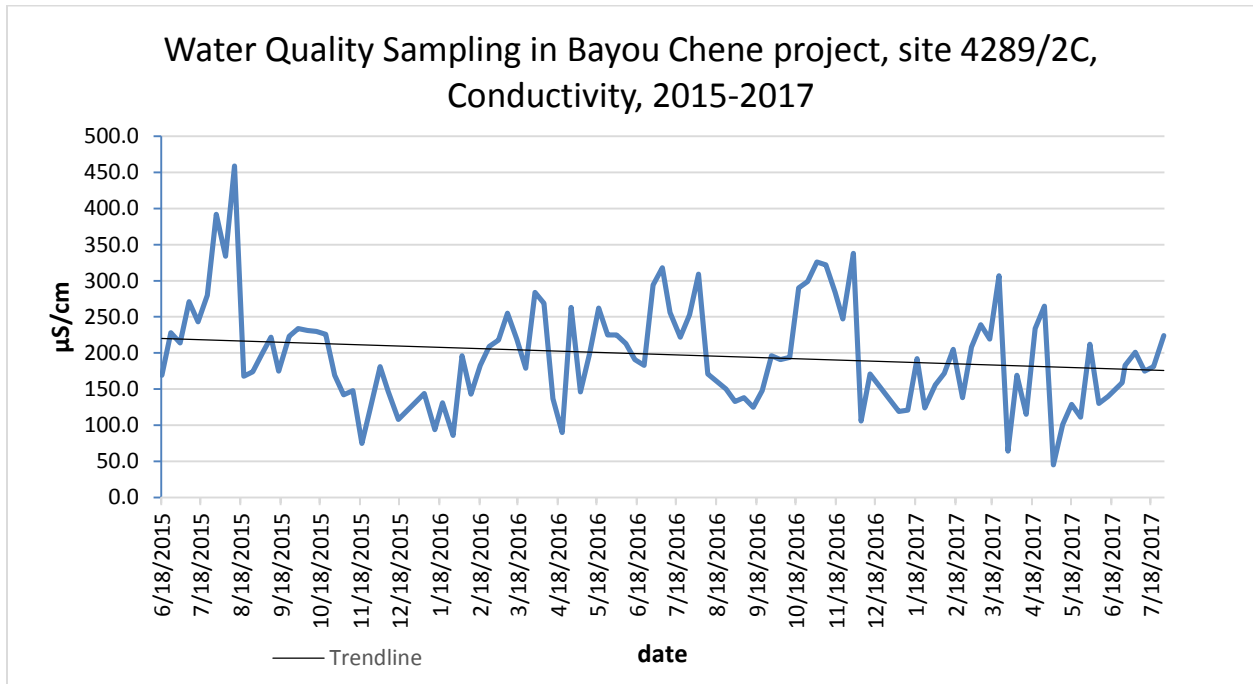


Figure 29 Water Quality Sampling in Bayou Chene project, site 4289/2C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4289/2C. There is no standard for conductivity. Conductivity values ranged from 45 $\mu\text{S}/\text{cm}$ (May 2017) to 459 $\mu\text{S}/\text{cm}$ (August 2015). The trendline shows conductivity values are slightly decreasing.

pH

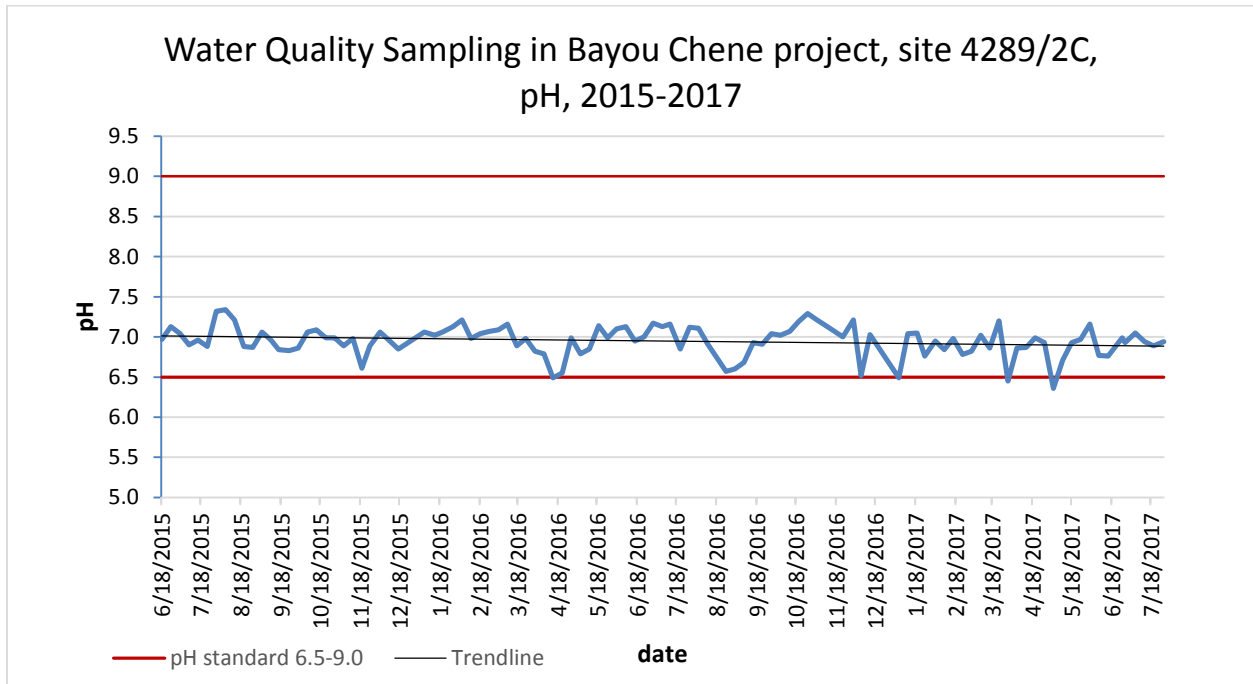


Figure 30 Water Quality Sampling in Bayou Chene project, site 4289/2C, pH, 2015-2017; pH exceedance rate ranges from 6.5 to 9.0

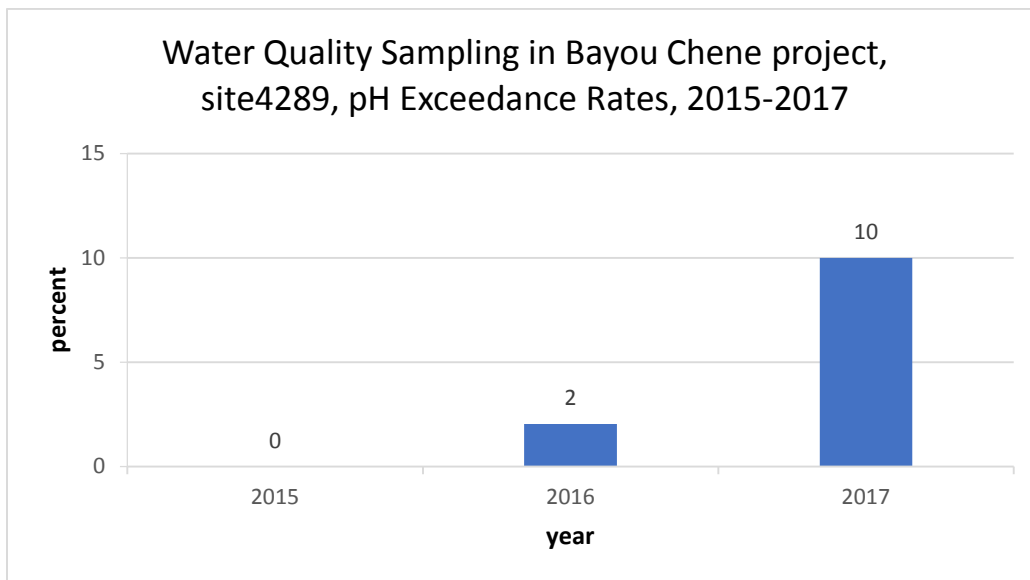


Figure 31 Water Quality Sampling in Bayou Chene project, site 4289/2C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the WQN site 4289/2C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.36 (May 2017) to 7.34 (August 2015). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 10 percent in 2017 and did not exceed in 2015; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there

were a total of 27 samples taken, of which none of the samples were below the state's standard. In 2016, there 49 samples taken, of which 1 was below the standard. In 2017, there were a total of 30 samples taken, of which 3 samples did not meet the standard. 102 of the 106 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

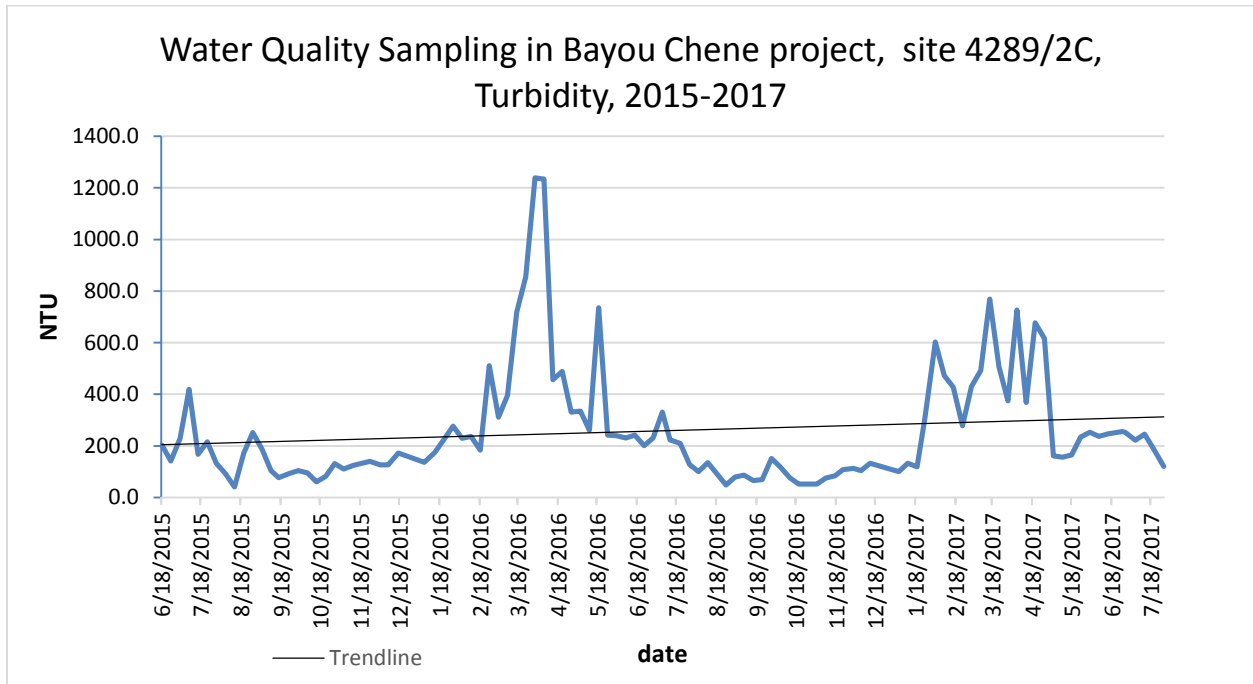


Figure 32 Water Quality Sampling in Bayou Chene project, site 4289/2C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 4289/2C. There is no standard for turbidity. Turbidity values ranged from 40.9 NTU (August 2015) to 1239.3 NTU (March 2016). The trendline shows turbidity values are slightly increasing. Data also shows higher levels in the spring months (March through May).

TSS

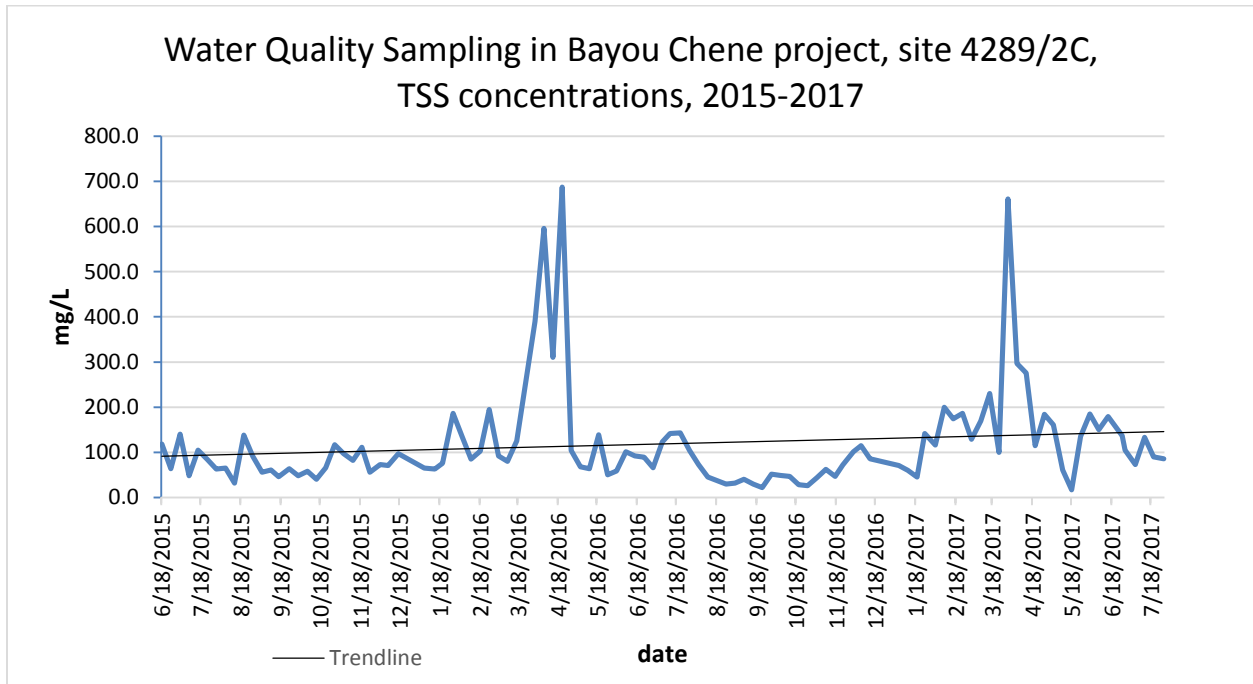


Figure 33 Water Quality Sampling in Bayou Chene project, site 4289/2C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for TSS. TSS concentrations ranged from 17.0 mg/L (May 2017) to 687.0 mg/L (April 2017). The trendline shows TSS concentrations are slightly increasing. Data also shows TSS levels are higher during spring months (March through May).

TDS

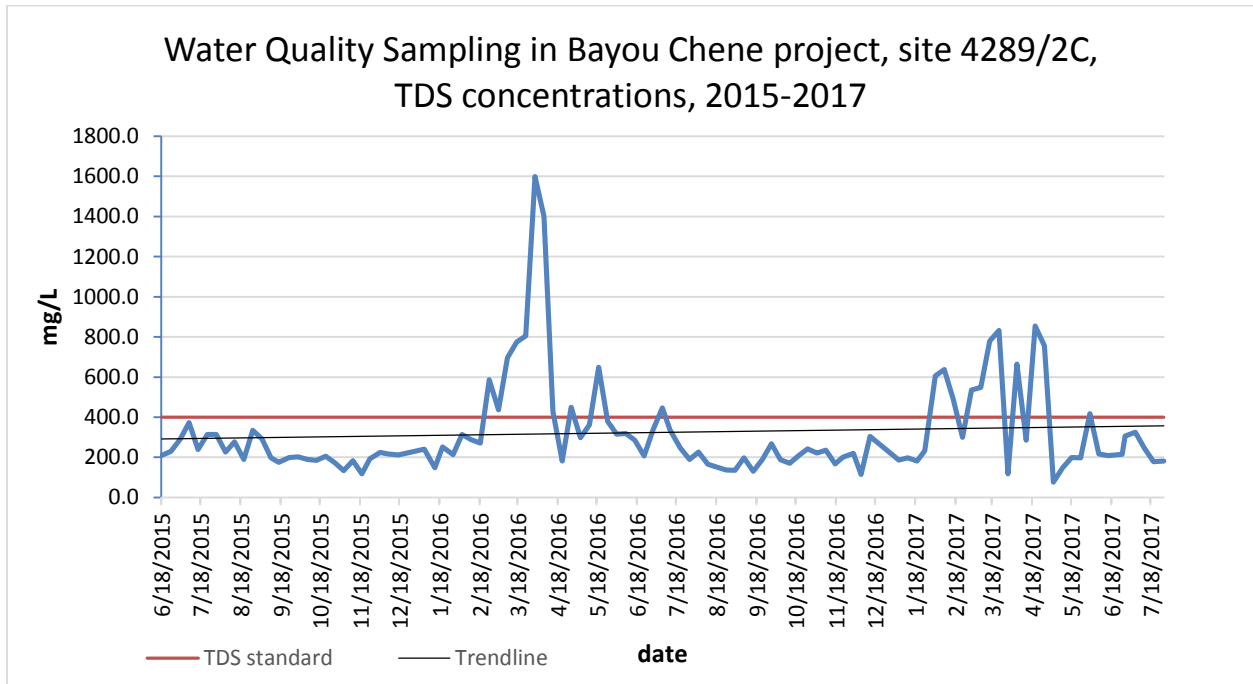


Figure 34 Water Quality Sampling in Bayou Chene project, site 4289/2C, TDS concentrations, 2015-2017

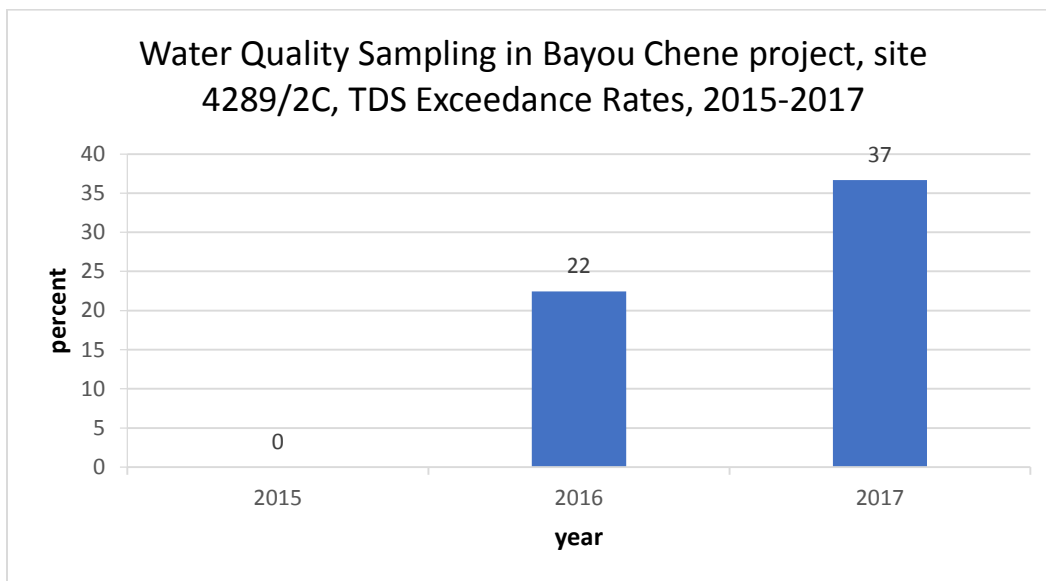


Figure 35 Water Quality Sampling in Bayou Chene project, site 4289/2C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the site 4289/2C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 77.0 mg/L (May 2017) to 1598.3 mg/L (March 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the spring months (March through May). The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as high as 37 percent in 2017 and did not exceed in 2015; however, sampling years 2015 and 2017 were not sampled for a full year. In

2015, there were a total of 27 samples taken, of which none of the samples exceeded the state's standard. In 2016, there 49 samples taken, of which 11 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 11 samples did not meet the standard. Only 22 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

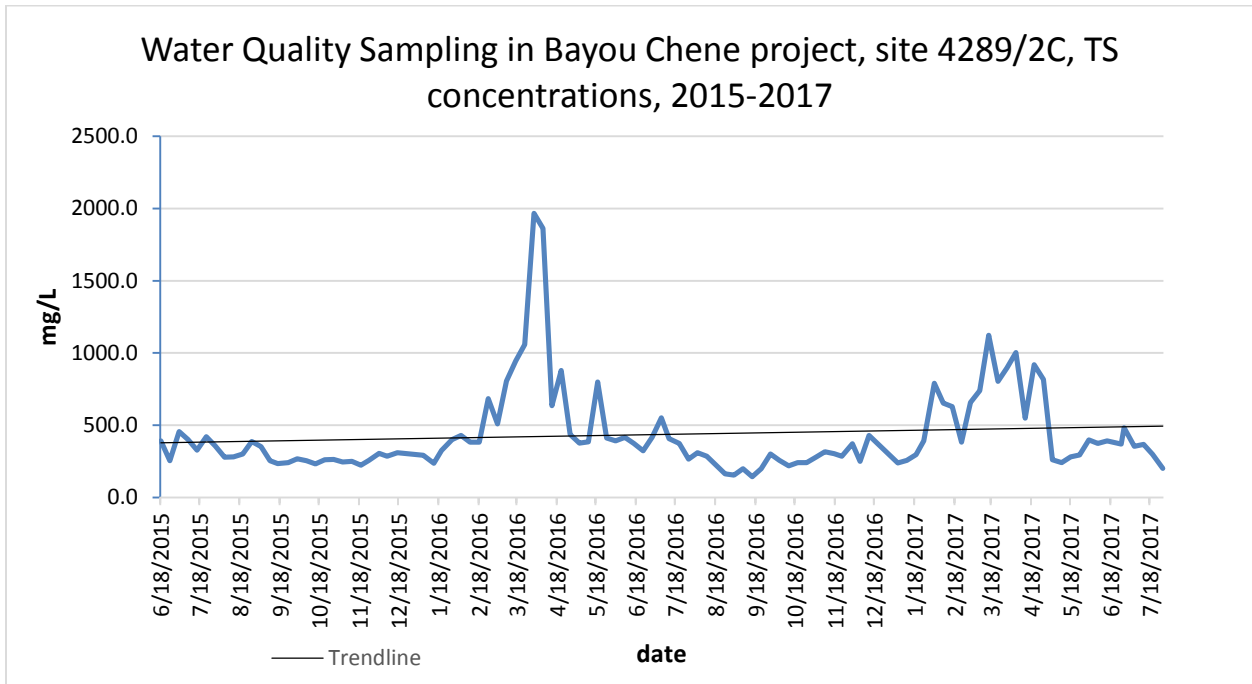


Figure 36 Water Quality Sampling in Bayou Chene project, site 4289/2C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for TS. TS concentrations ranged from 143.0 mg/L (September 2016) to 1967.0 mg/L (March 2016). The trendline shows TS concentrations are slightly increasing. Data also shows TS levels are highest during spring months (March through May).

NO₃-N

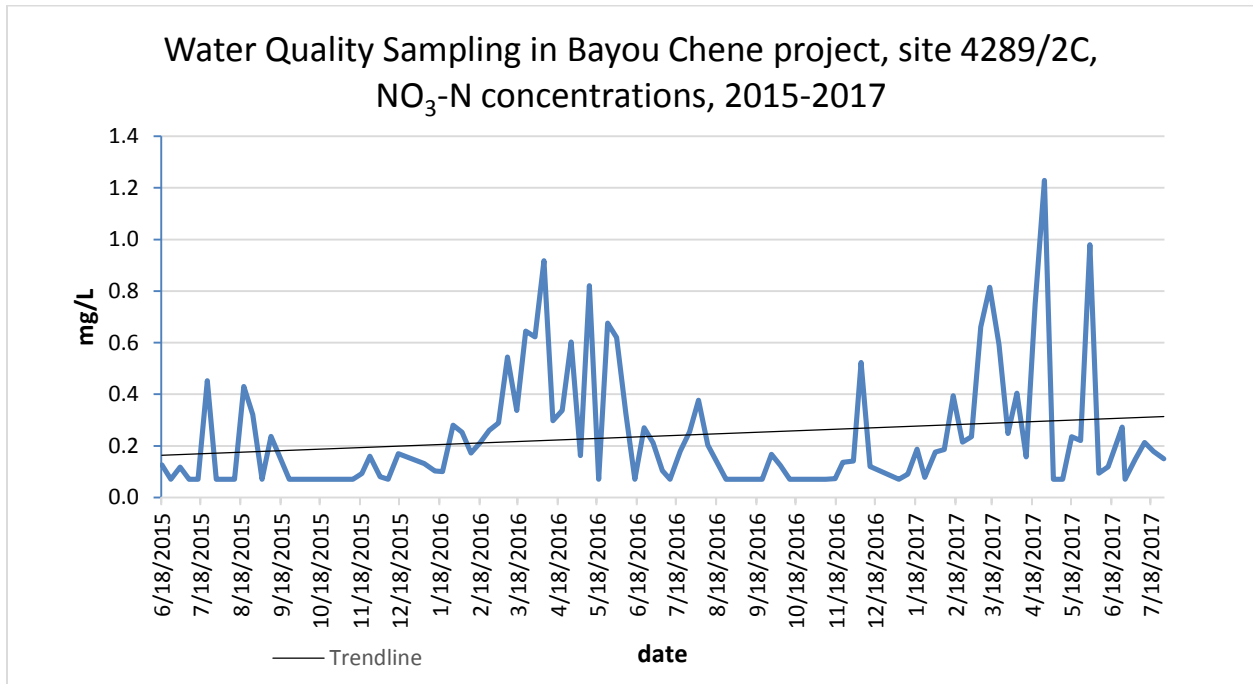


Figure 37 Water Quality Sampling in Bayou Chene project, WQN site 4289/2C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the site 04289/2C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-December 2015; May-November 2016; January, May-June 2017) to 1.23 mg/L (April 2017). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

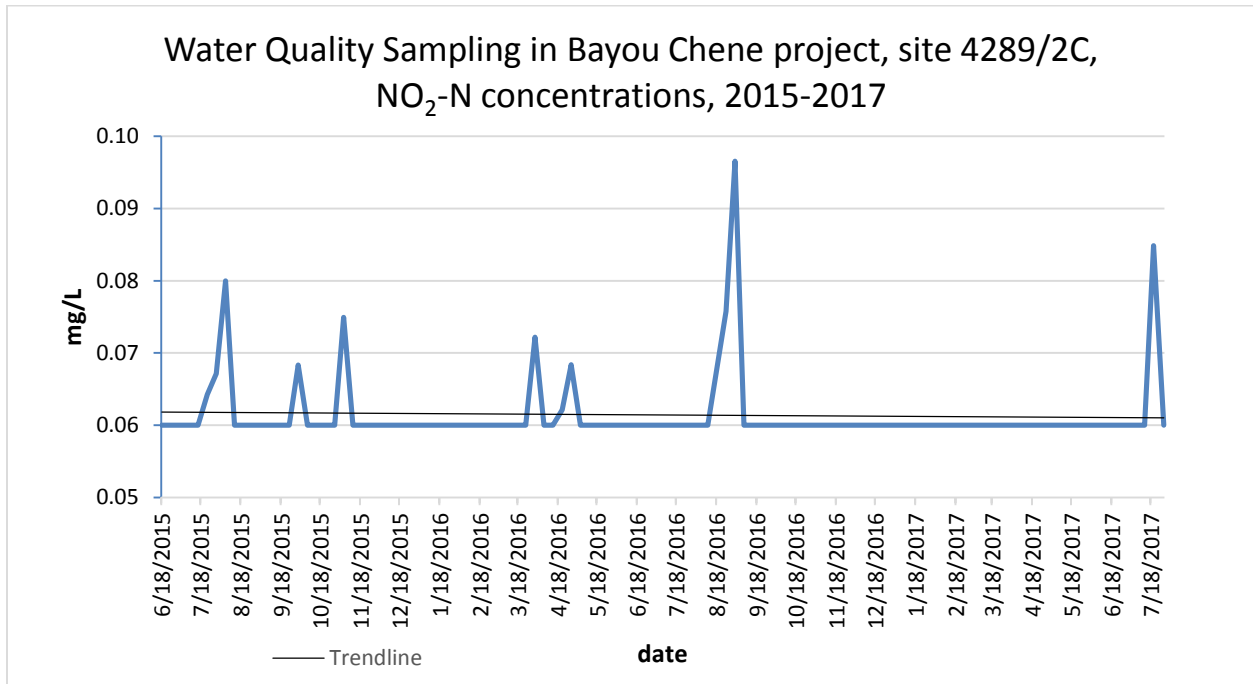


Figure 38 Water Quality Sampling in Bayou Chene project, WQN site 04289/2C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.10 mg/L (September 2016). The trendline shows NO₂-N concentrations are slightly decreasing.

NO₃/NO₂-N

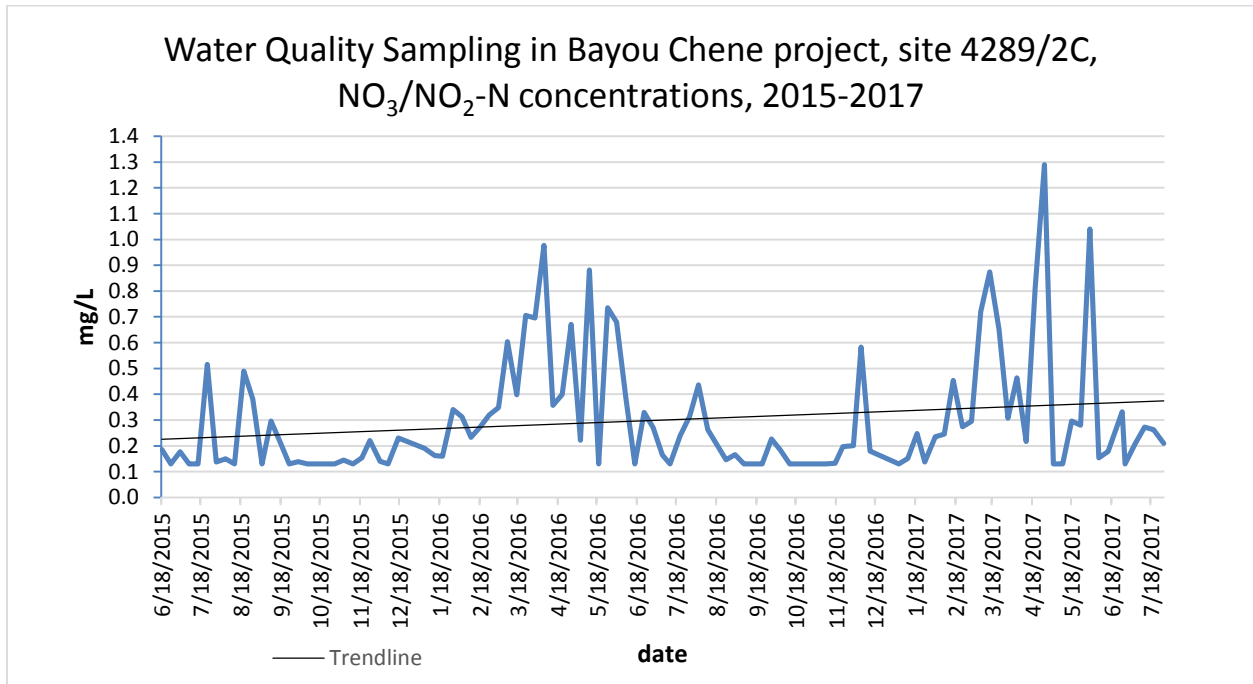


Figure 39 Water Quality Sampling in Bayou Chene project, WQN site 4289/2C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; May-July, September-November 2016; January, May-June 2017) to 1.29 mg/L (April 2017). The trendline shows that NO₃/NO₂-N concentrations are increasing. Data also shows NO₃/NO₂-N levels are lower in Fall months (September through November).

Cl

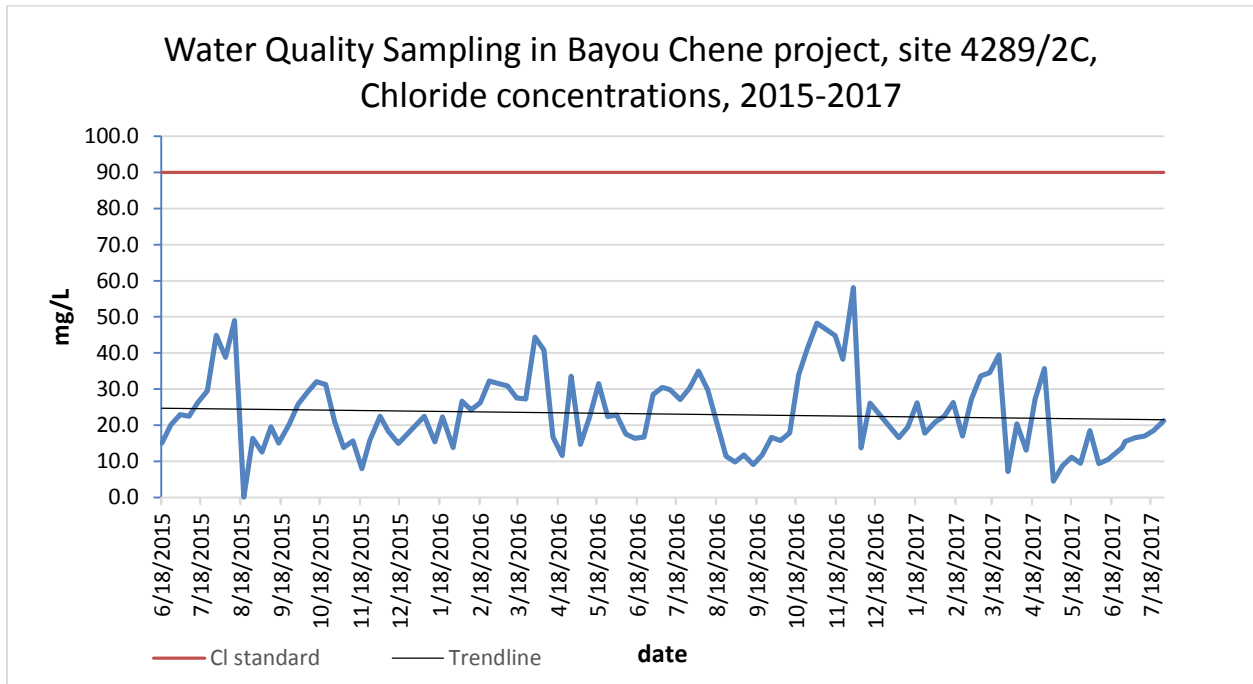


Figure 40 Water Quality Sampling in Bayou Chene project, site 4289/2C, Chloride concentrations, 2015-2017

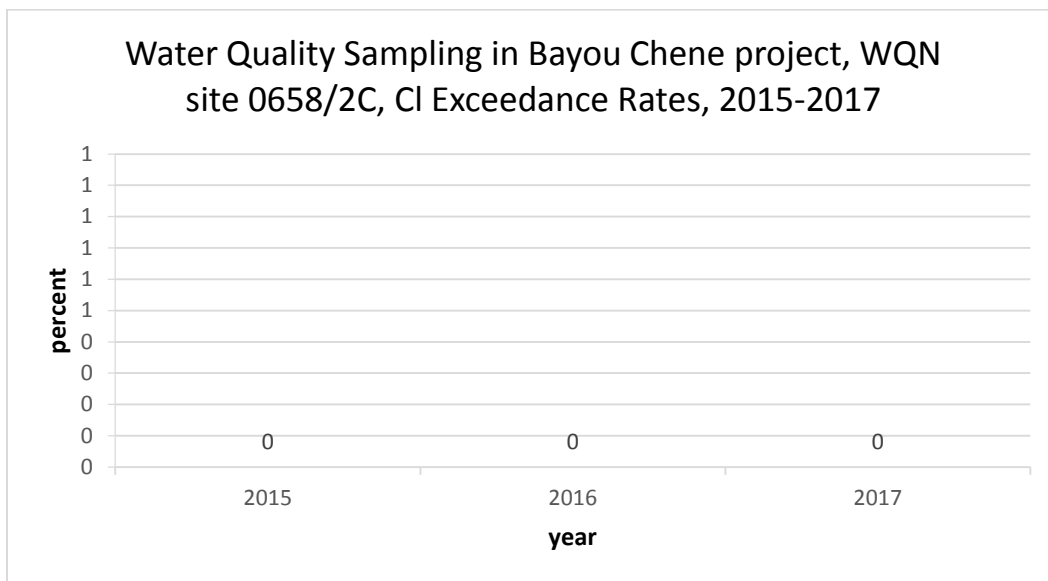


Figure 41 Water Quality Sampling in Bayou Chene project, WQN site 04289/2C, Cl Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the site 4289/2C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 0.10 mg/L (August 2015) to 58.11 mg/L (December 2016). The trendline shows Cl concentrations are decreasing. The exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from

2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

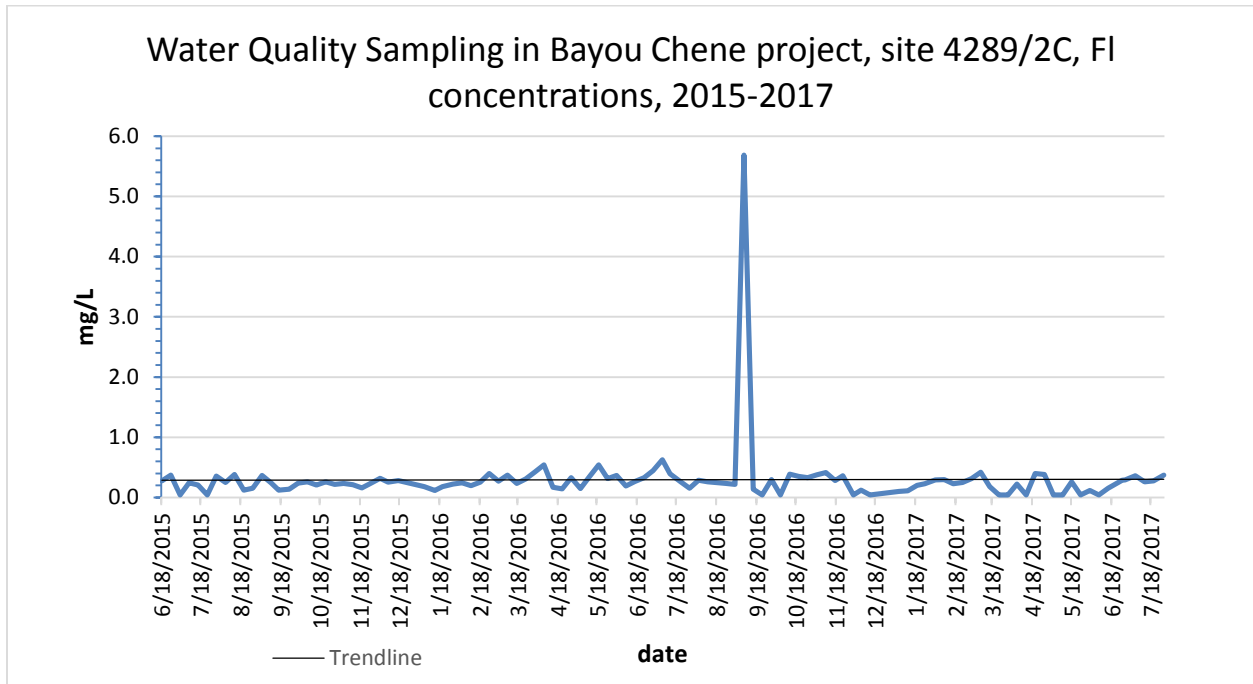


Figure 42 Water Quality Sampling in Bayou Chene project, WQN site 4289/2C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 4289/2C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: July 2015; September-October, December 2016; March-June 2017) to 5.69 mg/L (September 2016). The trendline shows FI concentrations are stable over time.

SO₄

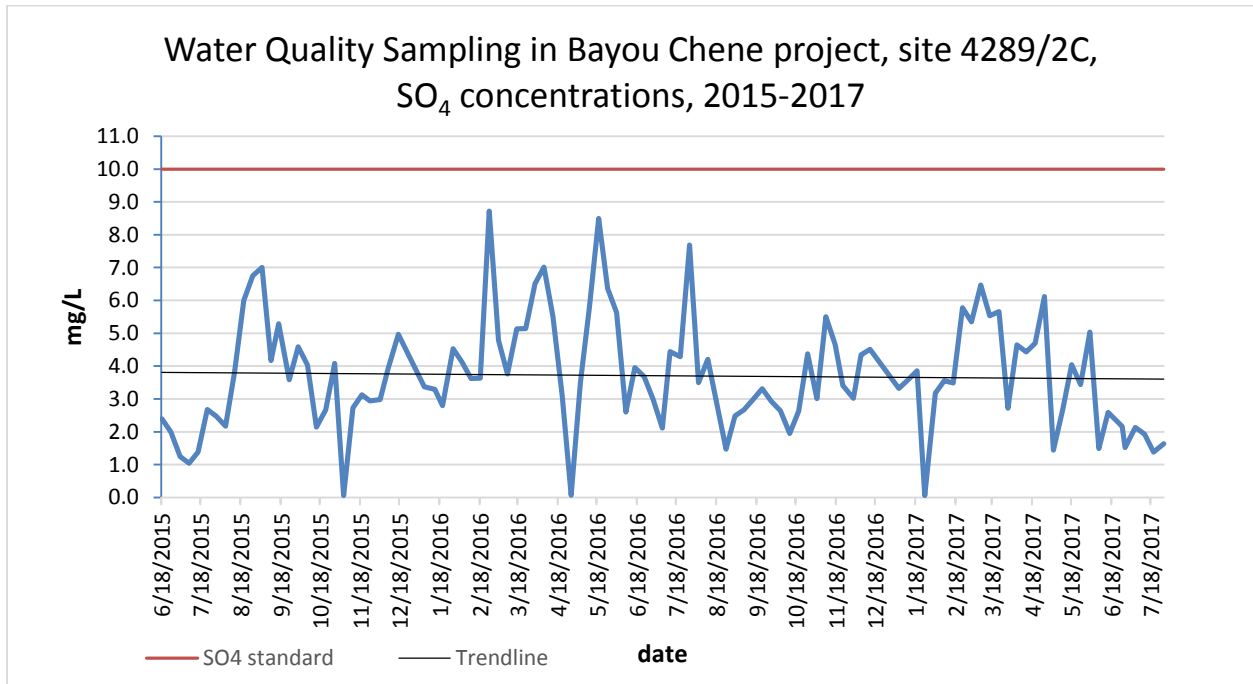


Figure 43 Water Quality Sampling in Bayou Chene project, site 4289/2C, SO₄ concentrations, 2015-2017

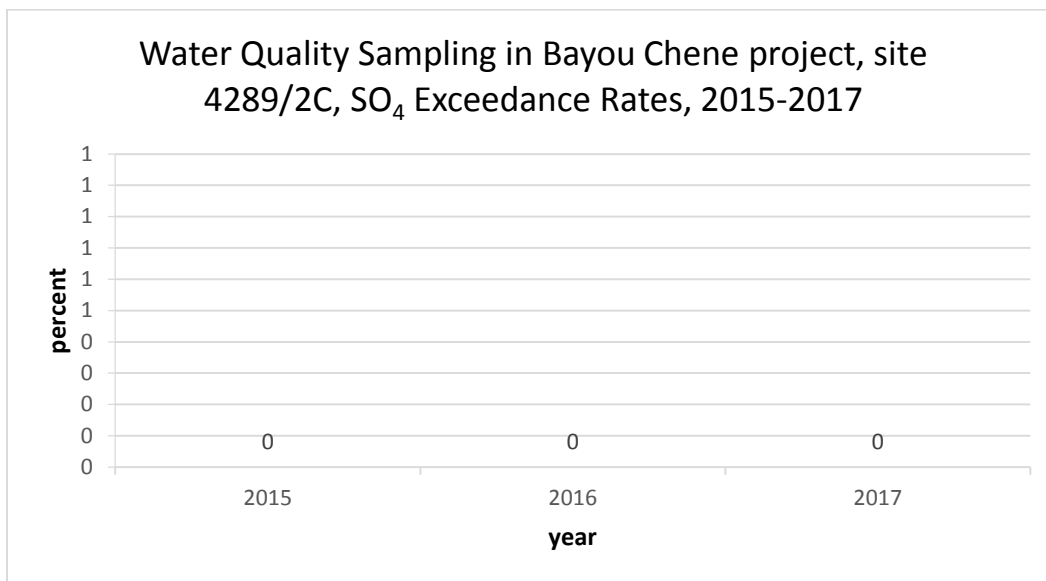


Figure 44 Water Quality Sampling in Bayou Chene project, WQN site 04289/2C, SO₄ Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the site 4289/2C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (April 2016; January 2017) to 8.72 mg/L (January 2016). The trendline shows SO₄ concentrations are slightly decreasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). None of

the samples collected from 2015 through 2017 exceeded the SO₄ standard of 10 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

SRP

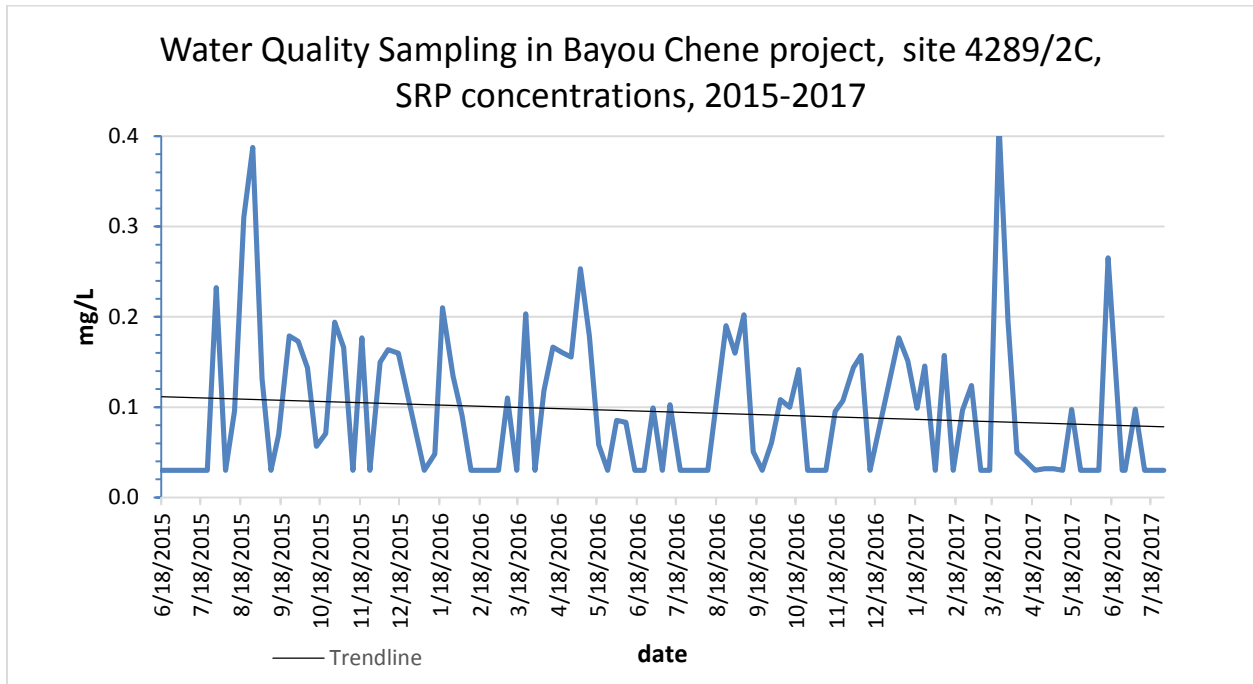


Figure 45 Water Quality Sampling in Bayou Chene project, site 4289/2C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for SRP. SRP concentrations ranged from 0.03 mg/L (value found intermittently through: June-August, September, November 2015; January-March, May-December 2016; February-July 2017) to 0.41 mg/L (March 2017). The trendline shows SRP concentrations are slightly decreasing.

TP

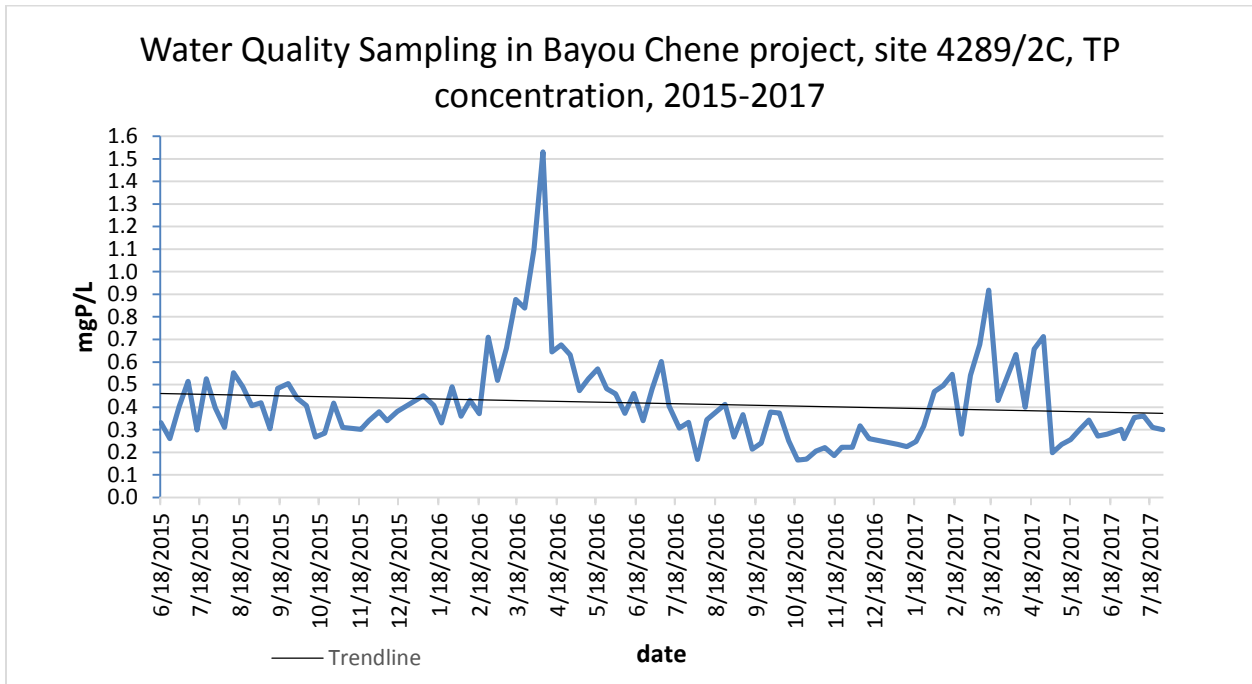


Figure 46 Water Quality Sampling in Bayou Chene project, WQN site 4289/2C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for TP. TP concentrations ranged from 0.17 mgP/L (August, October 2016) to 1.53 mgP/L (April 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in early spring months (March through May).

TKN

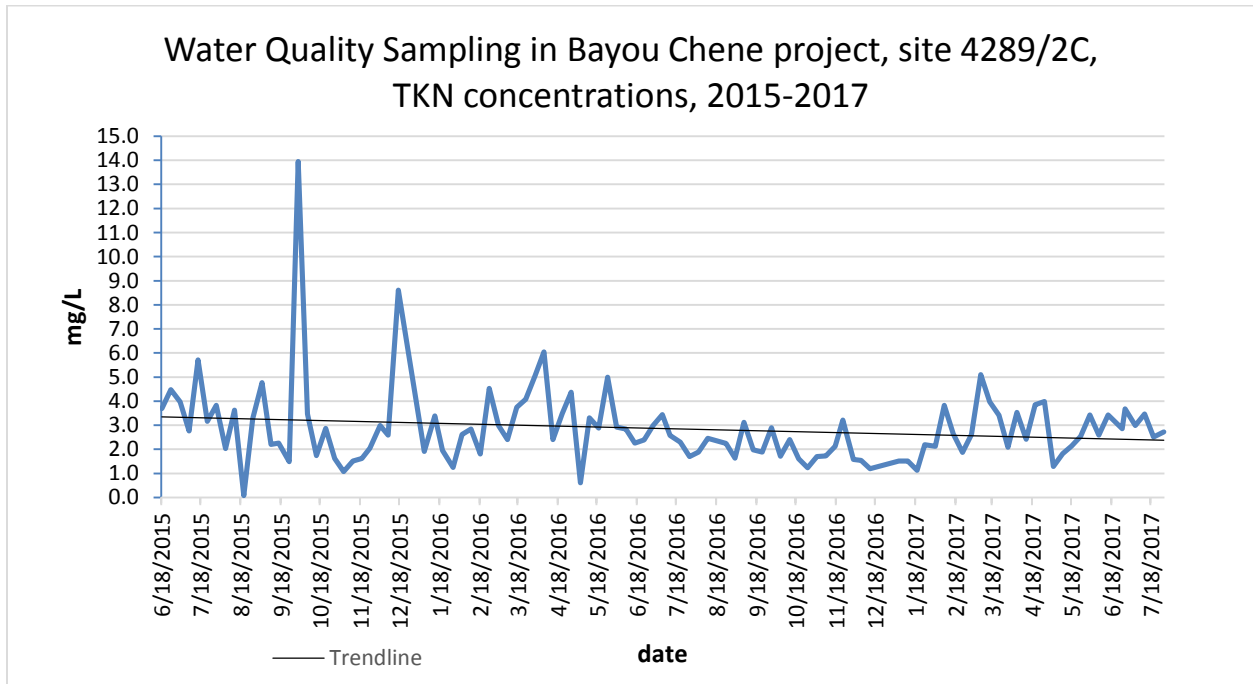


Figure 47 Water Quality Sampling in Bayou Chene project, site 4289/2C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for TKN. TKN concentrations ranged from 0.08 mg/L (August 2015) to 13.94 mg/L (October 2015). The trendline shows TKN concentrations are slightly decreasing.

BOD-5

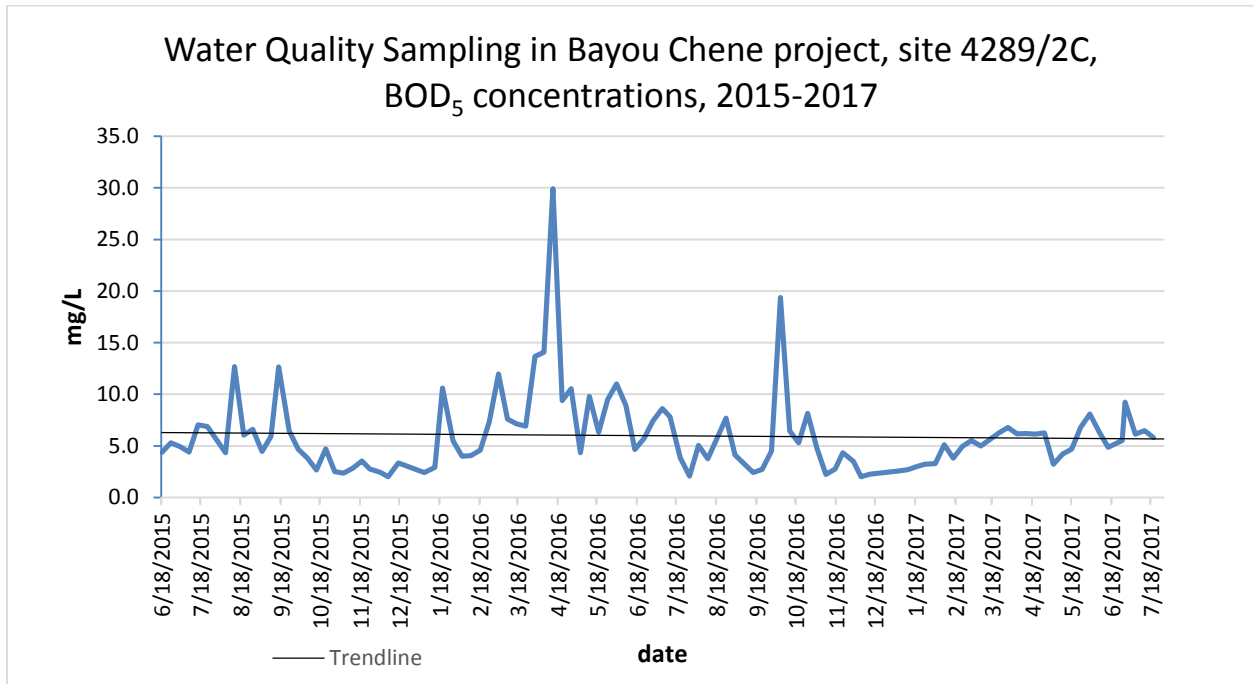


Figure 48 Water Quality Sampling in Bayou Chene project, site 4289/2C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the site 4289/2C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (December 2015; December 2016) to 29.91 mg/L (April 2016). The trendline shows BOD₅ concentrations are slightly decreasing. Only 103 samples were collected. Sample dates July 2015, September 2016, and July 2017 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4290/ 3C

DO

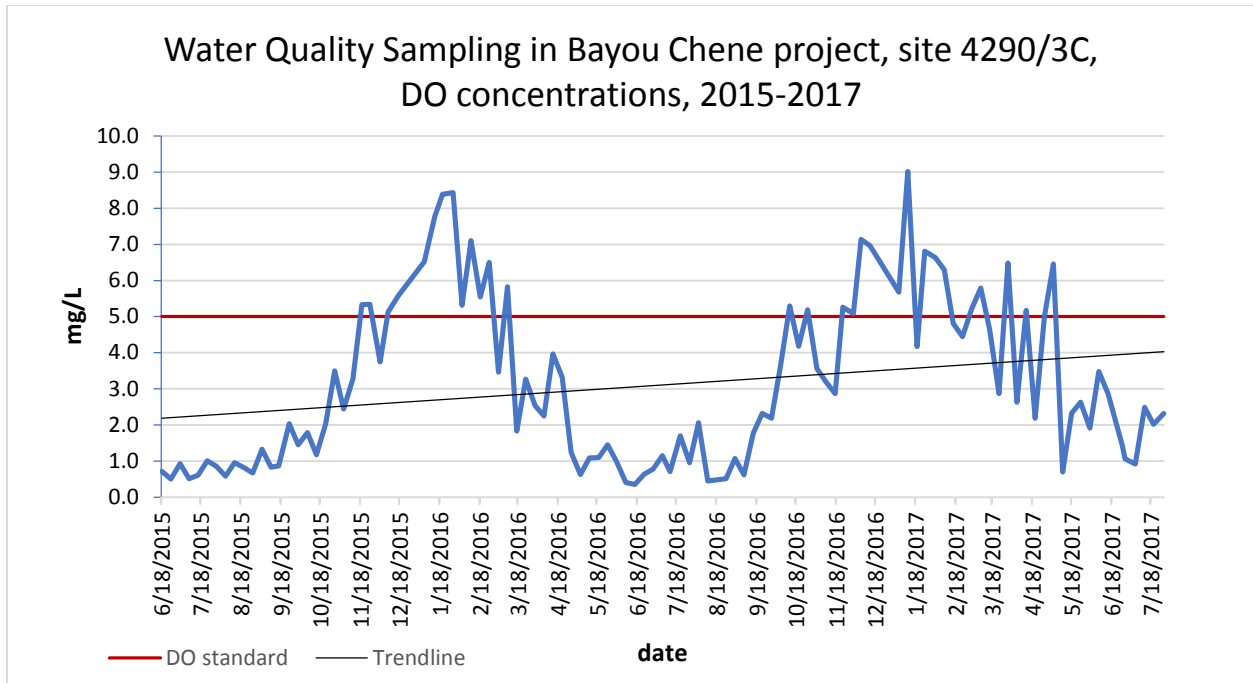


Figure 49 Water Quality Sampling in Bayou Chene project, site 4290/3C, DO concentrations, 2015-2017

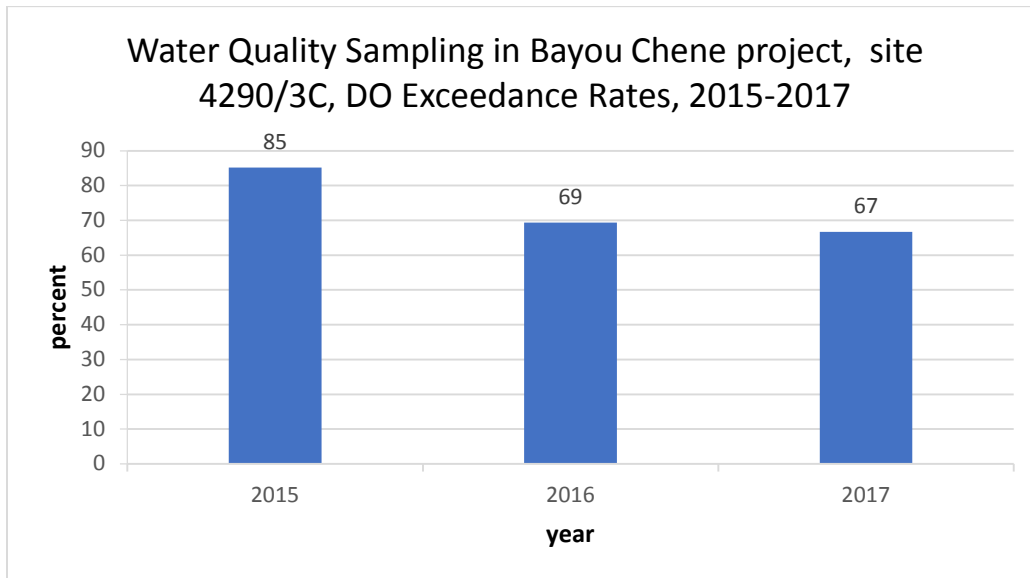


Figure 50 Water Quality Sampling in Bayou Chene project, site 4290/3C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at site 4290/3C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.35 mg/L (June 2016) to 9.02 mg/L (January 2017). The trendline shows DO concentrations are slightly increasing. Data also shows DO levels were highest in the cooler months (October through March). The exceedance rates

were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 85 percent in 2015 and as low as 67 percent in 2016 and 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 23 samples did not meet the standard. In 2016, there 49 samples taken, of which 34 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 20 samples did not meet the standard. Only 19 of the 106 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

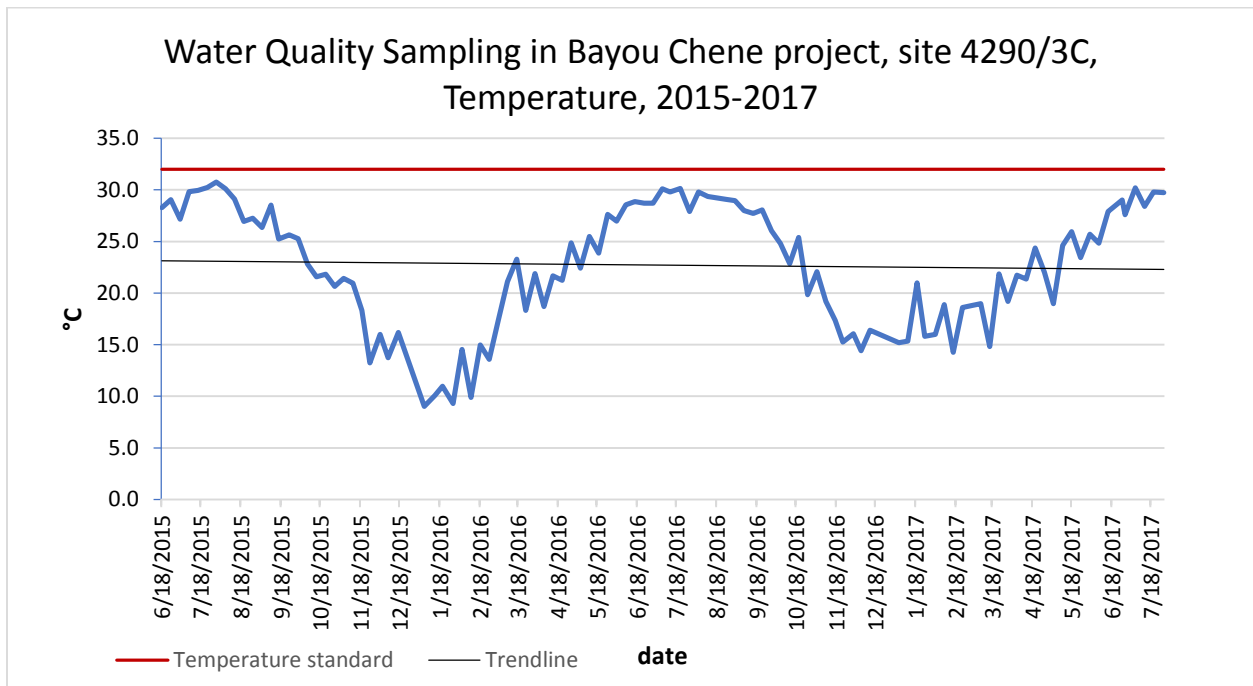


Figure 51 Water Quality Sampling in Bayou Chene project, site 4290/3C, Temperature, 2015-2017

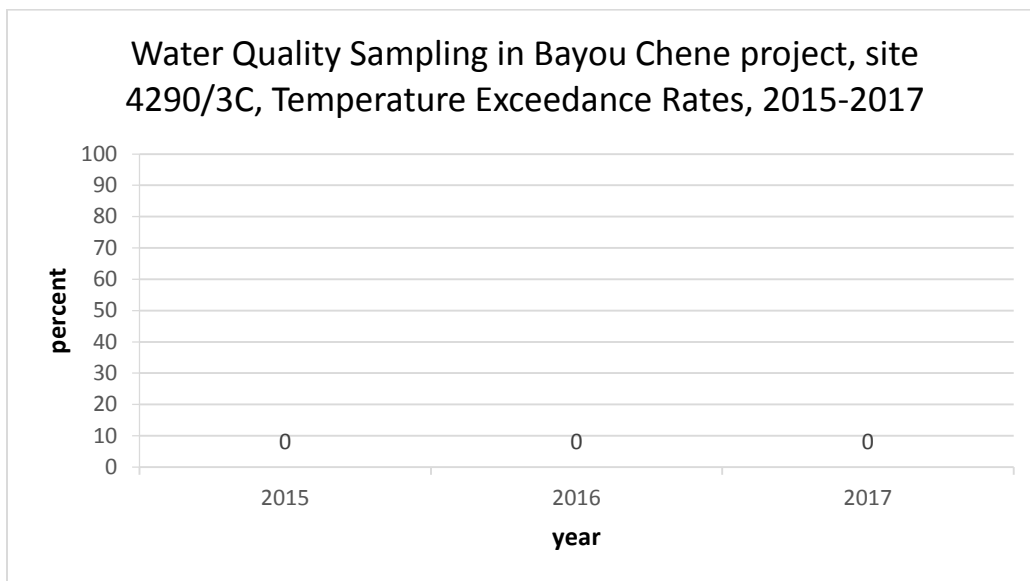


Figure 52 Water Quality Sampling in Bayou Chene project, site 4290/3C, Temperature Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at site 4290/3C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 9.03 °C (January 2016) to 30.76 °C (July 2015). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the winter months (December through February). The exceedance rates were calculated for temperature

from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

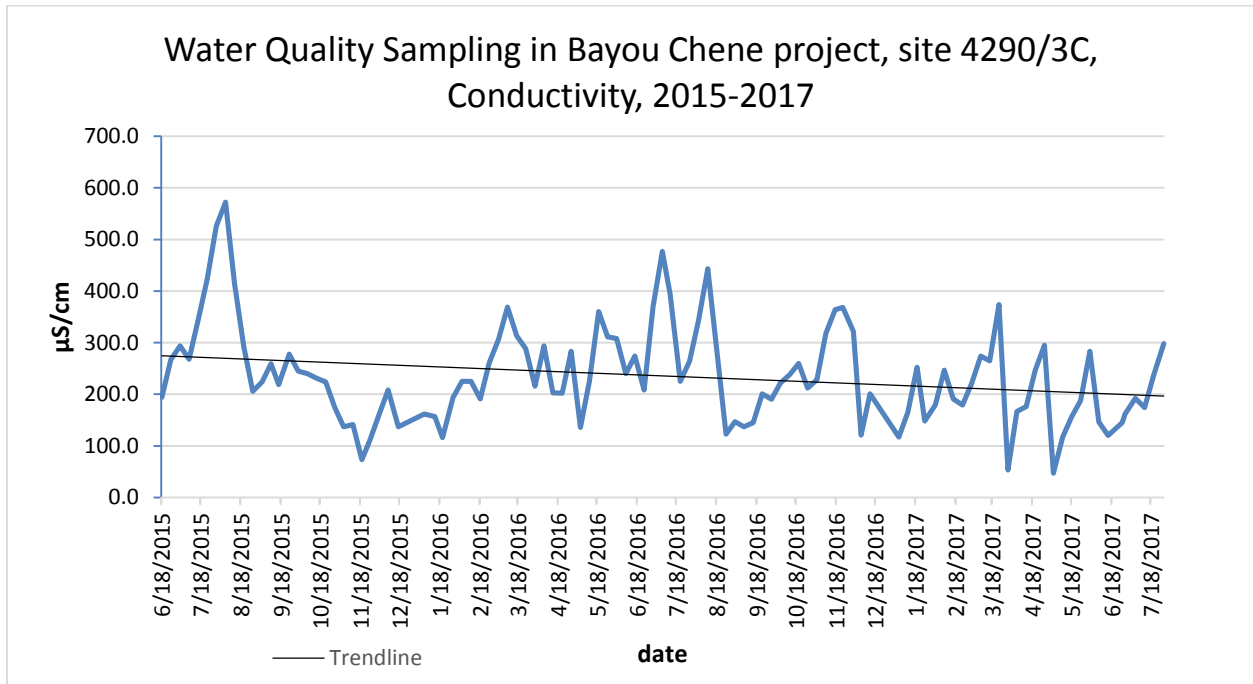


Figure 53 Water Quality Sampling in Bayou Chene project, site 4290/3C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4290/3C. There is no standard for conductivity. Conductivity values ranged from 47 $\mu\text{S}/\text{cm}$ (May 2017) to 572 $\mu\text{S}/\text{cm}$ (August 2015). The trendline shows conductivity values are slightly decreasing.

pH

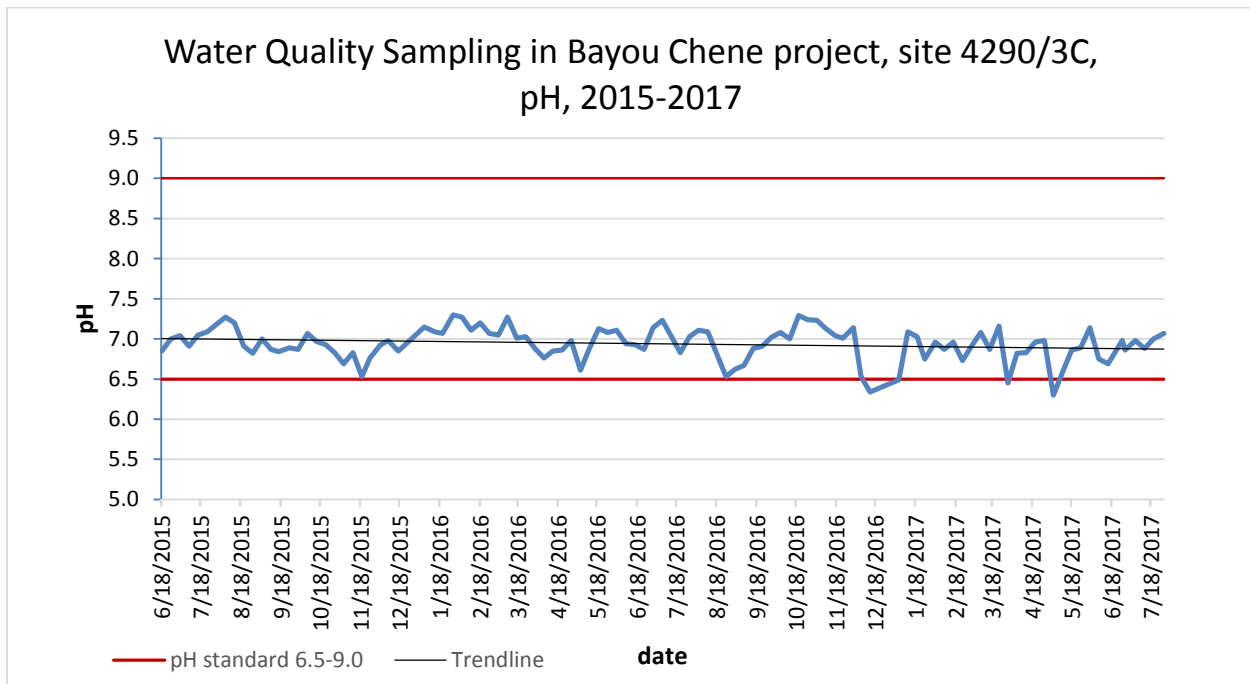


Figure 54 Water Quality Sampling in Bayou Chene project, site 4290/3C, pH, 2015-2017

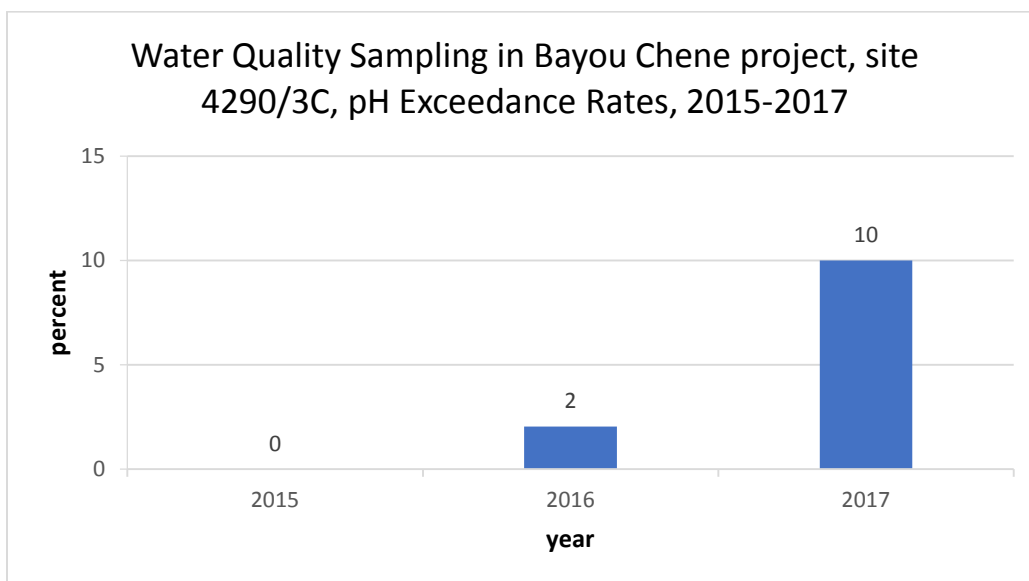


Figure 55 Water Quality Sampling in Bayou Chene project, site 4290/3C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at site 4290/3C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.30 (May 2017) to 7.30 (January 2016). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 10 percent in 2017 and did not exceed in 2015; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples were below the state's standard. In 2016, there 49

samples taken, of which 1 was below the standard. In 2017, there were a total of 30 samples taken, of which 3 samples did not meet the standard. 102 of the 106 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

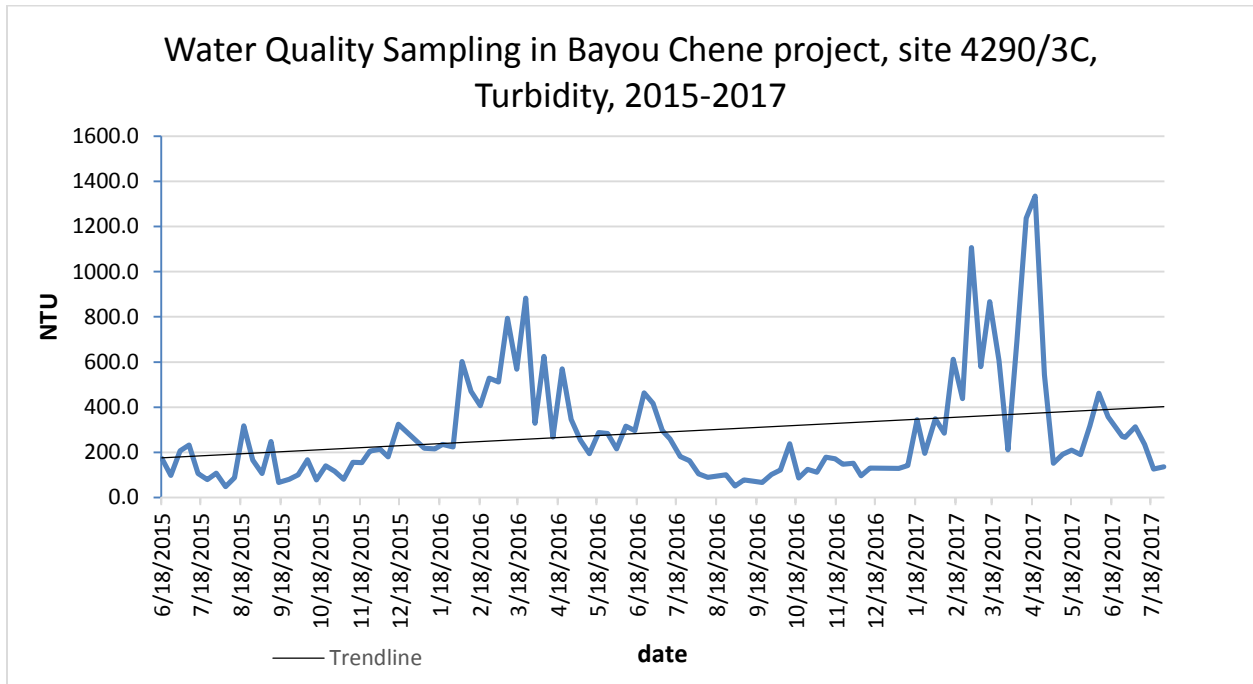


Figure 56 Water Quality Sampling in Bayou Chene project, site 4290/3C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at site 4290/3C. There is no standard for turbidity. Turbidity values ranged from 48.2 NTU (August 2015) to 1334.6 NTU (April 2017). The trendline shows turbidity values are slightly increasing. Data also shows higher turbidity levels in the spring months (March through May).

TSS

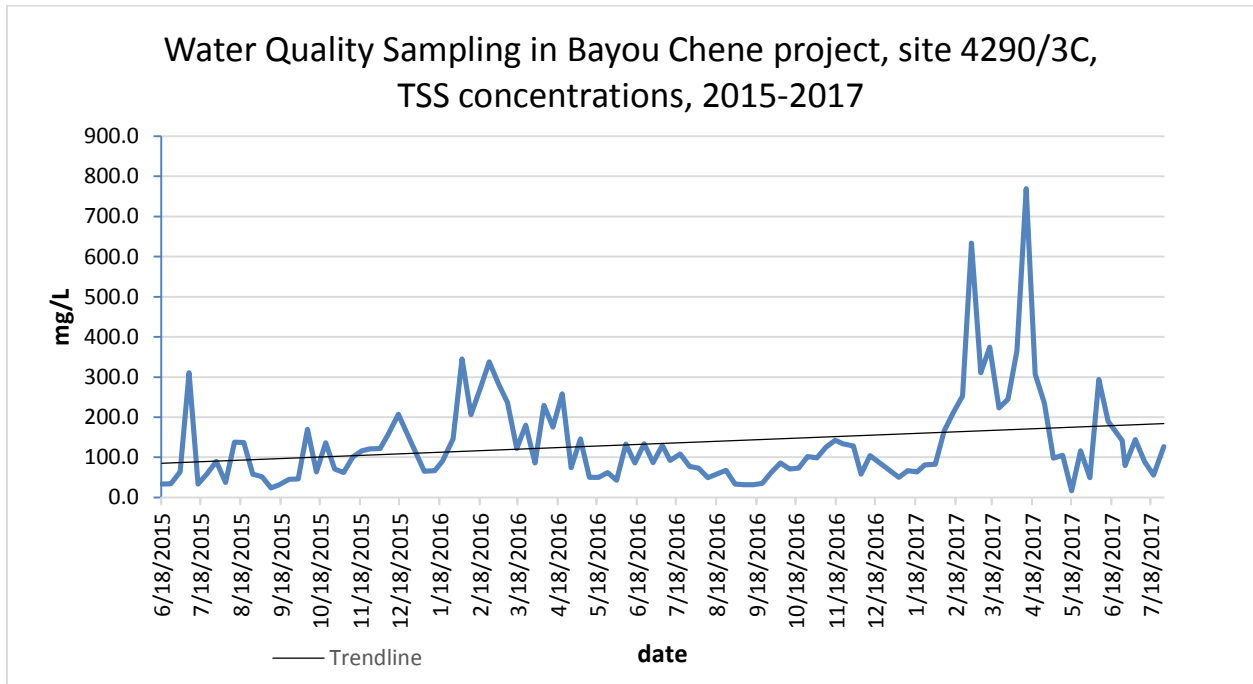


Figure 57 Water Quality Sampling in Bayou Chene project, site 4290/3C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for TSS. TSS concentrations ranged from 17.0 mg/L (May 2017) to 769.0 mg/L (April 2017). The trendline shows TSS concentrations are slightly increasing.

TDS

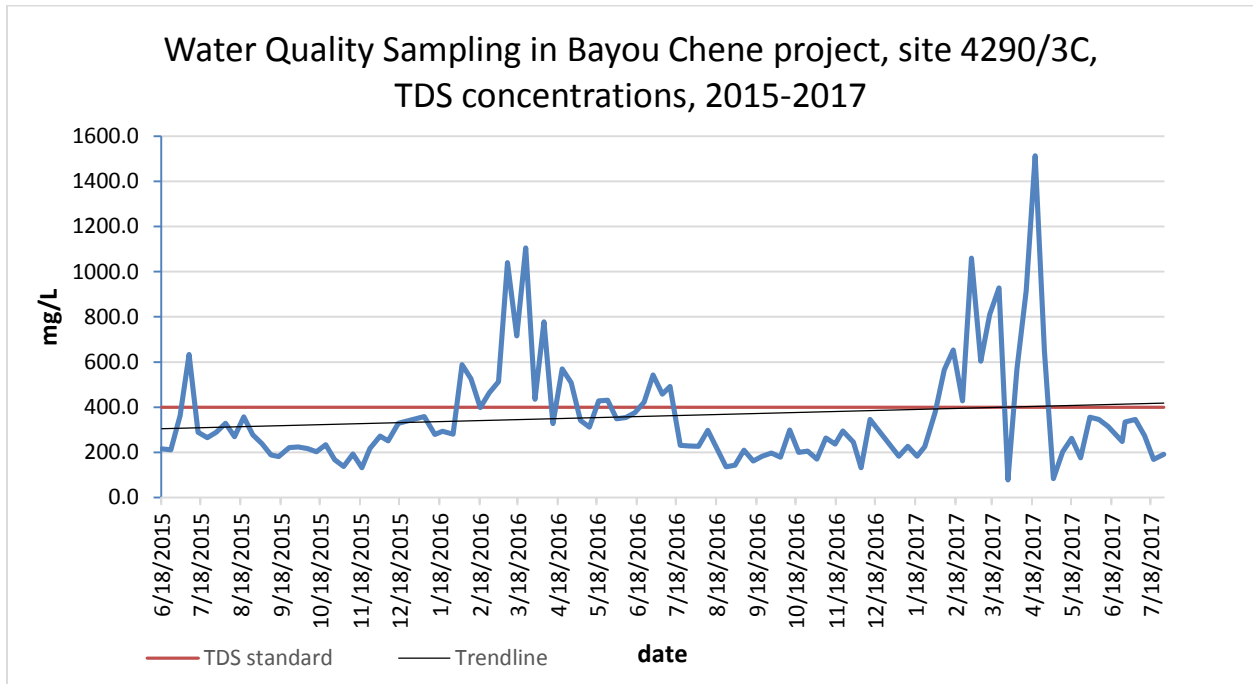


Figure 58 Water Quality Sampling in Bayou Chene project, site 4290/3C, TDS concentrations, 2015-2017

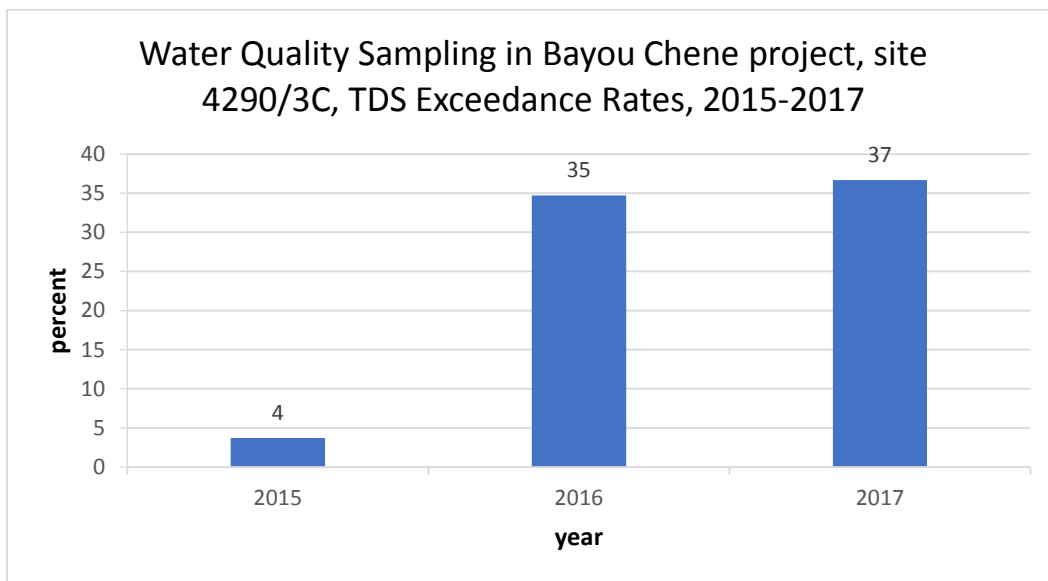


Figure 59 Water Quality Sampling in Bayou Chene project, site 4290/3C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at site 4290/3C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 78.0 mg/L (March 2017) to 1513.0 mg/L (April 2017). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the spring months (March through May). The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 4 percent in 2015 and as high as 37 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year.

In 2015, there were a total of 27 samples taken, of which 1 sample exceeded the state's standard. In 2016, there 49 samples taken, of which 17 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 11 samples did not meet the standard. Only 77 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

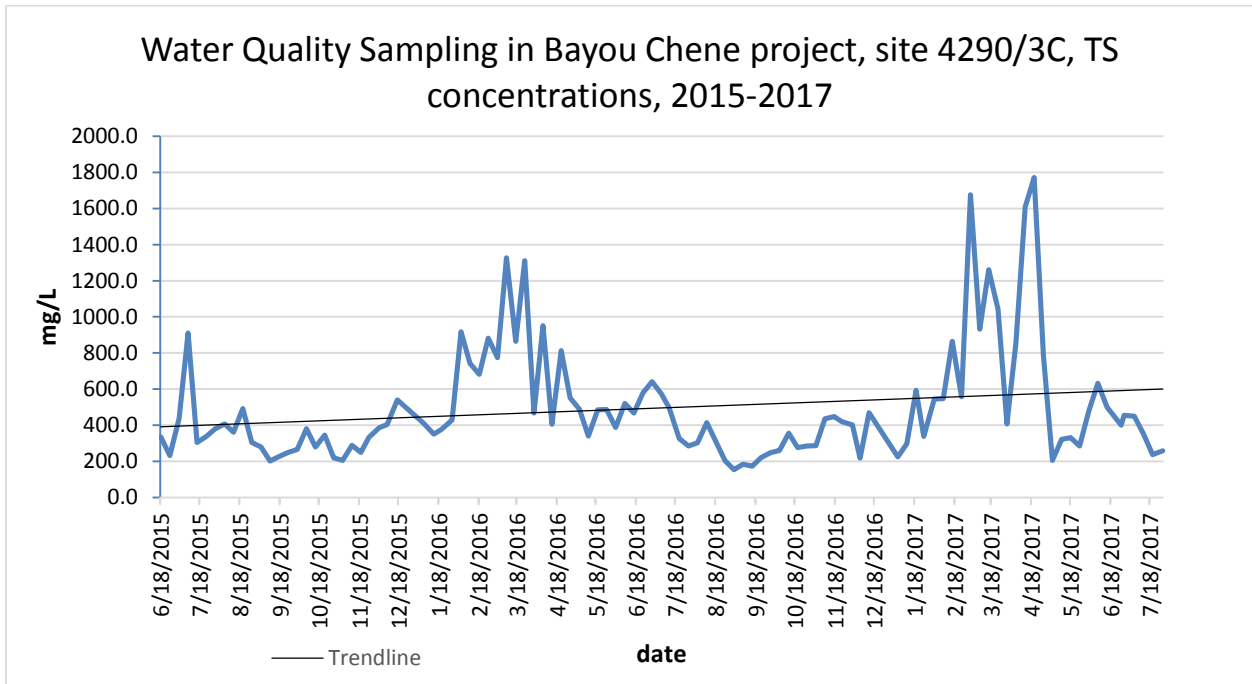


Figure 60 Water Quality Sampling in Bayou Chene project, site 4290/3C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for TS. TS concentrations ranged from 154.0 mg/L (September 2016) to 1771.0 mg/L (April 2017). The trendline shows TS concentrations are slightly increasing. Data also shows TS levels are highest during spring months (March through May).

NO3-N

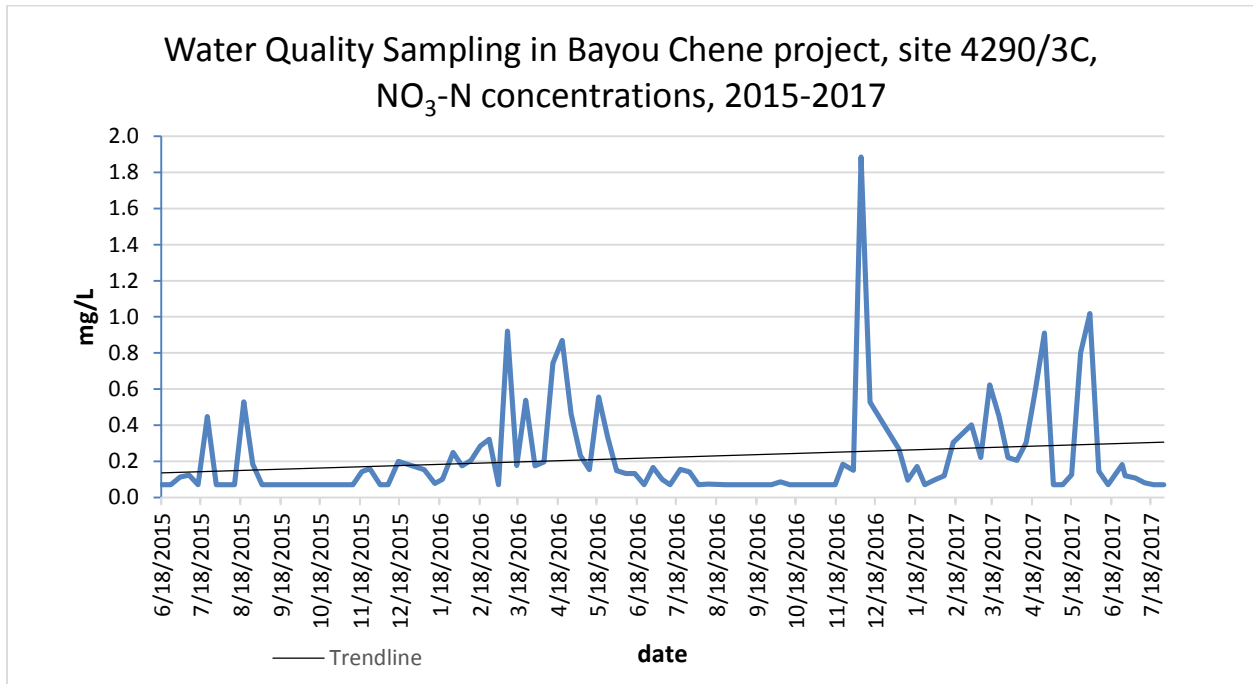


Figure 61 Water Quality Sampling in Bayou Chene project, site 4290/3C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-December 2015; March, June-November 2016; January, May-July 2017) to 1.88 mg/L (December 2016). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

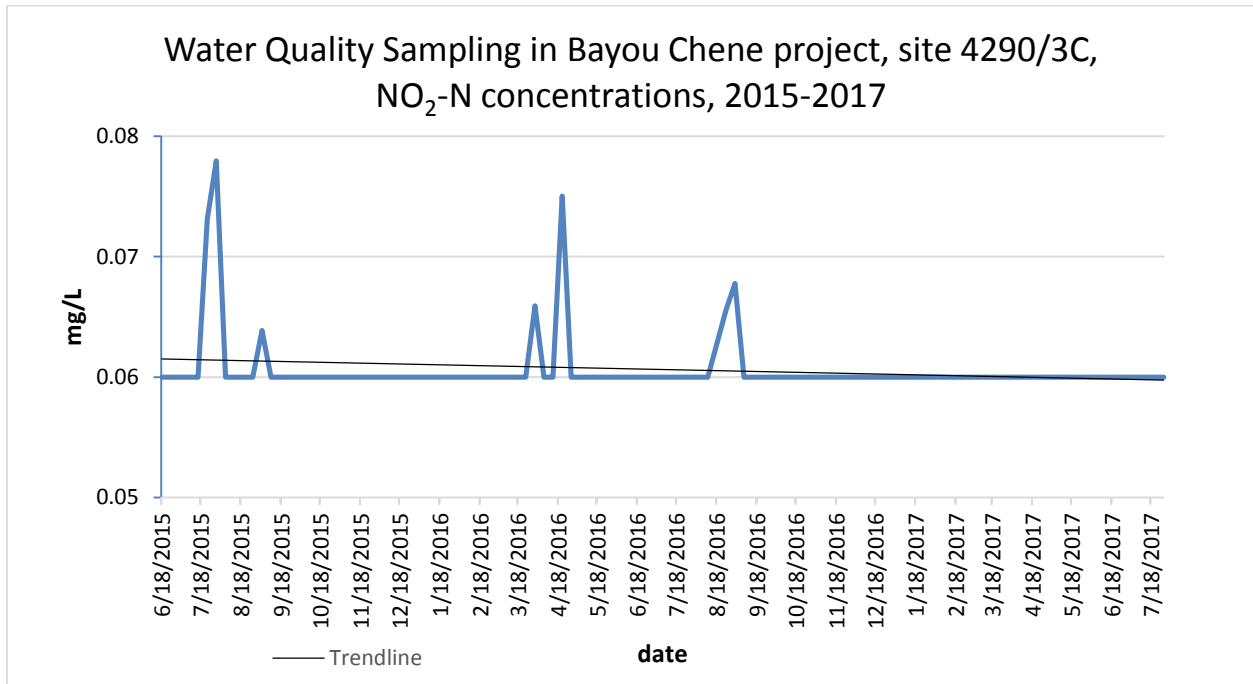


Figure 62 Water Quality Sampling in Bayou Chene project, site 4290/3C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.08 mg/L (April 2016). The trendline shows NO₂-N concentrations are slightly decreasing.

NO₃/NO₂-N

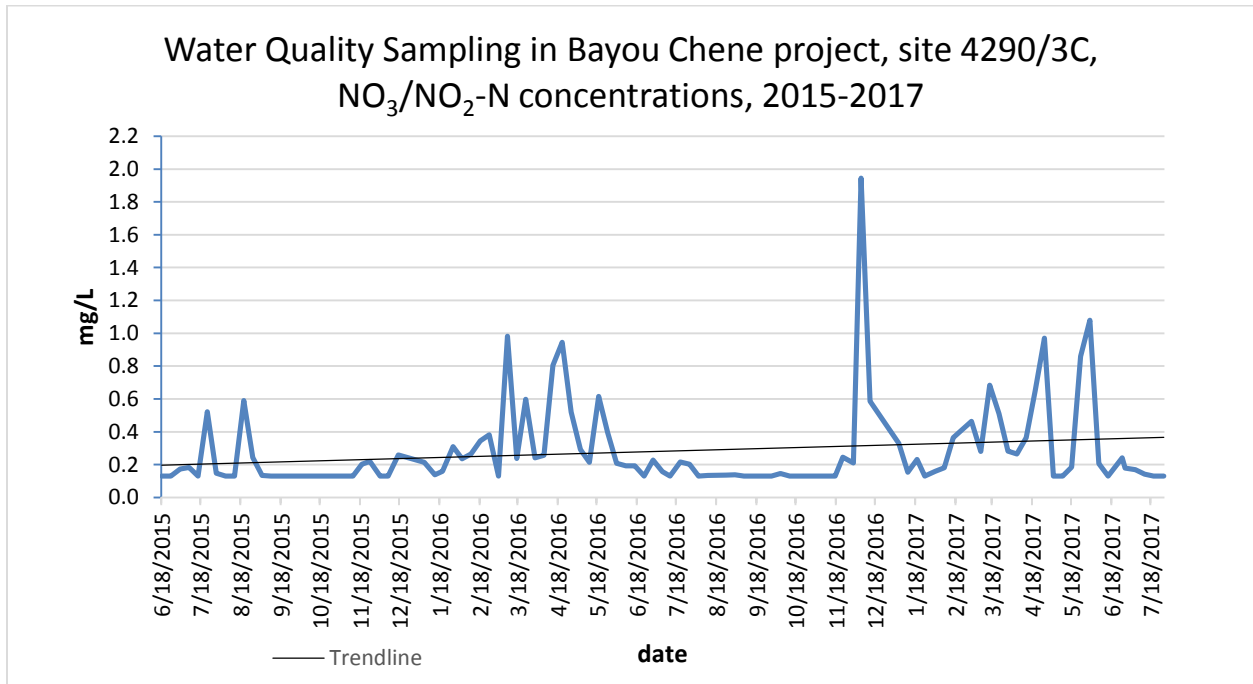


Figure 63 Water Quality Sampling in Bayou Chene project, site 4290/3C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; March, June-November 2016; January, May-July 2017) to 1.94 mg/L (December 2016). The trendline shows that NO₃/NO₂-N concentrations are slightly increasing.

Cl

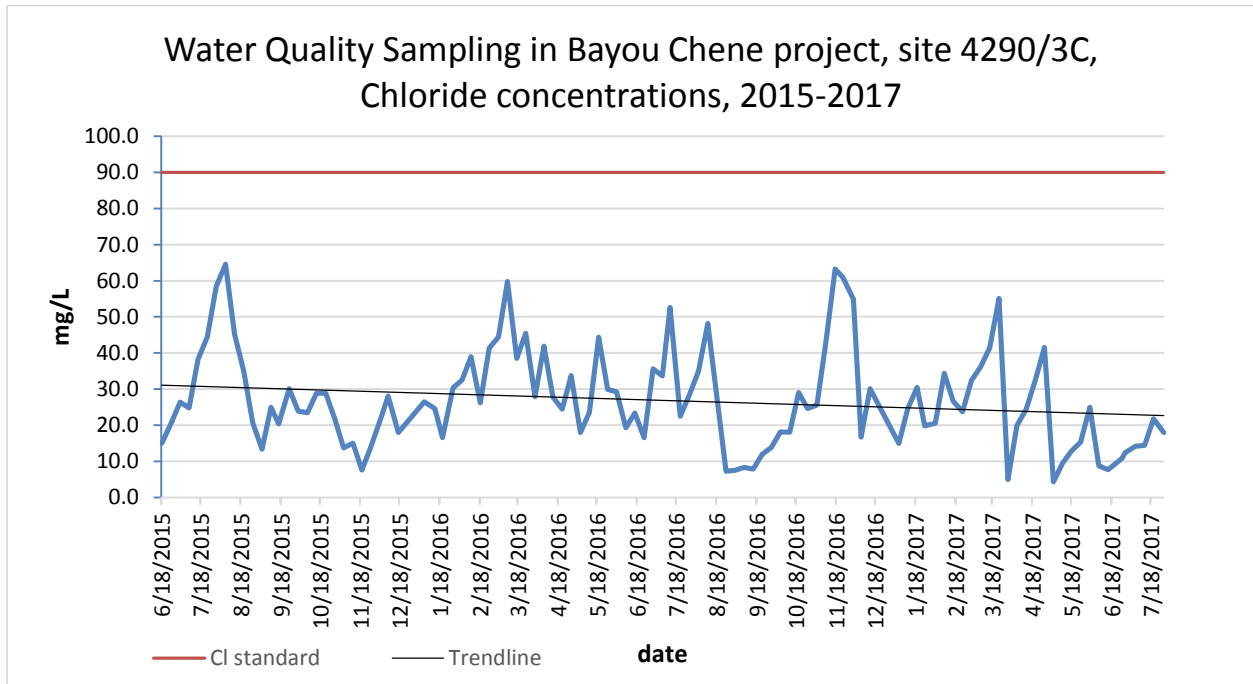


Figure 64 Water Quality Sampling in Bayou Chene project, site 4290/3C, Chloride concentrations, 2015-2017

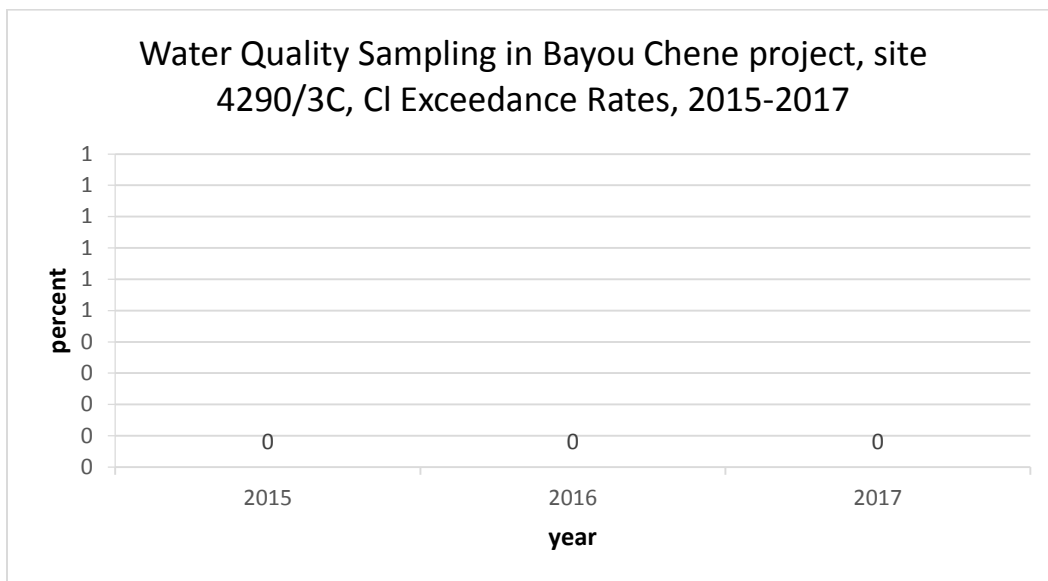


Figure 65 Water Quality Sampling in Bayou Chene project, site 4290/3C, Cl Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at site 4290/3C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 4.35 mg/L (May 2017) to 64.60 mg/L (August 2015). The trendline shows Cl concentrations are decreasing. The exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from 2015

through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

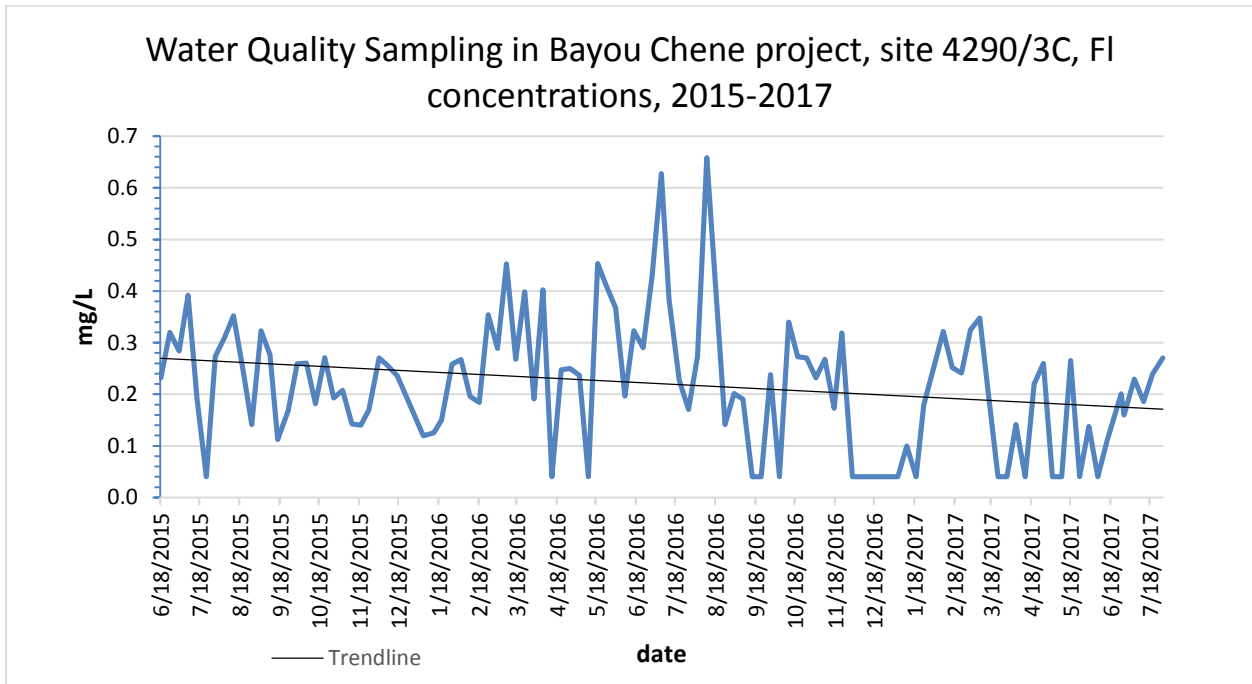


Figure 66 Water Quality Sampling in Bayou Chene project, site 4290/3C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: July 2015; April-May, September-October, December 2016; January, March-June 2017) to 0.66 mg/L (August 2016). The trendline shows FI concentrations are slightly decreasing.

SO₄

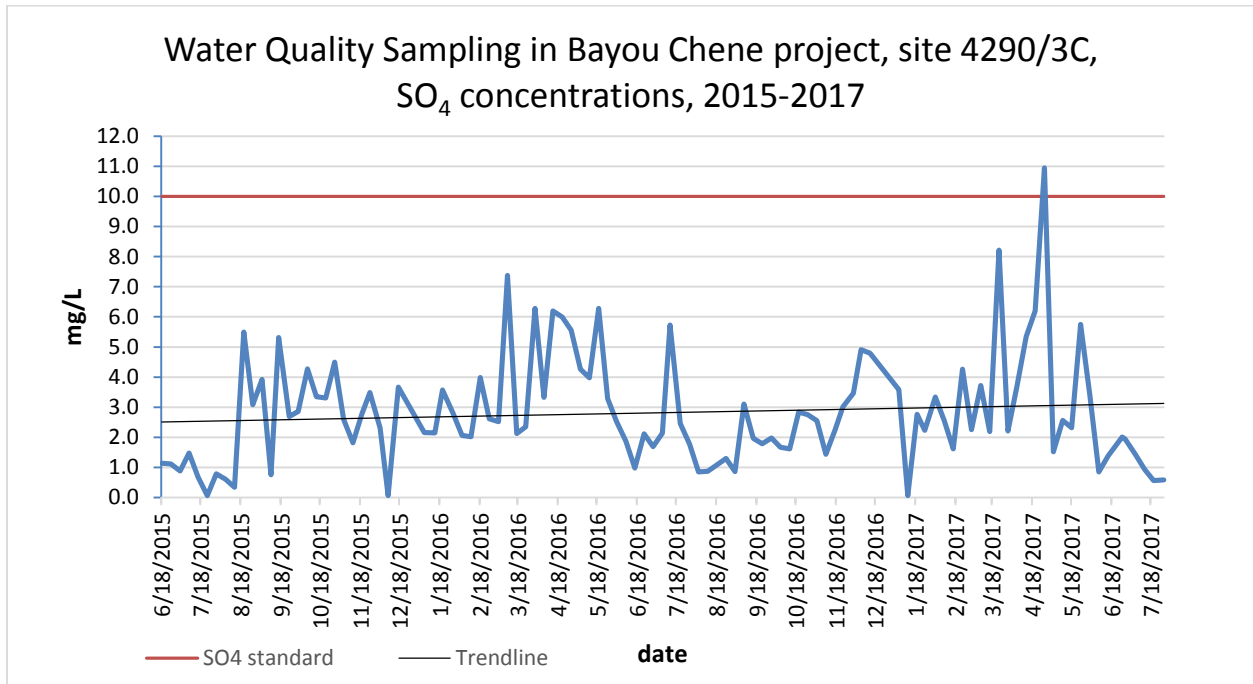


Figure 67 Water Quality Sampling in Bayou Chene project, site 4290/3C, SO₄ concentrations, 2015-2017

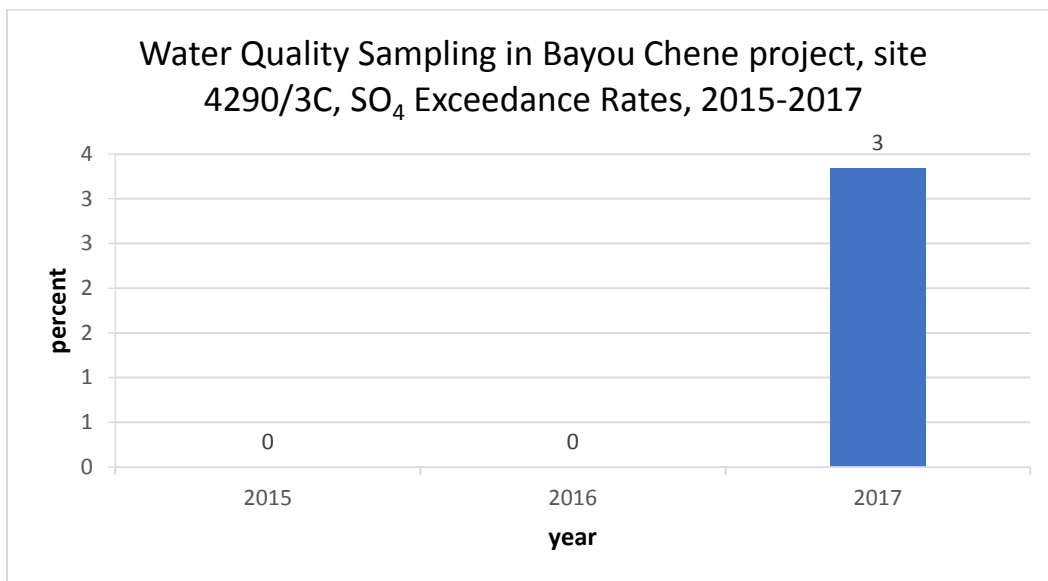


Figure 68 Water Quality Sampling in Bayou Chene project, site 4290/3C, SO₄ Exceedance Rates, 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at site 4290/3C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (July, December 2015; January 2017) to 10.94 mg/L (April 2017). The trendline shows SO₄ concentrations are slightly increasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). Rates fluctuated as high as 3 percent in 2017 and did not exceed standards in 2015 and 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27

samples taken, of which none of the samples exceeded the state's standard. In 2016, there were a total of 49 samples taken, of which none of the samples exceeded the state's standard. In 2017, there were a total of 30 samples taken, of which 1 sample did not meet the standard. 105 of the 106 samples collected from 2015 through 2017 were below the 10 mg/L standard.

SRP

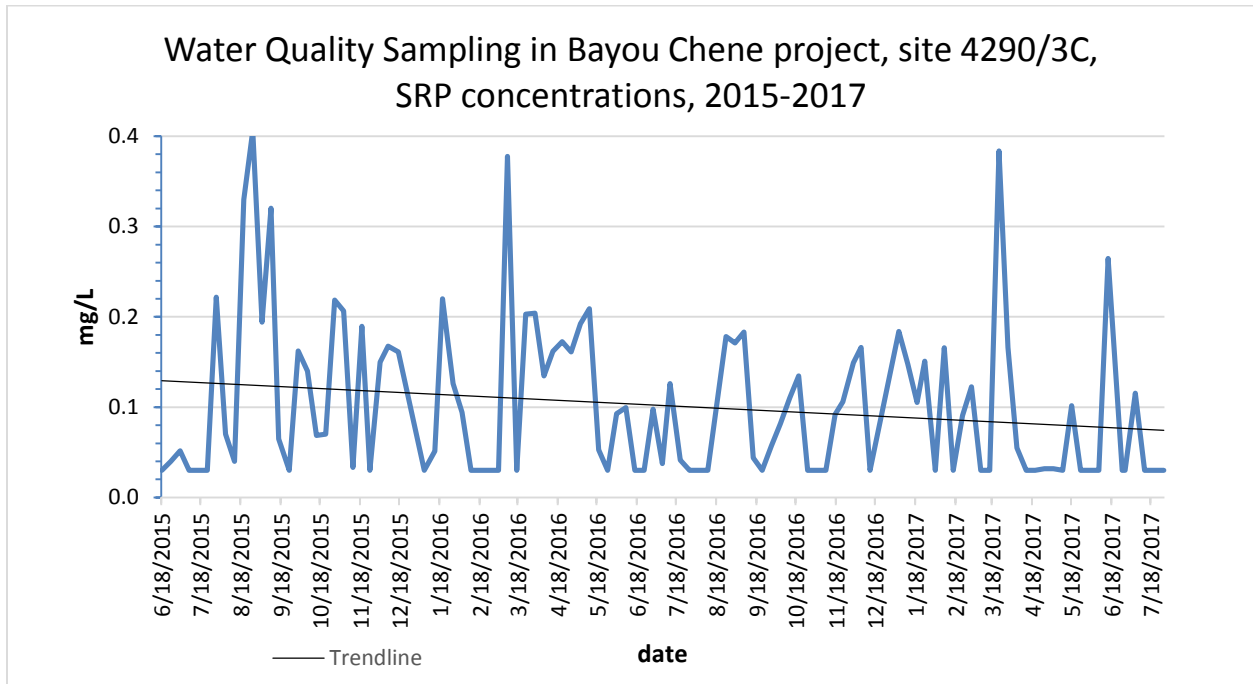


Figure 69 Water Quality Sampling in Bayou Chene project, site 4290/3C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for SRP. SRP concentrations ranged from 0.03 mg/L (value found intermittently through: June-July, September, November 2015; January-March, May-December 2016; February-July 2017) to 0.41 mg/L (August 2015). The trendline shows SRP concentrations are slightly decreasing.

TP

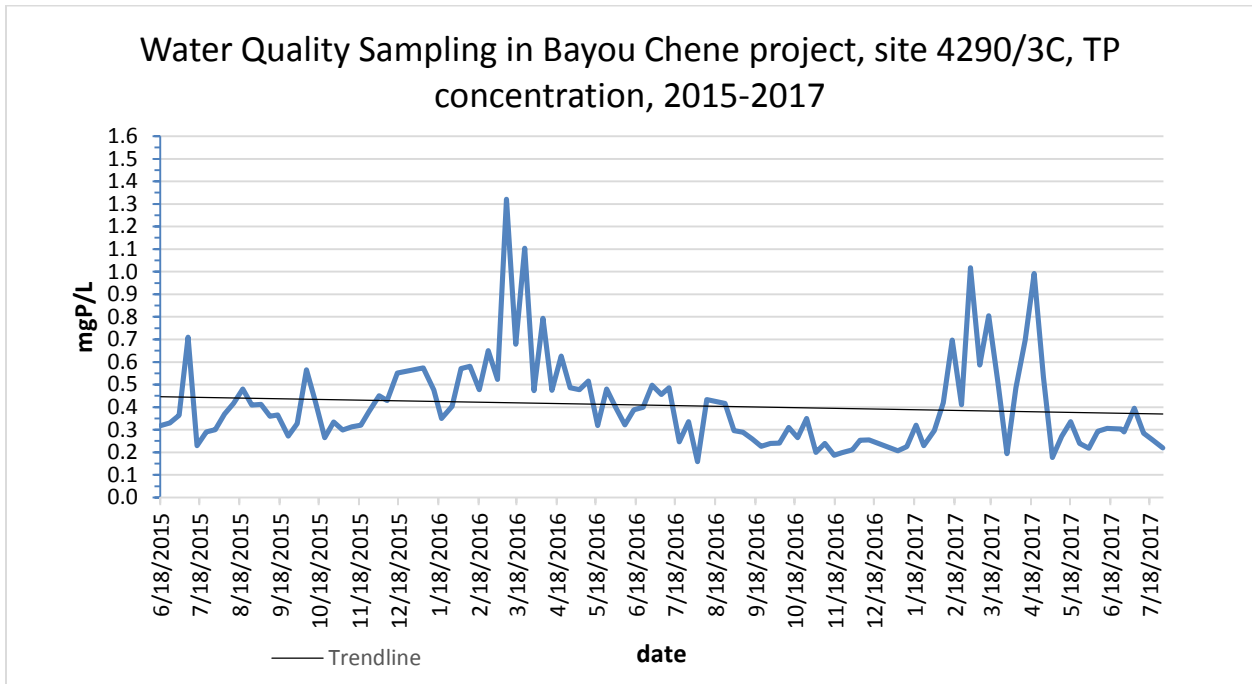


Figure 70 Water Quality Sampling in Bayou Chene project, site 4290/3C, TP concentrations, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for TP. TP concentrations ranged from 0.16 mg/L (August 2016) to 1.32 mg/L (March 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in early spring months (March through May).

TKN

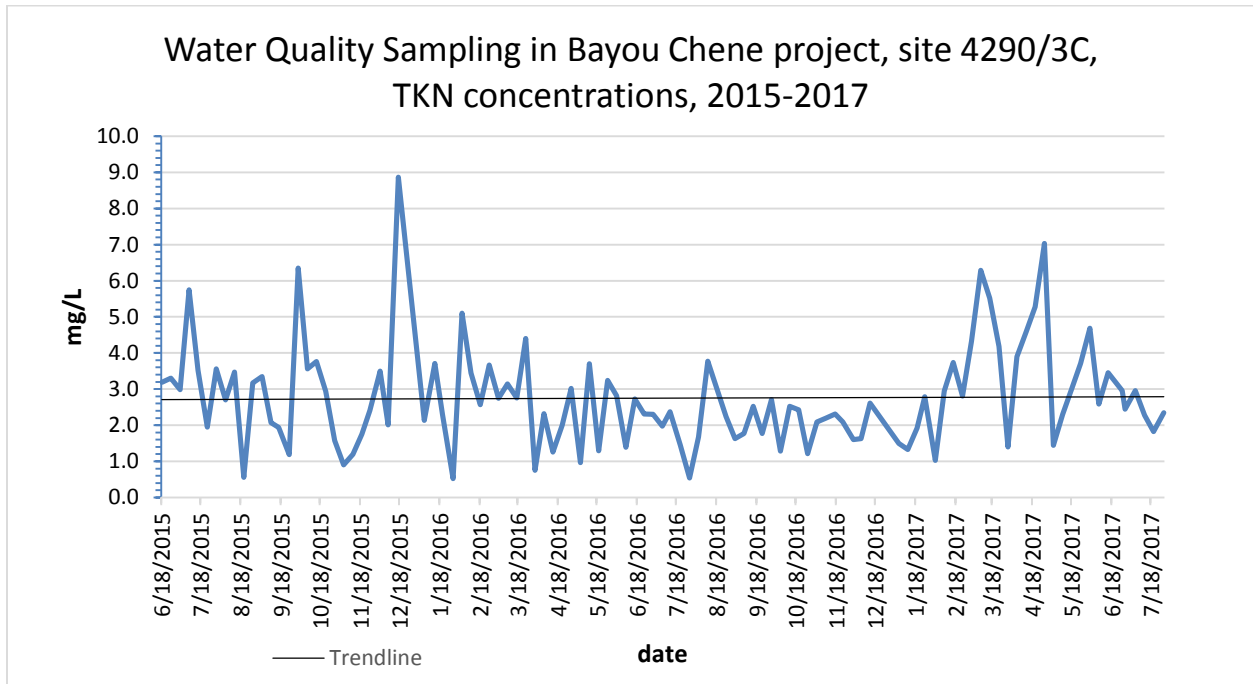


Figure 71 Water Quality Sampling in Bayou Chene project, site 4290/3C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for TKN. TKN concentrations ranged from 0.52 mg/L (January 2016) to 8.87 mg/L (December 2015). The trendline shows TKN concentrations are slightly increasing.

BOD-5

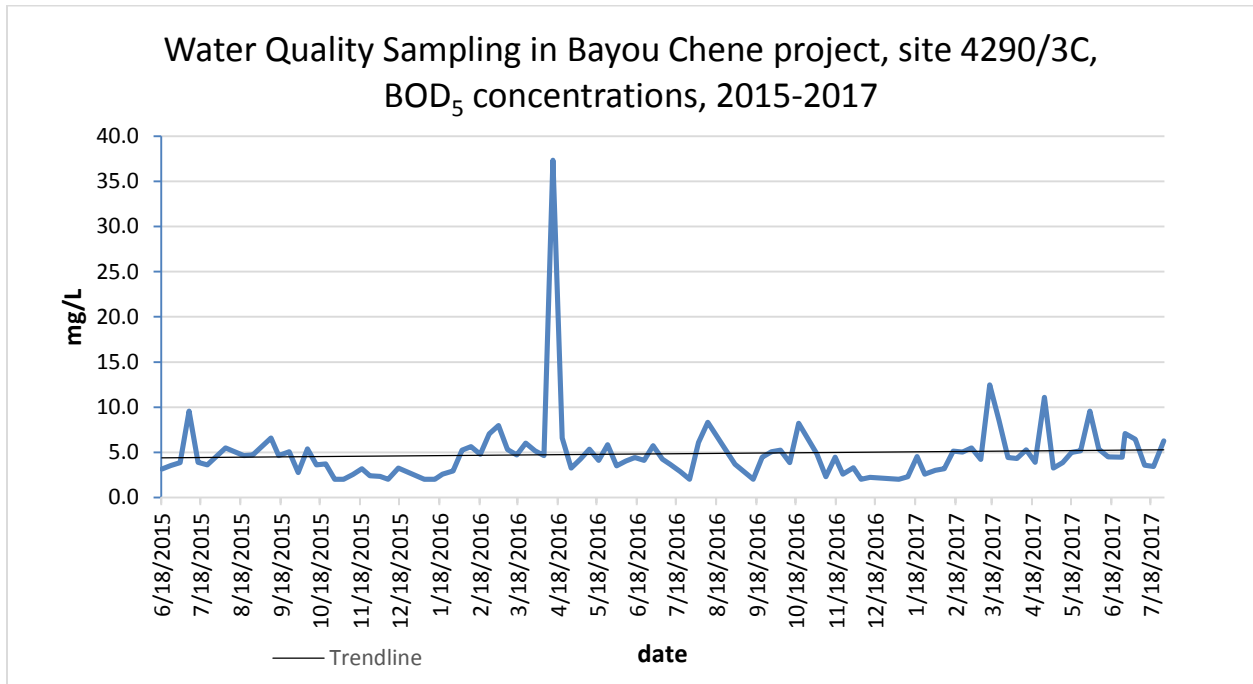


Figure 72 Water Quality Sampling in Bayou Chene project, site 4290/3C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at site 4290/3C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (October-December 2015; January, July, December 2016) to 37.36 mg/L (April 2016). The trendline shows BOD₅ concentrations are slightly increasing. Only 100 samples were collected. Some sample dates in July 2015, August 2015, September 2015, August 2016, September 2016, and October 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4288/4C

DO

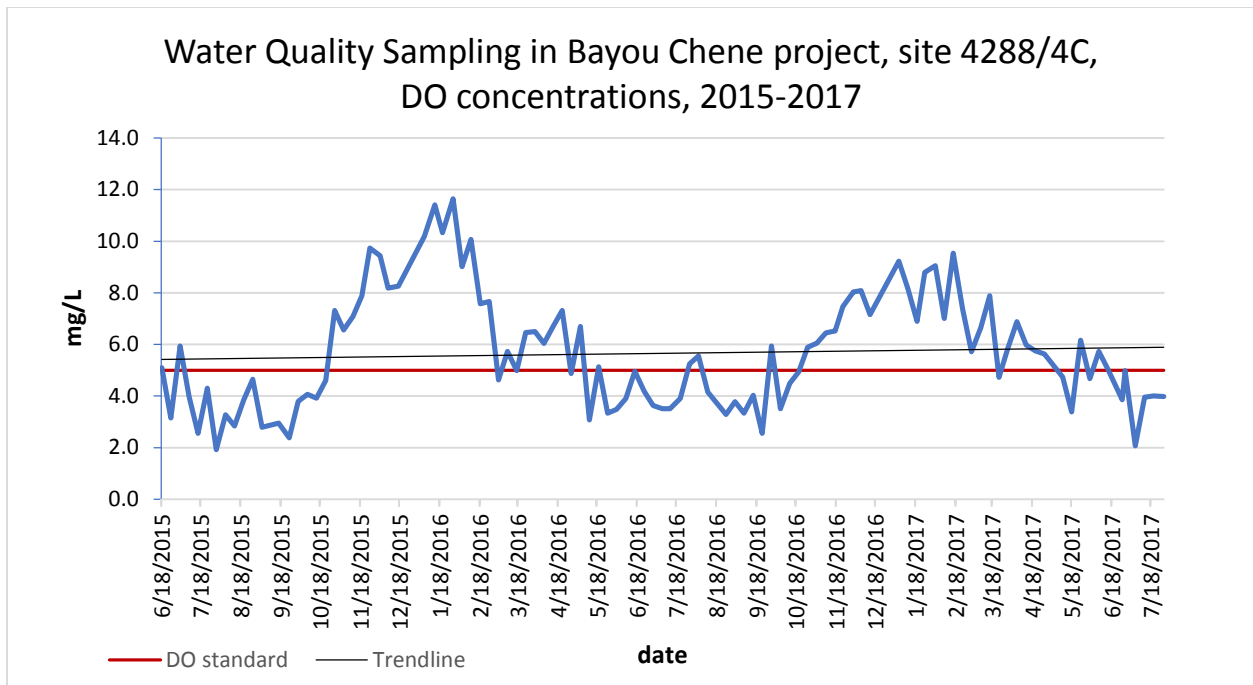


Figure 73 Water Quality Sampling in Bayou Chene project, WQN site 4288/4C, DO concentrations, 2015-2017

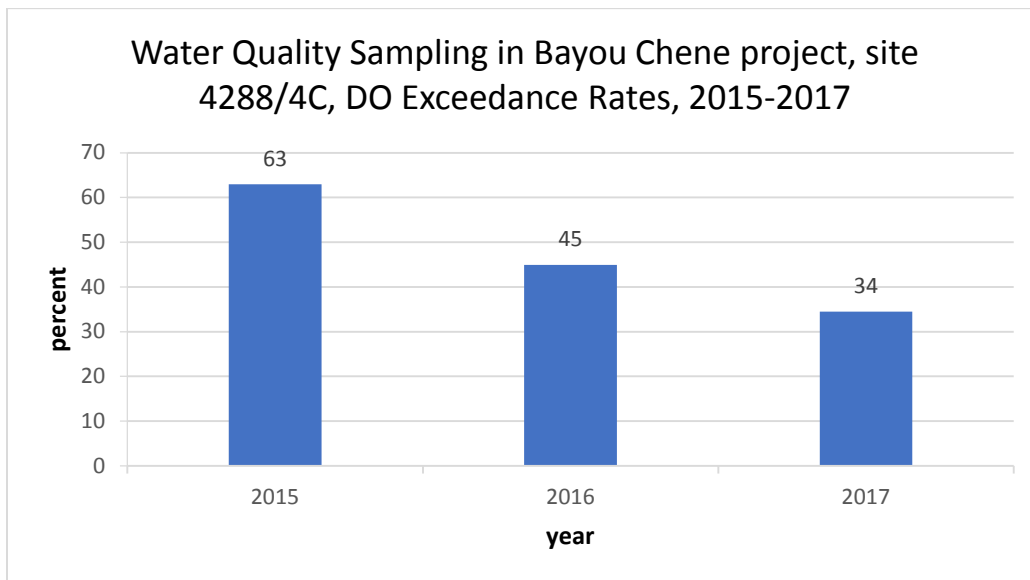


Figure 74 Water Quality Sampling in Bayou Chene project, site 4288/4C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at WQN site 4288/4C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 1.92 mg/L (July 2015) to 11.64 mg/L (January 2016). The trendline shows DO concentrations are slightly increasing. Data also shows DO levels were highest in the cooler months (October through March). The exceedance rates

were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 63 percent in 2015 and as low as 34 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 17 samples did not meet the standard. In 2016, there 49 samples taken, of which 22 did not meet the state's standard. In 2017, there were a total of 29 samples taken, of which 10 samples did not meet the standard. Only 56 of the 105 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

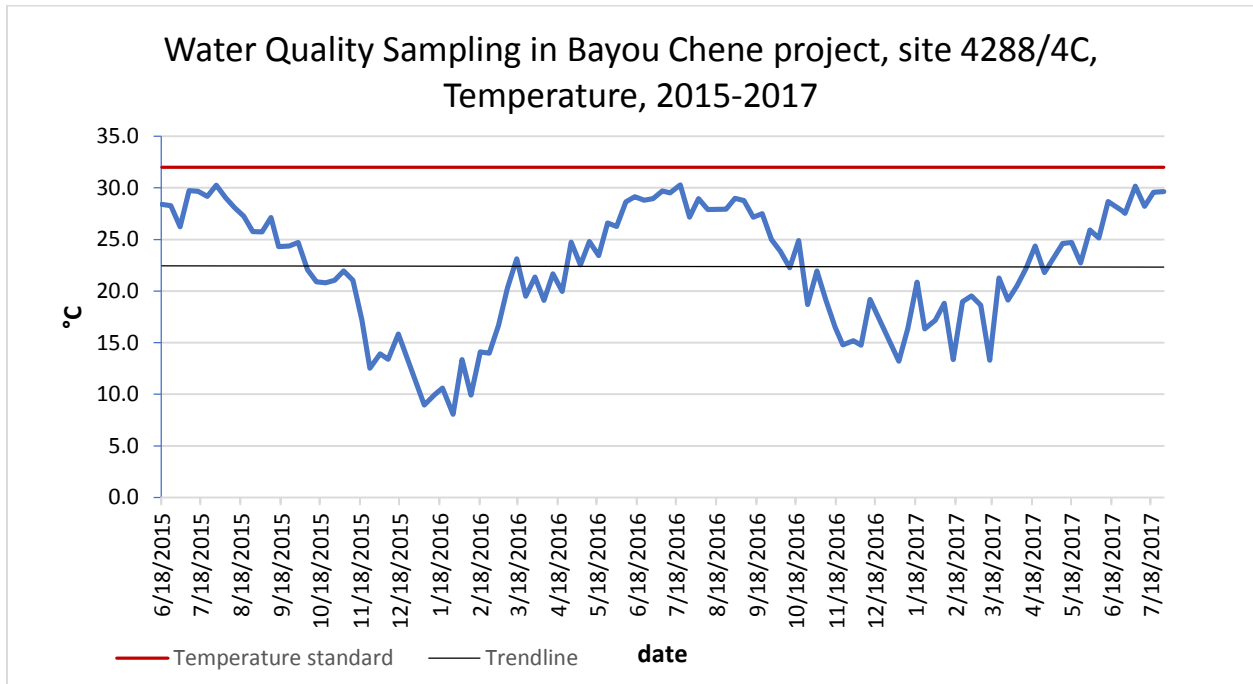


Figure 75 Water Quality Sampling in Bayou Chene project, site 4288/4C, Temperature, 2015-2017

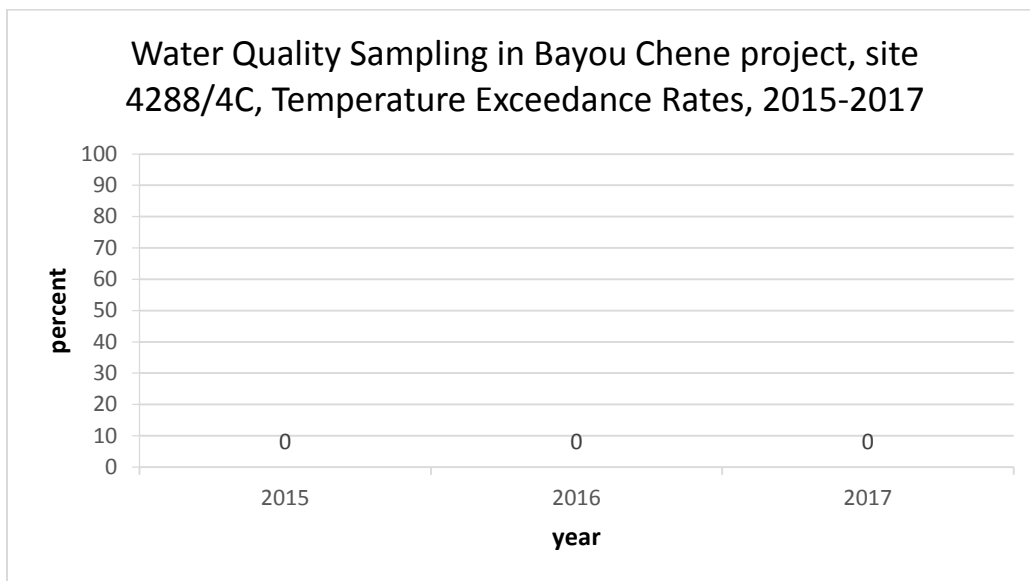


Figure 76 Water Quality Sampling in Bayou Chene project, site 4288/4C, Temperature Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 4288/4C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 8.06 °C (January 2016) to 30.30 °C (July 2016). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the winter months (December through February). The exceedance rates were calculated for temperature

from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

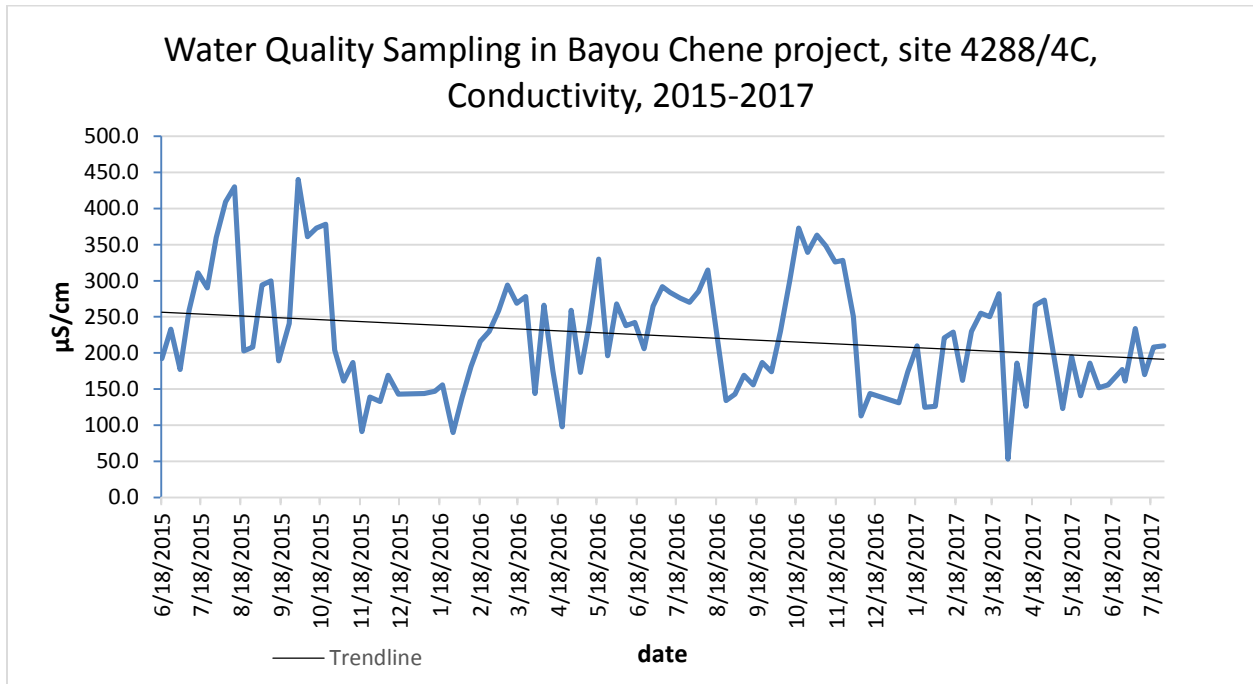


Figure 77 Water Quality Sampling in Bayou Chene project, site 4288/4C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4288/4C. There is no standard for conductivity. Conductivity values ranged from 53 $\mu\text{S}/\text{cm}$ (March 2017) to 440 $\mu\text{S}/\text{cm}$ (October 2015). The trendline shows conductivity values are slightly decreasing.

pH

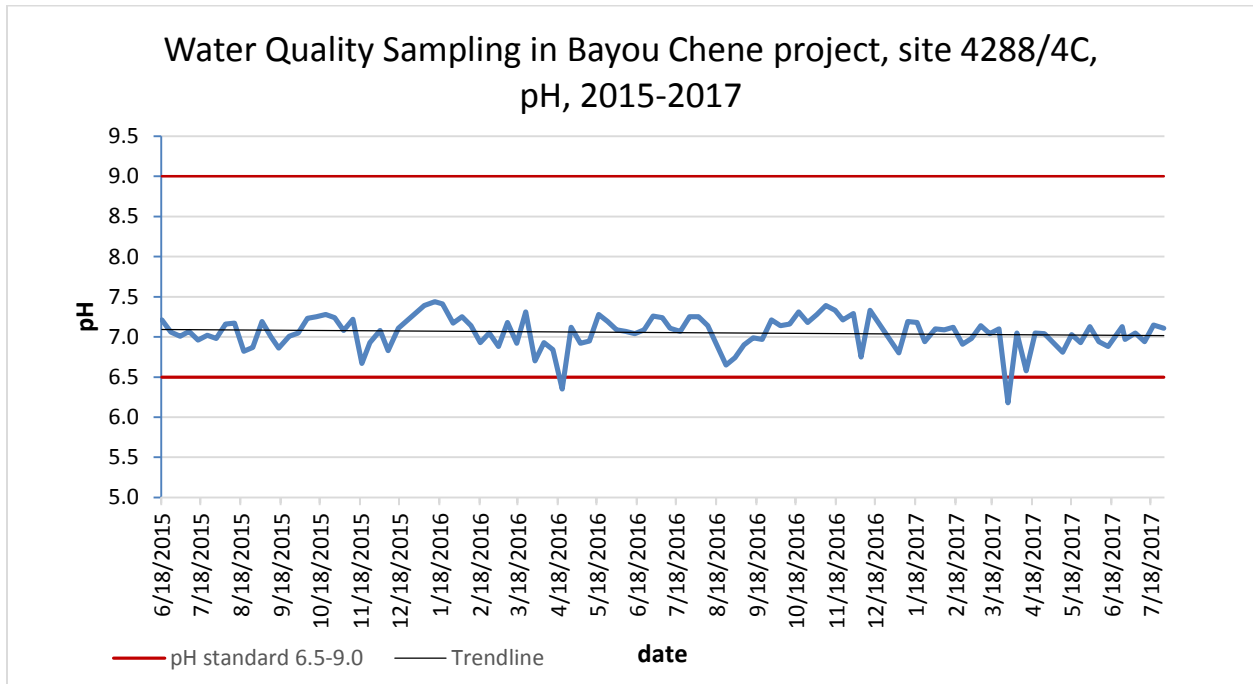


Figure 78 Water Quality Sampling in Bayou Chene project, WQN site 4288/4C, pH, 2015-2017

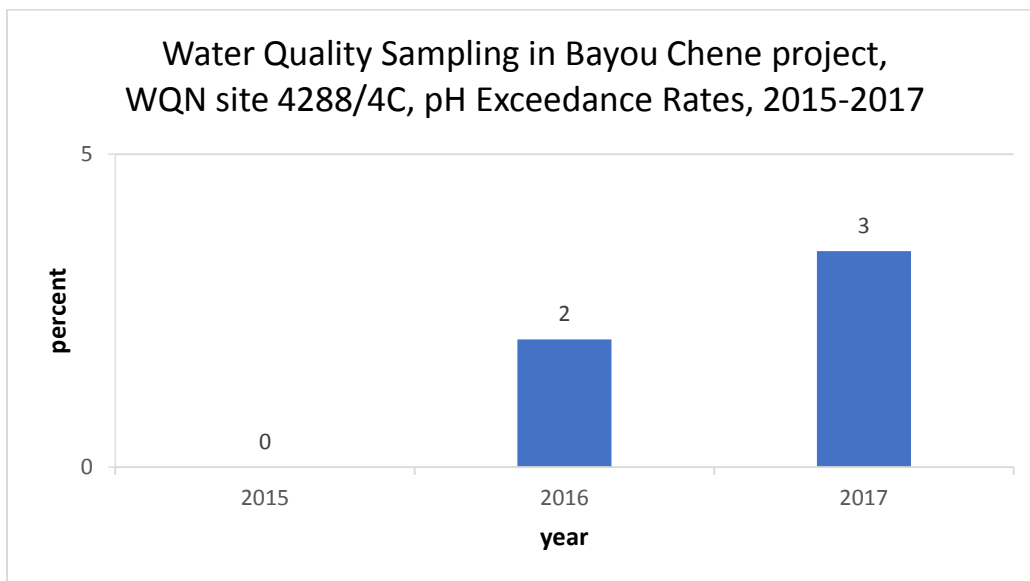


Figure 79 Water Quality Sampling in Bayou Chene project, site 4288/4C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the WQN site 4288/4C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.18 (March 2017) to 7.44 (January 2016). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 3 percent in 2017 and did not exceed in 2015; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples were below the state's

standard. In 2016, there 49 samples taken, of which 1 was below the standard. In 2017, there were a total of 29 samples taken, of which 1 sample did not meet the standard. 103 of the 105 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

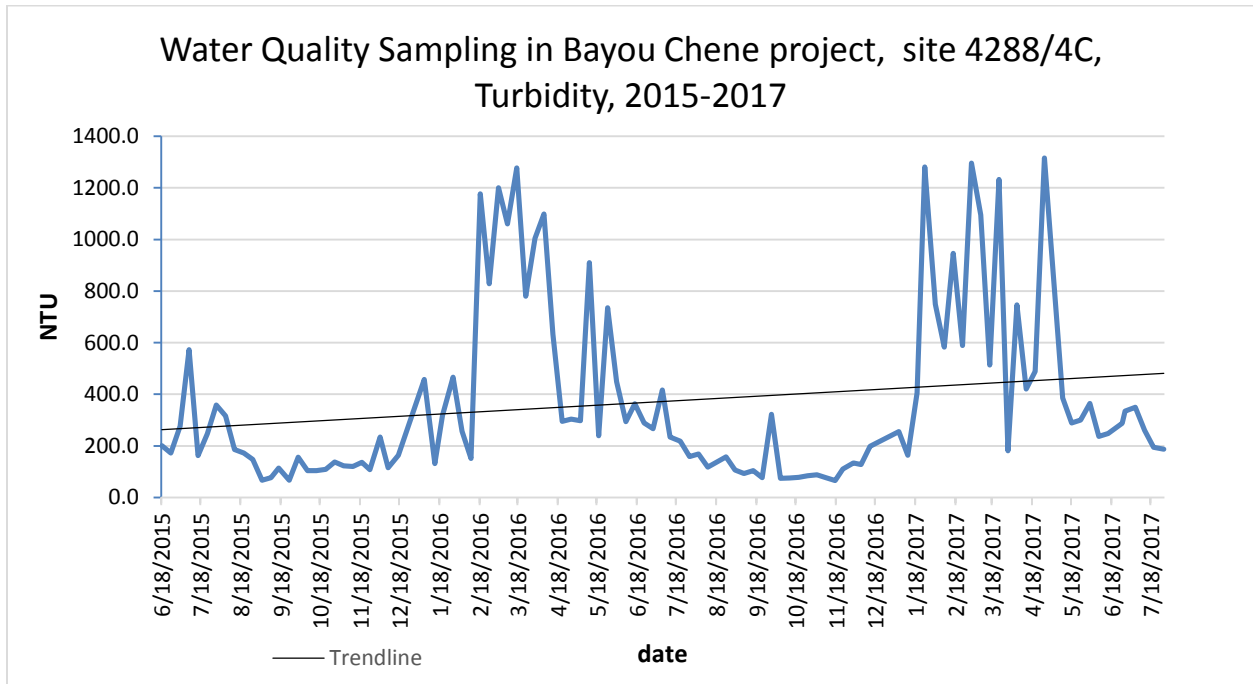


Figure 80 Water Quality Sampling in Bayou Chene project, site 4288/4C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 4288/4C. There is no standard for turbidity. Turbidity values ranged from 66.1 NTU (November 2016) to 1315.4 NTU (April 2017). The trendline shows turbidity values are increasing. Data also shows higher turbidity levels in the spring months (March through May).

TSS

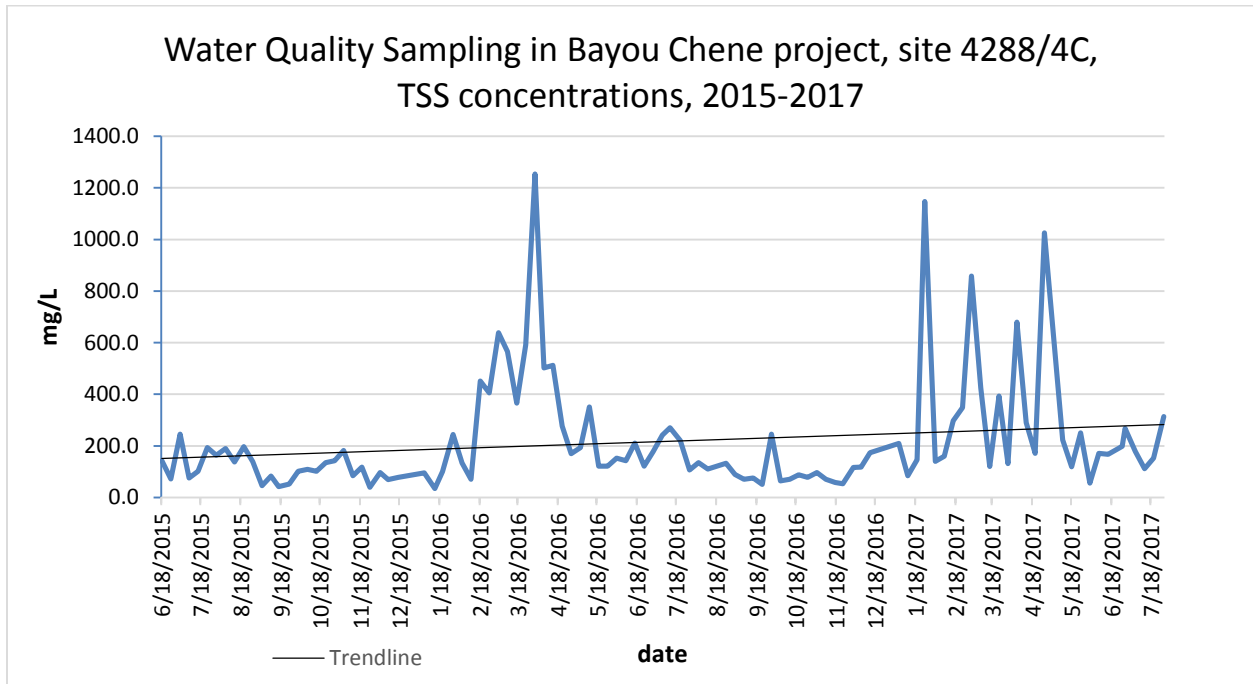


Figure 81 Water Quality Sampling in Bayou Chene project, site 4288/4C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for TSS. TSS concentrations ranged from 35.0 mg/L (January 2016) to 1253.5 mg/L (March 2016). The trendline shows TSS concentrations are increasing. Data also shows higher TSS values in the spring months (March through May).

TDS

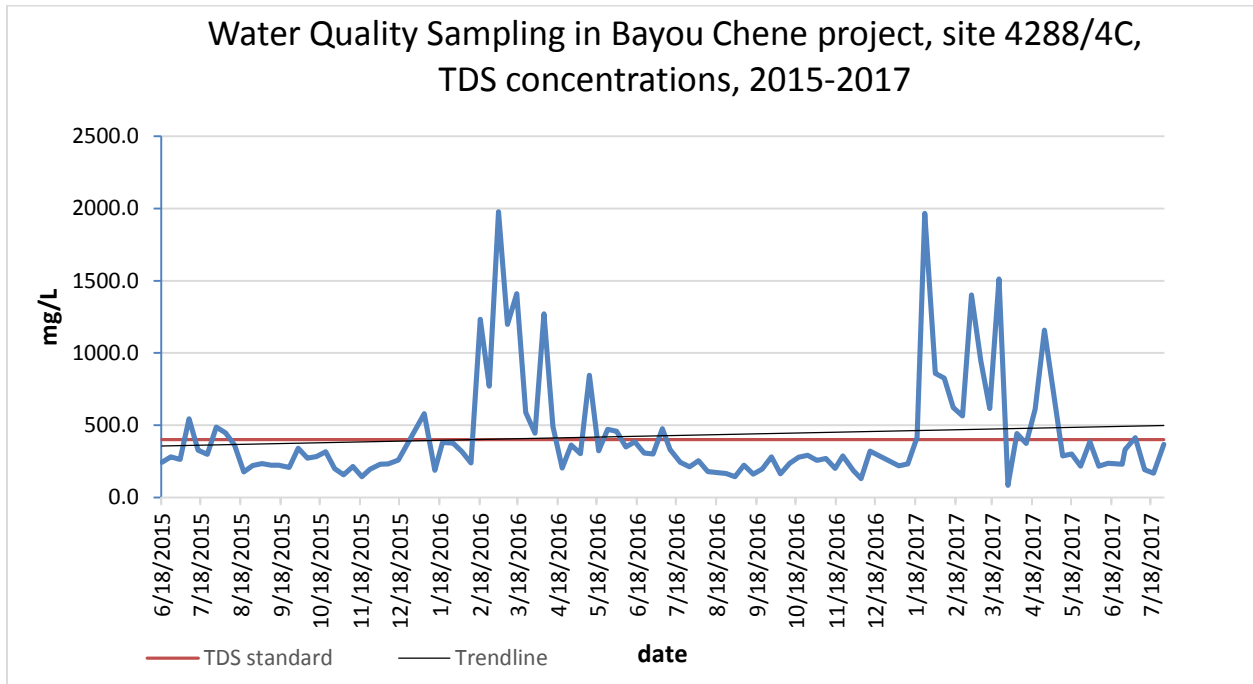


Figure 82 Water Quality Sampling in Bayou Chene project, site 4288/4C, TDS concentrations, 2015-2017

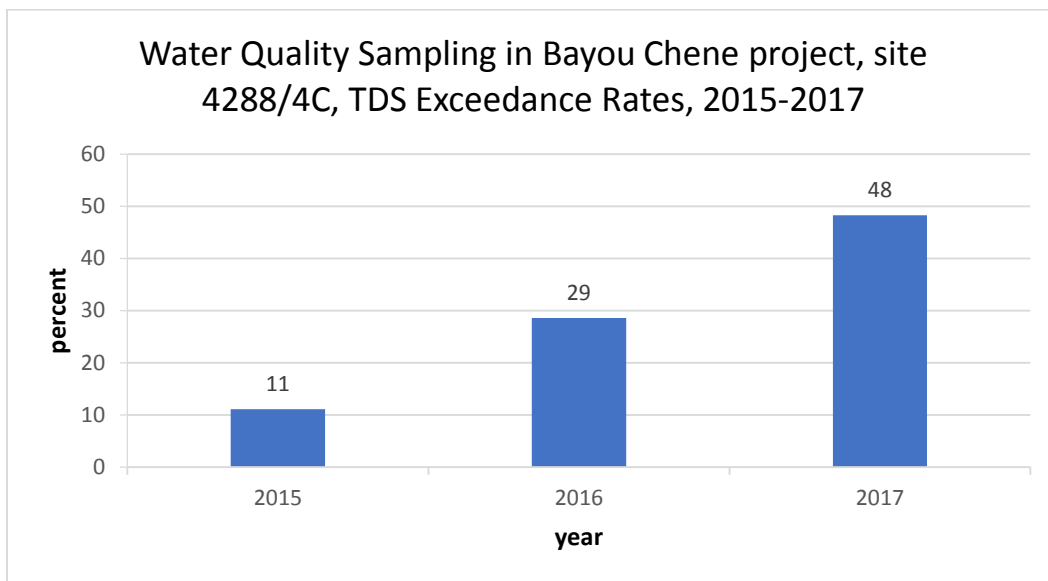


Figure 83 Water Quality Sampling in Bayou Chene project, site 4288/4C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the site 4288/4C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 85.0 mg/L (March 2017) to 1978.0 mg/L (March 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the spring months (March through May). The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 11 percent in 2015 and as high as 48 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full

year. In 2015, there were a total of 27 samples taken, of which 3 samples exceeded the state's standard. In 2016, there 49 samples taken, of which 14 did not meet the state's standard. In 2017, there were a total of 29 samples taken, of which 14 samples did not meet the standard. Only 74 of the 105 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

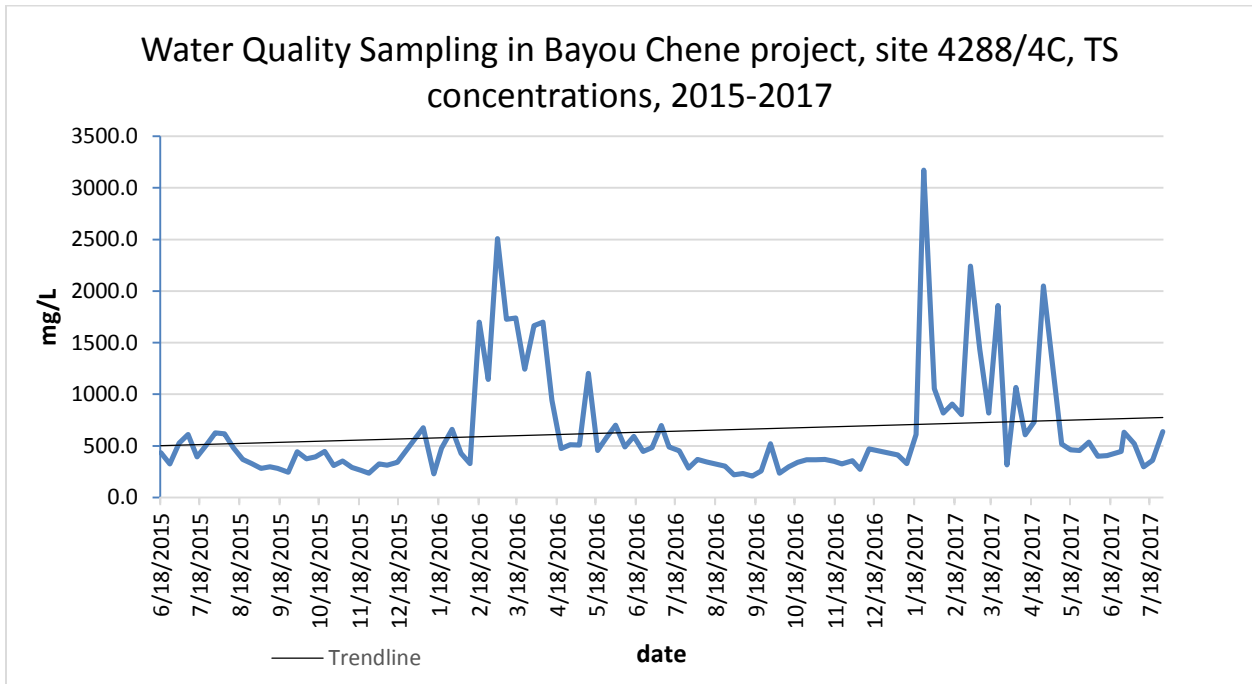


Figure 84 Water Quality Sampling in Bayou Chene project, site 4288/4C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for TS. TS concentrations ranged from 207.0 mg/L (September 2016) to 3171.0 mg/L (January 2017). The trendline shows TS concentrations are increasing. Data also shows TS levels are highest during late winter to spring months (February through May).

NO3-N

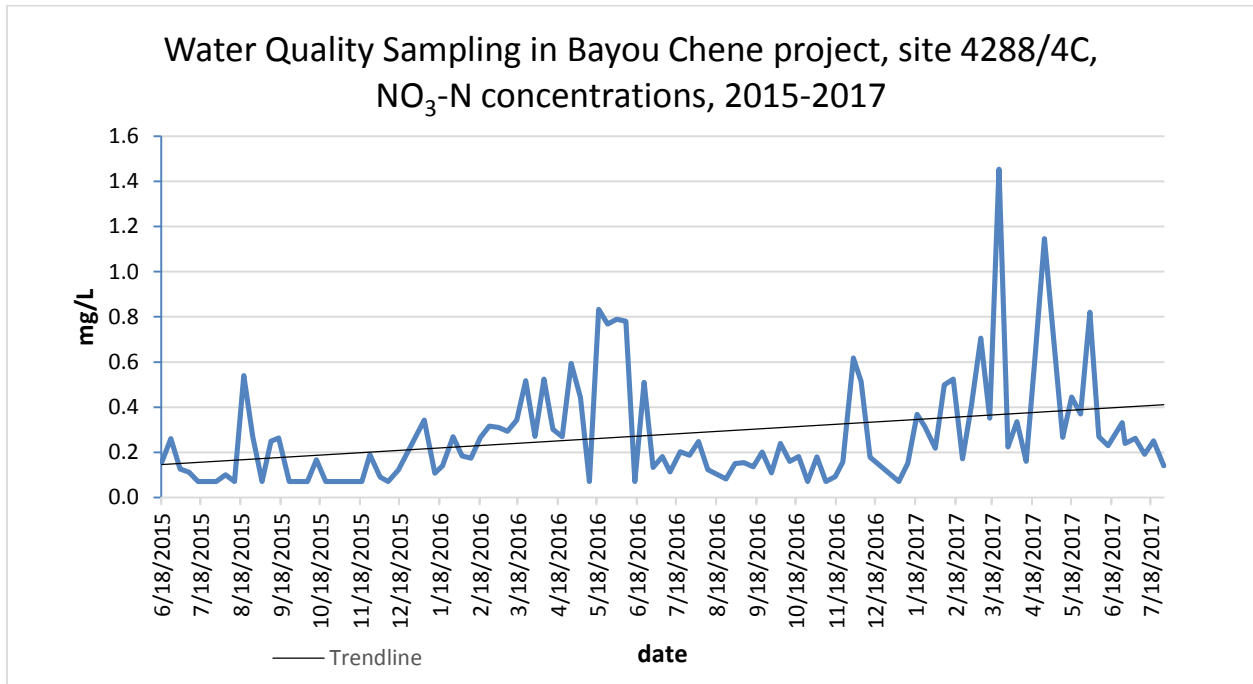


Figure 85 Water Quality Sampling in Bayou Chene project, site 4288/4C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: July-December 2015; May-June, October-November 2016; January 2017) to 1.45 mg/L (March 2017). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

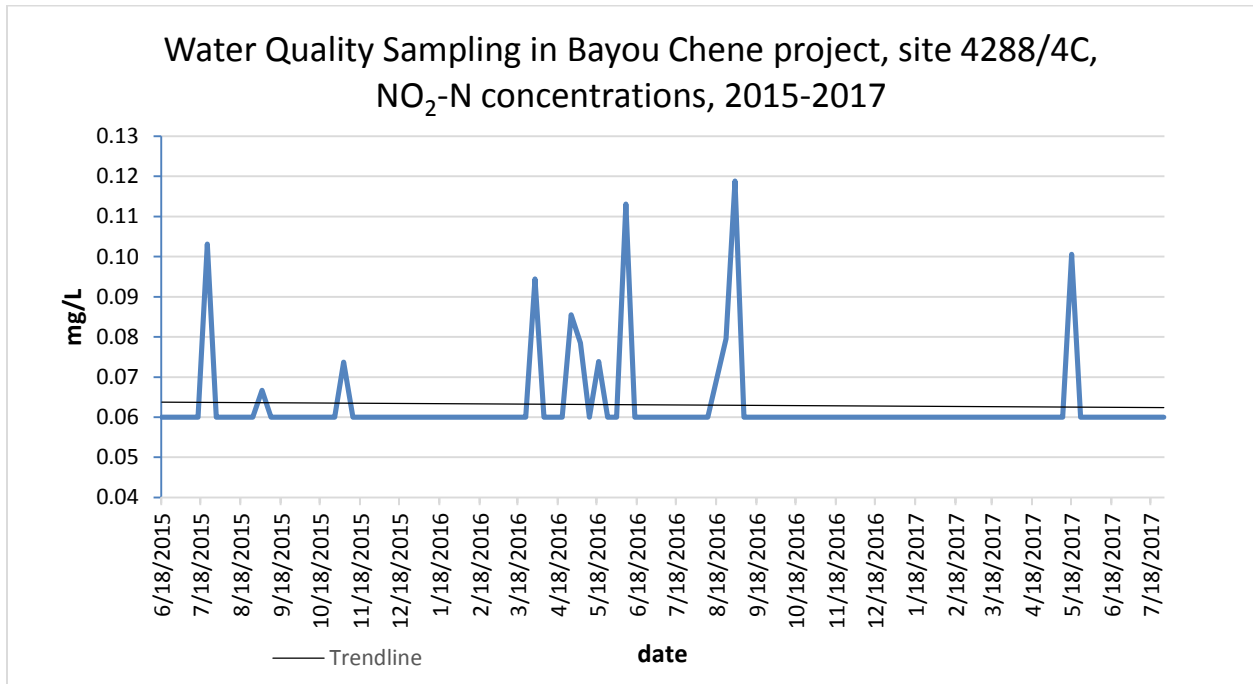


Figure 86 Water Quality Sampling in Bayou Chene project, site 4288/4C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.12 mg/L (September 2016). The trendline shows NO₂-N concentrations are slightly decreasing.

NO₃/NO₂-N

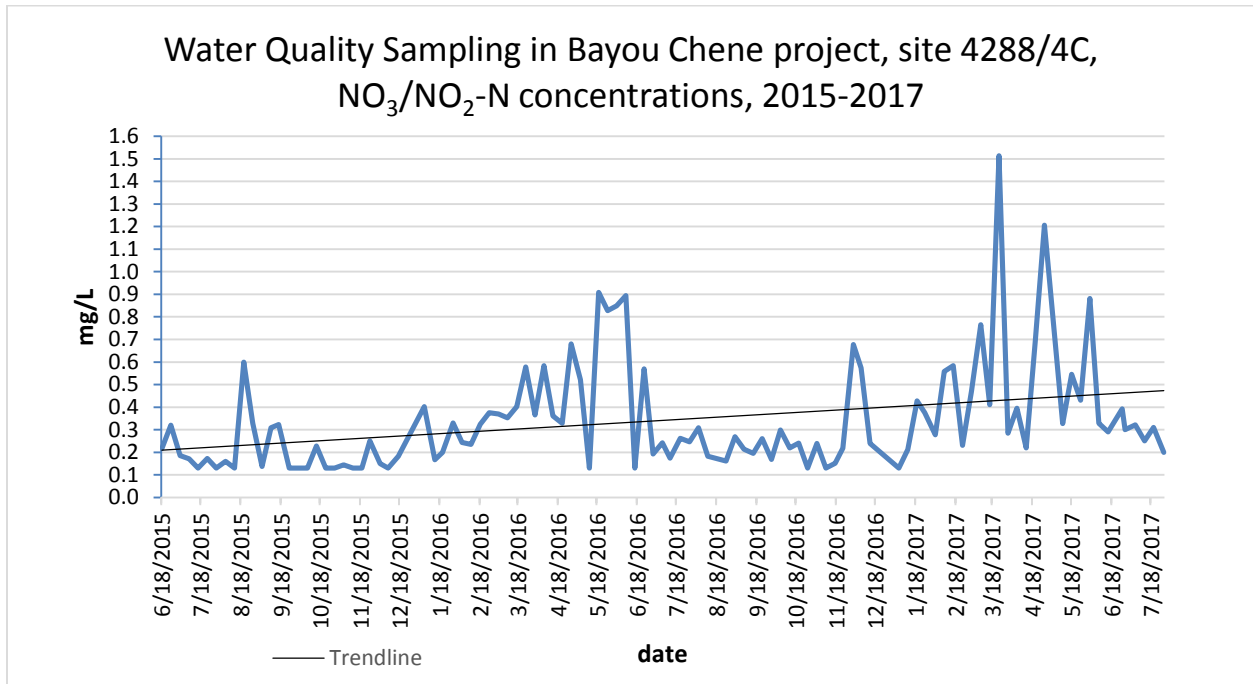


Figure 87 Water Quality Sampling in Bayou Chene project, site 4288/4C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: July-December 2015; May-June, October-November 2016; January 2017) to 1.51 mg/L (March 2017). The trendline shows that NO₃/NO₂-N concentrations are increasing.

Cl

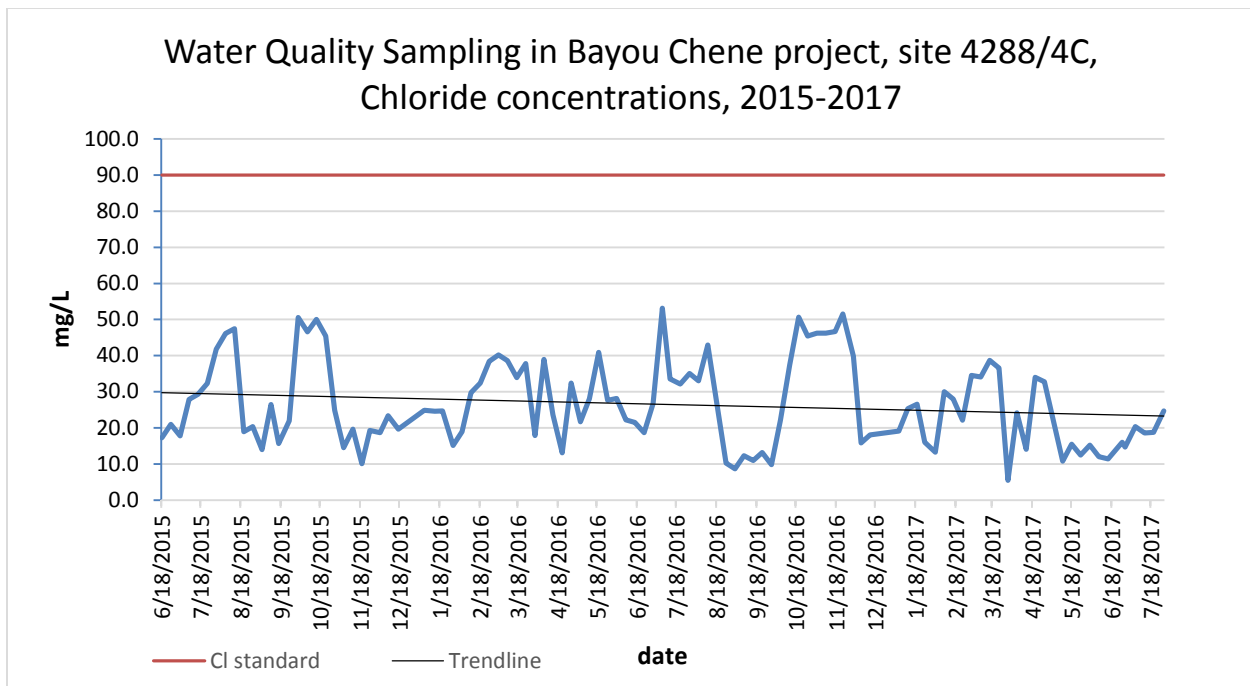


Figure 88 Water Quality Sampling in Bayou Chene project, site 4288/4C, Chloride concentrations, 2015-2017

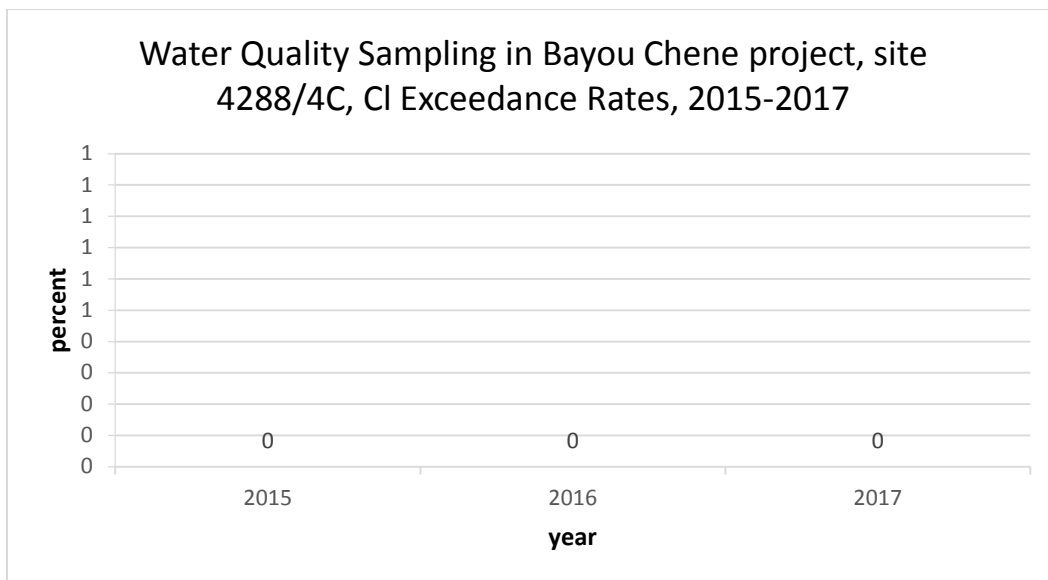


Figure 89 Water Quality Sampling in Bayou Chene project, site 4288/4C, Cl Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the site 4288/4C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 5.52 mg/L (March 2017) to 53.10 mg/L (July 2016). The trendline shows Cl concentrations are decreasing. The exceedance rates

were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from 2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

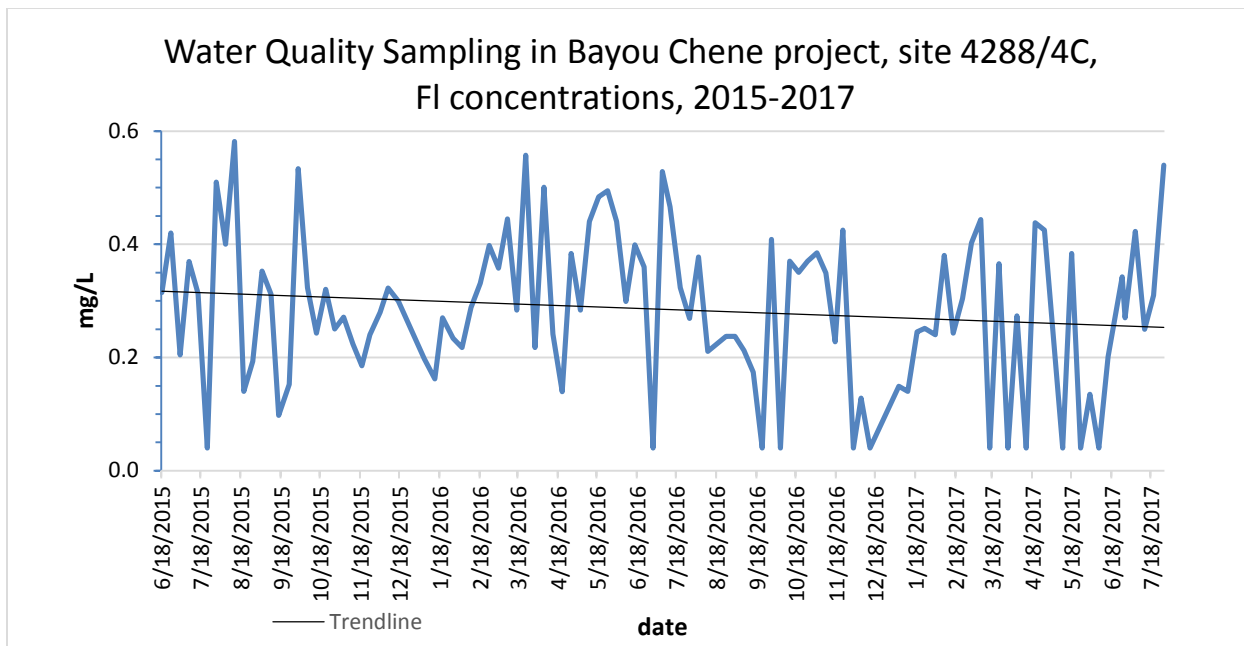


Figure 90 Water Quality Sampling in Bayou Chene project, site 4288/4C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 4288/4C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: July 2015; June, September-October, December 2016; March-June 2016) to 0.58 mg/L (August 2015). The trendline shows FI concentrations decreasing.

SO₄

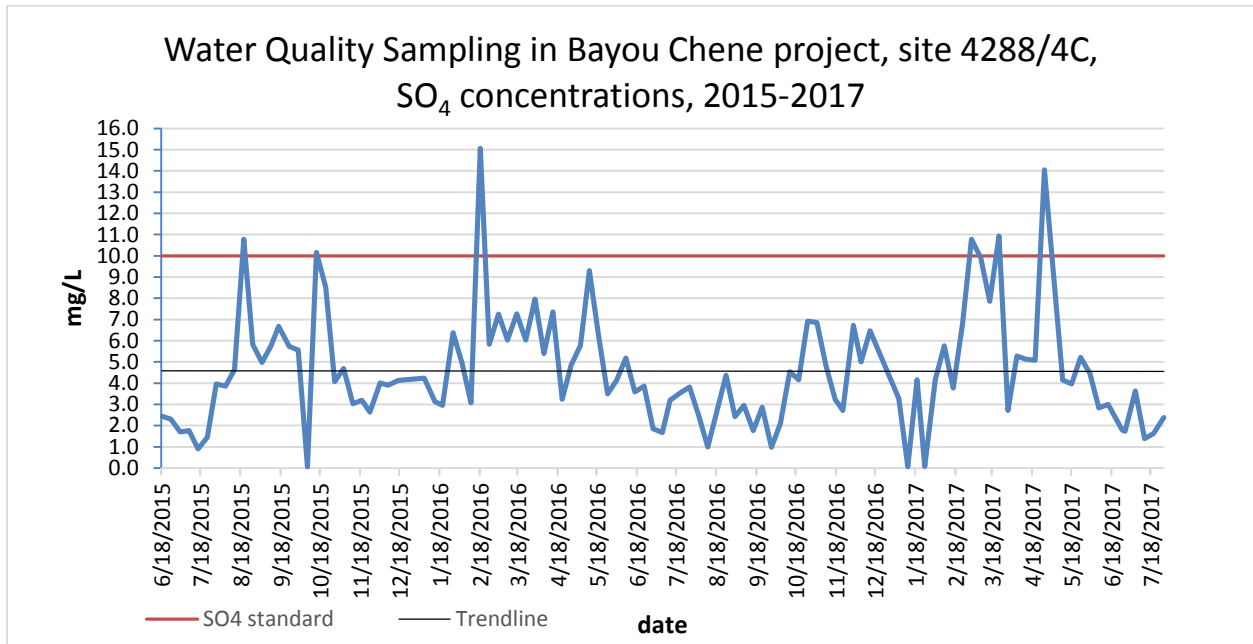


Figure 91 Water Quality Sampling in Bayou Chene project, site 4288/4C, SO₄ concentrations, 2015-2017

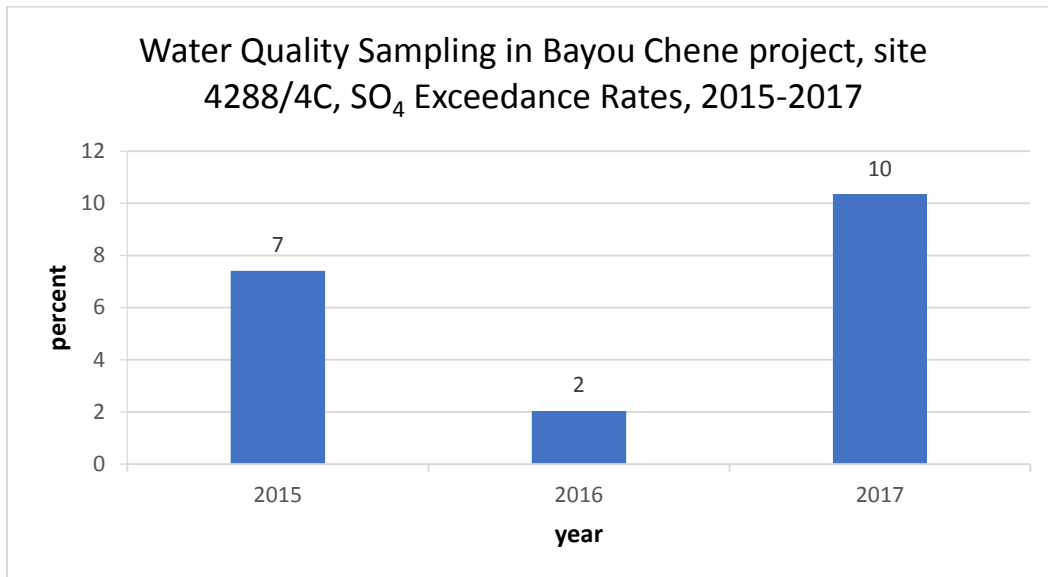


Figure 92 Water Quality Sampling in Bayou Chene project, site 4288/4C, SO₄ Exceedance Rates, 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the site 4288/4C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (October 2015 and January 2017) to 15.05 mg/L (February 2016). The trendline shows SO₄ concentrations are slightly decreasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). Rates fluctuated as high as 10 percent in 2017 and as low as 2 percent 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 2 did not meet the standard. In 2016, there were a total of 49 samples taken, of which 1 did not meet the

standard. In 2017, there were a total of 29 samples taken, of which 3 samples did not meet the standard. 99 of the 105 samples collected from 2015 through 2017 were below the 10 mg/L standard.

SRP

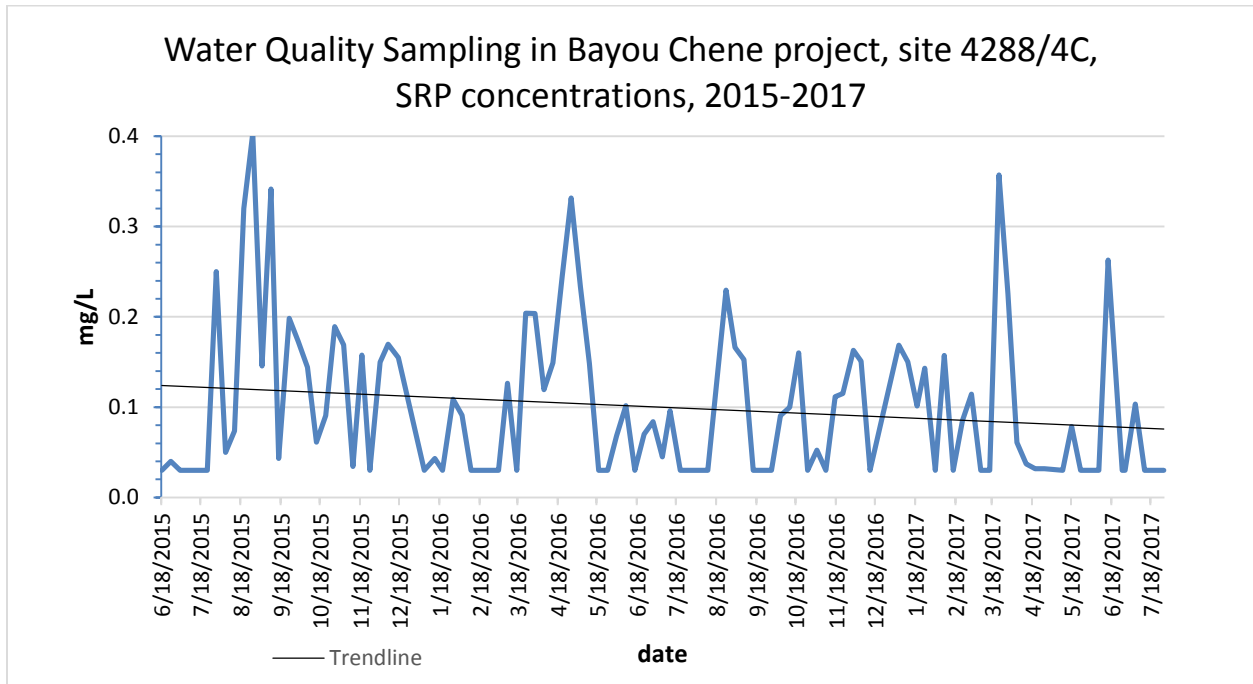


Figure 93 Water Quality Sampling in Bayou Chene project, site 4288/4C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for SRP. SRP concentrations ranged from 0.03 mg/L (value found intermittently through: June-July, November 2015; January-March, March-December 2016; February-July 2017) to 0.40 mg/L (August 2015). The trendline shows SRP concentrations are slightly decreasing.

TP

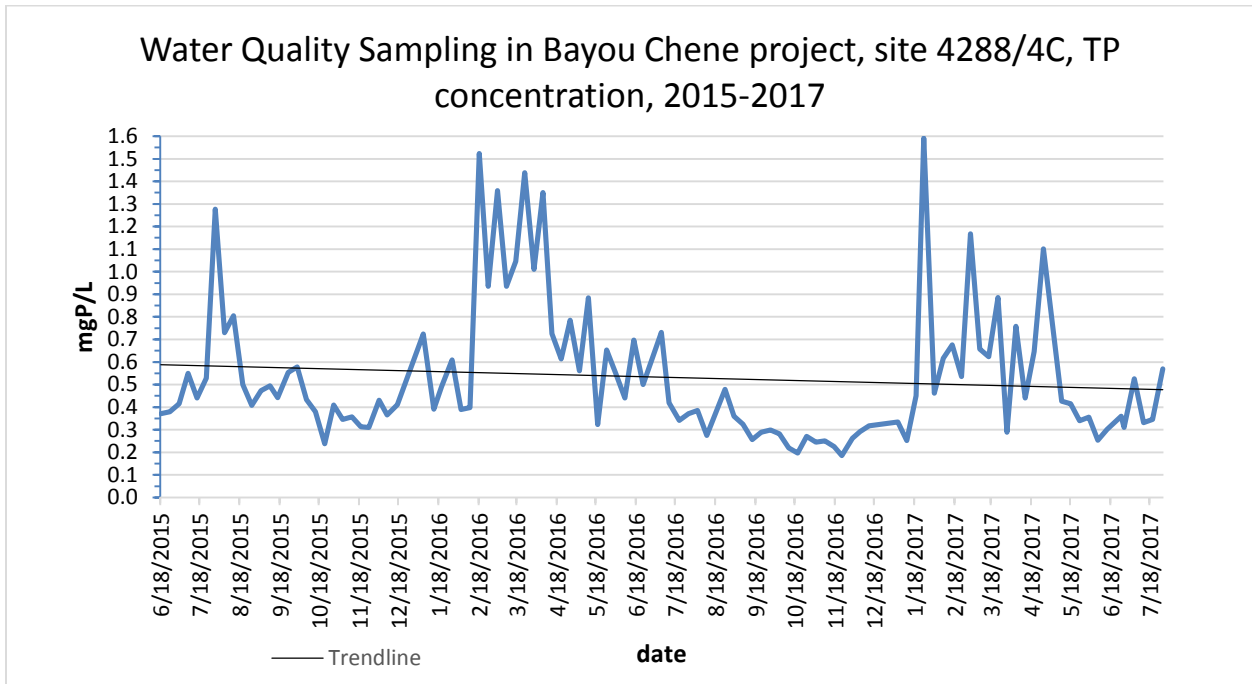


Figure 94 Water Quality Sampling in Bayou Chene project, site 4288/4C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 4288/4C. There is no standard for TP. TP concentrations ranged from 0.19 mgP/L (November 2016) to 1.59 mgP/L (January 2017). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in late winter to spring months (February through May).

TKN

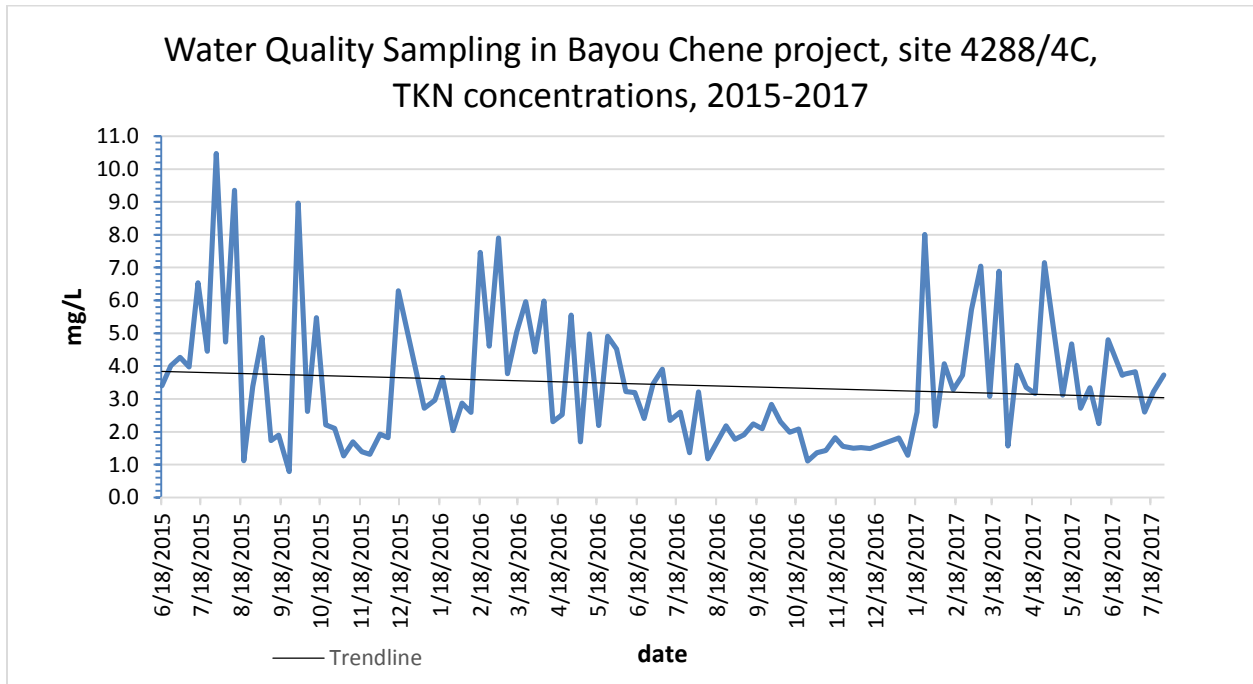


Figure 95 Water Quality Sampling in Bayou Chene project, site 4288/4C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at site 4288/4C. There is no standard for TKN. TKN concentrations ranged from 0.79 mg/L (September 2015) to 10.47 mg/L (July 2015). The trendline shows TKN concentrations are slightly decreasing.

BOD-5

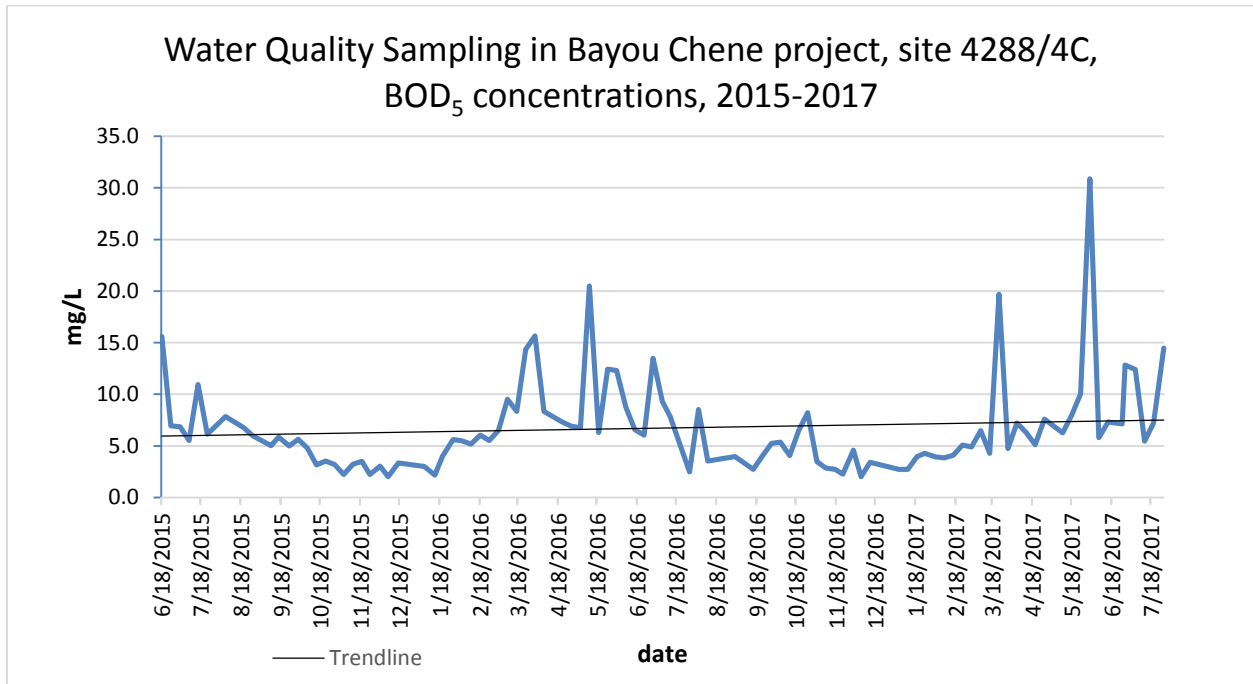


Figure 96 Water Quality Sampling in Bayou Chene project, site 4288/4C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at site 4288/4C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (December 2015 and December 2016) to 30.87 mg/L (June 2017). The trendline shows BOD₅ concentrations are slightly increasing. Only 99 samples were collected. Some sample dates in July 2015, August 2015, September 2015, April 2016, August 2016, and September 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4532/5C

DO

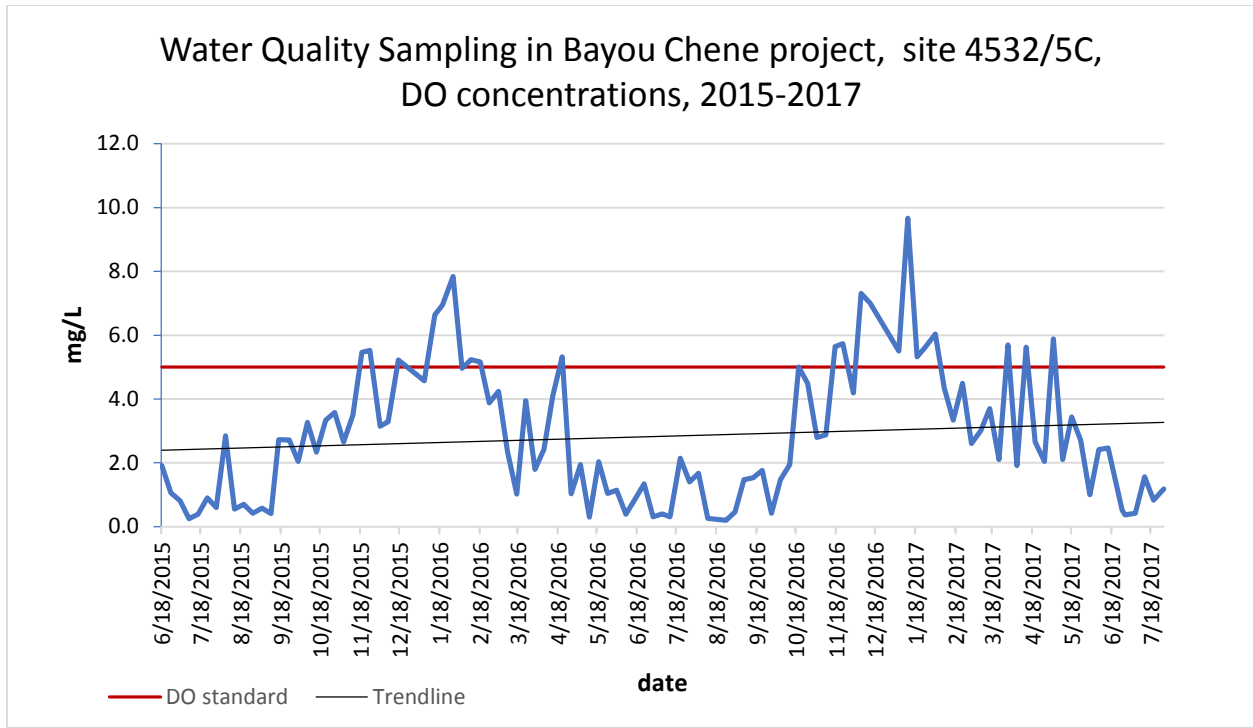


Figure 97 Water Quality Sampling in Bayou Chene project, site 4532/5C, DO concentrations, 2015-2017

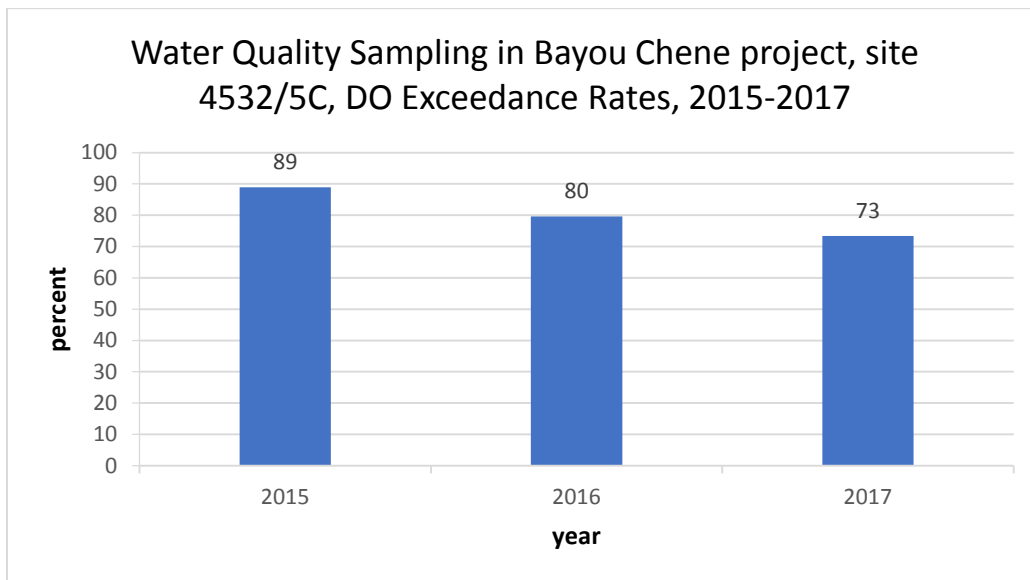


Figure 98 Water Quality Sampling in Bayou Chene project, site 4532/5C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 site 4532/5C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.20 mg/L (August 2016) to 9.67 mg/L (January 2017). The trendline shows DO concentrations are slightly increasing. Data also shows DO

levels were highest in the cooler months (October through March). The exceedance rates were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 89 percent in 2015 and as low as 73 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 24 samples did not meet the standard. In 2016, there 49 samples taken, of which 39 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 22 samples did not meet the standard. Only 21 of the 106 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

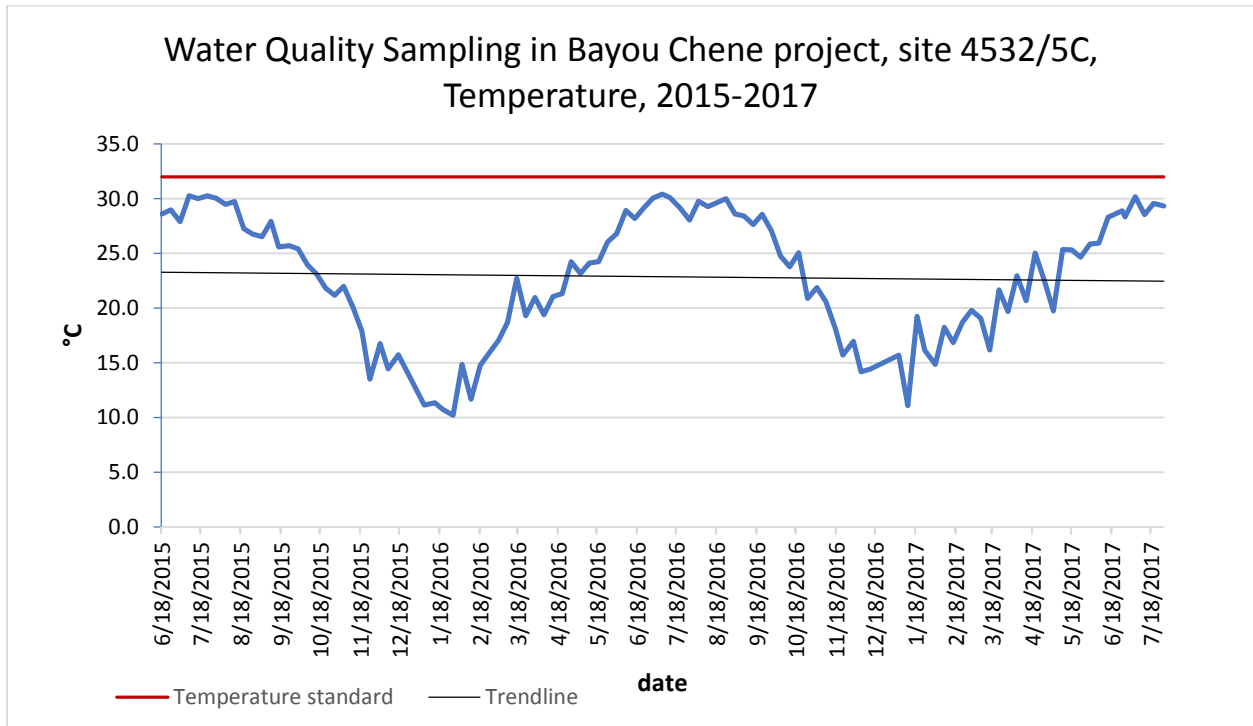


Figure 99 Water Quality Sampling in Bayou Chene project, site 4532/5C, Temperature, 2015-2017

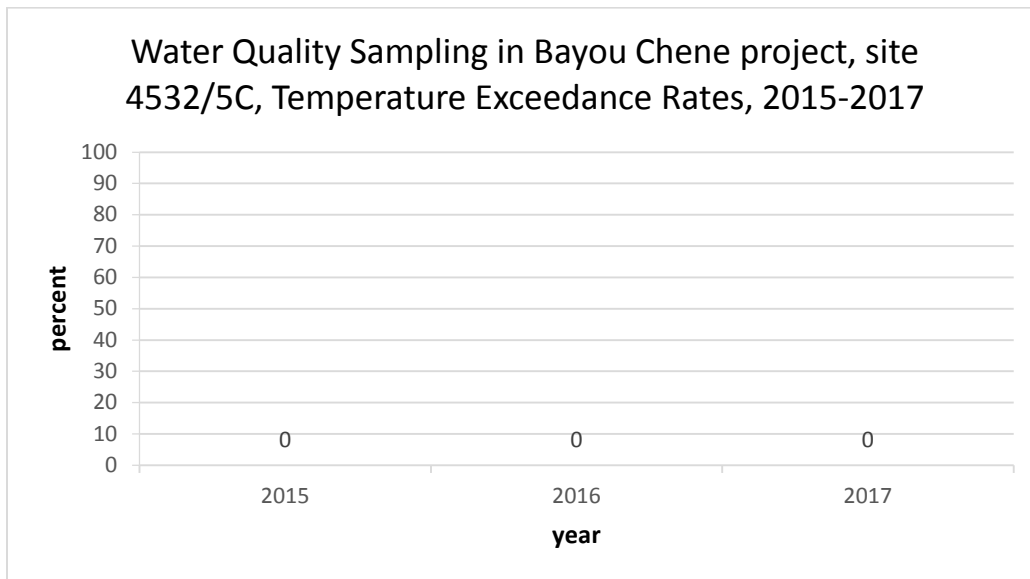


Figure 100 Water Quality Sampling in Bayou Chene project, site 4532/5C, Temperature Exceedance Rates, 2015-2017; no values exceeded standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 4532/5C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 10.21 °C (January 2016) to 30.42 °C (July 2016). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the

winter months (December through February). The exceedance rates were calculated for temperature from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

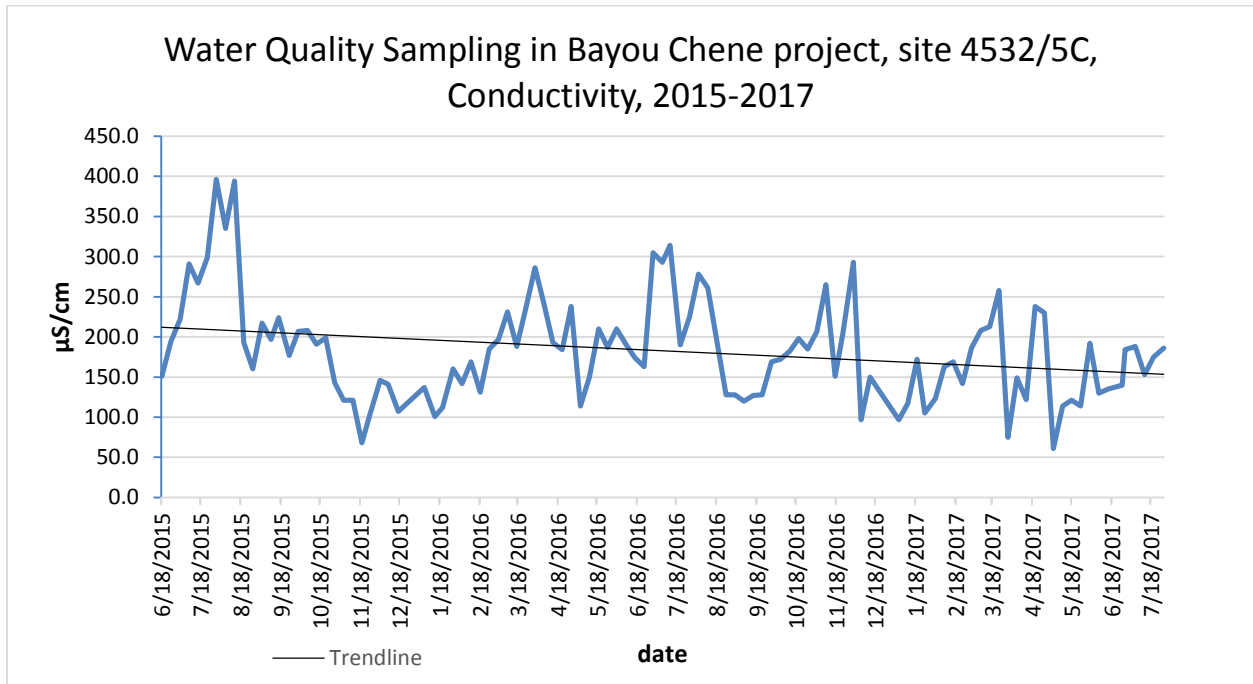


Figure 101 Water Quality Sampling in Bayou Chene project, site 4532/5C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4532/5C. There is no standard for conductivity. Conductivity values ranged from 61 $\mu\text{S}/\text{cm}$ (May 2017) to 396 $\mu\text{S}/\text{cm}$ (July 2015). The trendline shows conductivity values are slightly decreasing.

pH

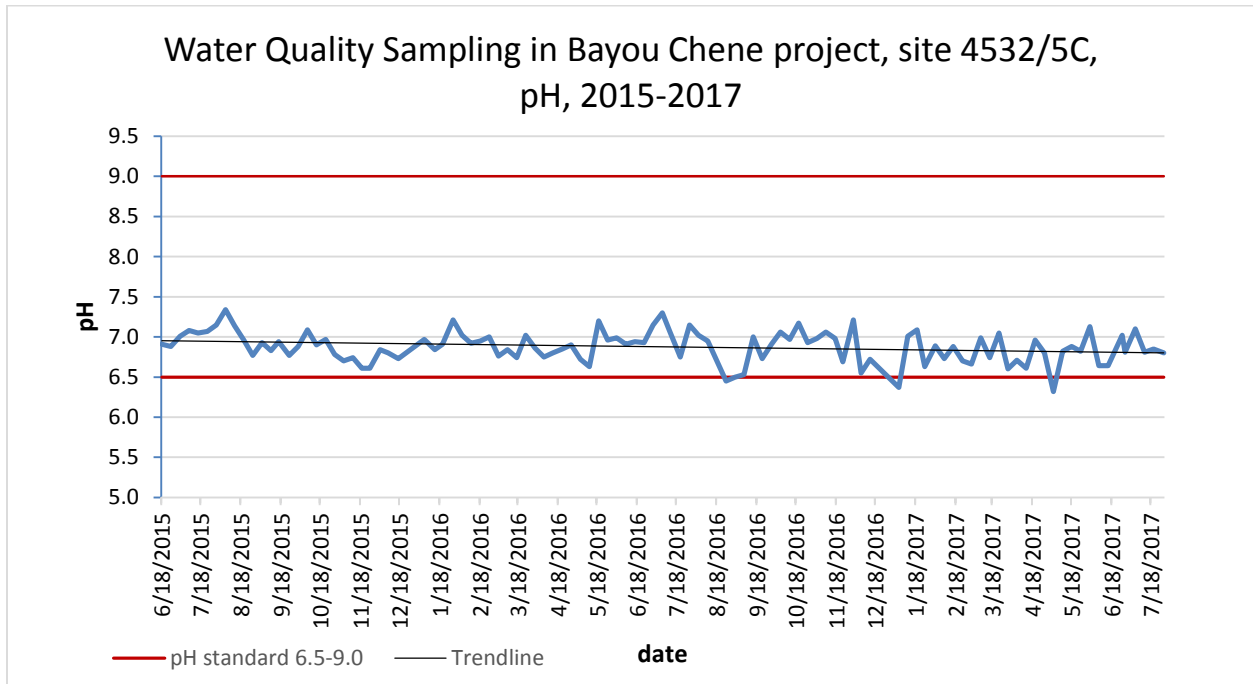


Figure 102 Water Quality Sampling in Bayou Chene project, site 4532/5C, pH, 2015-2017

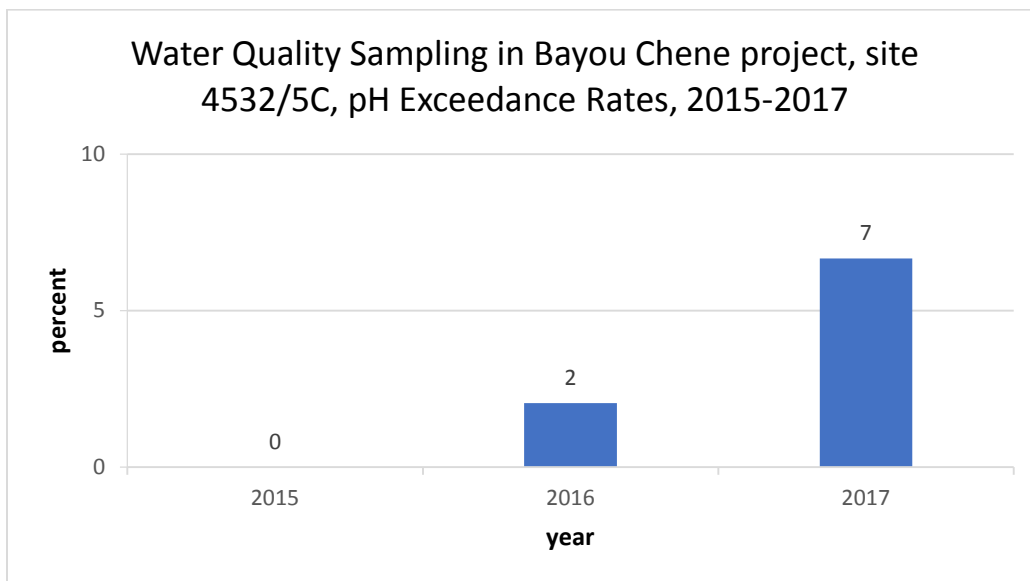


Figure 103 Water Quality Sampling in Bayou Chene project, site 4532/5C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the site 4532/5C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.32 (May 2017) to 7.34 (August 2015). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 7 percent in 2017 and did not exceed in 2015; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples were below the state's standard. In 2016, there 49

samples taken, of which 1 was below the standard. In 2017, there were a total of 30 samples taken, of which 2 samples did not meet the standard. 103 of the 106 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

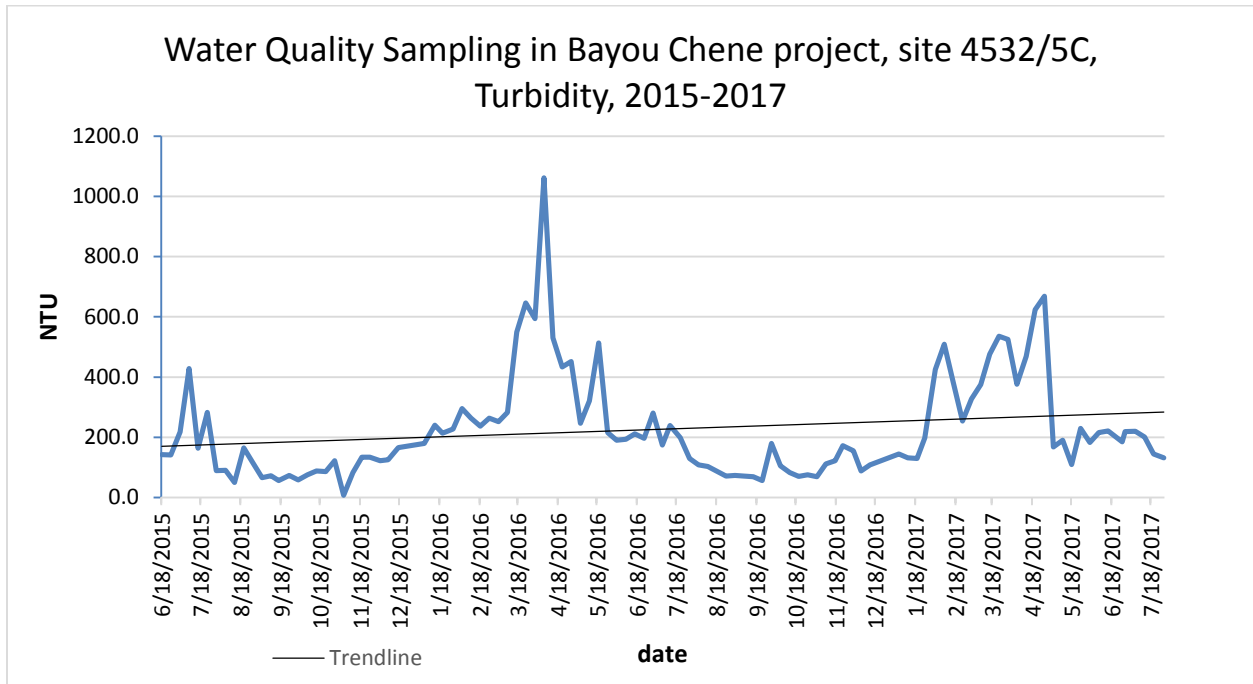


Figure 104 Water Quality Sampling in Bayou Chene project, site 4532/5C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 4532/5C. There is no standard for turbidity. Turbidity values ranged from 7.0 NTU (November 2015) to 1061.6 NTU (March 2017). The trendline shows turbidity values are slightly increasing. Data also shows higher turbidity levels in the spring months (March through May).

TSS

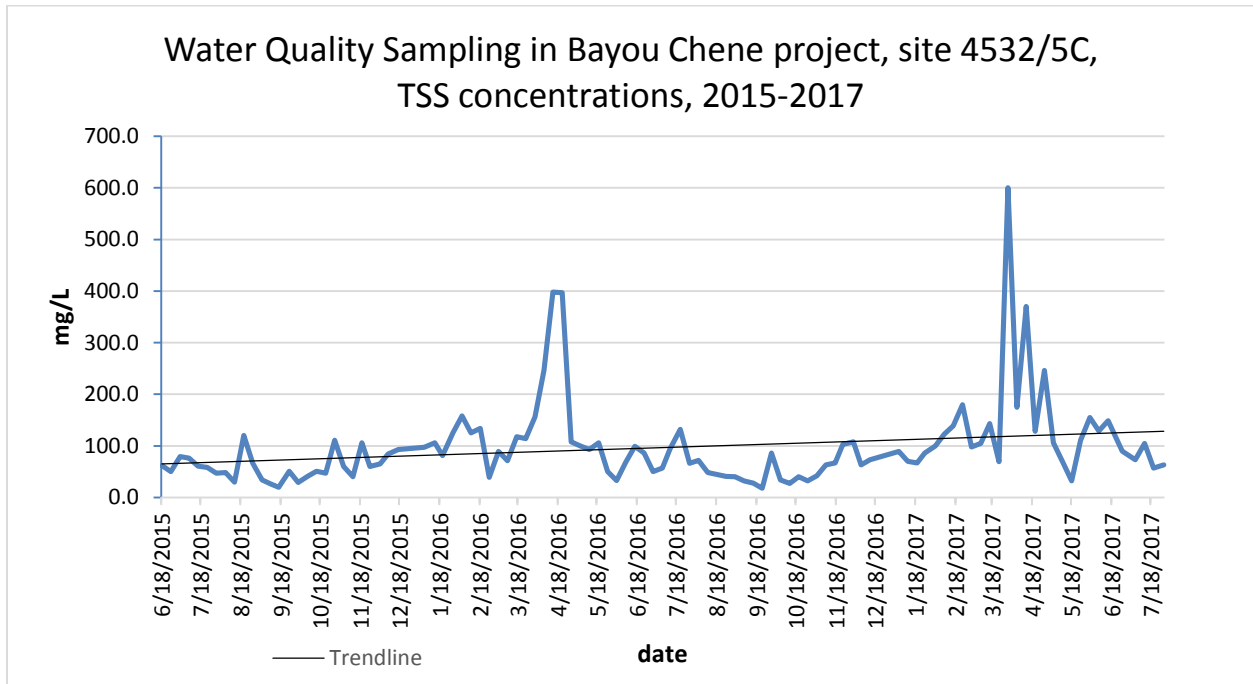


Figure 105 Water Quality Sampling in Bayou Chene project, site 4532/5C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at site 4532/5C. There is no standard for TSS. TSS concentrations ranged from 18 mg/L (September 2016) to 600 mg/L (March 2016). The trendline shows TSS concentrations are slightly increasing. Data also shows higher TSS values in the early spring months (March through April).

TDS

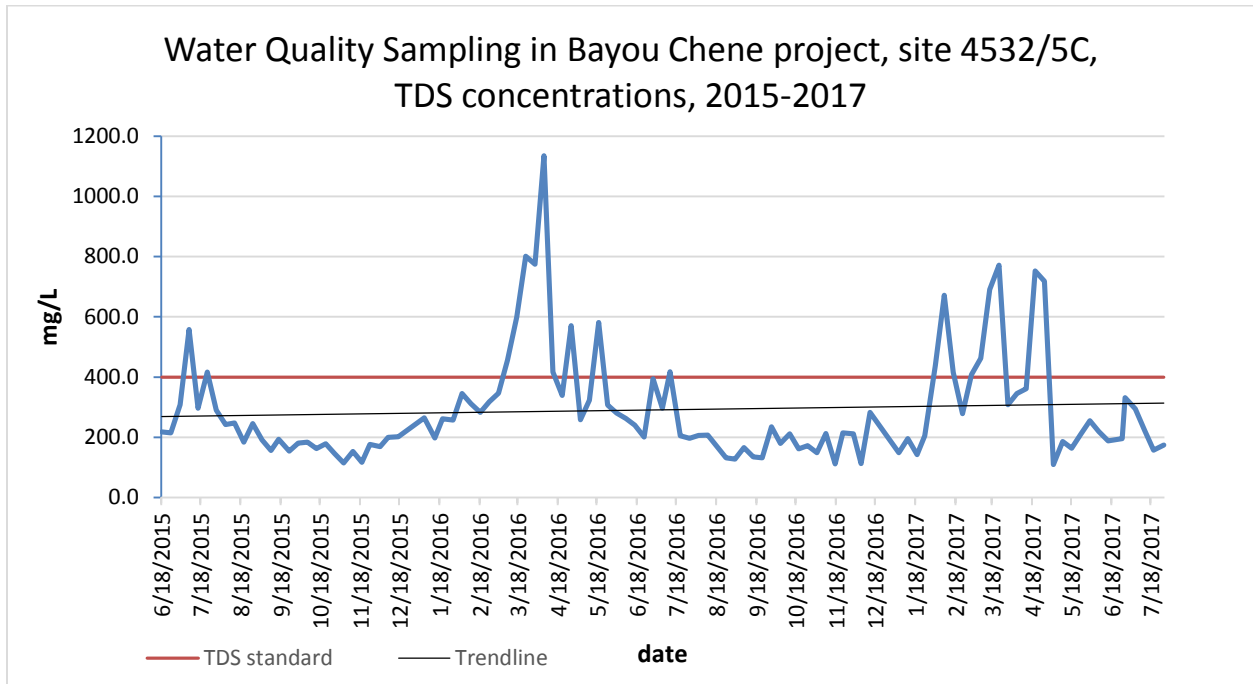


Figure 106 Water Quality Sampling in Bayou Chene project, site 4532/5C, TDS concentrations, 2015-2017

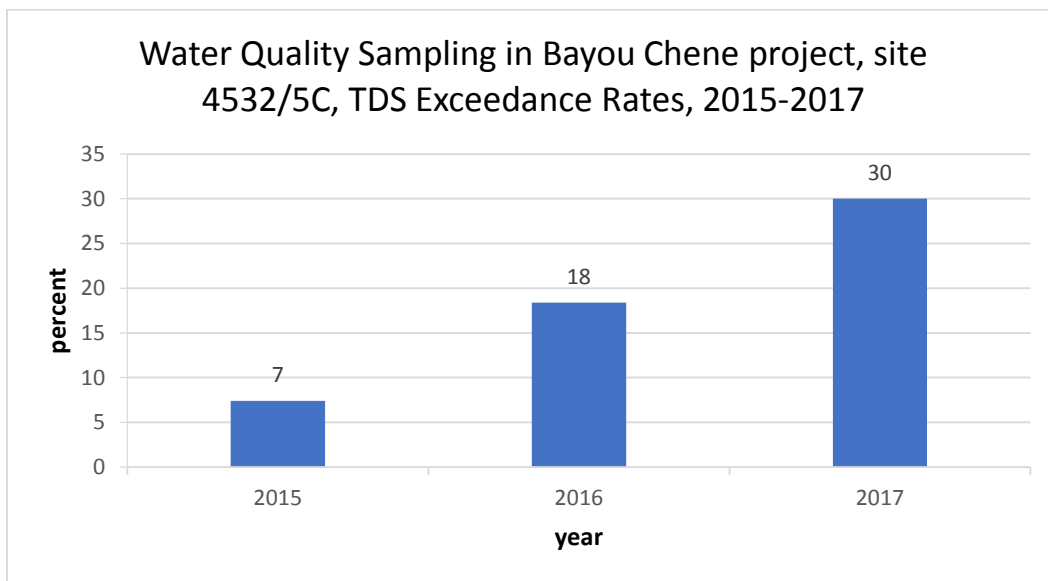


Figure 107 Water Quality Sampling in Bayou Chene project, WQN site 4532/5C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at site 4532/5C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 109.0 mg/L (May 2017) to 1135.0 mg/L (April 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the spring months (March through May). The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 7 percent in 2015 and as high as 30 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year.

In 2015, there were a total of 27 samples taken, of which 2 sample exceeded the state's standard. In 2016, there 49 samples taken, of which 9 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 9 samples did not meet the standard. Only 86 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

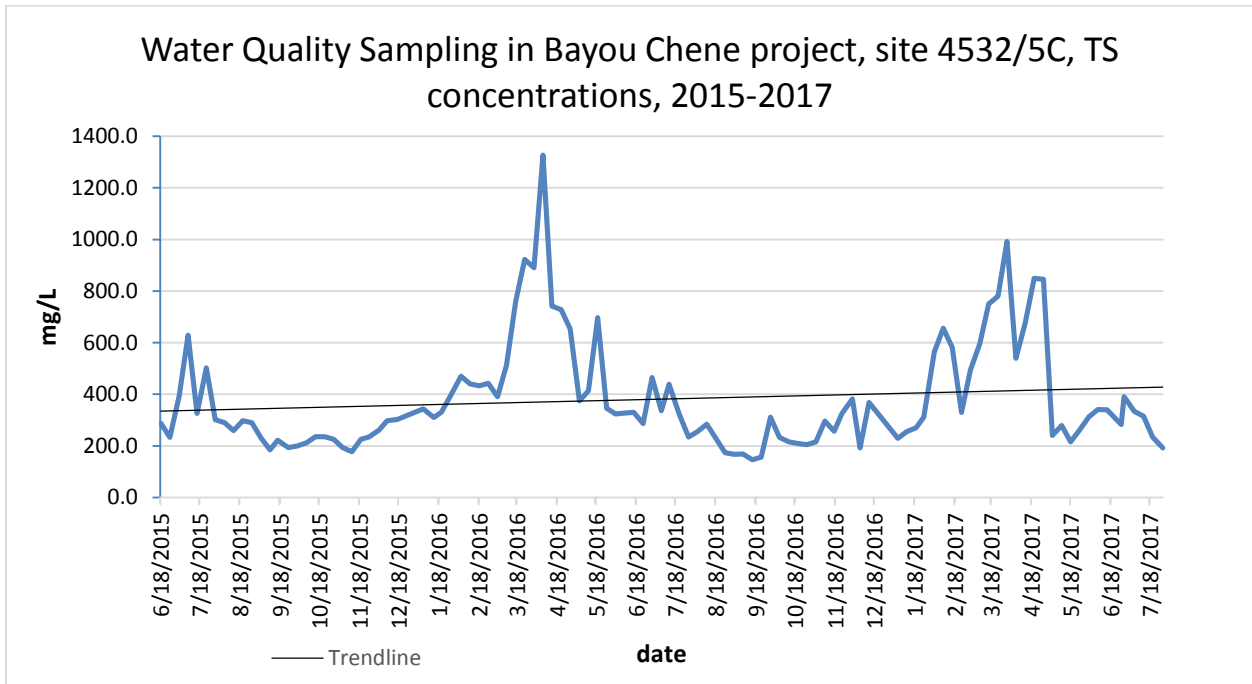


Figure 108 Water Quality Sampling in Bayou Chene project, site 4532/5C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at site 4532/5C. There is no standard for TS. TS concentrations ranged from 146.0 mg/L (September 2016) to 1327.0 mg/L (April 2016). The trendline shows TS concentrations are slightly increasing. Data also shows TS levels are highest during late winter to spring months (February through May).

NO₃-N

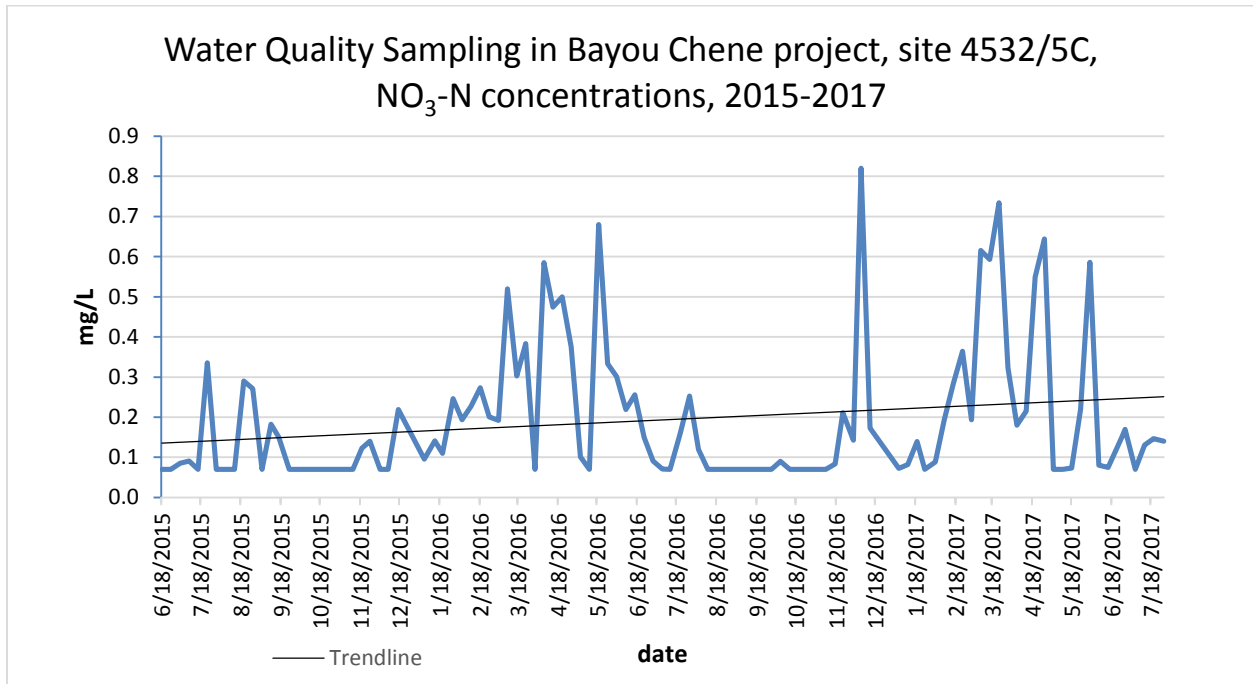


Figure 109 Water Quality Sampling in Bayou Chene project, site 4532/5C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at site 4532/5C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-December 2015; March, May, July-November 2016; January, May-July 2017) to 0.82 mg/L (December 2016). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

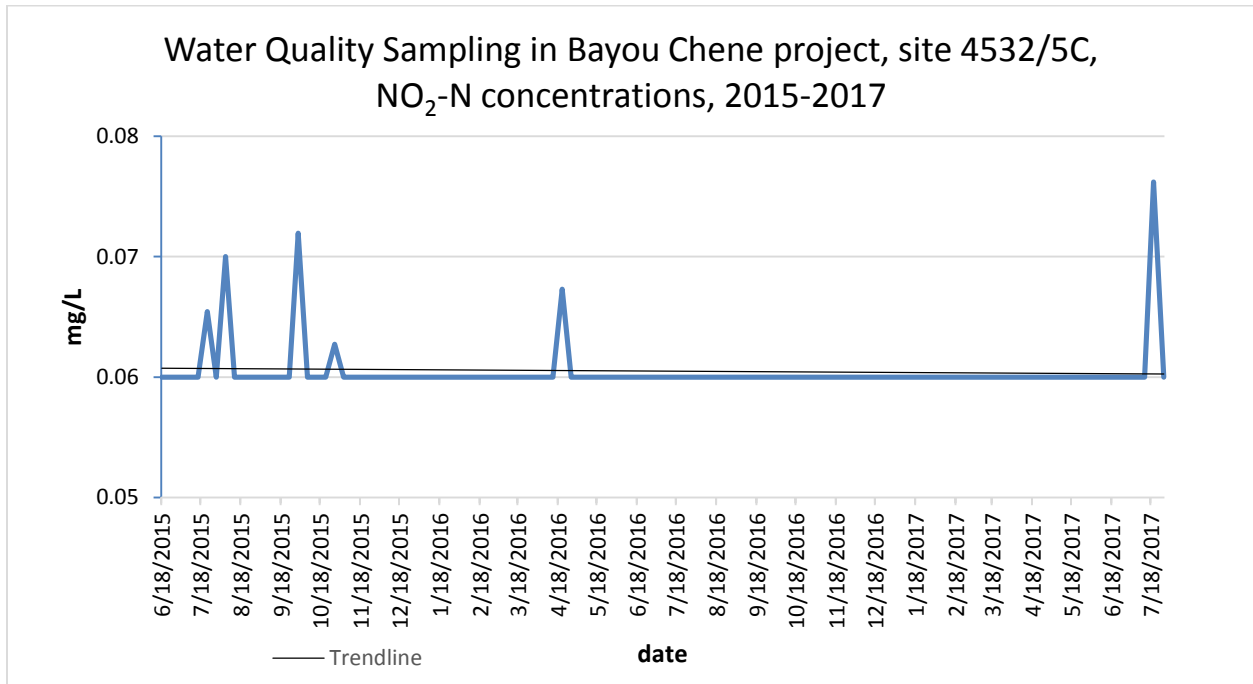


Figure 110 Water Quality Sampling in Bayou Chene project, site 4532/5C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 4532/5C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.12 mg/L (July 2017). The trendline shows NO₂-N concentrations are slightly decreasing.

NO₃/NO₂-N

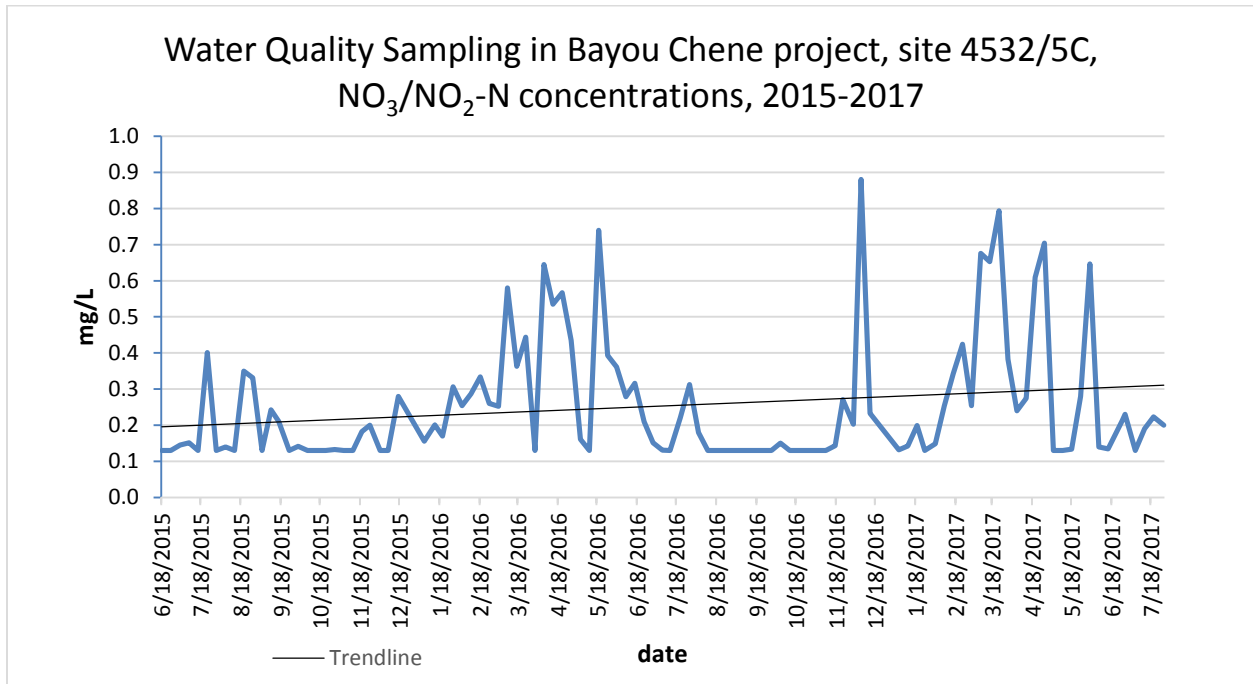


Figure 111 Water Quality Sampling in Bayou Chene project, WQN site 4532/5C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at site 4532/5C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; March, May, July-November 2016; January, May-July 2017) to 0.88 mg/L (December 2016). The trendline shows that NO₃/NO₂-N concentrations are slightly increasing.

Cl

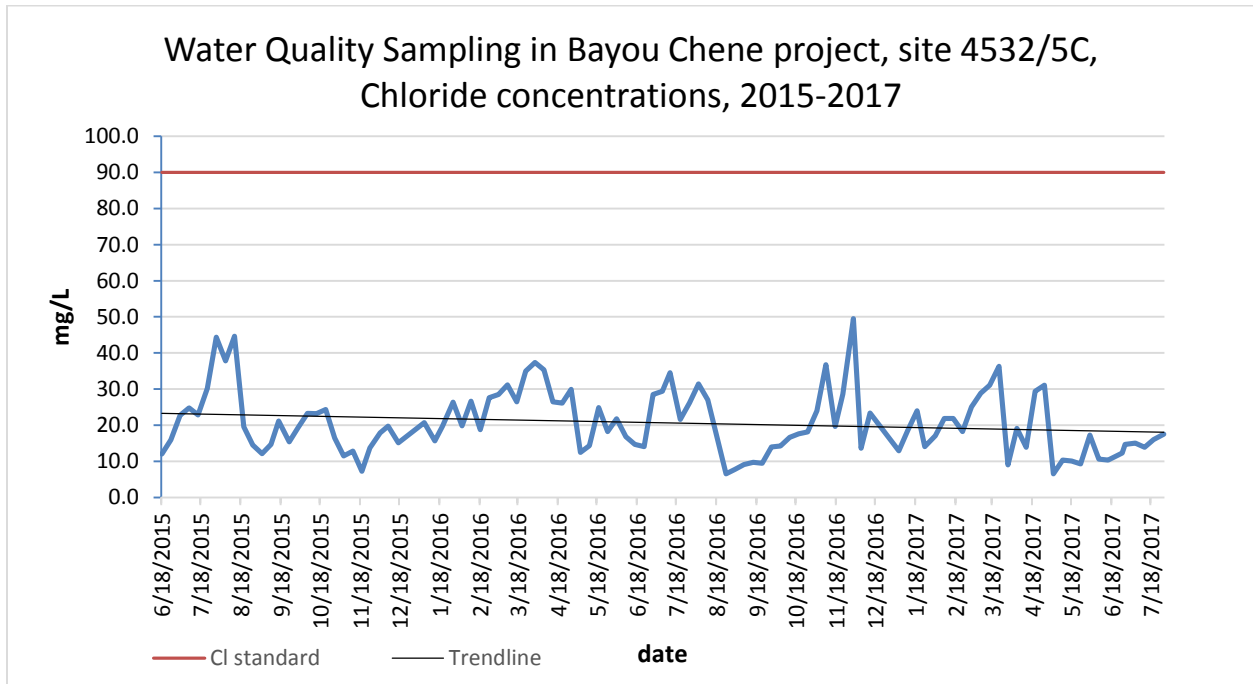


Figure 112 Water Quality Sampling in Bayou Chene project, WQN site 4532/5C, Chloride concentrations, 2015-2017

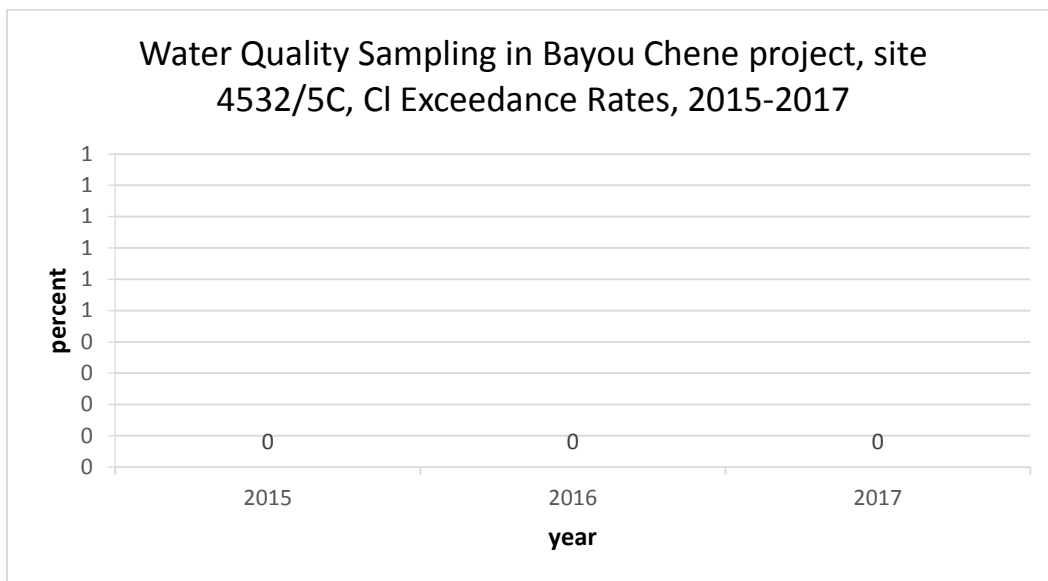


Figure 113 Water Quality Sampling in Bayou Chene project, site 4532/5C, Cl Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at site 4532/5C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 6.54 mg/L (May 2017) to 49.51 mg/L (December 2016). The trendline shows Cl concentrations are decreasing. The exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from

2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

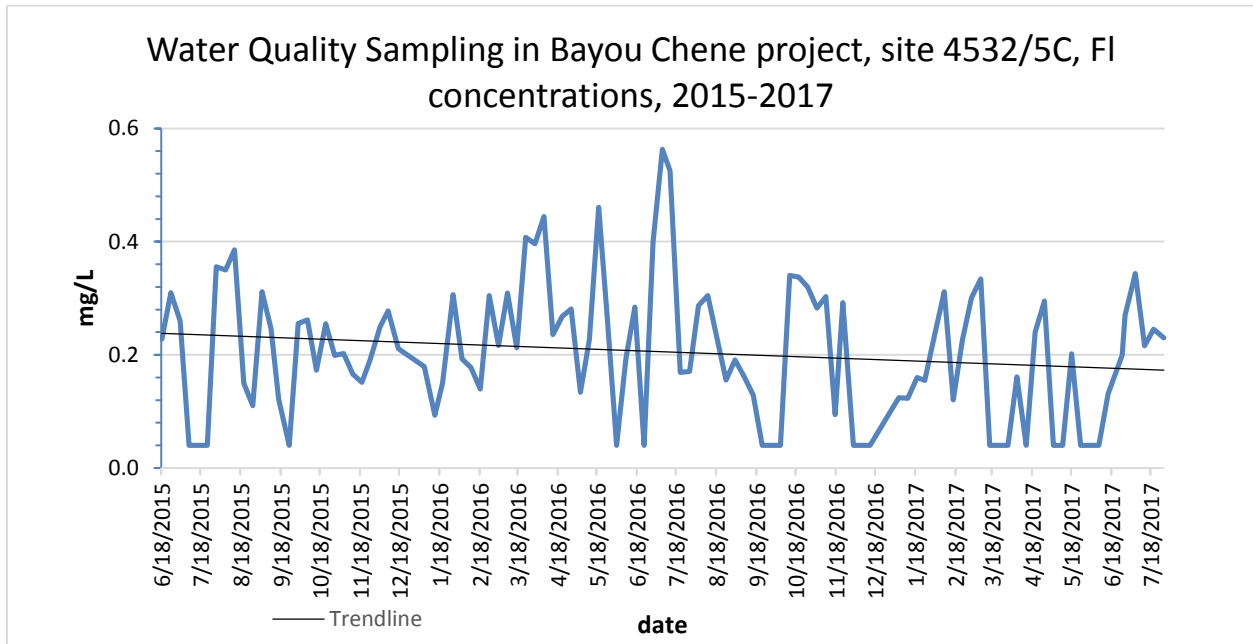


Figure 114 Water Quality Sampling in Bayou Chene project, WQN site 4532/5C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 4532/5C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: July, September 2015; June, September-October, December 2016; March-June 2017) to 0.56 mg/L (July 2016). The trendline shows FI concentrations are slightly decreasing.

SO₄

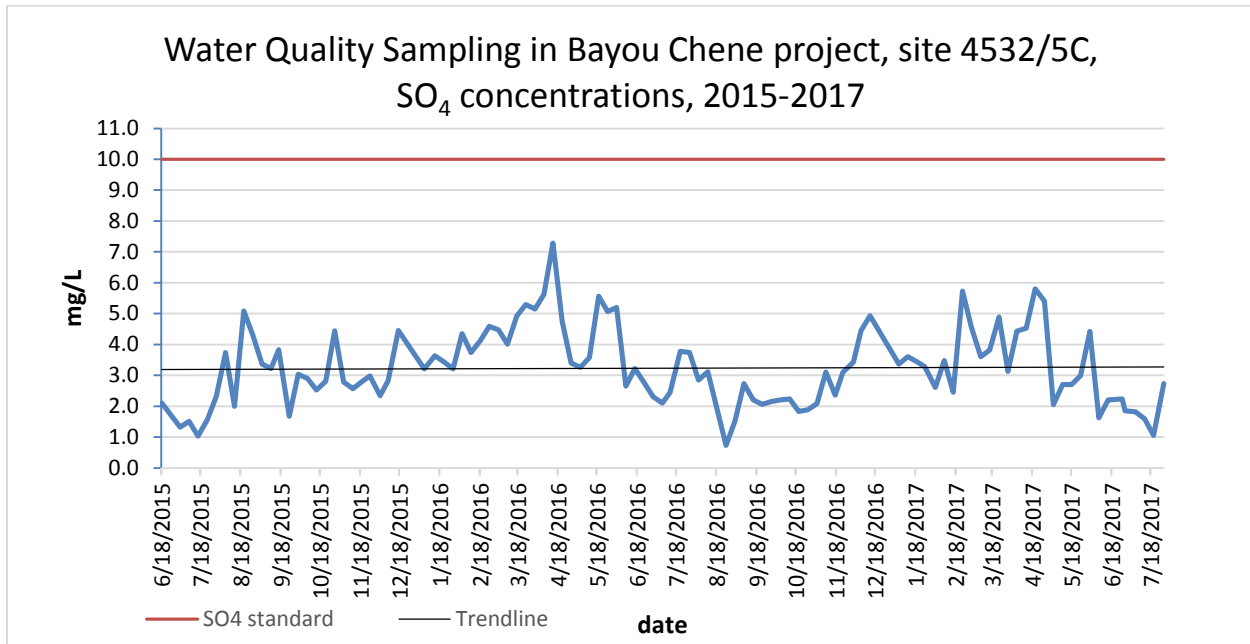


Figure 115 Water Quality Sampling in Bayou Chene project, site 4532/5C, SO₄ concentrations, 2015-2017

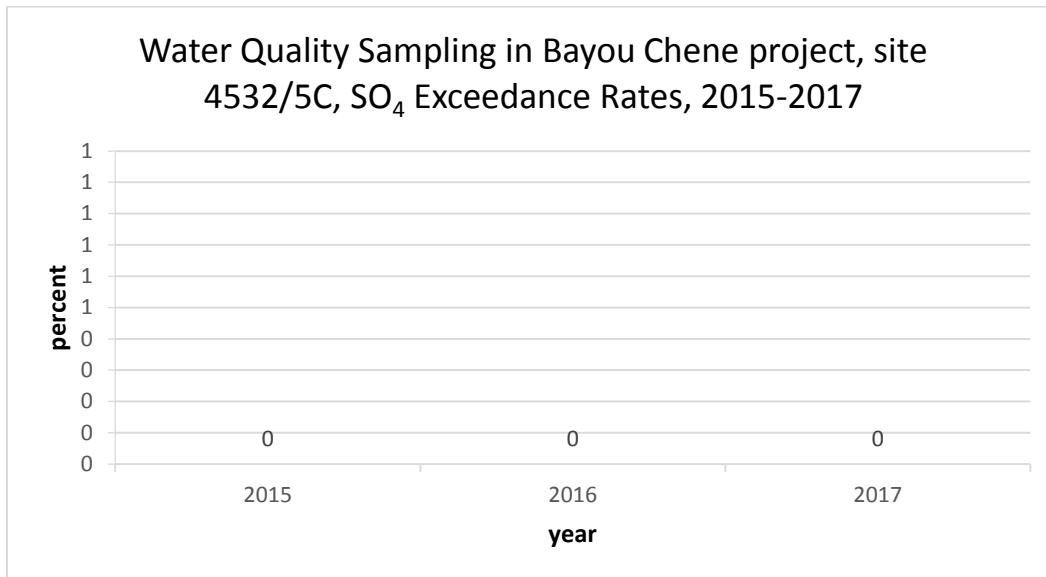


Figure 116 Water Quality Sampling in Bayou Chene project, site 4532/5C, SO₄ Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at site 4532/5C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.73 mg/L (August 2016) to 7.29 mg/L (April 2016). The trendline shows SO₄ concentrations are slightly increasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). None of the samples collected from 2015 through 2017 exceeded the SO₄ standard of 10 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

SRP

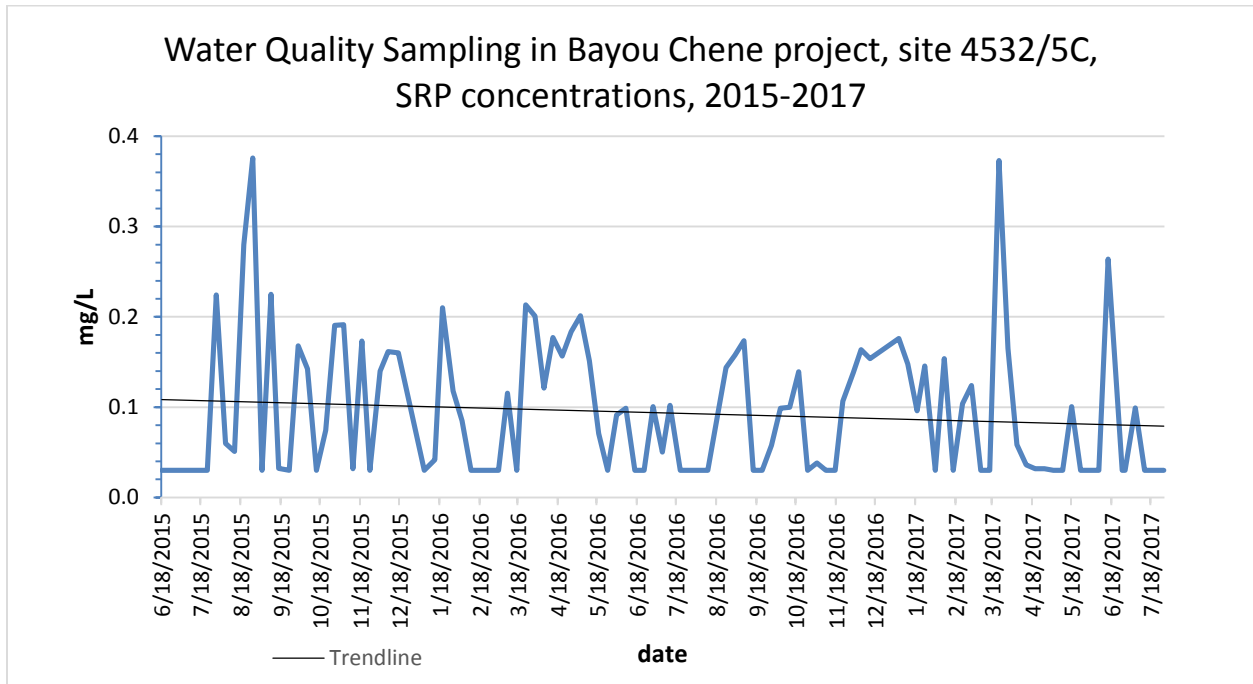


Figure 117 Water Quality Sampling in Bayou Chene project, site 4532/5C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at site 4532/5C. There is no standard for SRP. SRP concentrations ranged from 0.03 mg/L (value found intermittently through: June-July, September-November 2015; January-March, May-November 2016; February-July 2017) to 0.38 mg/L (August 2015). The trendline shows SRP concentrations are slightly decreasing.

TP

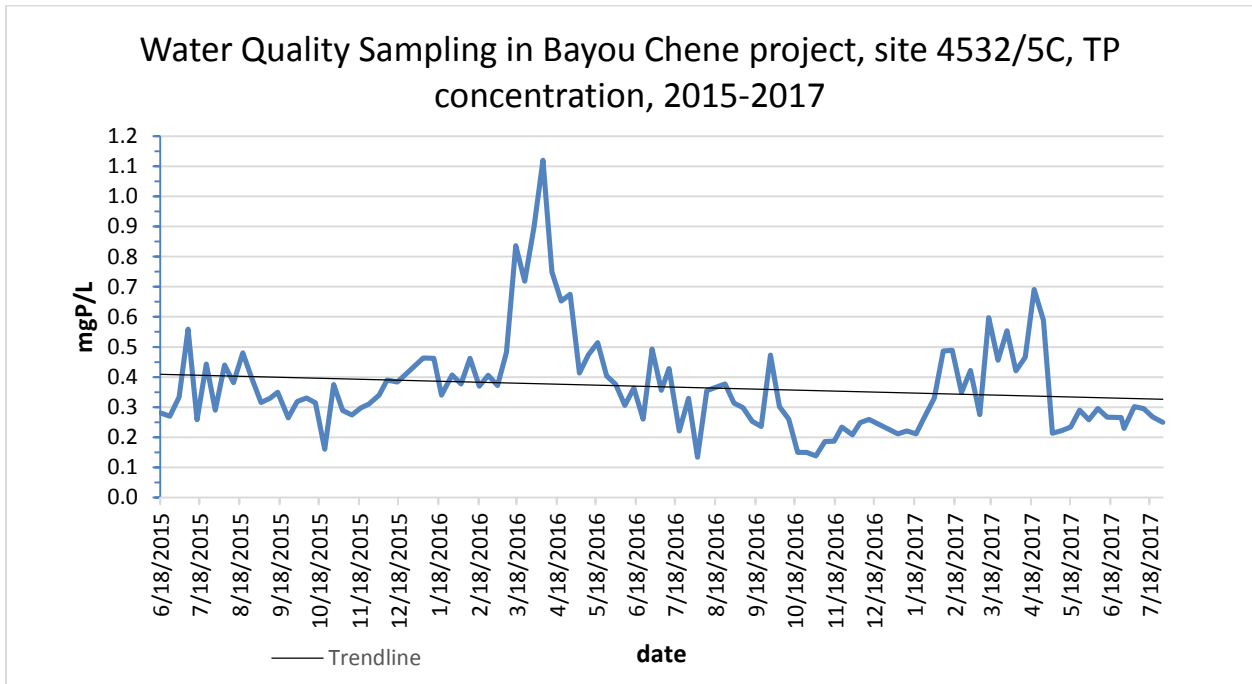


Figure 118 Water Quality Sampling in Bayou Chene project, site 4532/5C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 4532/5C. There is no standard for TP. TP concentrations ranged from 0.13 mgP/L (August 2016) to 1.12 mgP/L (April 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in the spring months (March through May).

TKN

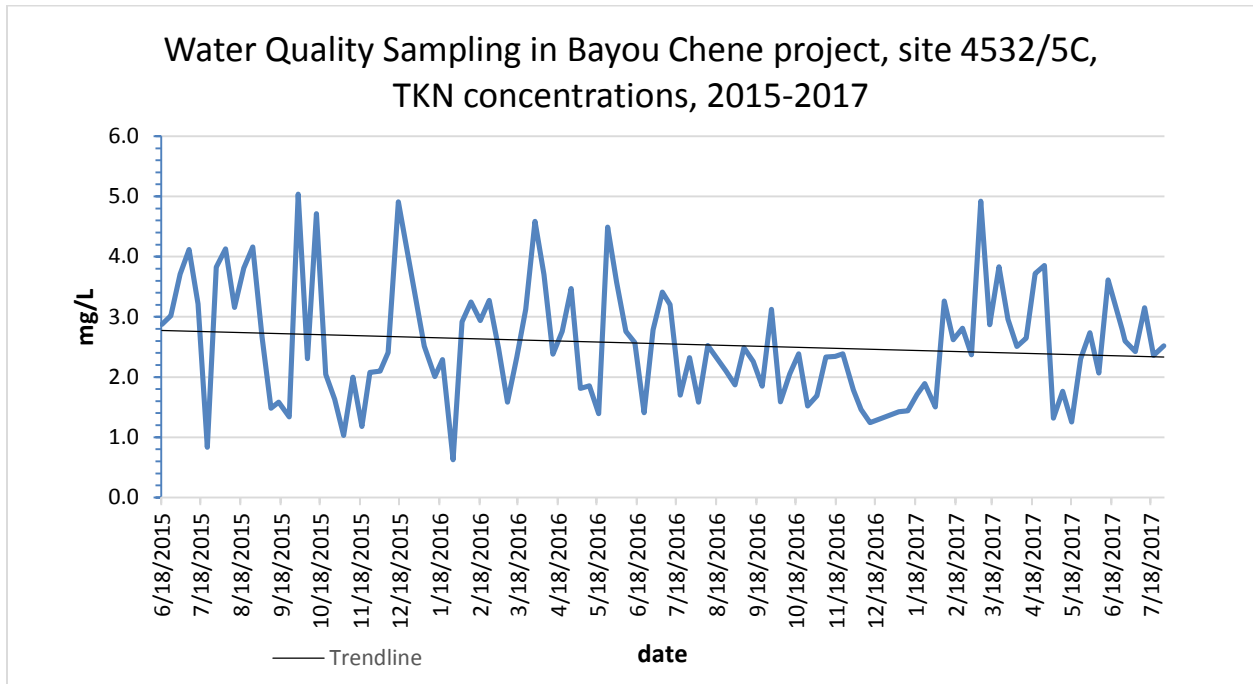


Figure 119 Water Quality Sampling in Bayou Chene project, site 4532/5C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the site 4532/5C. There is no standard for TKN. TKN concentrations ranged from 0.63 mg/L (January 2016) to 5.04 mg/L (October 2015). The trendline shows TKN concentrations are slightly decreasing.

BOD-5

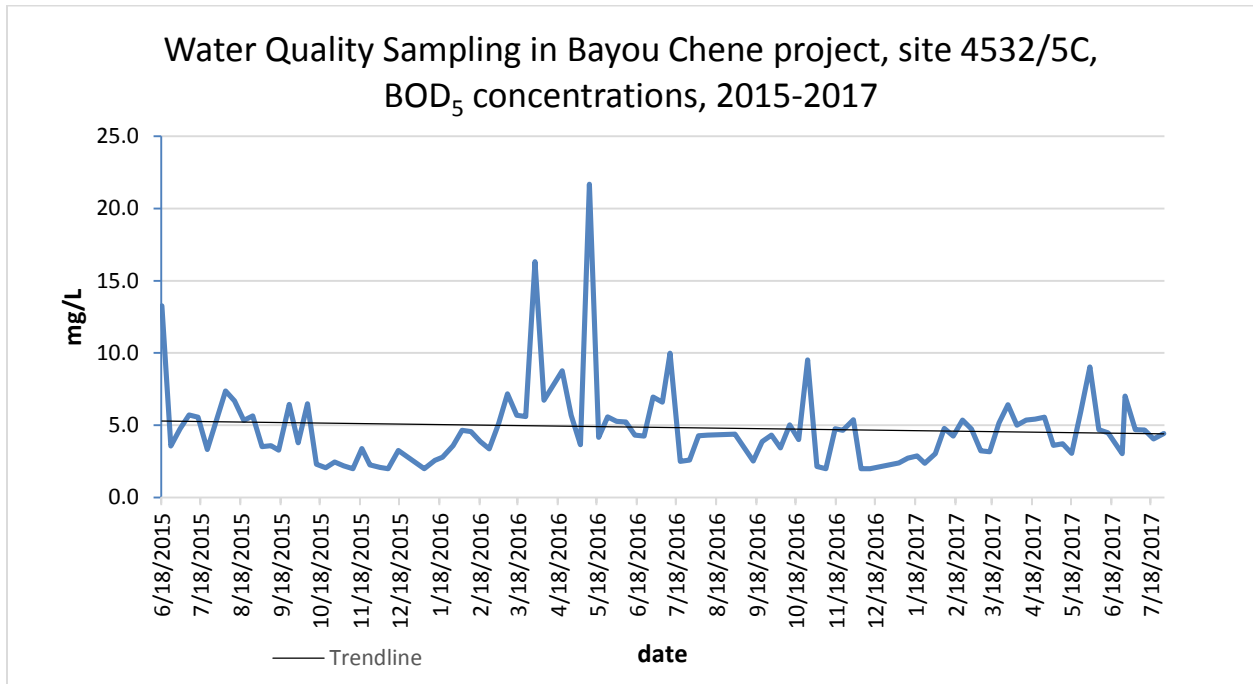


Figure 120 Water Quality Sampling in Bayou Chene project, site 4532/5C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the site 4532/5C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (value found intermittently through: November-December 2015; January, November-December 2016) to 21.68 mg/L (May 2016). The trendline shows BOD₅ concentrations are slightly decreasing. Only 102 samples were collected. Some sample dates in July 2015, April 2015, August 2016, and September 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 2220/6C

DO

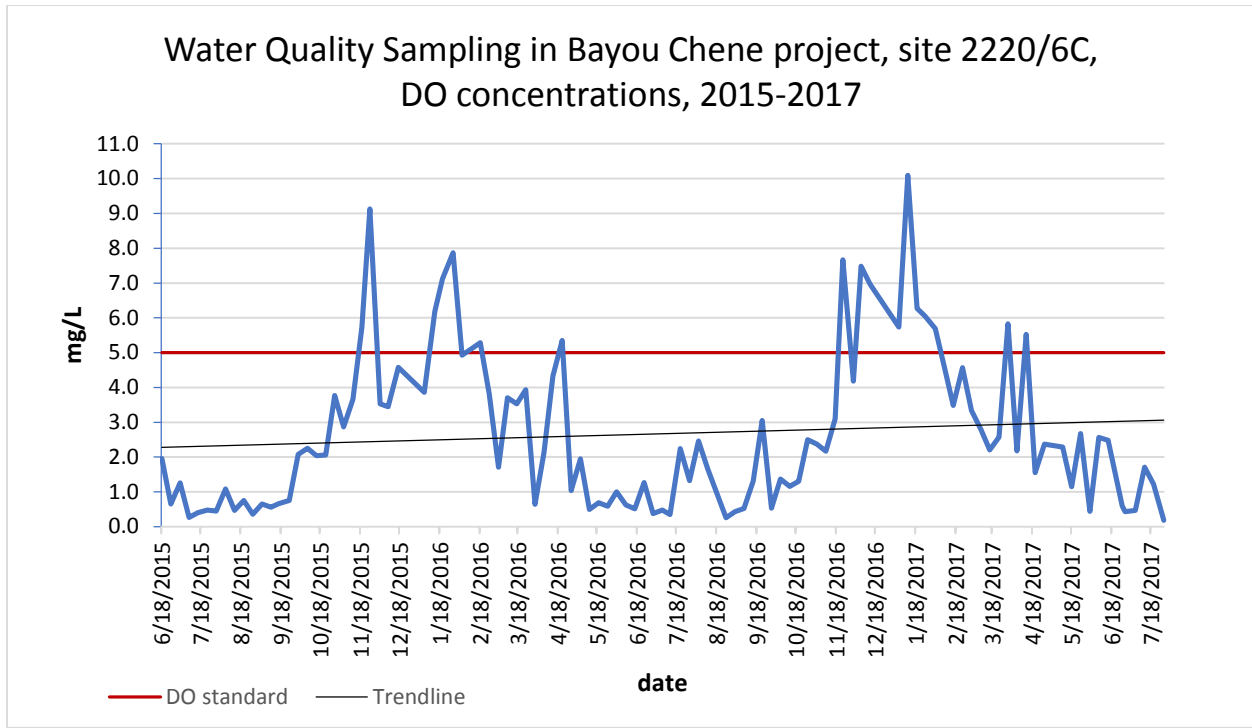


Figure 121 Water Quality Sampling in Bayou Chene project, site 2220/6C, DO concentrations, 2015-2017

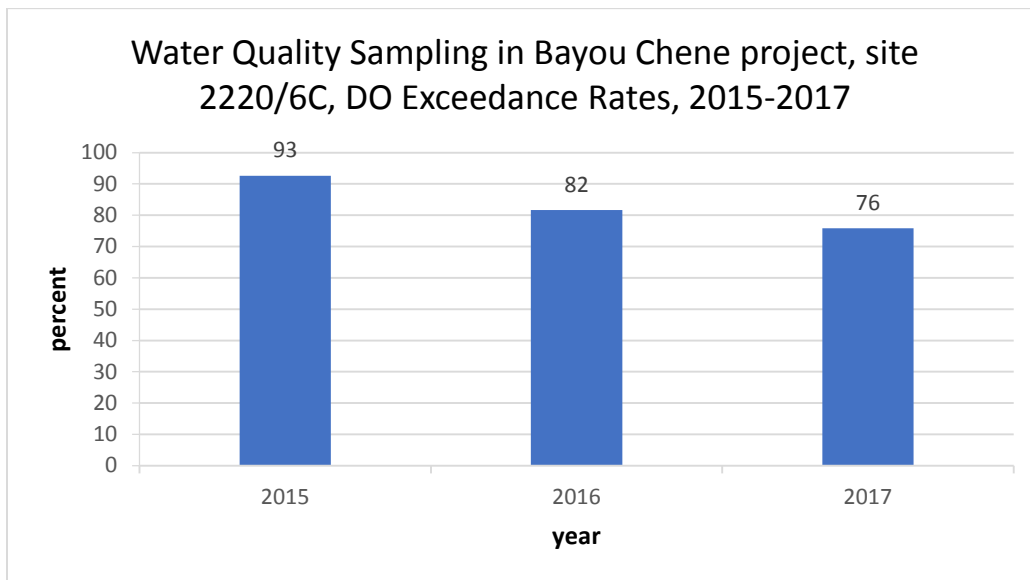


Figure 122 Water Quality Sampling in Bayou Chene project, site 2220/6C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at site 2220/6C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.18 mg/L (January 2017) to 10.09 mg/L (January 2017). The trendline shows DO concentrations are slightly increasing. Data also

shows DO levels were highest in the cooler months (October through March). The exceedance rates were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 93 percent in 2015 and as low as 76 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 25 samples did not meet the standard. In 2016, there 49 samples taken, of which 40 did not meet the state's standard. In 2017, there were a total of 29 samples taken, of which 22 samples did not meet the standard. Only 18 of the 105 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

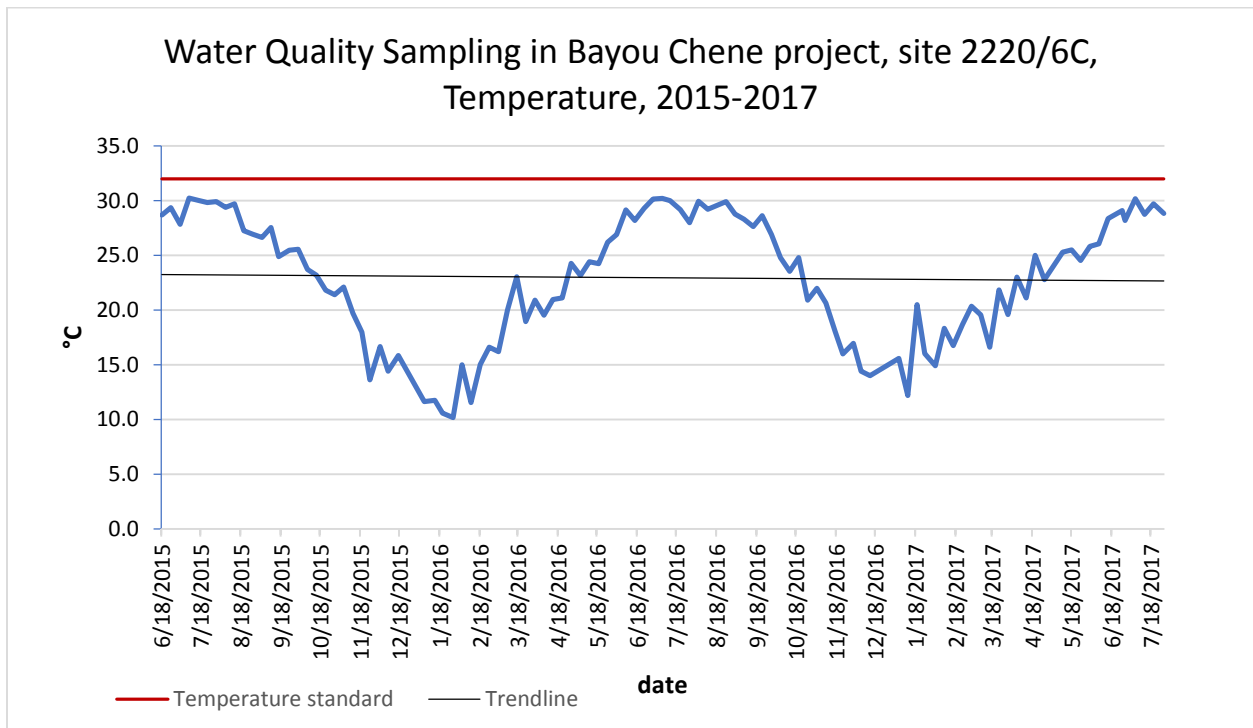


Figure 123 Water Quality Sampling in Bayou Chene project, site 2220/6C, Temperature, 2015-2017

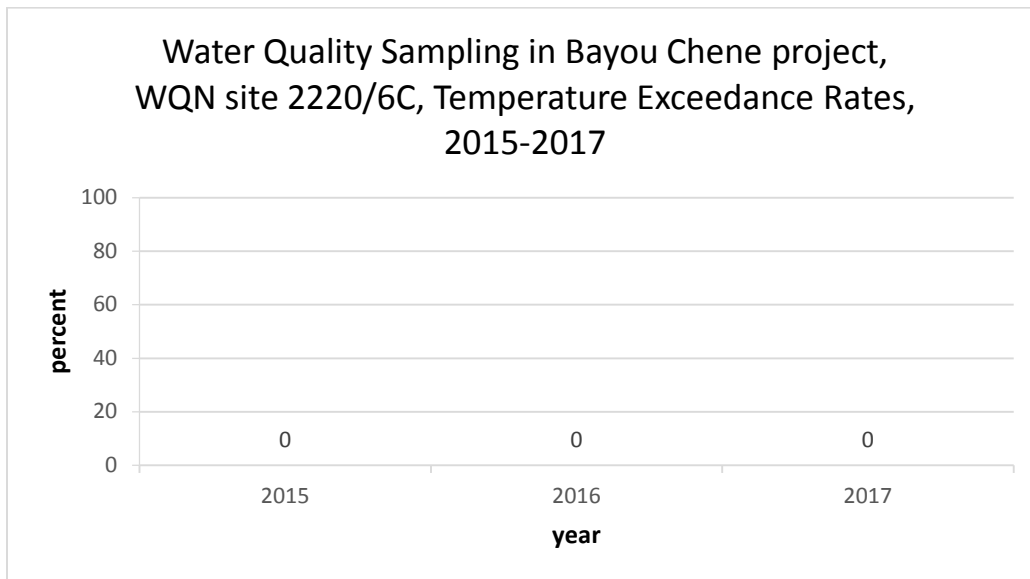


Figure 124 Water Quality Sampling in Bayou Chene project, site 2220/6C, Temperature Exceedance Rates, 2015-2017; no values exceeded the standard for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 2220/6C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 10.18 °C (January 2016) to 30.25 °C (July 2015). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the

winter months (December through February). The exceedance rates were calculated for temperature from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

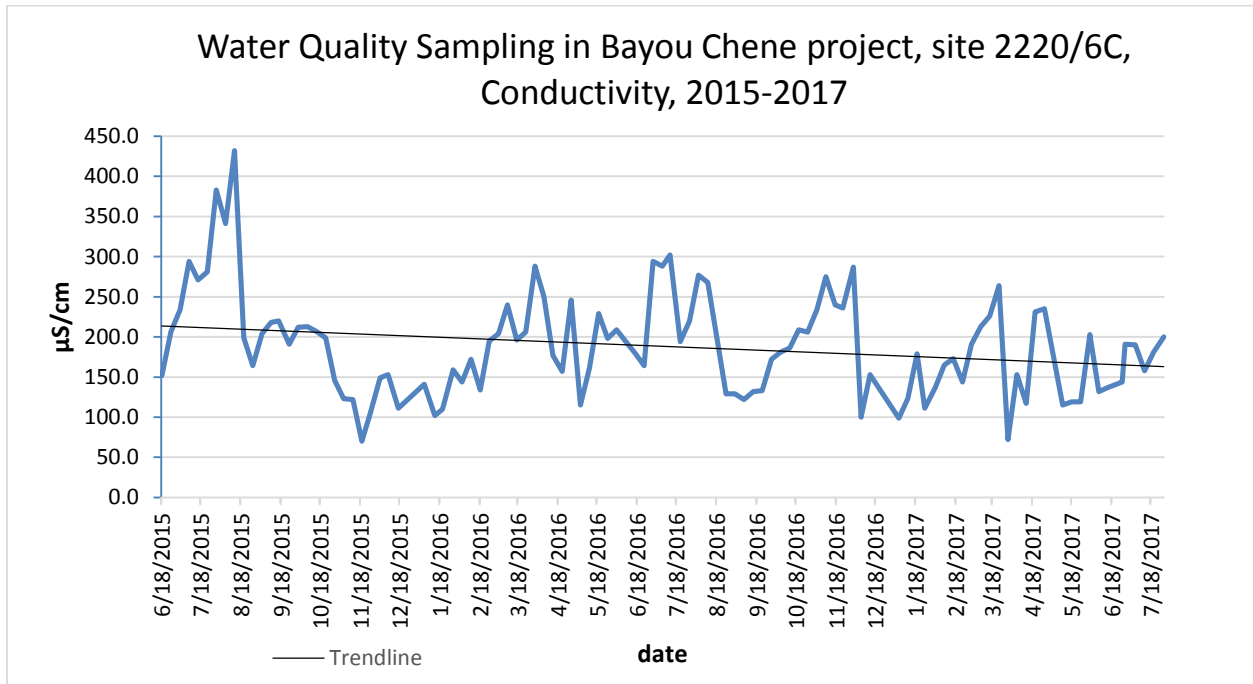


Figure 125 Water Quality Sampling in Bayou Chene project, site 2220/6C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 2220/6C. There is no standard for conductivity. Conductivity values ranged from 70.0 $\mu\text{S}/\text{cm}$ (November 2015) to 432.0 $\mu\text{S}/\text{cm}$ (August 2015). The trendline shows conductivity values are slightly decreasing.

pH

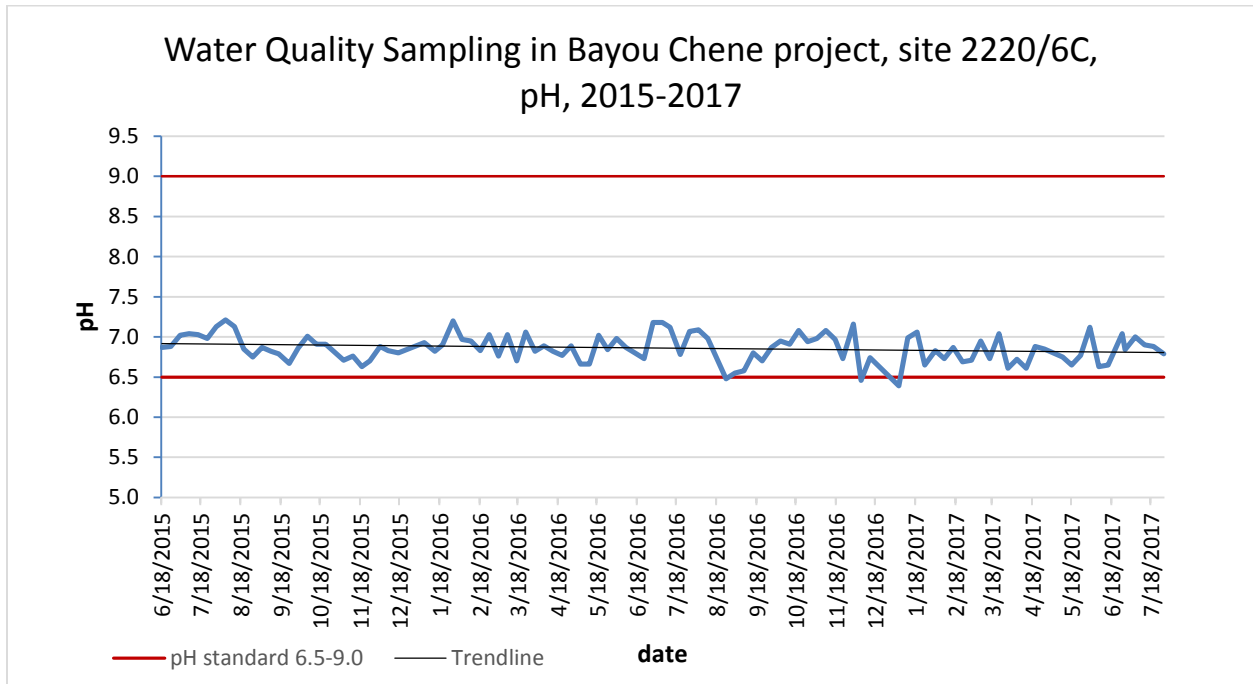


Figure 126 Water Quality Sampling in Bayou Chene project, site 2220/6C, pH, 2015-2017

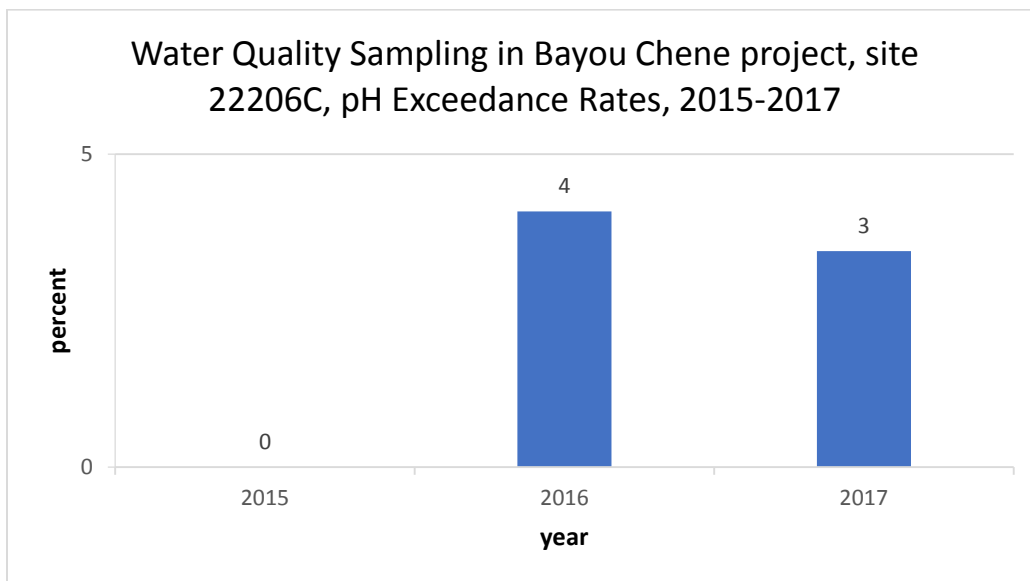


Figure 127 Water Quality Sampling in Bayou Chene project, site 2220/6C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the site 2220/6C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.39 (January 2017) to 7.21 (August 2015). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 4 percent in 2016 and did not exceed in 2015; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples were below the state's standard. In 2016, there 49

samples taken, of which 2 were below the standard. In 2017, there were a total of 29 samples taken, of which 1 sample did not meet the standard. 102 of the 105 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

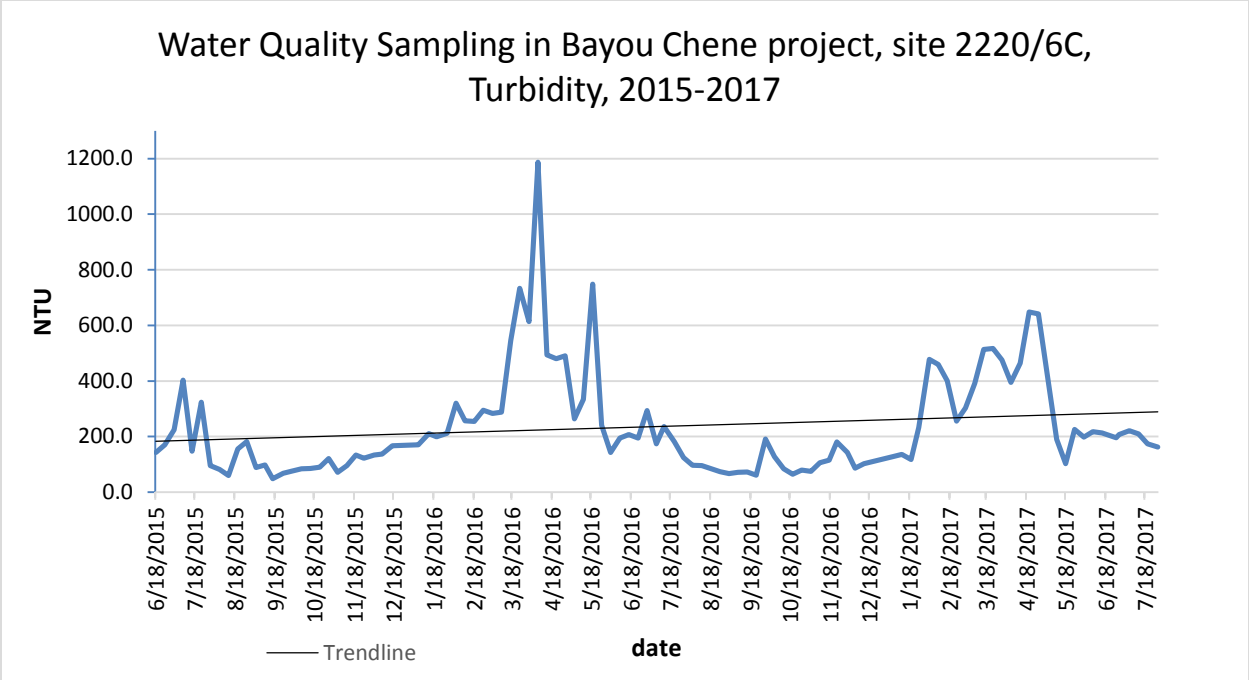


Figure 128 Water Quality Sampling in Bayou Chene project, site 2220/6C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 2220/6C. There is no standard for turbidity. Turbidity values ranged from 48.0 NTU (September 2015) to 1187.0 NTU (April 2016). The trendline shows turbidity values are slightly increasing. Data also shows higher turbidity levels in the spring months (March through May).

TSS

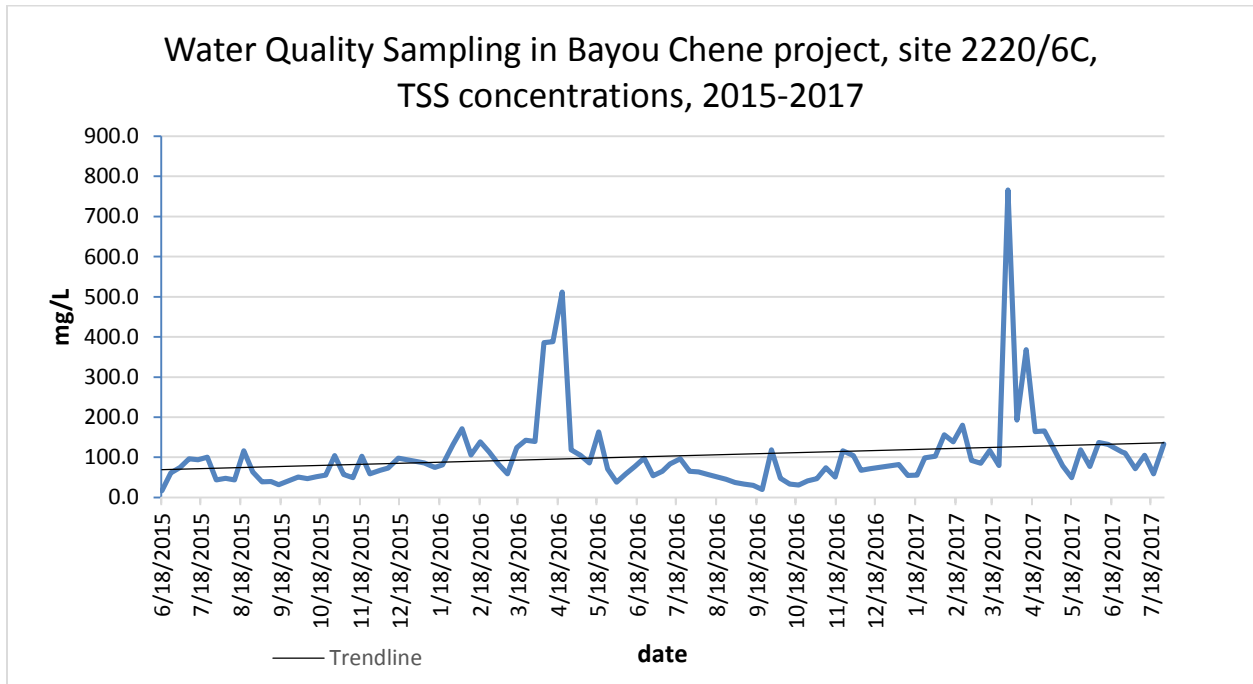


Figure 129 Water Quality Sampling in Bayou Chene project, site 2220/6C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for TSS. TSS concentrations ranged from 20.0 mg/L (September 2016) to 766.0 mg/L (April 2017). The trendline shows TSS concentrations are slightly increasing. Data also shows higher TSS values in the spring months (March through May).

TDS

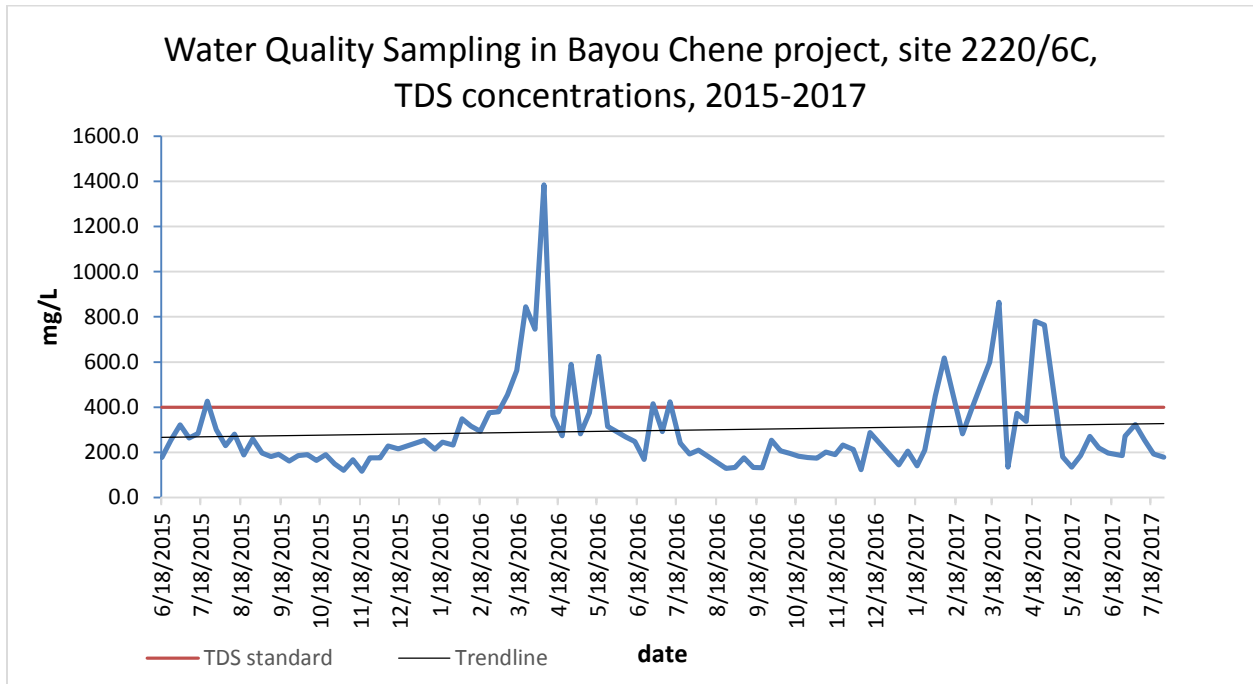


Figure 130 Water Quality Sampling in Bayou Chene project, site 2220/6C, TDS concentrations, 2015-2017

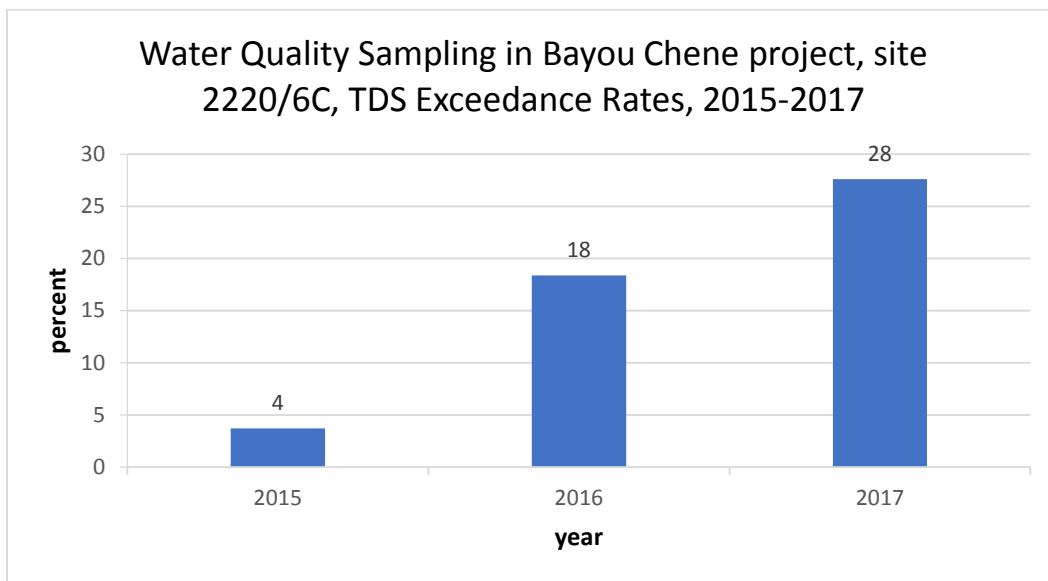


Figure 131 Water Quality Sampling in Bayou Chene project, site 2220/6C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the site 2220/6C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 116.0 mg/L (November 2015) to 1385.0 mg/L (April 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the spring months (March through May). The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 4 percent in 2015 and as high as 28 percent in 2017; however, sampling years 2015 and 2017 were

not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 1 sample exceeded the state's standard. In 2016, there 49 samples taken, of which 9 did not meet the state's standard. In 2017, there were a total of 29 samples taken, of which 7 samples did not meet the standard. Only 88 of the 105 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

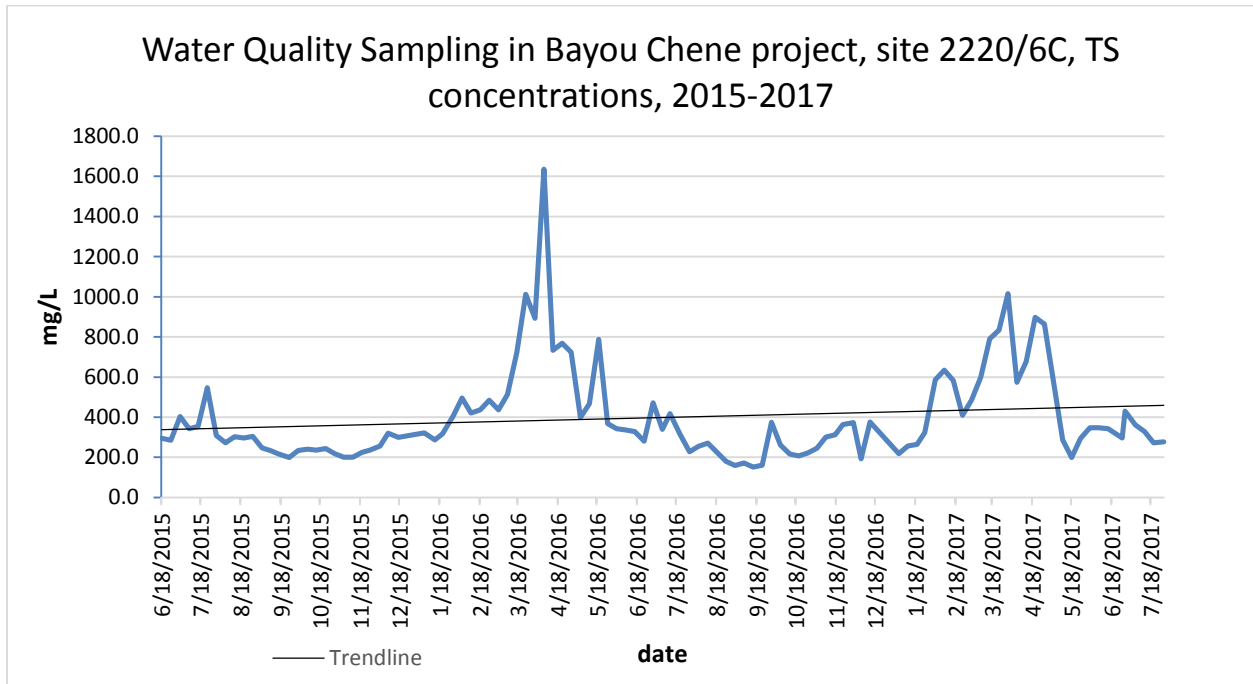


Figure 132 Water Quality Sampling in Bayou Chene project, site 2220/6C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for TS. TS concentrations ranged from 151.0 mg/L (September 2016) to 1636.0 mg/L (April 2016). The trendline shows TS concentrations are slightly increasing. Data also shows TS levels are highest during late winter to spring months (February through May).

NO₃-N

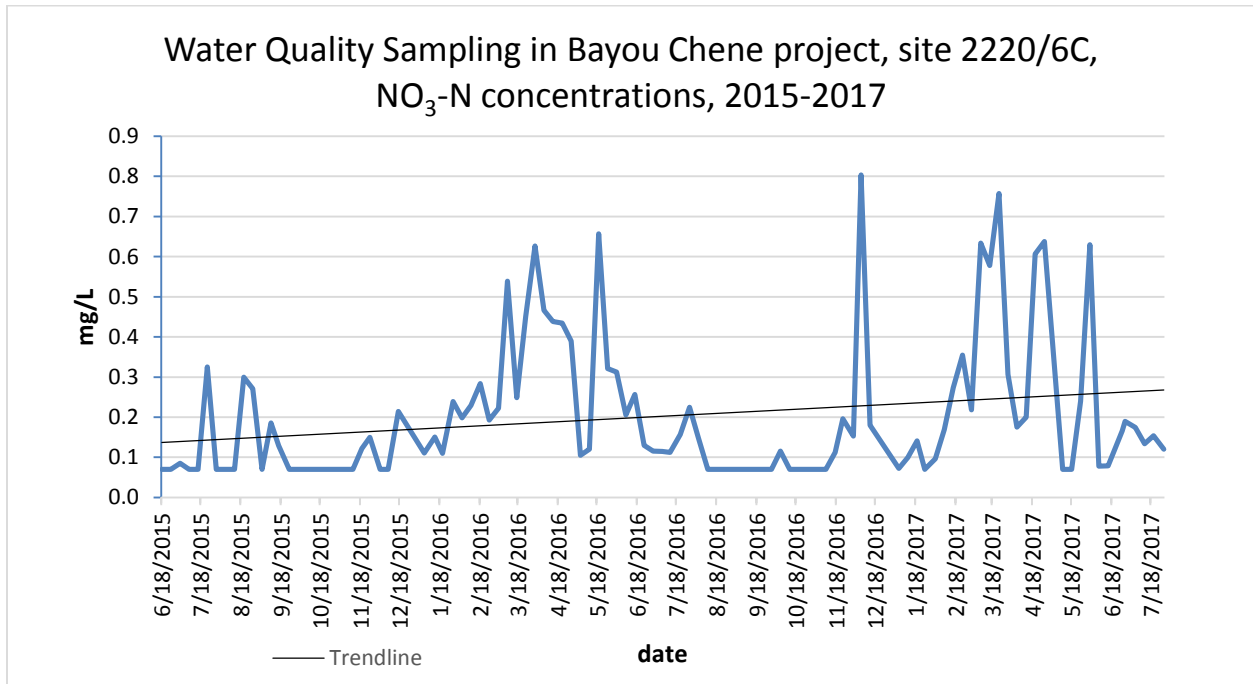


Figure 133 Water Quality Sampling in Bayou Chene project, site 2220/6C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-December 2015; August-November 2016; January, May 2017) to 0.80 mg/L (December 2016). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

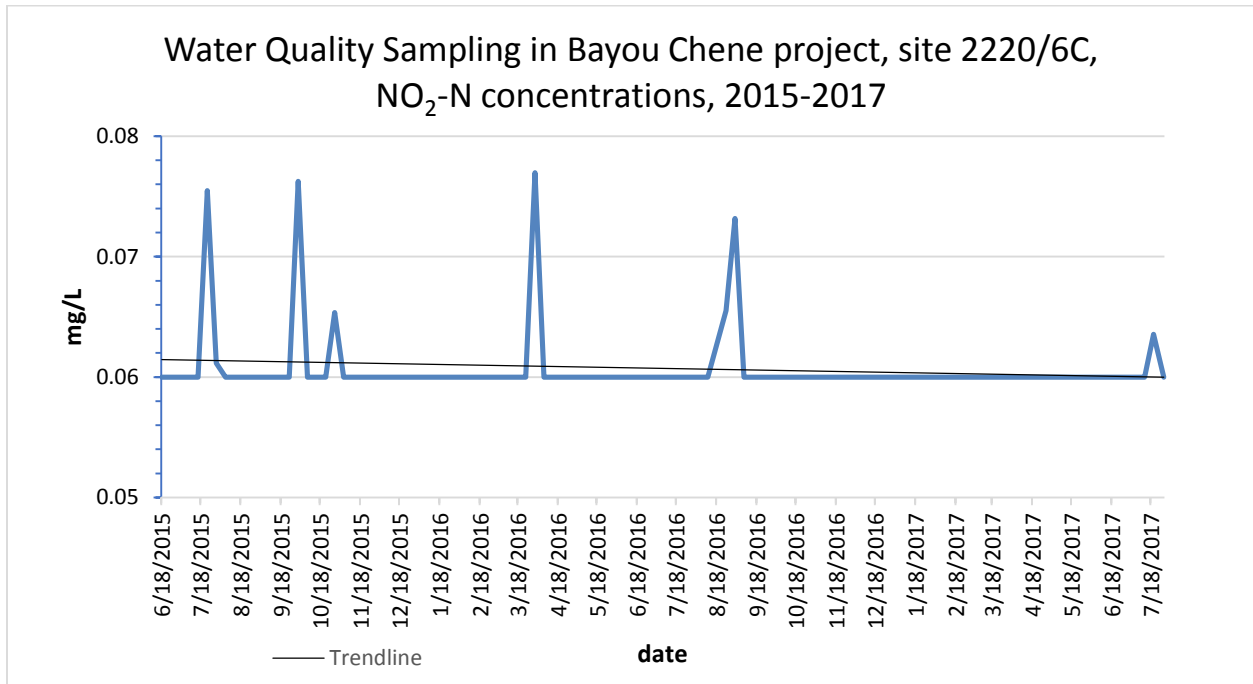


Figure 134 Water Quality Sampling in Bayou Chene project, site 2220/6C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.060 mg/L (intermittently each month) to 0.077 mg/L (October 2015). The trendline shows NO₂-N concentrations are slightly decreasing.

NO₃/NO₂-N

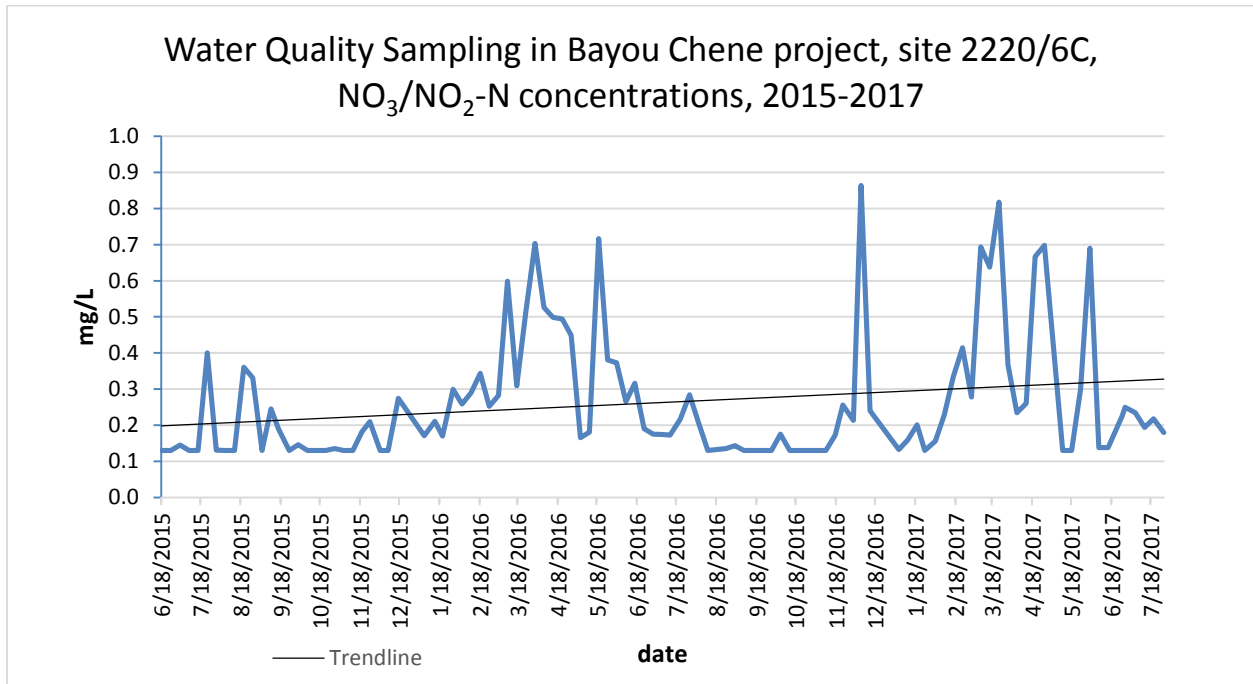


Figure 135 Water Quality Sampling in Bayou Chene project, site 2220/6C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; August-November 2016; January, May 2017) to 0.86 mg/L (December 2016). The trendline shows that NO₃/NO₂-N concentrations are slightly increasing.

Cl

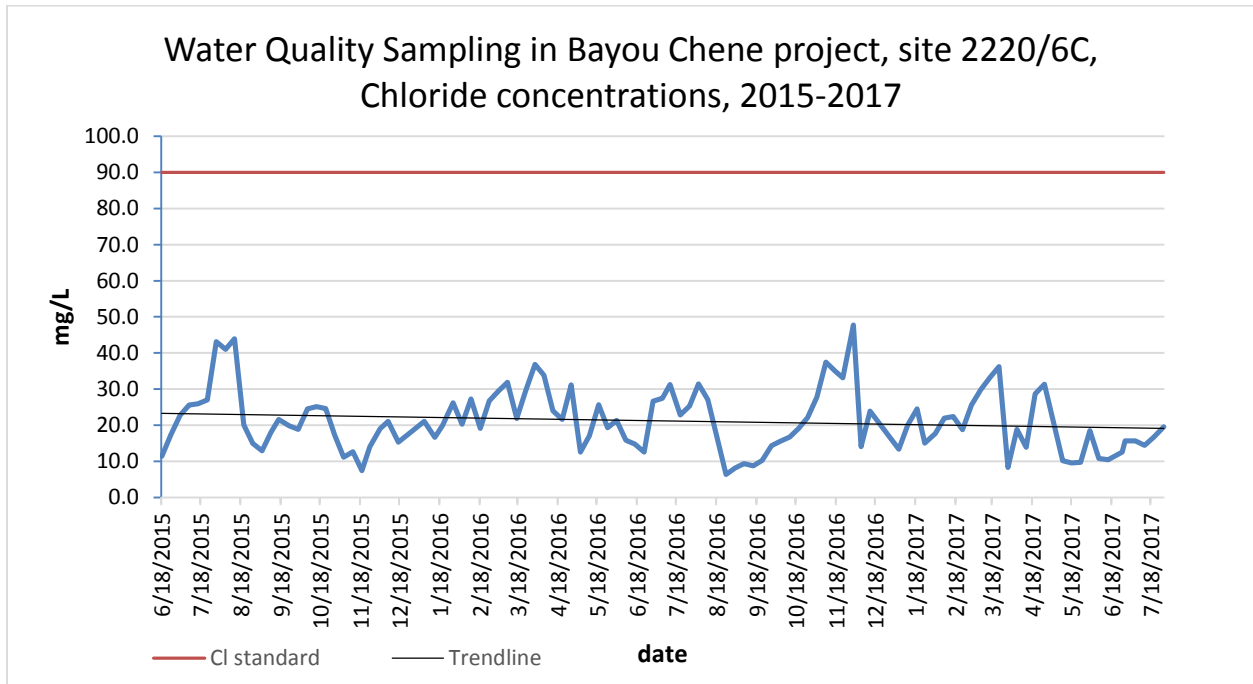


Figure 136 Water Quality Sampling in Bayou Chene project, site 2220/6C, Chloride concentrations, 2015-2017

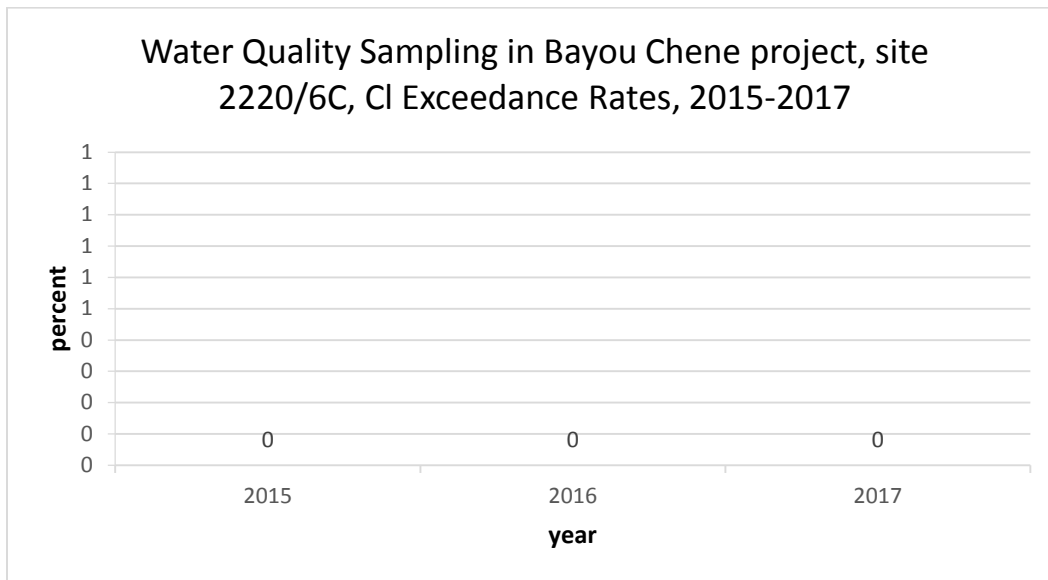


Figure 137 Water Quality Sampling in Bayou Chene project, site 2220/6C, Cl Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the site 2220/6C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 6.35 mg/L (August 2016) to 47.73 mg/L (December 2016). The trendline shows Cl concentrations are decreasing. The exceedance

rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from 2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

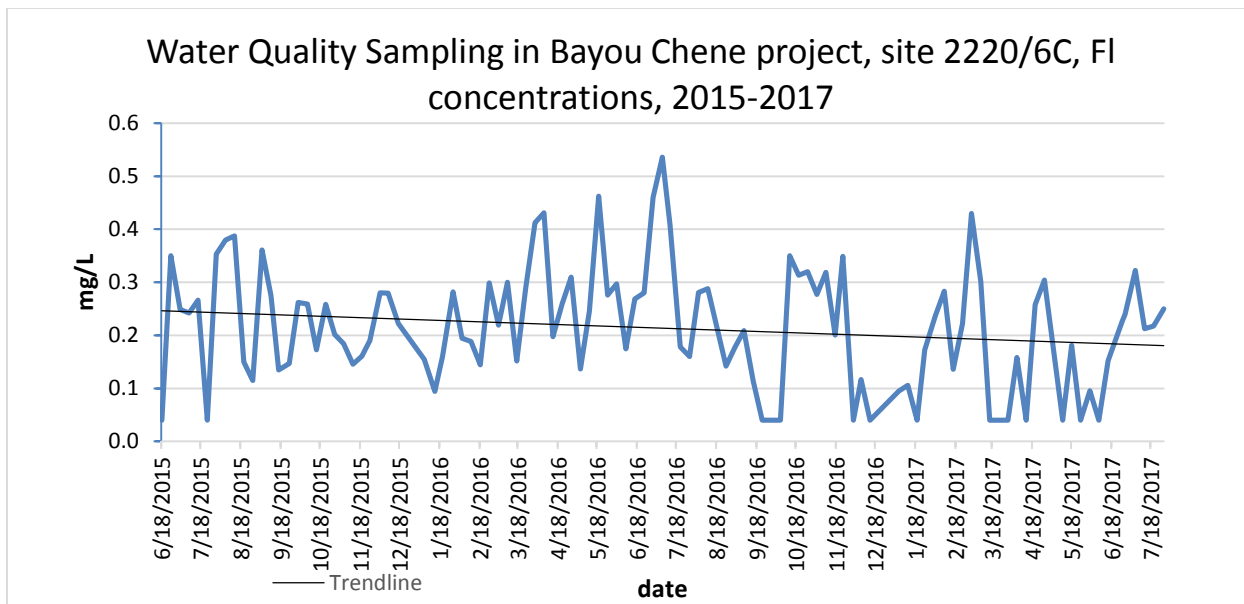


Figure 138 Water Quality Sampling in Bayou Chene project, site 2220/6C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 2220/6C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: June-July 2015; September-October, December 2016; January, March-June 2017) to 0.54 mg/L (July 2016). The trendline shows FI concentrations are slightly decreasing.

SO₄

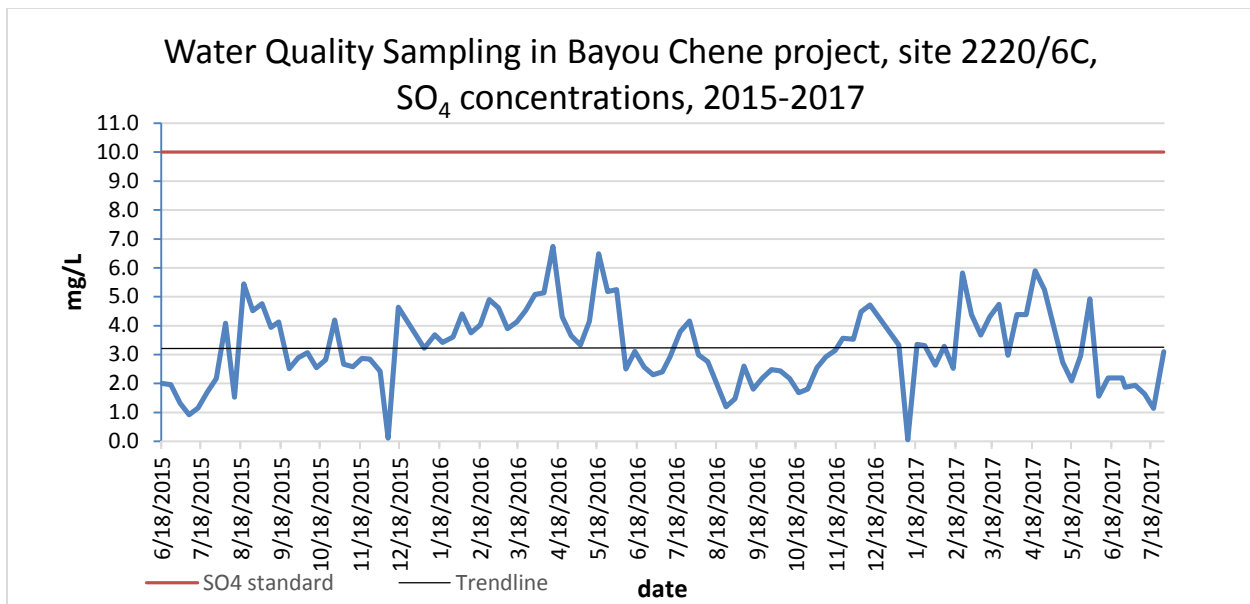


Figure 139 Water Quality Sampling in Bayou Chene project, site 2220/6C, SO₄ concentrations, 2015-2017

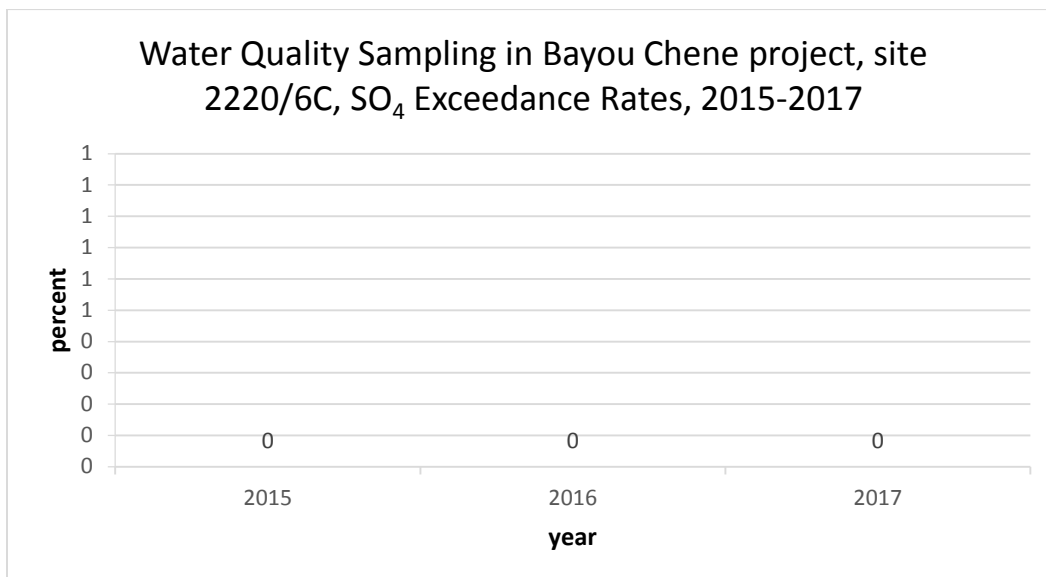


Figure 140 Water Quality Sampling in Bayou Chene project, site 2220/6C, SO₄ Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the site 2220/6C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (January 2017) to 6.74 mg/L (April 2016). The trendline shows SO₄ concentrations are slightly increasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). None of the samples

collected from 2015 through 2017 exceeded the SO_4 standard of 10 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

SRP

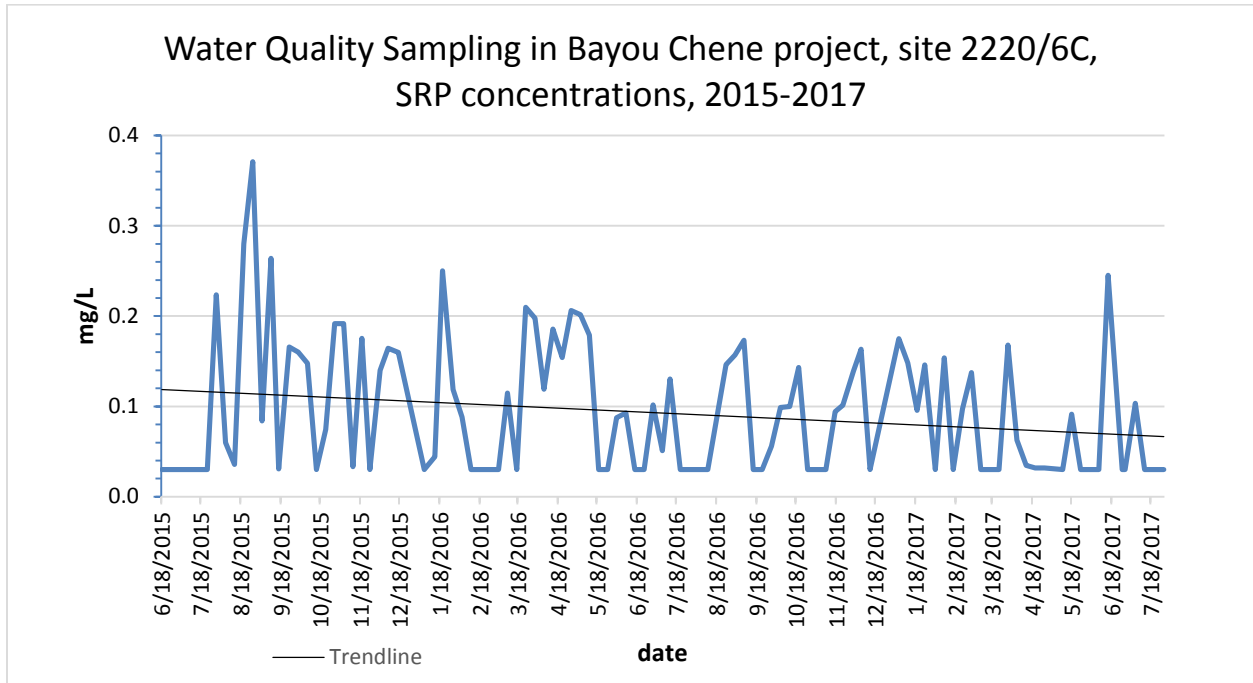


Figure 141 Water Quality Sampling in Bayou Chene project, site 2220/6C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for SRP. SRP concentrations ranged from 0.03 mg/L (value found intermittently through: June-July, September-November 2015; January-March, May-December 2016; February-July 2017) to 0.37 mg/L (August 2015). The trendline shows SRP concentrations are slightly decreasing.

TP

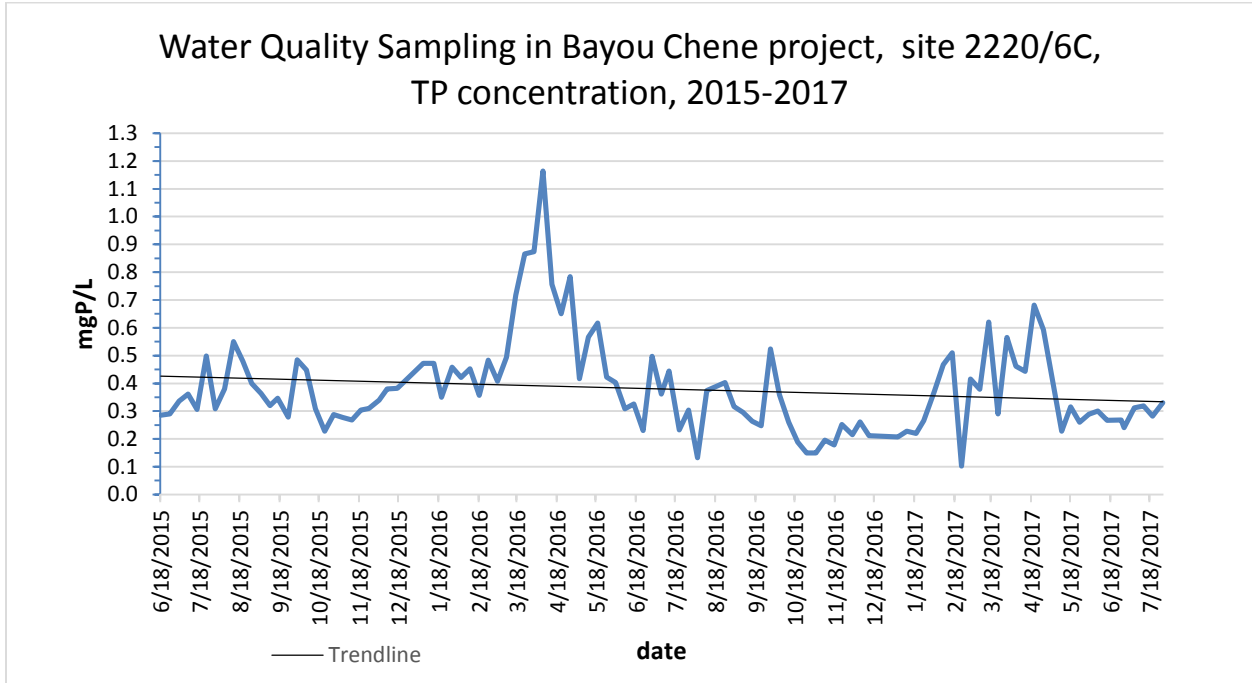


Figure 142 Water Quality Sampling in Bayou Chene project, site 2220/6C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for TP. TP concentrations ranged from 0.10 mg/L (February 2017) to 1.16 mg/L (April 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in spring months (March through May).

TKN

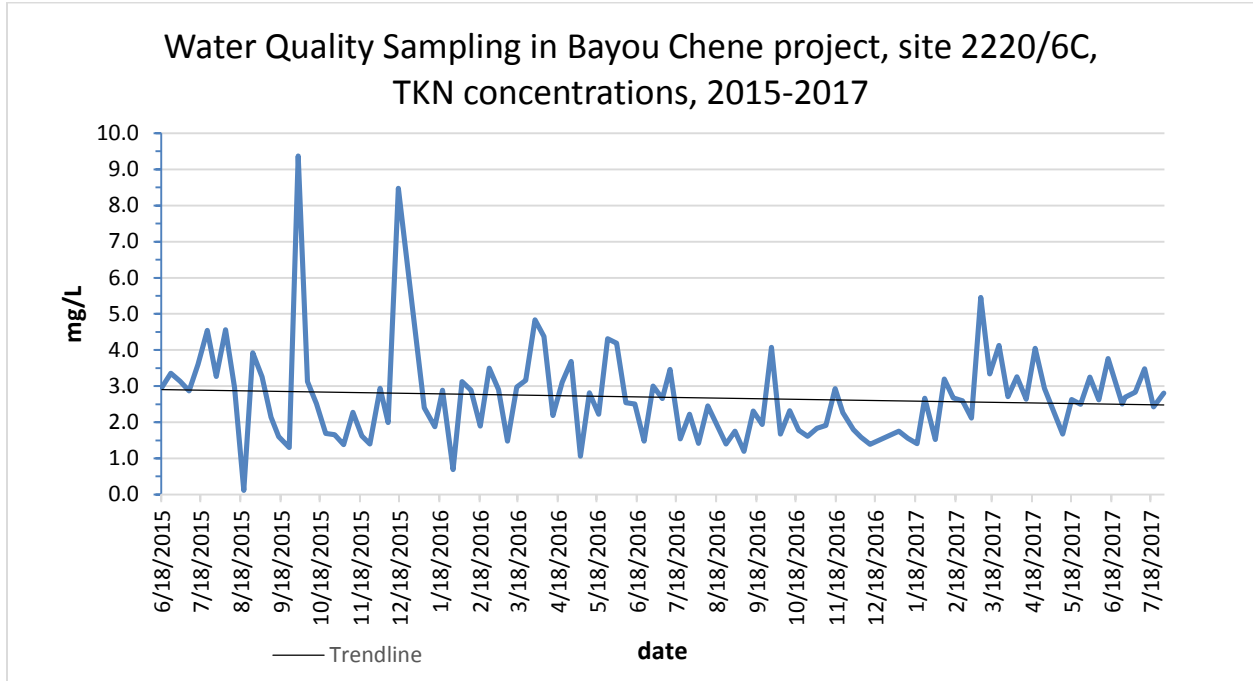


Figure 143 Water Quality Sampling in Bayou Chene project, site 2220/6C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for TKN. TKN concentrations ranged from 0.11 mg/L (August 2015) to 9.37 mg/L (October 2015). The trendline shows TKN concentrations are slightly decreasing.

BOD₅

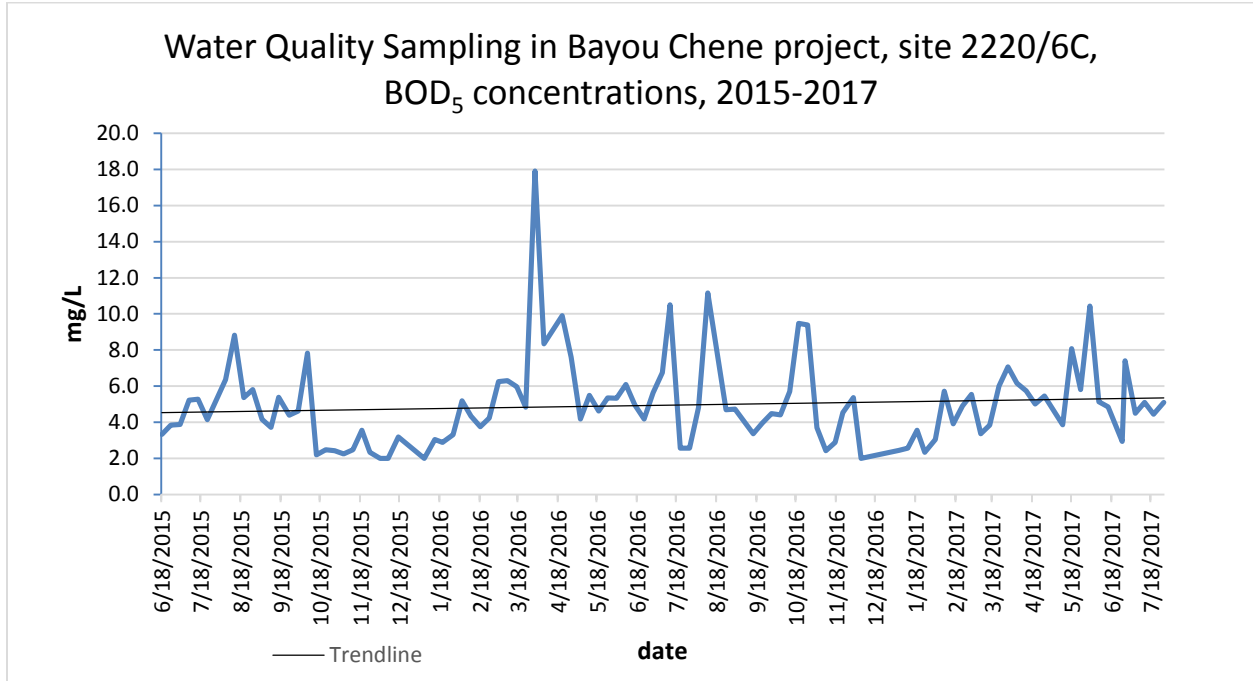


Figure 144 Water Quality Sampling in Bayou Chene project, site 2220/6C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the site 2220/6C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (December 2015; January, December 2016) to 17.91 mg/L (March 2016). The trendline shows BOD₅ concentrations are slightly increasing. Only 102 samples were collected. Some sample dates in July 2015, April 2016, and September 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4534/8C

DO

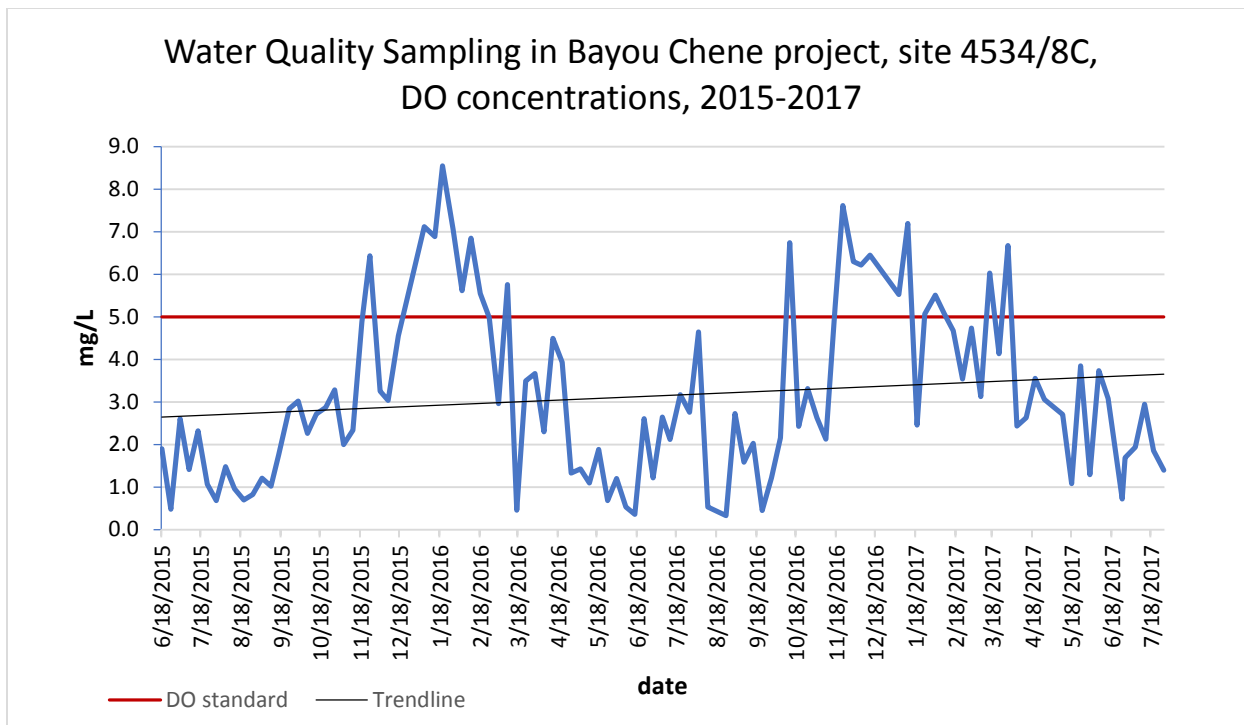


Figure 145 Water Quality Sampling in Bayou Chene project, site 4534/8C, DO concentrations, 2015-2017

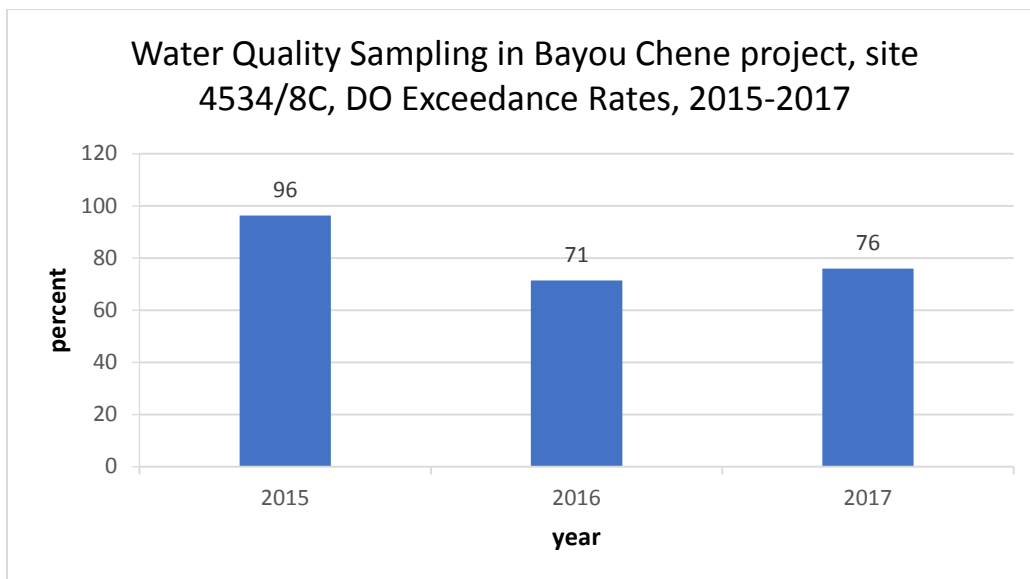


Figure 146 Water Quality Sampling in Bayou Chene project, site 4534/8C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at site 4534/8C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.33 mg/L (August 2016) to 8.55 mg/L (January 2016). The trendline shows DO concentrations are slightly increasing. Data also shows DO levels were highest in the cooler months (October through March). The exceedance rates were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 96 percent in 2015 and as low as 71 percent in 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 26 samples did not meet the standard. In 2016, there 49 samples taken, of which 32 did not meet the state's standard. In 2017, there were a total of 29 samples taken, of which 22 samples did not meet the standard. Only 25 of the 105 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

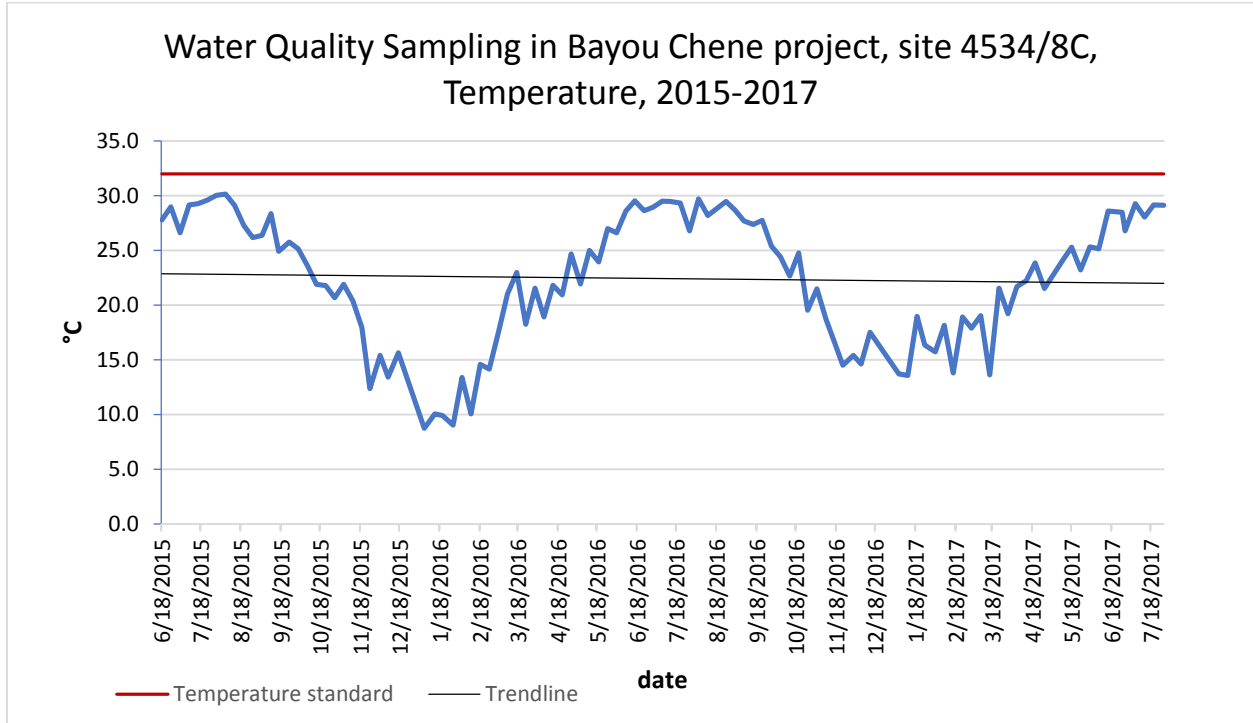


Figure 147 Water Quality Sampling in Bayou Chene project, site 4534/8C, Temperature, 2015-2017

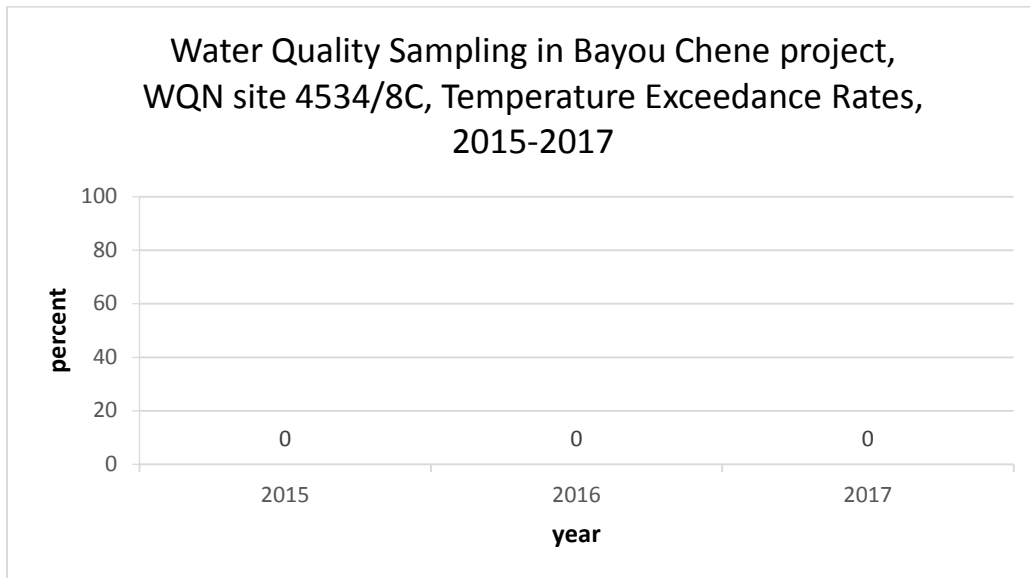


Figure 148 Water Quality Sampling in Bayou Chene project, site 4534/8C, Temperature Exceedance Rates, 2015-2017; no values exceed the standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 4534/8C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 8.73 °C (January 2016) to 30.17 °C (August 2015). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the winter months (December through February). The exceedance rates were calculated for temperature from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

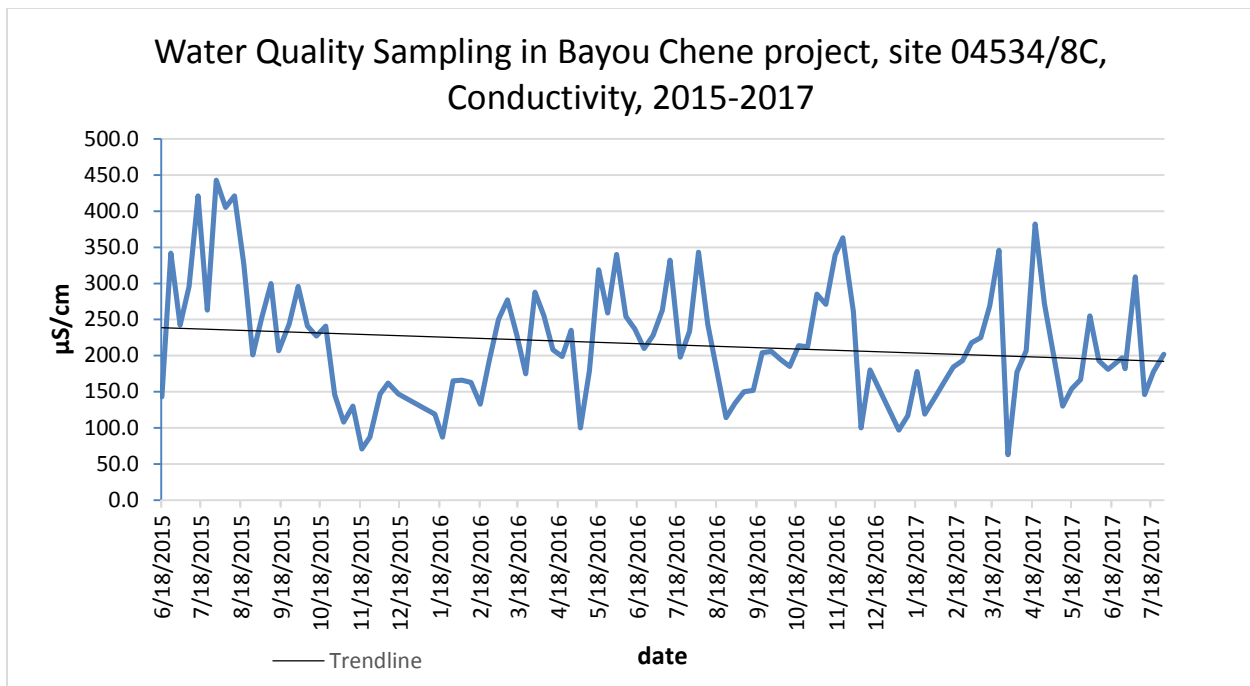


Figure 149 Water Quality Sampling in Bayou Chene project, site 4534/8C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4534/8C. There is no standard for conductivity. Conductivity values ranged from 63.0 $\mu\text{S}/\text{cm}$ (March 2017) to 443.0 $\mu\text{S}/\text{cm}$ (July 2015). The trendline shows conductivity values are slightly decreasing.

pH

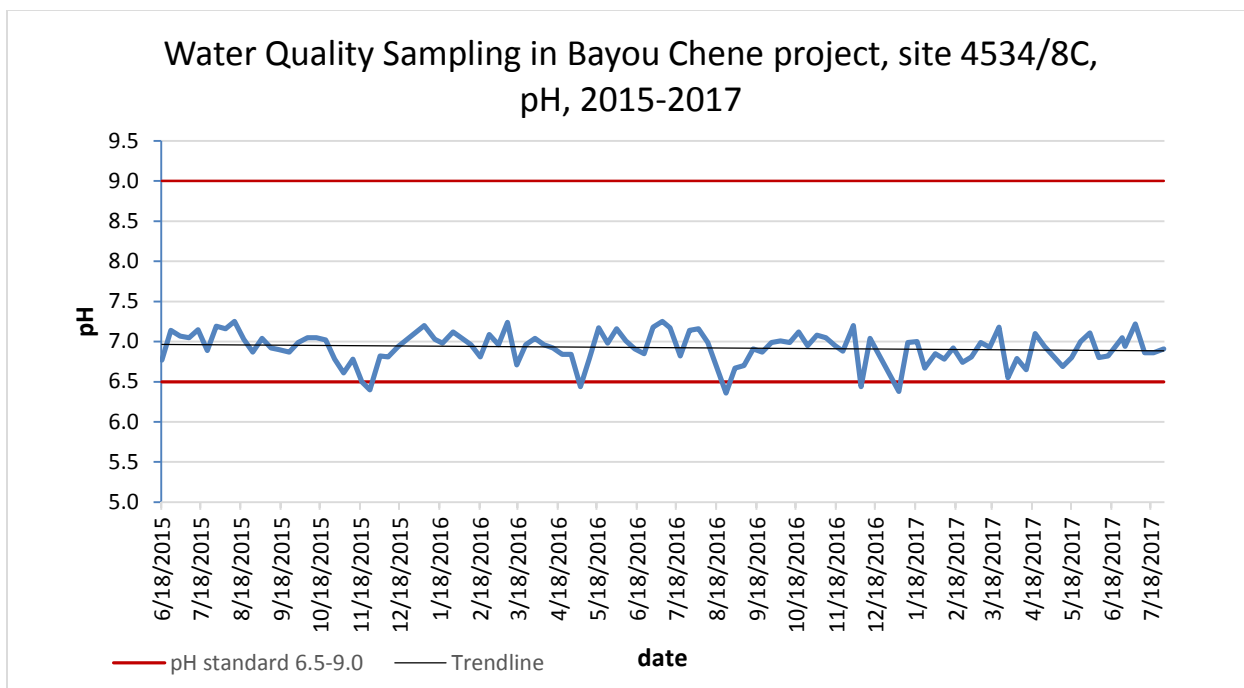


Figure 150 Water Quality Sampling in Bayou Chene project, site 4534/8C, pH, 2015-2017

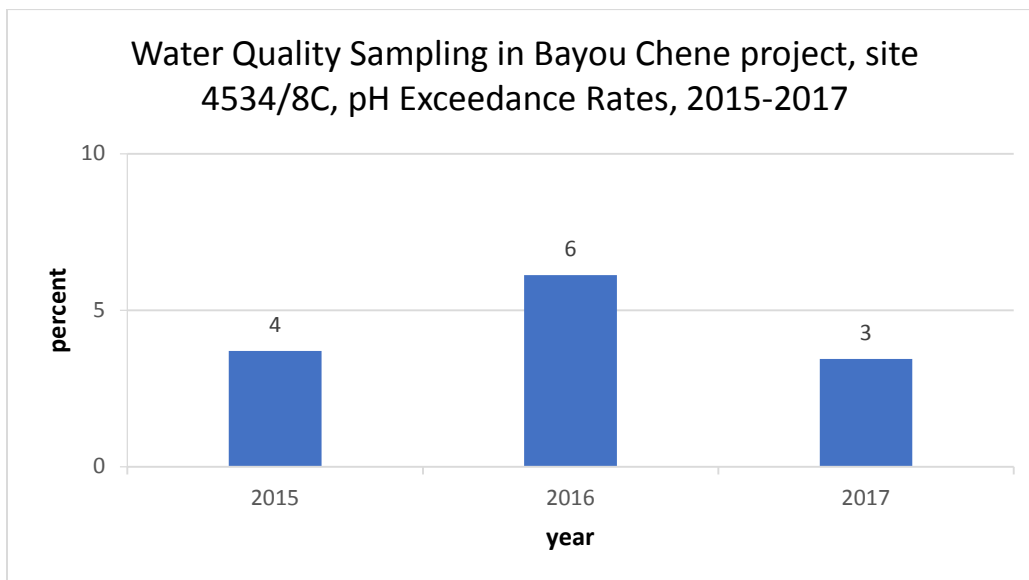


Figure 151 Water Quality Sampling in Bayou Chene project, site 4534/8C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the site 4534/8C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.36 (August 2016) to 7.25 (August 2015). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 6 percent in 2016 and as low as 3 percent in

2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none 1 was below the standard. In 2016, there 49 samples taken, of which 3 were below the standard. In 2017, there were a total of 29 samples taken, of which 1 sample did not meet the standard. 100 of the 105 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

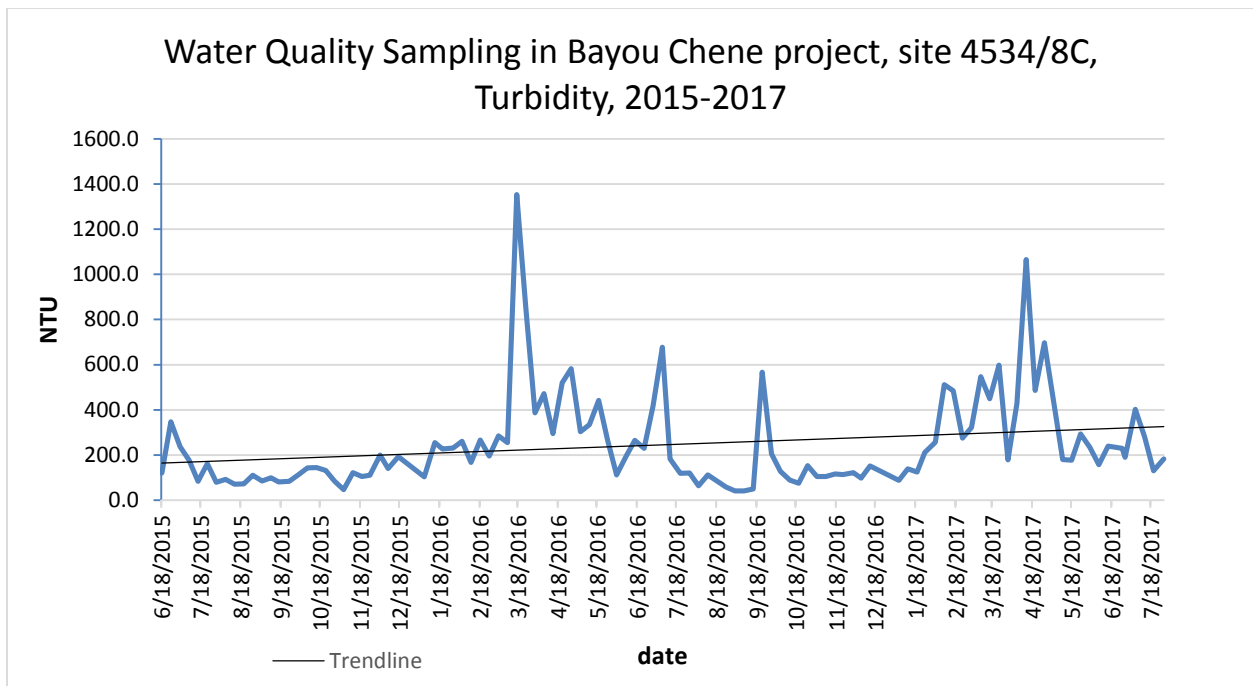


Figure 152 Water Quality Sampling in Bayou Chene project, site 4534/8C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 4534/8C. There is no standard for turbidity. Turbidity values ranged from 41.0 NTU (September 2015) to 1353.5 NTU (September 2016). The trendline shows turbidity values are slightly increasing. Data also shows higher turbidity levels in the spring months (March through May).

TSS

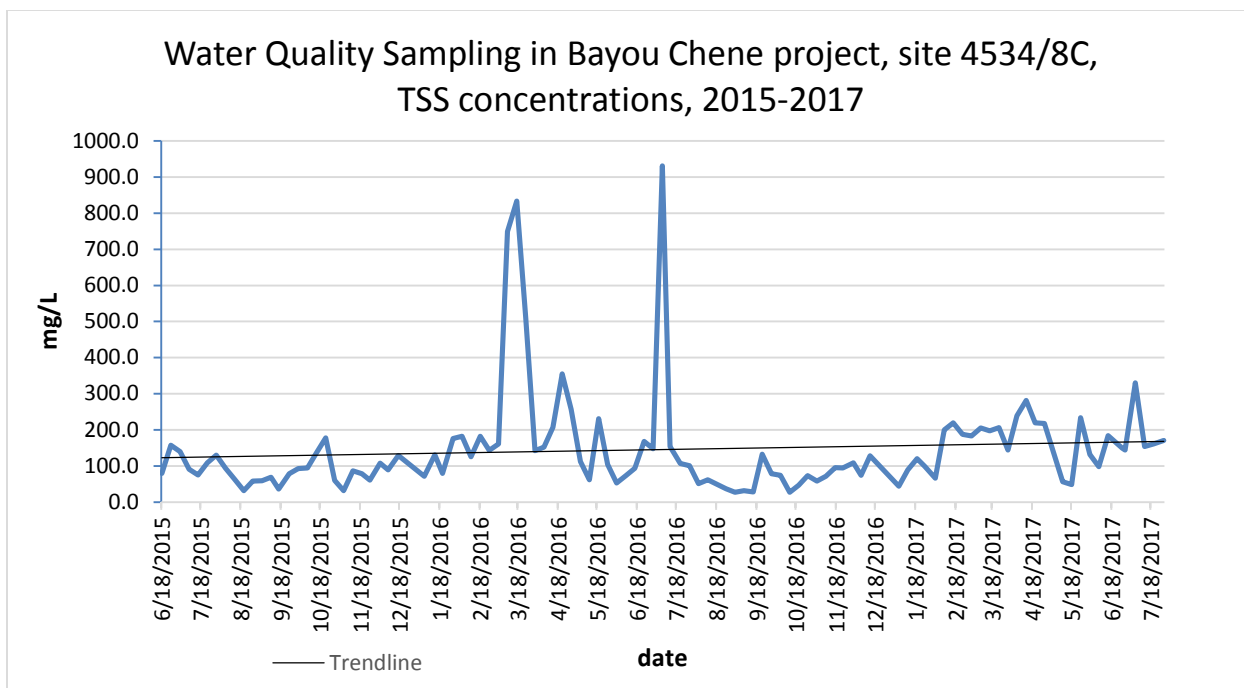


Figure 153 Water Quality Sampling in Bayou Chene project, site 4534/8C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for TSS. TSS concentrations ranged from 27.0 mg/L (September 2016) to 931.0 mg/L (July 2016). The trendline shows TSS concentrations are slightly increasing.

TDS

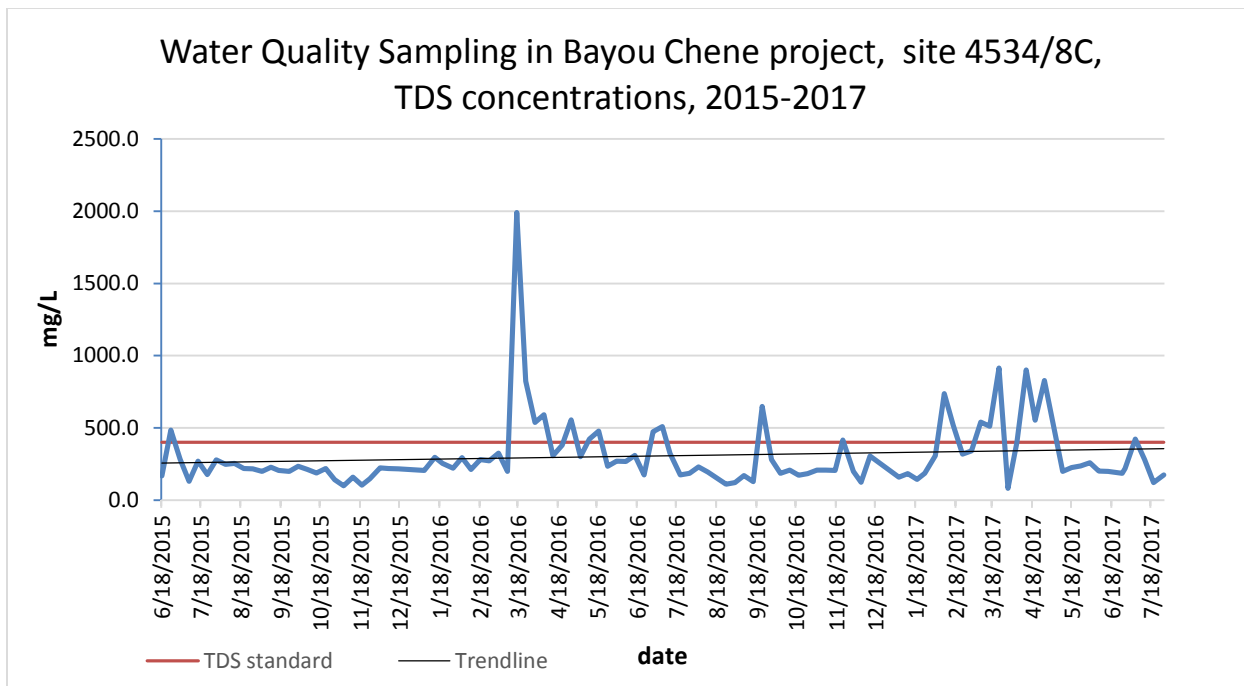


Figure 154 Water Quality Sampling in Bayou Chene project, site 4534/8C, TDS concentrations, 2015-2017

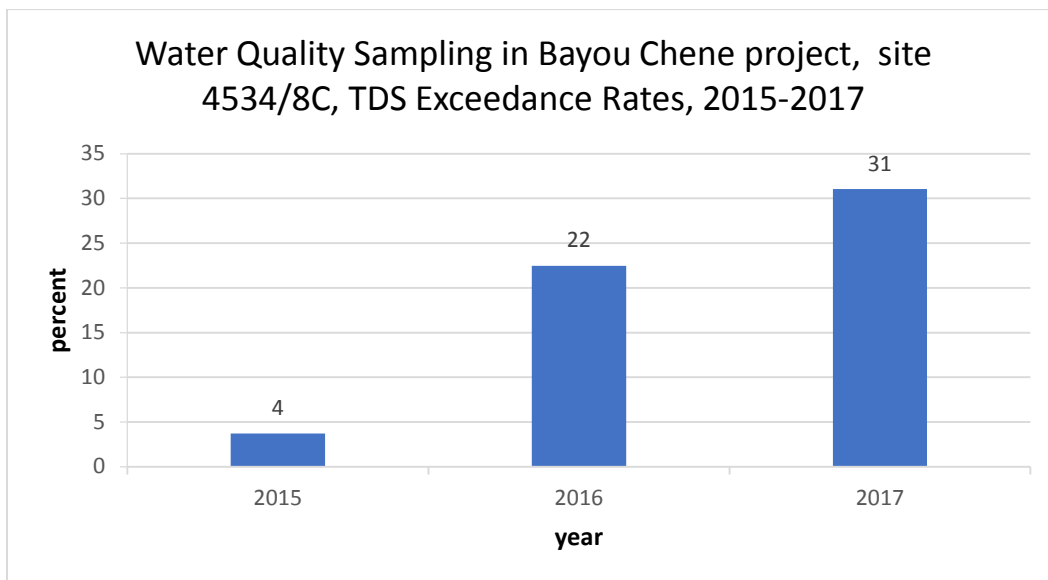


Figure 155 Water Quality Sampling in Bayou Chene project, site 4534/8C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the site 4534/8C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 82.0 mg/L (March 2017) to 1991.0 mg/L (March 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the spring months (March through May). The exceedance rates

were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 4 percent in 2015 and as high as 31 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 1 sample exceeded the state's standard. In 2016, there 49 samples taken, of which 11 did not meet the state's standard. In 2017, there were a total of 29 samples taken, of which 9 samples did not meet the standard. Only 84 of the 105 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

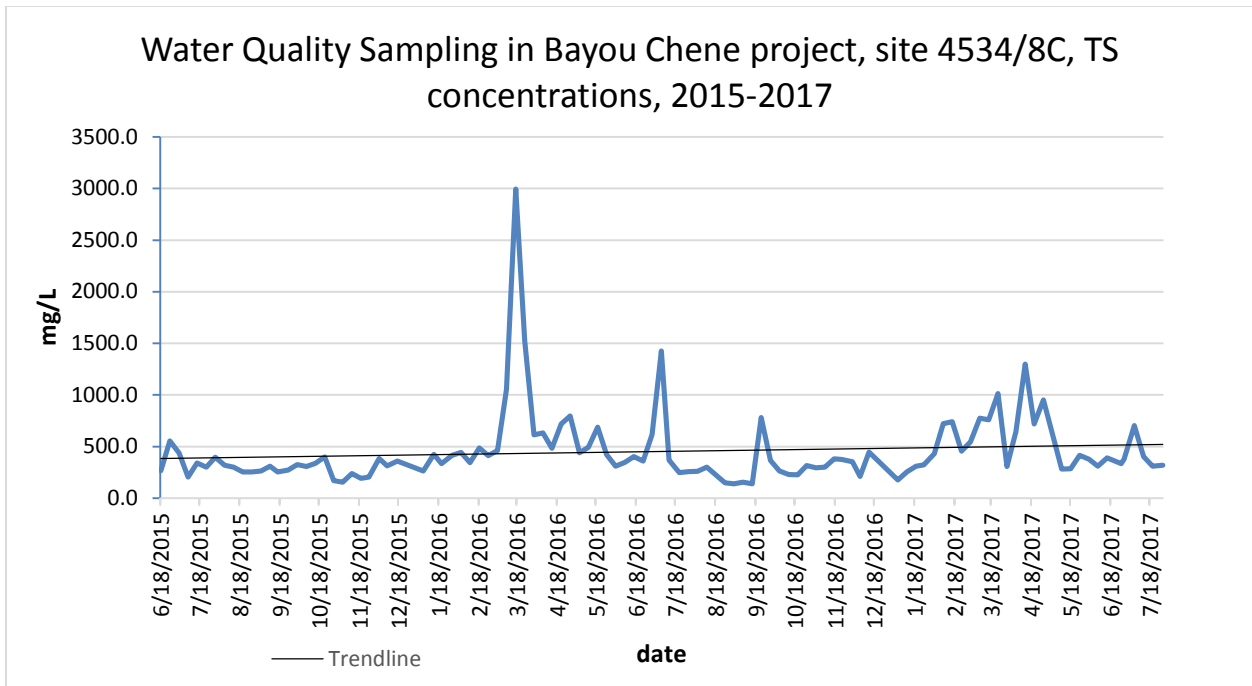


Figure 156 Water Quality Sampling in Bayou Chene project, site 4534/8C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for TS. TS concentrations ranged from 138.0 mg/L (September 2016) to 2994.0 mg/L (March 2016). The trendline shows TS concentrations are slightly increasing.

NO₃-N

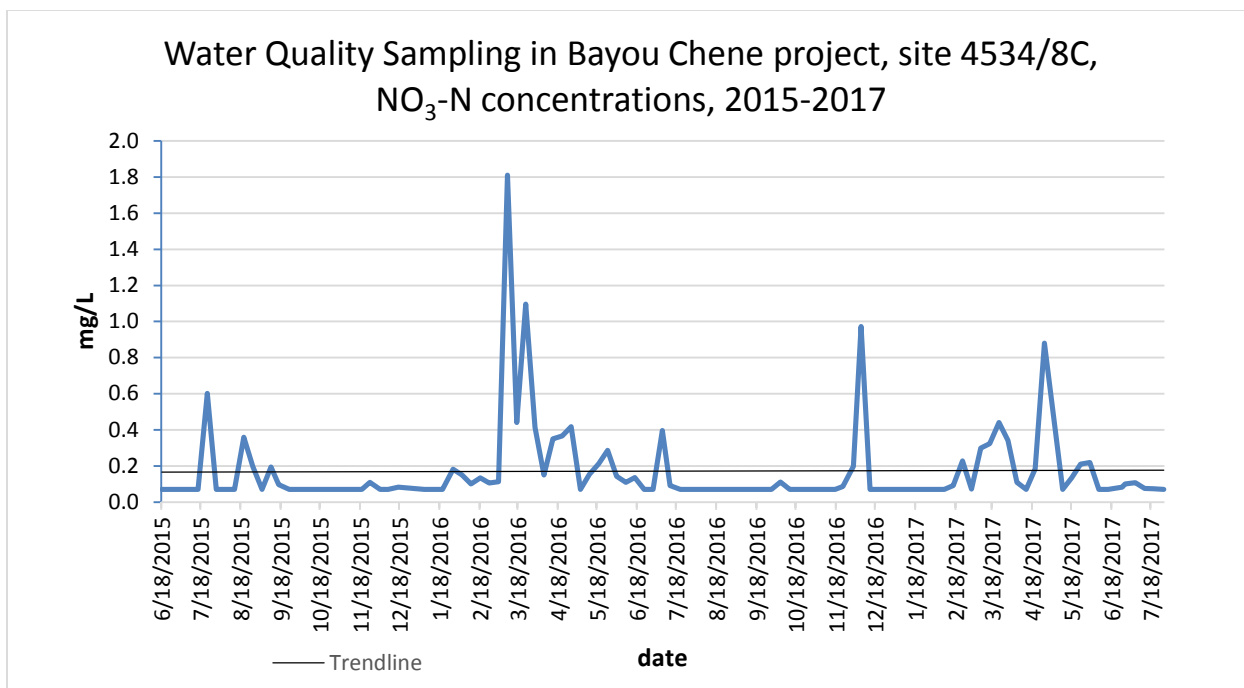


Figure 157 Water Quality Sampling in Bayou Chene project, site 4534/8C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-December 2015; January, May-December 2016; January-July 2017) to 1.81 mg/L (March 2016). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

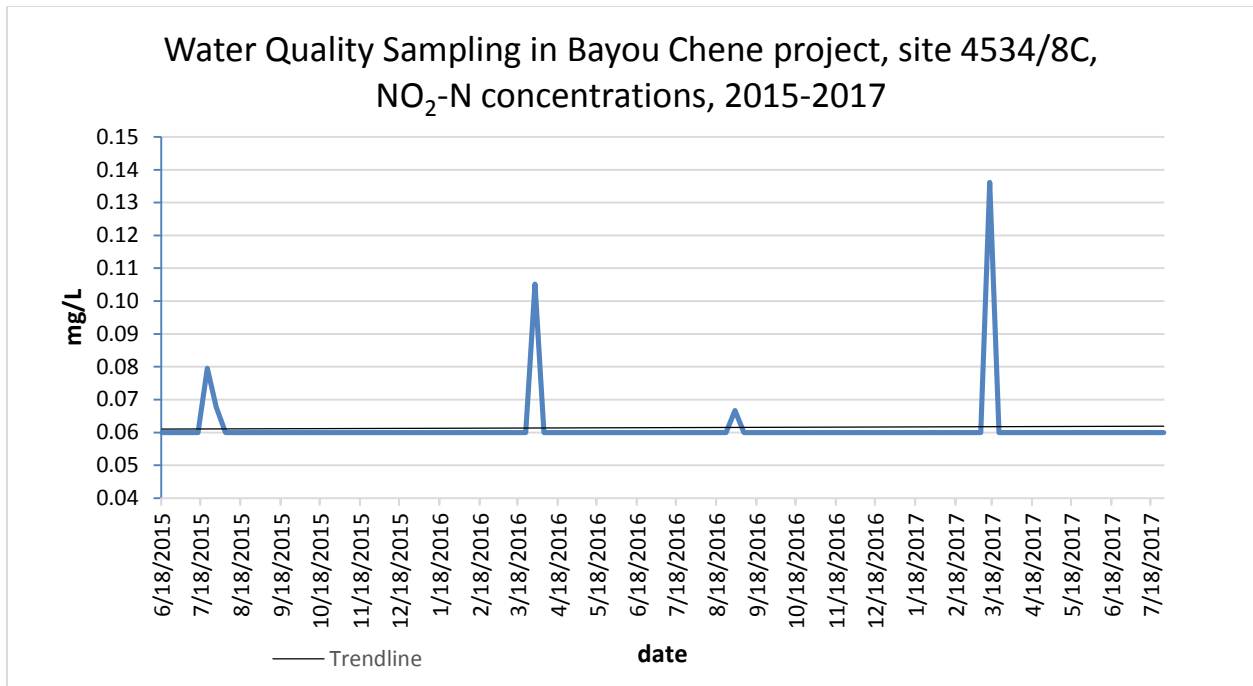


Figure 158 Water Quality Sampling in Bayou Chene project, site 4534/8C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.14 mg/L (March 2017). The trendline shows NO₂-N concentrations are slightly increasing.

NO₃/NO₂-N

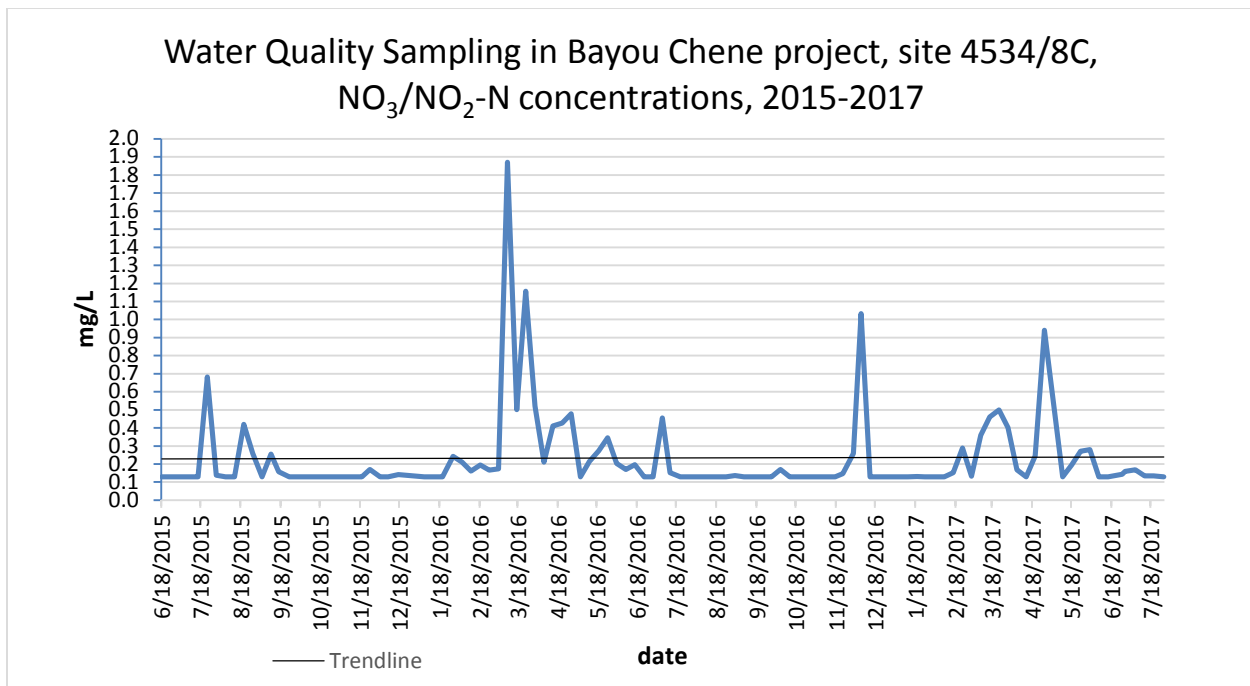


Figure 159 Water Quality Sampling in Bayou Chene project, site 4534/8C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; January, May-December 2016; January-July 2017) to 1.87 mg/L (March 2016). The trendline shows that NO₃/NO₂-N concentrations are slightly increasing.

Cl

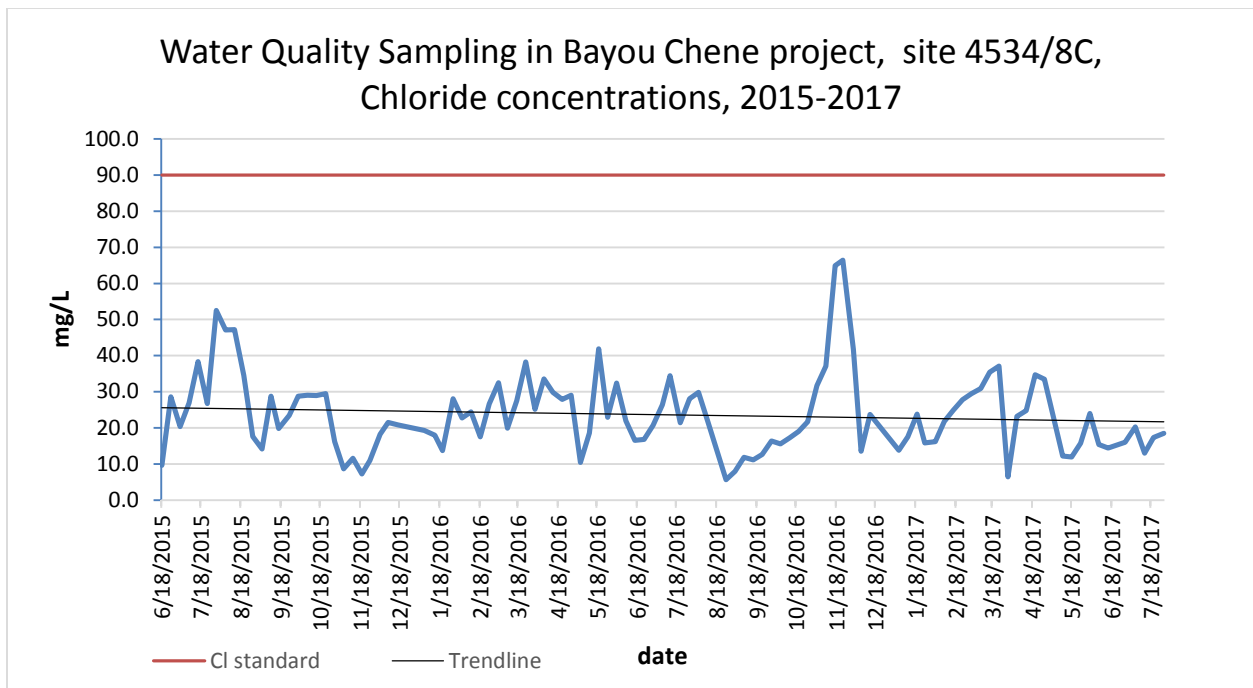


Figure 160 Water Quality Sampling in Bayou Chene project, site 4534/8C, Chloride concentrations, 2015-2017

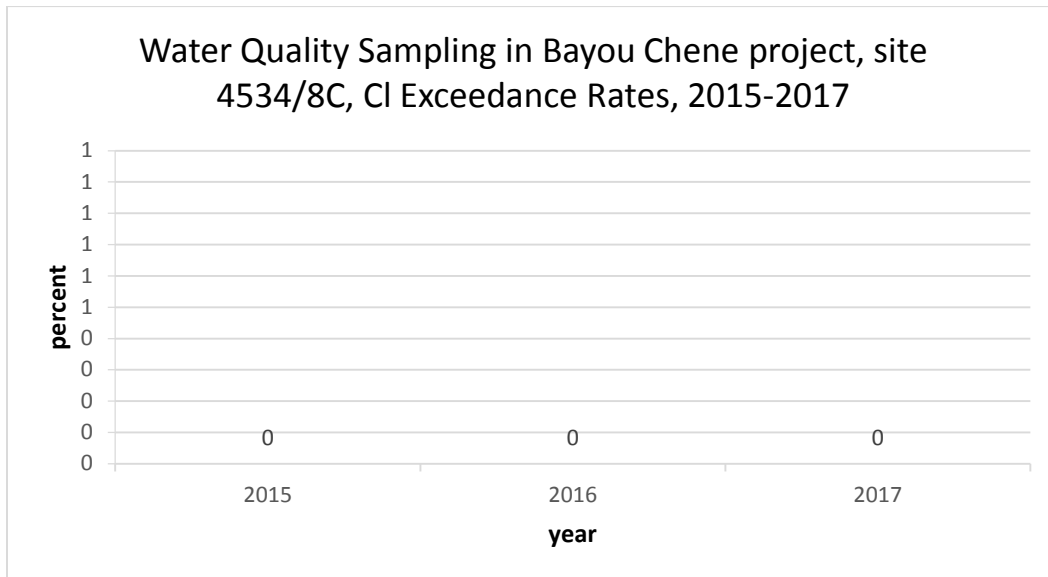


Figure 161 Water Quality Sampling in Bayou Chene project, site 4534/8C, Cl Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the site 4534/8C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 5.62 mg/L (August 2016) to 66.42 mg/L (November 2016). The trendline shows Cl concentrations are slightly decreasing. The

exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from 2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

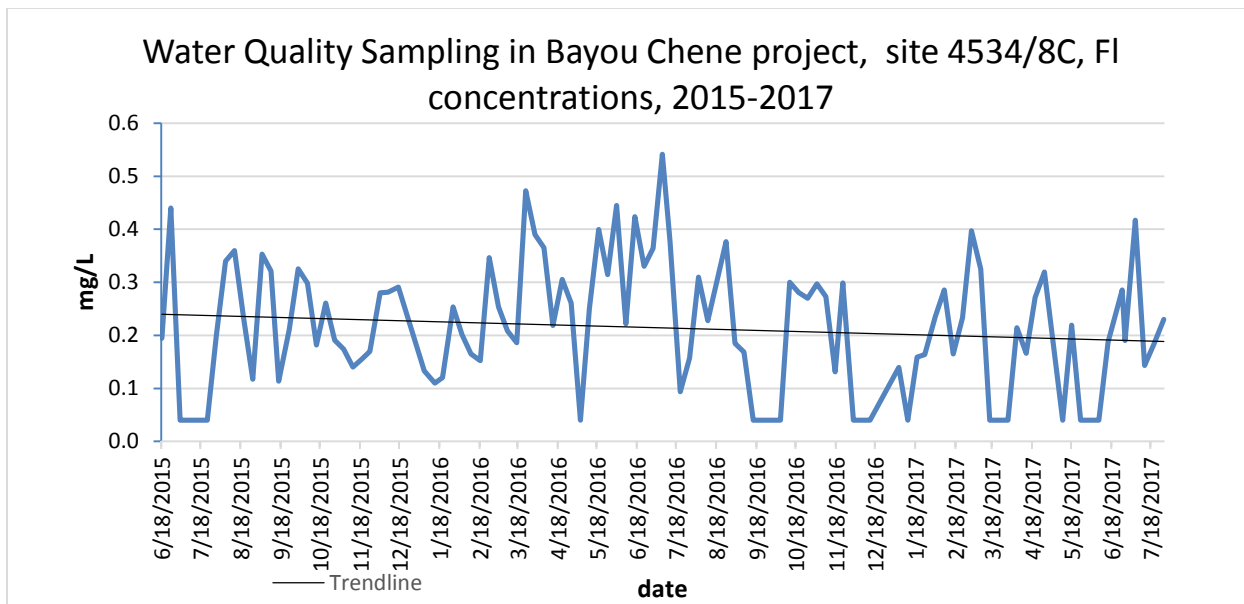


Figure 162 Water Quality Sampling in Bayou Chene project, site 4534/8C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 4534/8C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: July 2015; May, September-October, December 2016; January, March, May-June 2017) to 0.54 mg/L (July 2016). The trendline shows FI concentrations are slightly decreasing.

SO₄

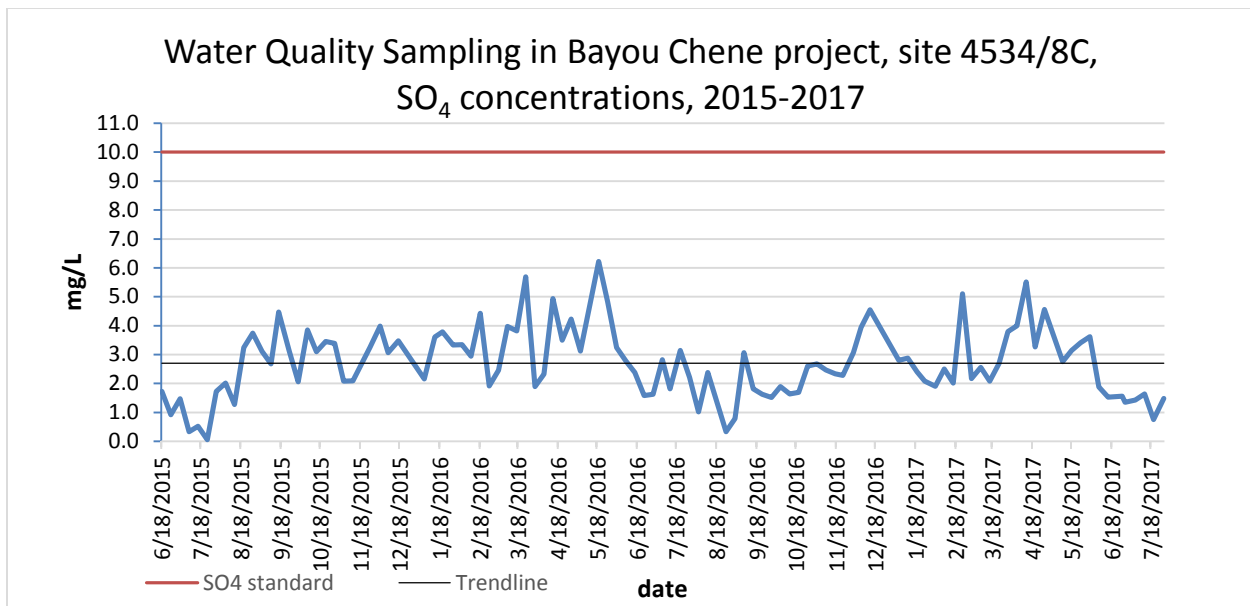


Figure 163 Water Quality Sampling in Bayou Chene project, site 4534/8C, SO₄ concentrations, 2015-2017

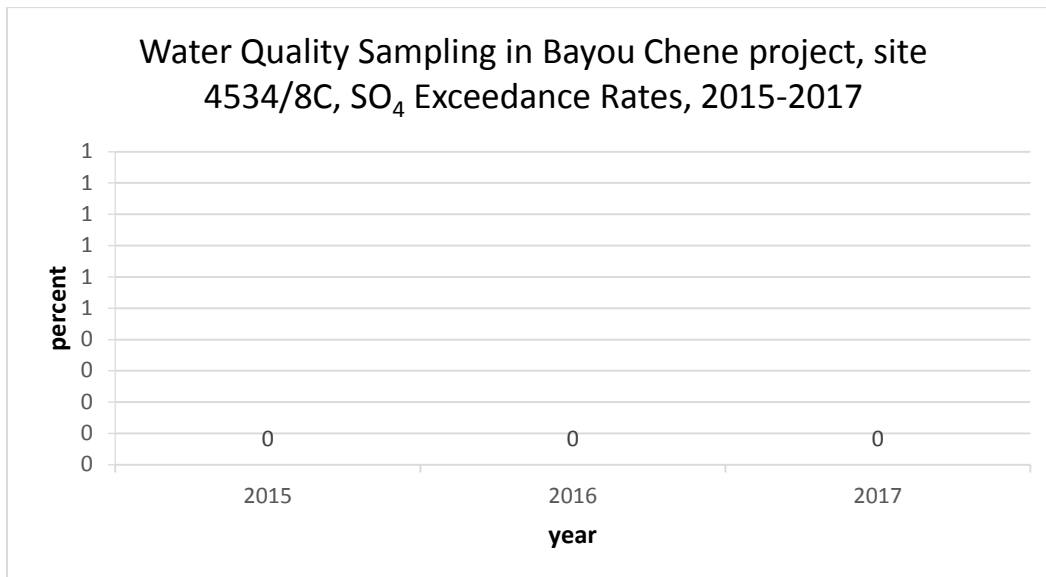


Figure 164 Water Quality Sampling in Bayou Chene project, site 4534/8C, SO₄ Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the site 4534/8C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (July 2015) to 6.23 mg/L (May 2016). The trendline shows SO₄ concentrations are slightly decreasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). None of the samples collected from

2015 through 2017 exceeded the SO₄ standard of 10 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

SRP

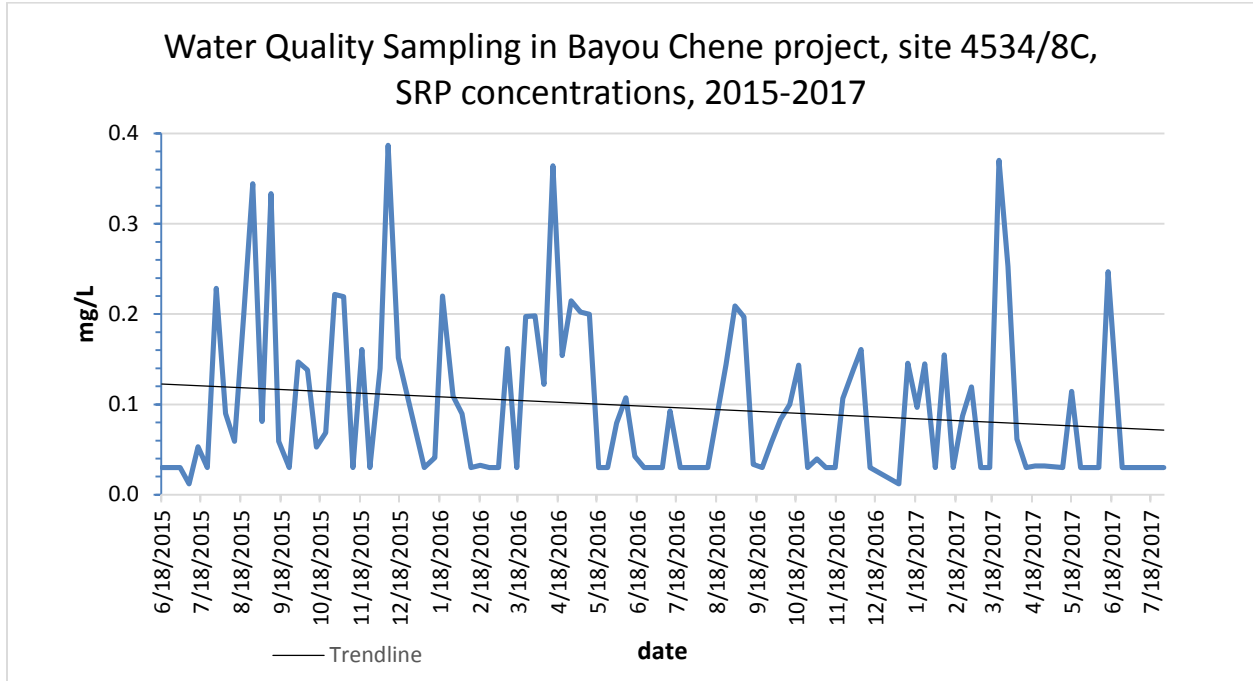


Figure 165 Water Quality Sampling in Bayou Chene project, site 4534/8C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for SRP. SRP concentrations ranged from 0.01 mg/L (July 2015, January 2017) to 0.39 mg/L (December 2015). The trendline shows SRP concentrations are slightly decreasing.

TP

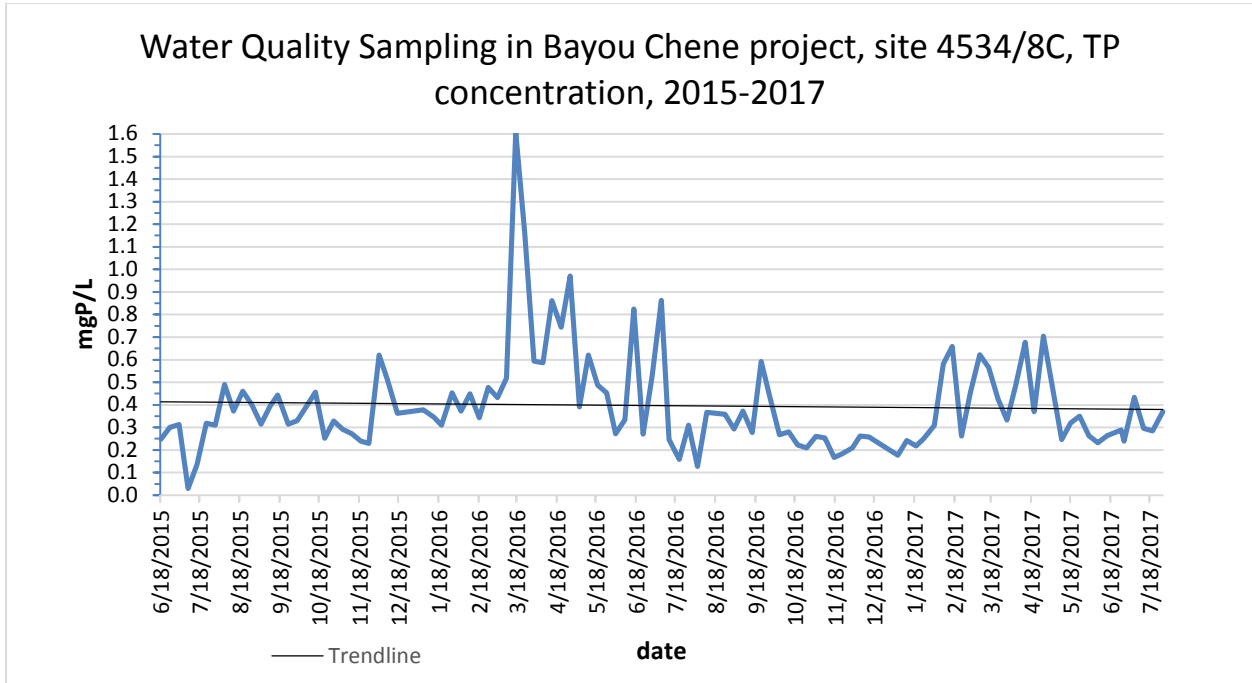


Figure 166 Water Quality Sampling in Bayou Chene project, site 4534/8C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for TP. TP concentrations ranged from 0.03 mgP/L (July 2015) to 1.61 mgP/L (March 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in spring months (March through May).

TKN

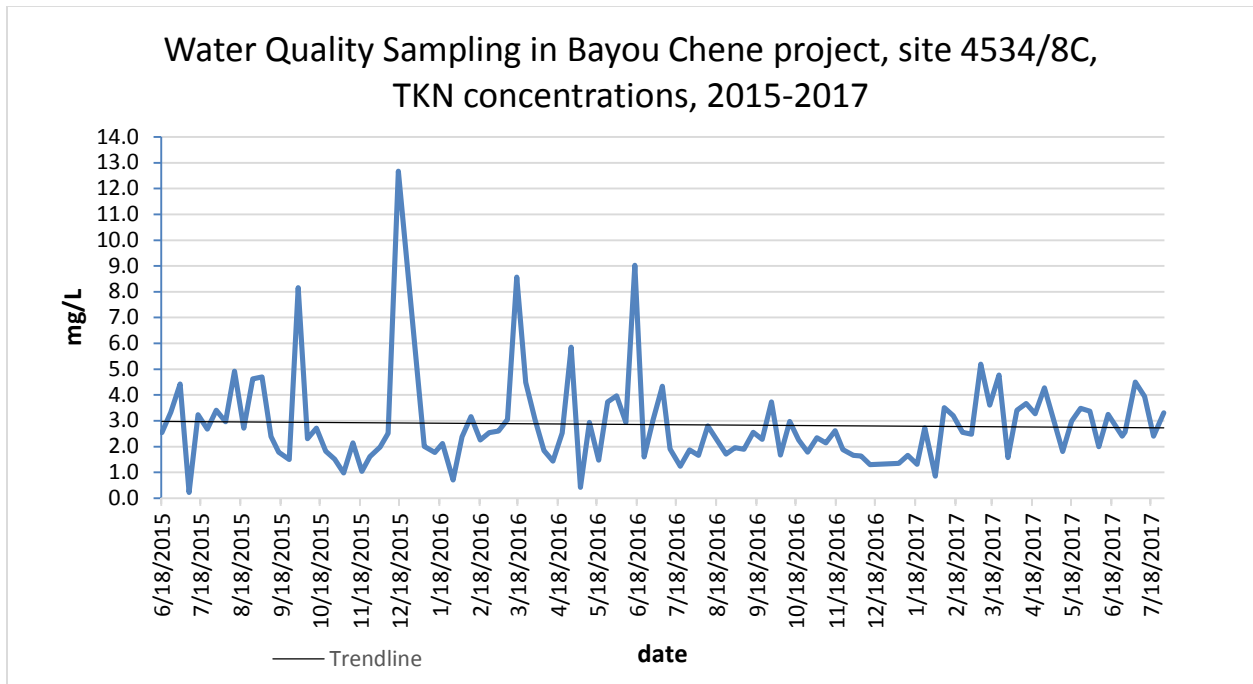


Figure 167 Water Quality Sampling in Bayou Chene project, site 4534/8C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for TKN. TKN concentrations ranged from 0.22 mg/L (July 2017) to 12.67 mg/L (December 2015). The trendline shows TKN concentrations are slightly decreasing.

BOD₅

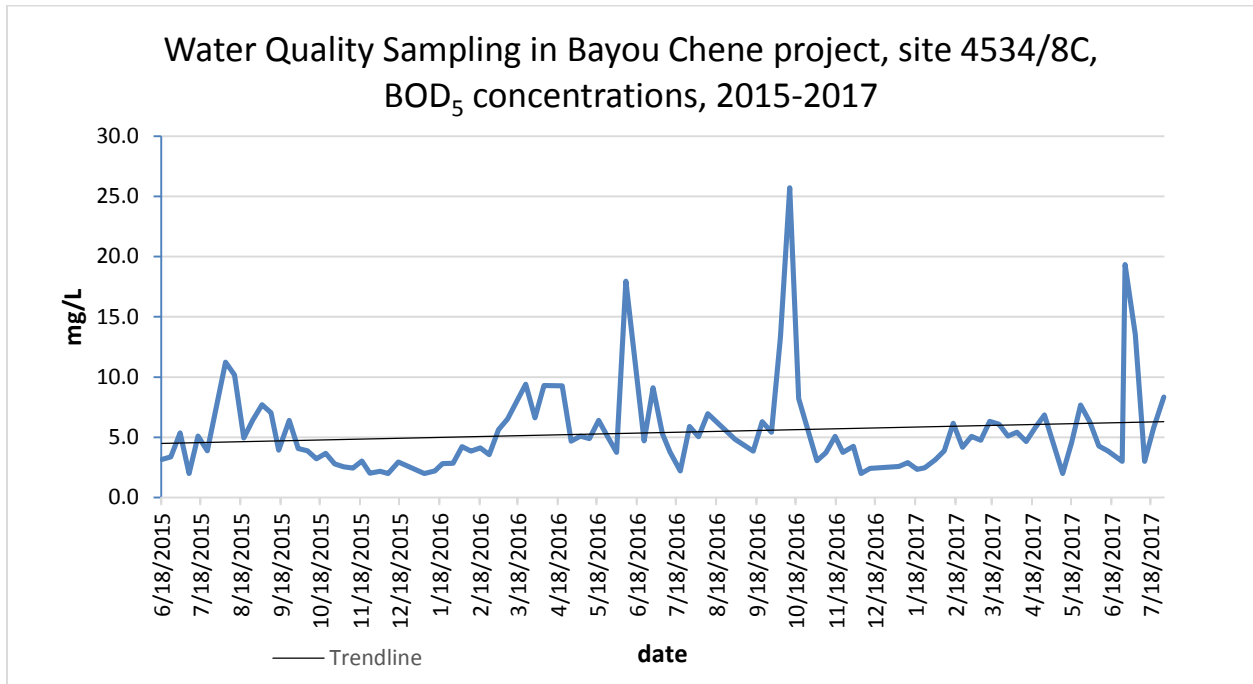


Figure 168 Water Quality Sampling in Bayou Chene project, site 4534/8C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the site 4534/8C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (July, December 2015; January, December 2016; May 2017) to 25.73 mg/L (October 2016). The trendline shows BOD₅ concentrations are slightly increasing. Only 98 samples were collected. Some sample dates in July 2015, March 2016, April 2016, August 2016, September 2016, and October 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4535/9C

DO

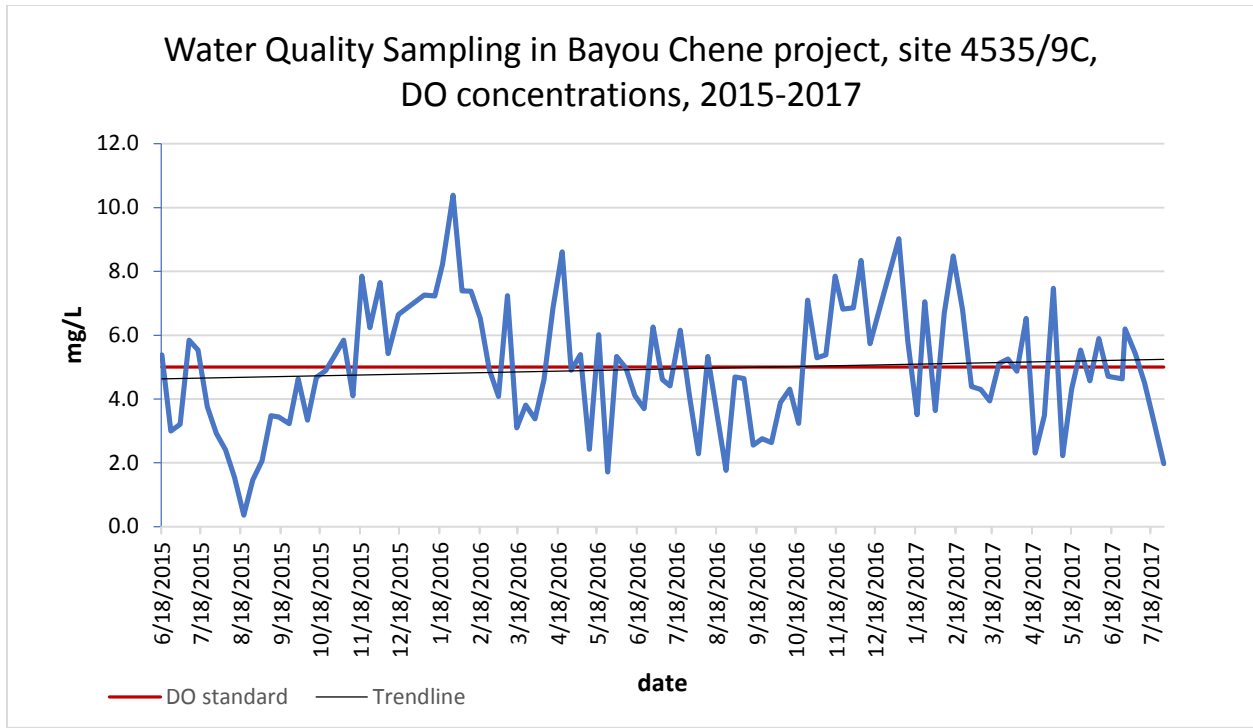


Figure 169 Water Quality Sampling in Bayou Chene project, site 4535/9C, DO concentrations, 2015-2017

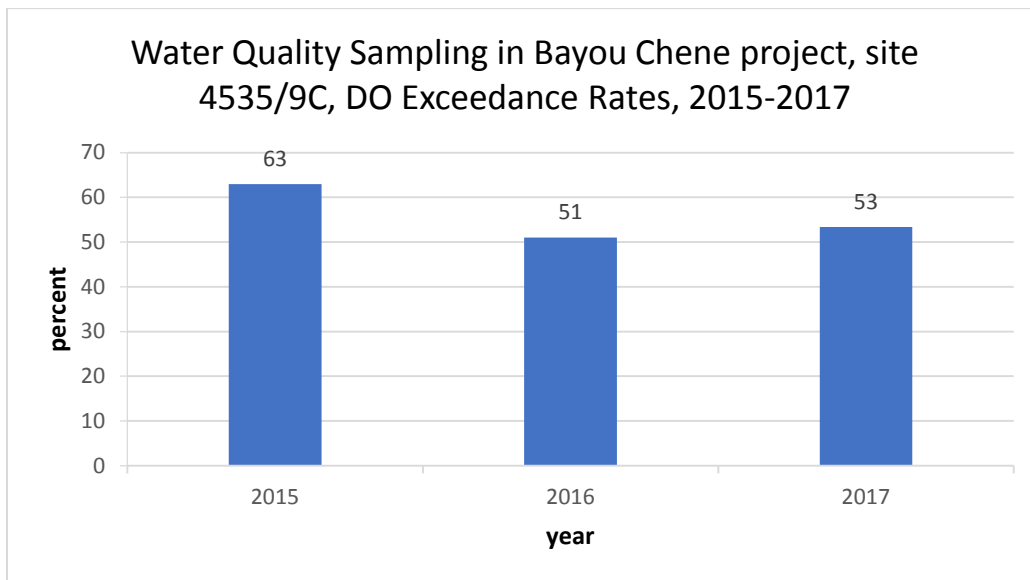


Figure 170 Water Quality Sampling in Bayou Chene project, site 4535/9C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at site 4535/9C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.36 mg/L (August 2015) to 10.39 mg/L (January 2016). The trendline shows DO concentrations are slightly increasing. Data also

shows DO levels were lowest near the month of August. The exceedance rates were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 63 percent in 2015 and as low as 51 percent in 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 17 samples did not meet the standard. In 2016, there 49 samples taken, of which 25 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 16 samples did not meet the standard. Only 48 of the 106 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

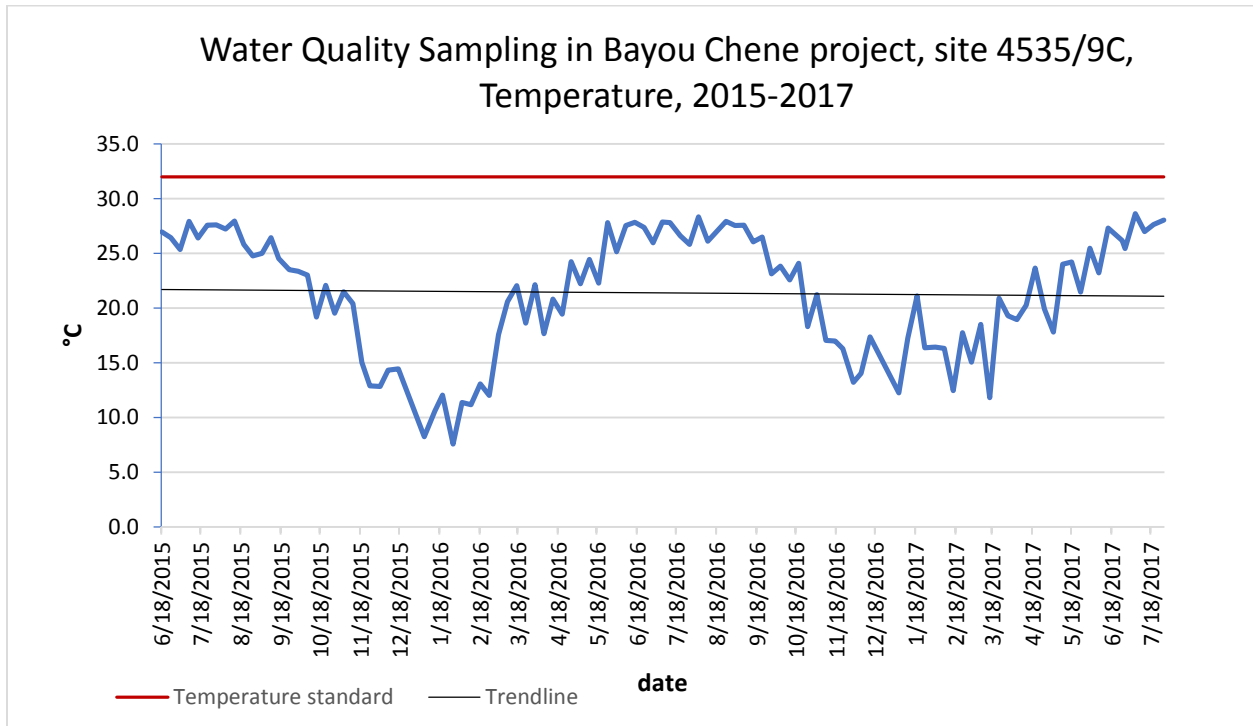


Figure 171 Water Quality Sampling in Bayou Chene project, site 4535/9C, Temperature, 2015-2017

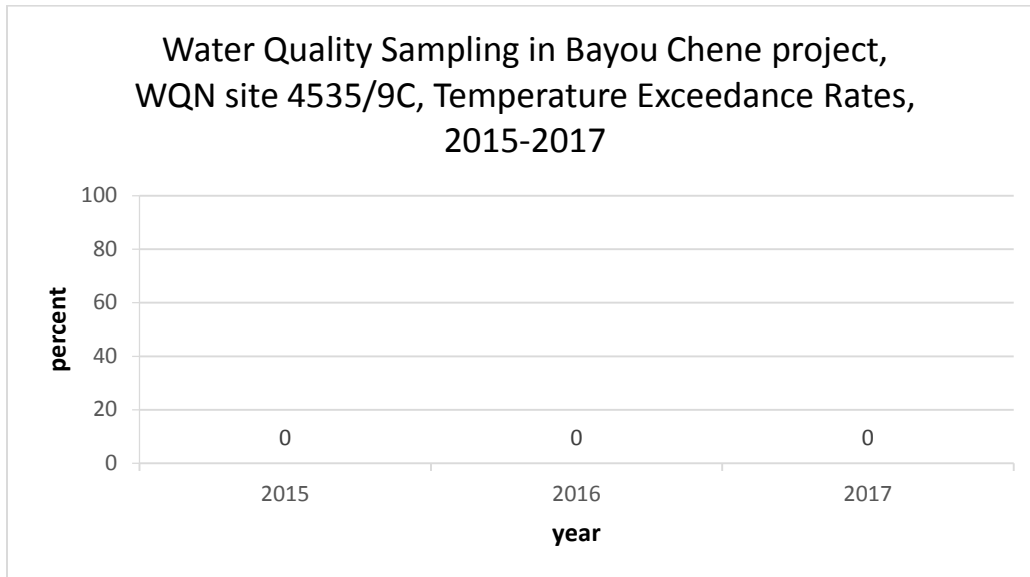


Figure 172 Water Quality Sampling in Bayou Chene project, site 4535/9C, Temperature Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 4535/9C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 7.58 °C (January 2016) to 28.63 °C (July 2017). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the

winter months (December through February). The exceedance rates were calculated for temperature from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

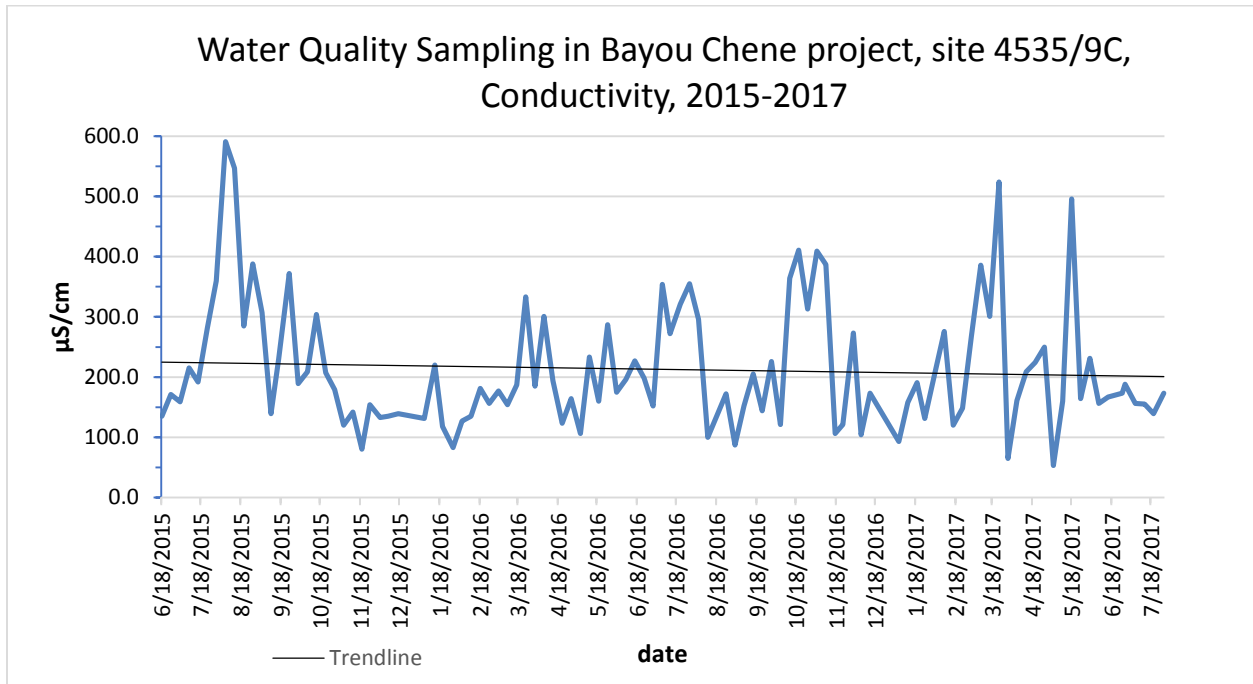


Figure 173 Water Quality Sampling in Bayou Chene project, site 4535/9C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4535/9C. There is no standard for conductivity. Conductivity values ranged from 53 $\mu\text{S}/\text{cm}$ (May 2017) to 591 $\mu\text{S}/\text{cm}$ (August 2015). The trendline shows conductivity values are slightly decreasing.

pH

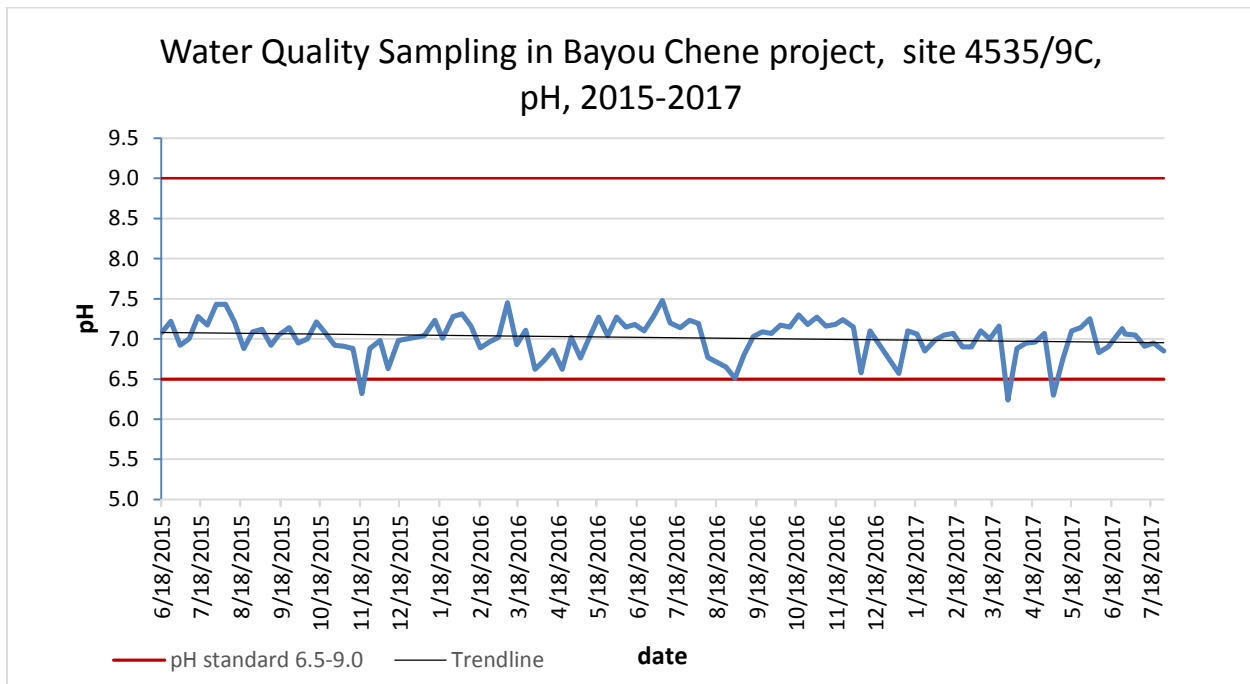


Figure 174 Water Quality Sampling in Bayou Chene project, site 4535/9C, pH, 2015-2017

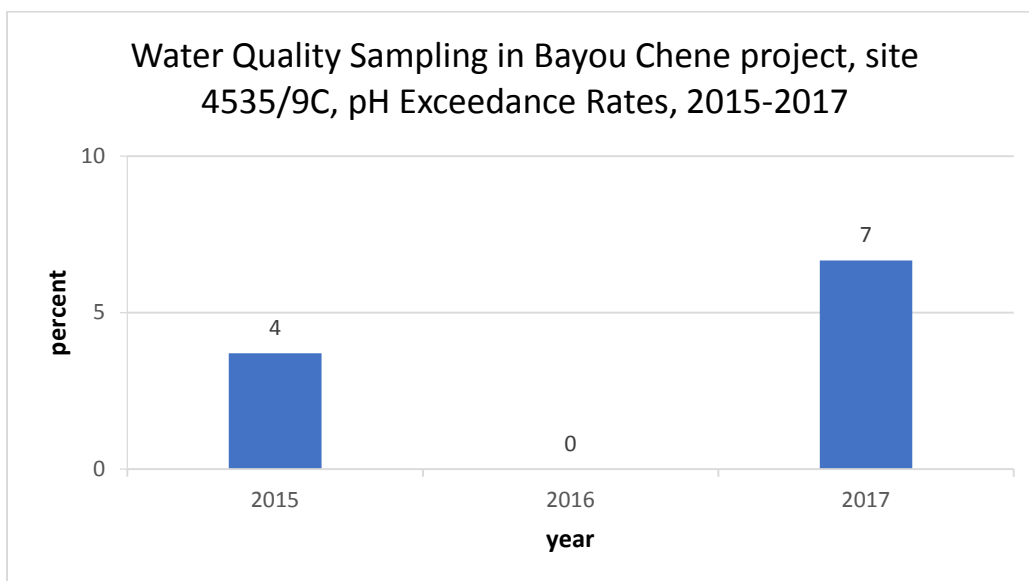


Figure 175 Water Quality Sampling in Bayou Chene project, site 4535/9C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the site 4535/9C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.24 (March 2017) to 7.48 (July 2016). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as low as 4 percent in 2015 and as high as 7 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 1 sample was below the state's standard. In 2016, there 49 samples

taken, of which none were below the standard. In 2017, there were a total of 30 samples taken, of which 2 samples did not meet the standard. 103 of the 106 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

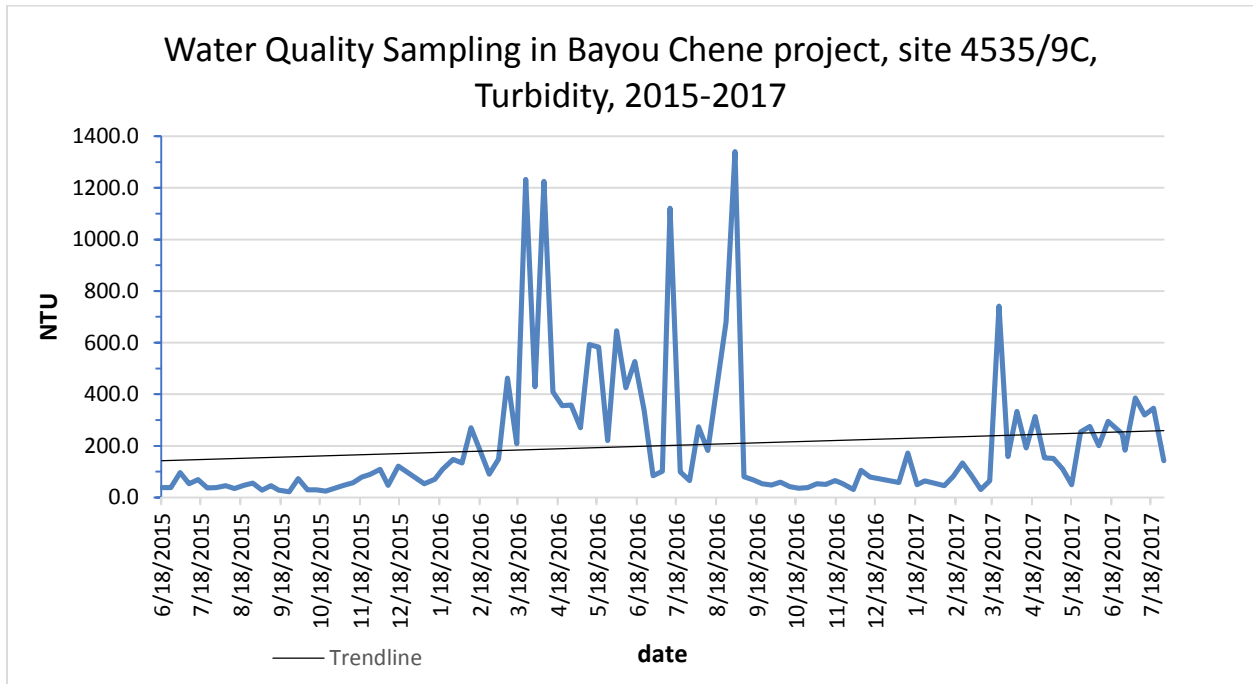


Figure 176 Water Quality Sampling in Bayou Chene project, site 4535/9C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 4535/9C. There is no standard for turbidity. Turbidity values ranged from 22.0 NTU (September 2015) to 1340.7 NTU (September 2016). The trendline shows turbidity values are slightly increasing.

TSS

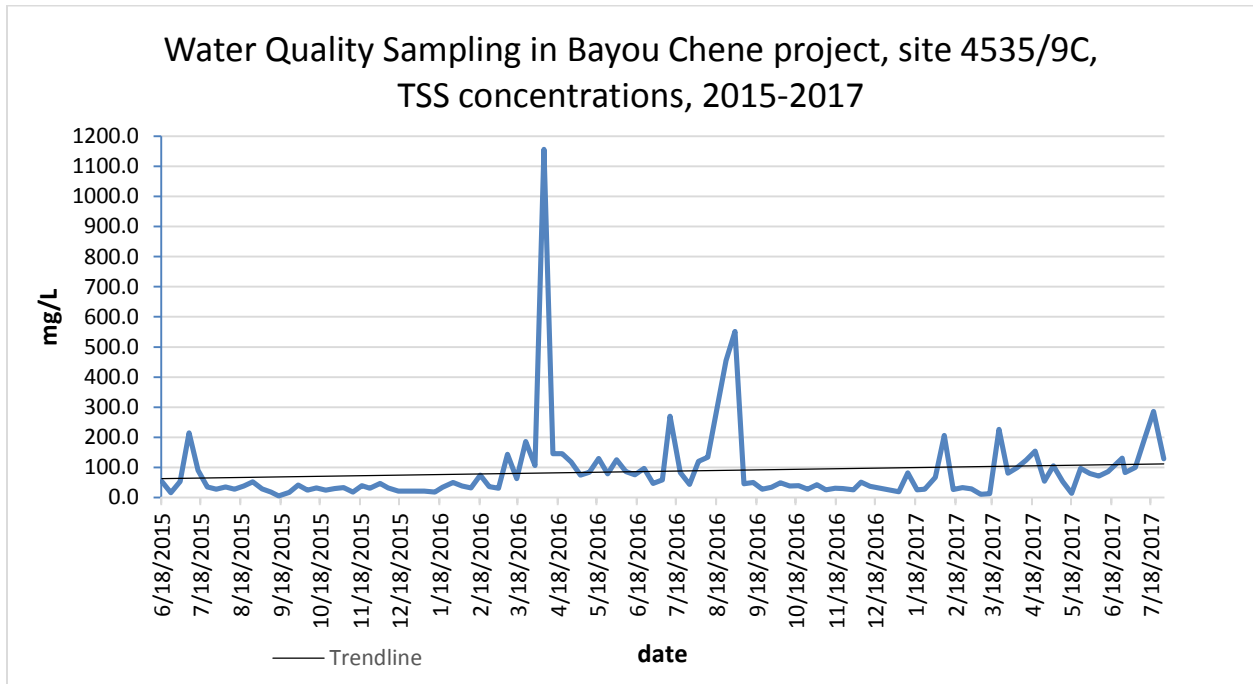


Figure 177 Water Quality Sampling in Bayou Chene project, site 4535/9C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for TSS. TSS concentrations ranged from 5.0 mg/L (September 2015) to 1156.0 mg/L (April 2016). The trendline shows TSS concentrations are slightly increasing.

TDS

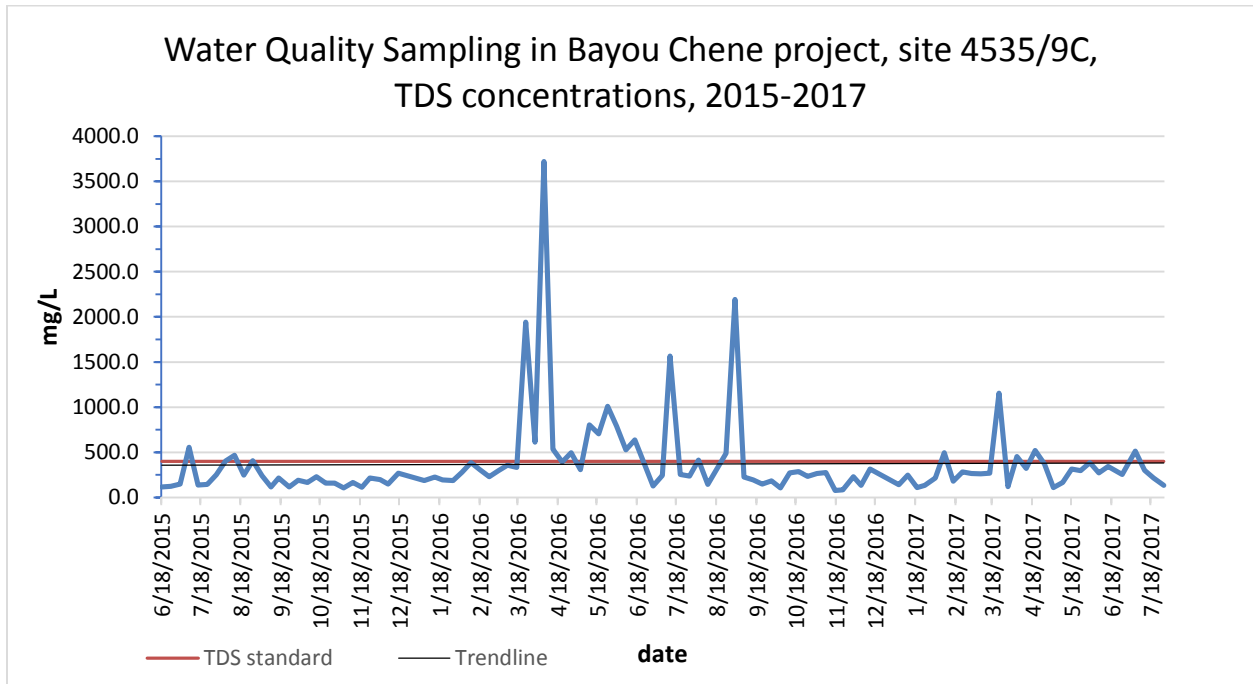


Figure 178 Water Quality Sampling in Bayou Chene project, site 4535/9C, TDS concentrations, 2015-2017

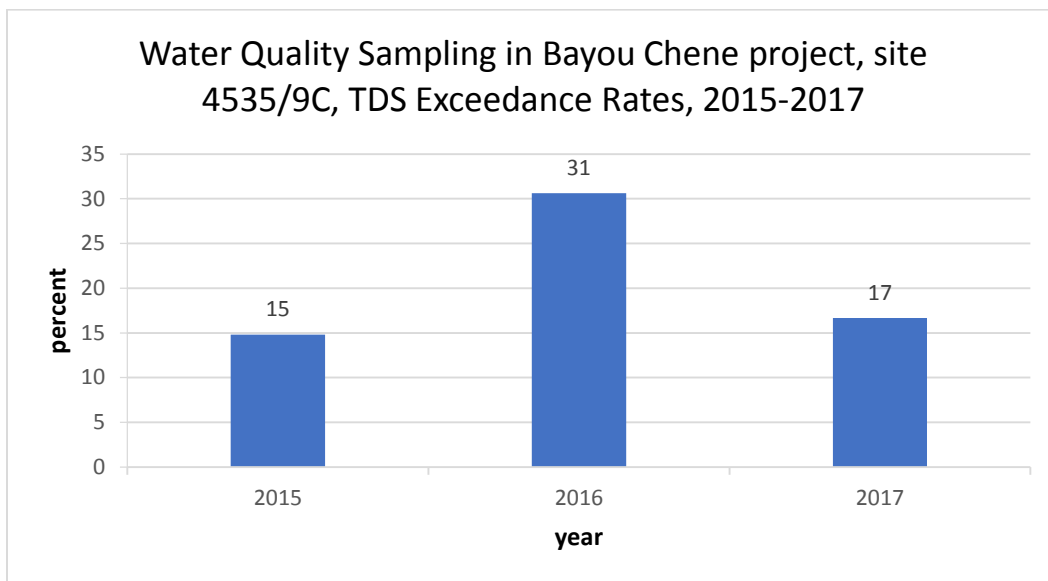


Figure 179 Water Quality Sampling in Bayou Chene project, site 4535/9C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the site 4535/9C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 78.0 mg/L (November 2016) to 3721.7 mg/L (April 2016). The trendline shows TDS concentrations are slightly increasing. The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 15 percent in 2015 and as high as 31 percent in 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 4

sample exceeded the state's standard. In 2016, there 49 samples taken, of which 15 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 5 samples did not meet the standard. Only 82 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

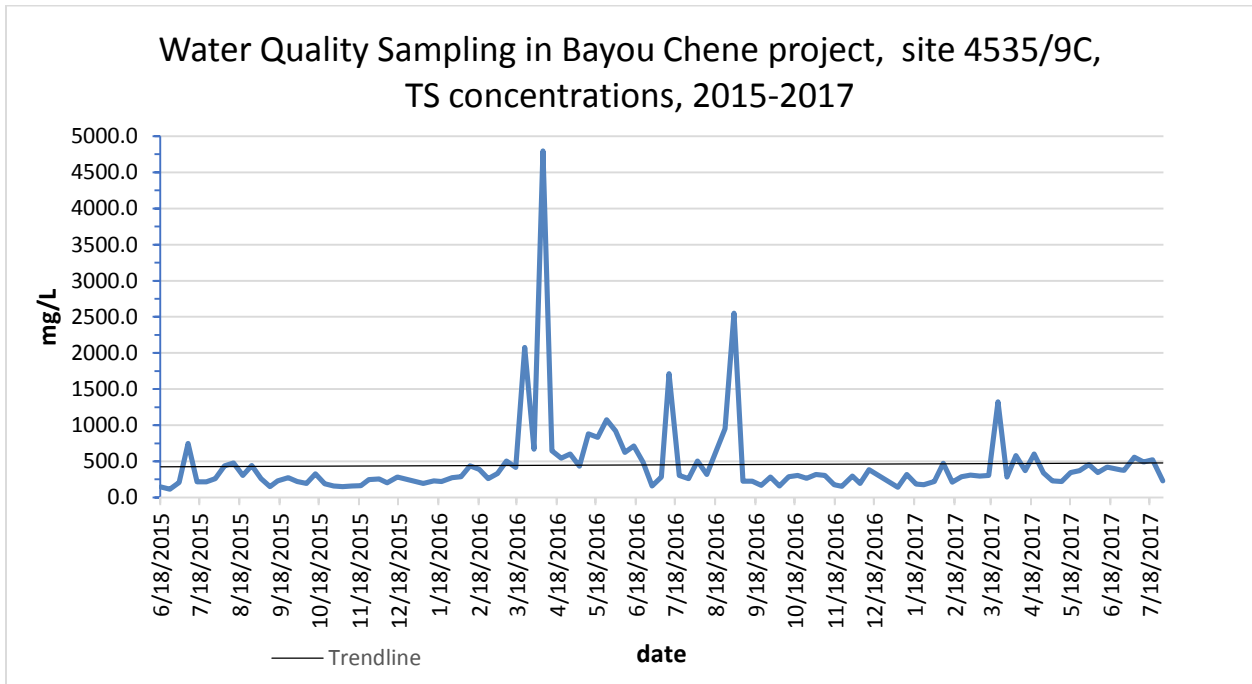


Figure 180 Water Quality Sampling in Bayou Chene project, site 4535/9C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for TS. TS concentrations ranged from 116.0 mg/L (June 2015) to 4794.0 mg/L (April 2016). The trendline shows TS concentrations are slightly increasing.

NO3-N

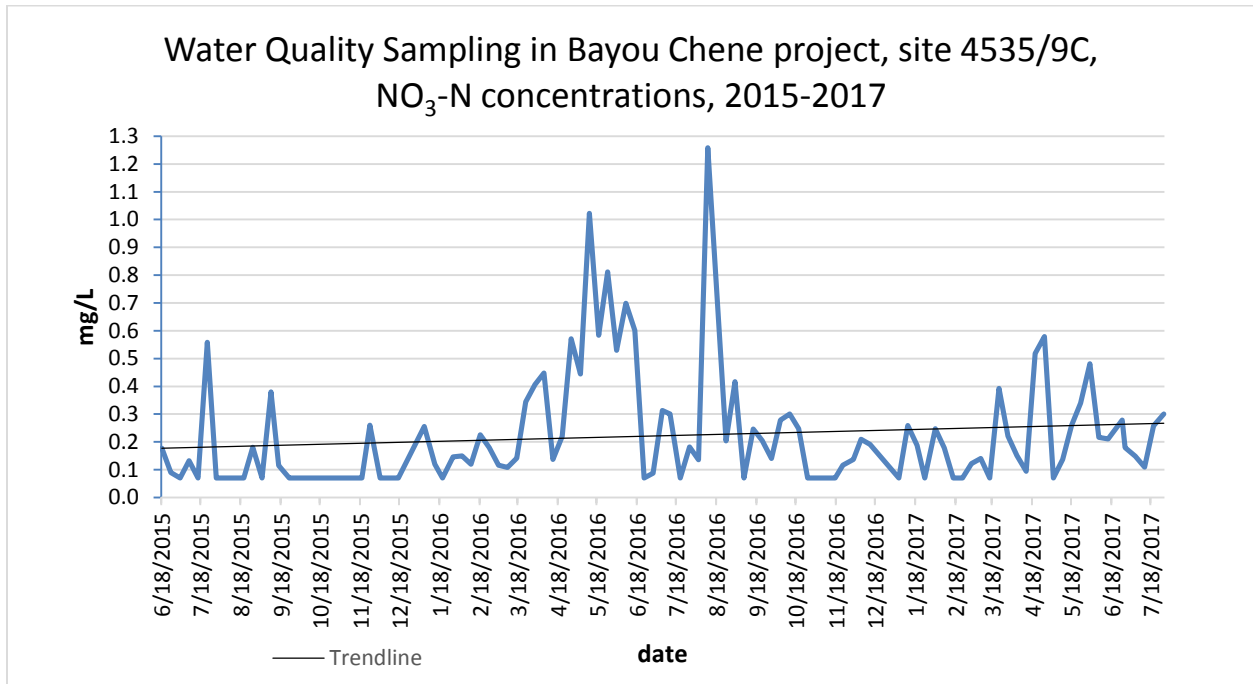


Figure 181 Water Quality Sampling in Bayou Chene project, site 4535/9C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: July-December 2015; January, June-July, September-November 2016; January-March, May 2017) to 1.26 mg/L (August 2016). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

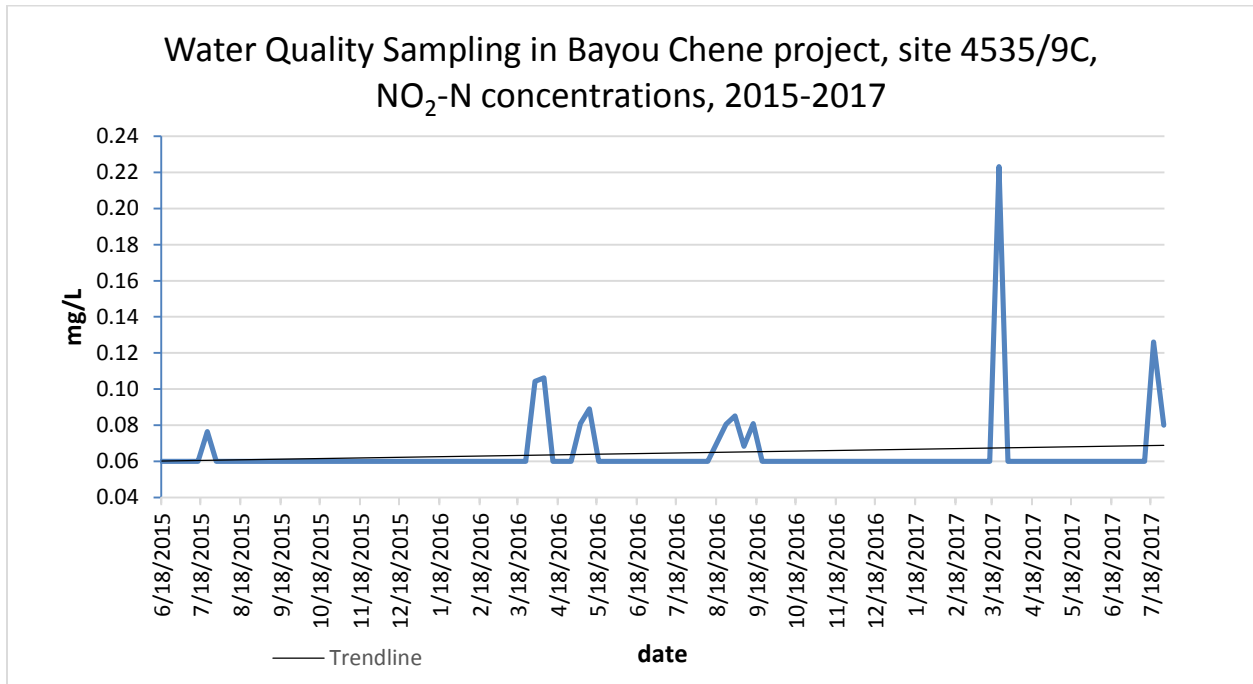


Figure 182 Water Quality Sampling in Bayou Chene project, site 4535/9C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.22 mg/L (March 2017). The trendline shows NO₂-N concentrations are slightly increasing.

NO₃/NO₂-N

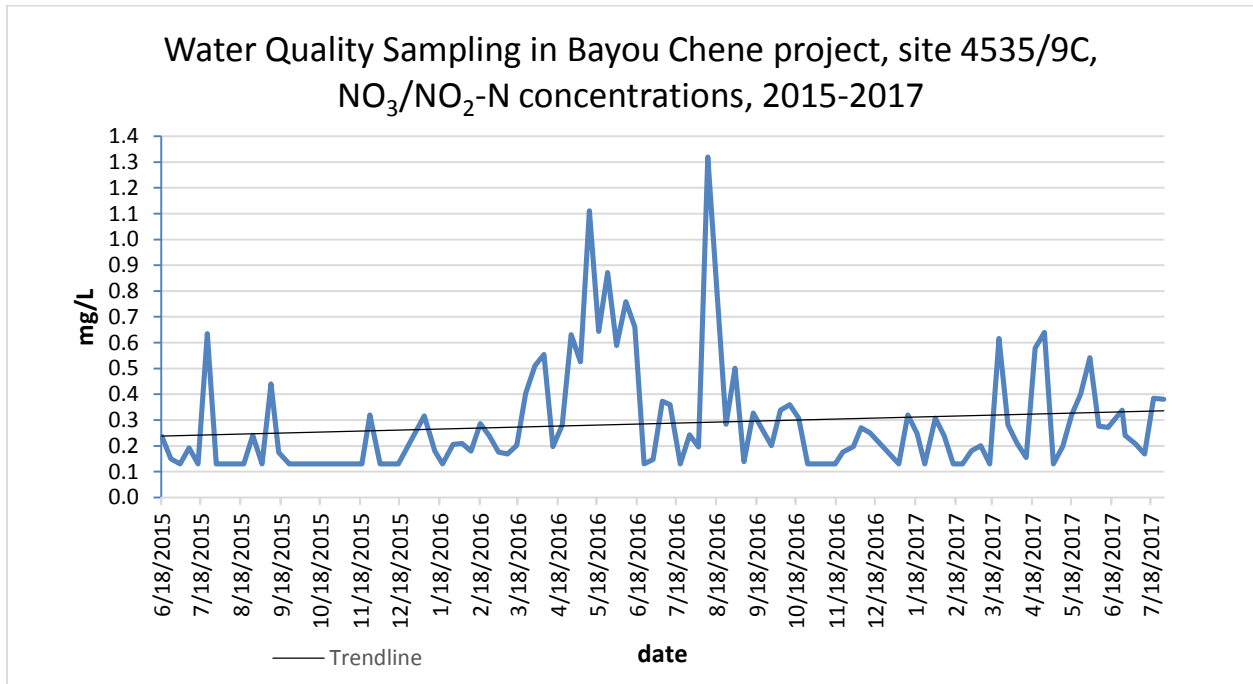


Figure 183 Water Quality Sampling in Bayou Chene project, site 4535/9C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: July-December 2015; January, June-July, October-November 2016; January-March, May 2017) to 1.32 mg/L (August 2016). The trendline shows that NO₃/NO₂-N concentrations are slightly increasing.

Cl

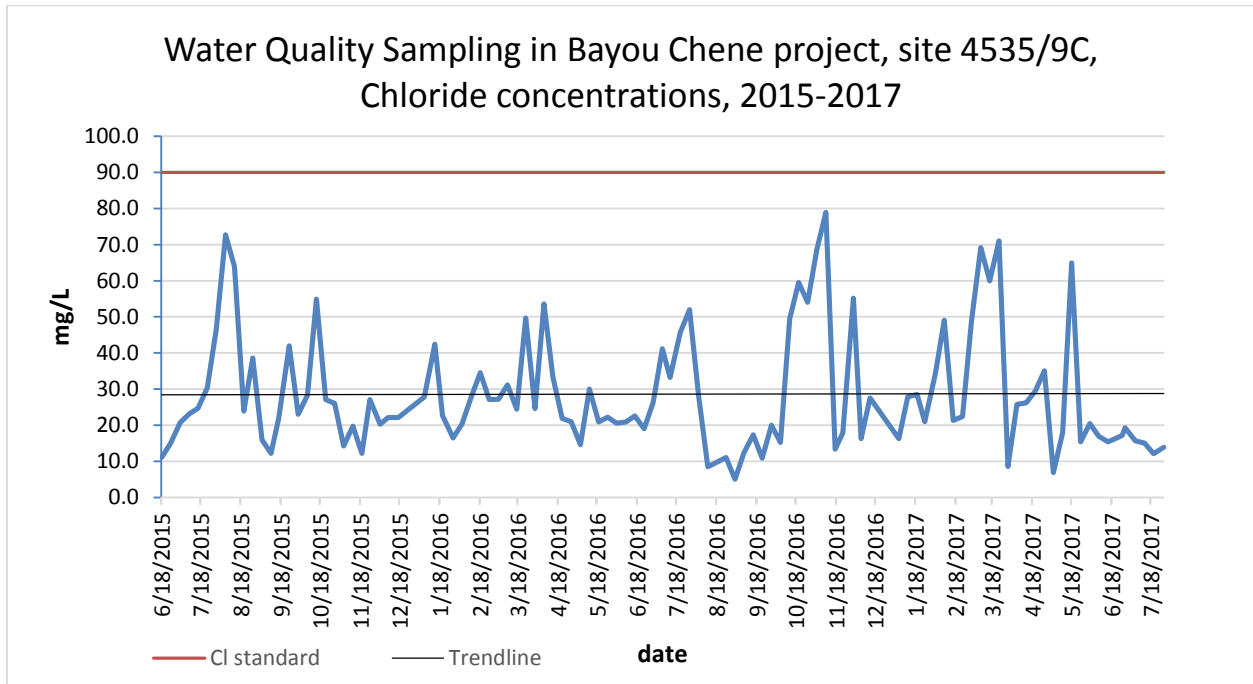


Figure 184 Water Quality Sampling in Bayou Chene project, site 4535/9C, Chloride concentrations, 2015-2017

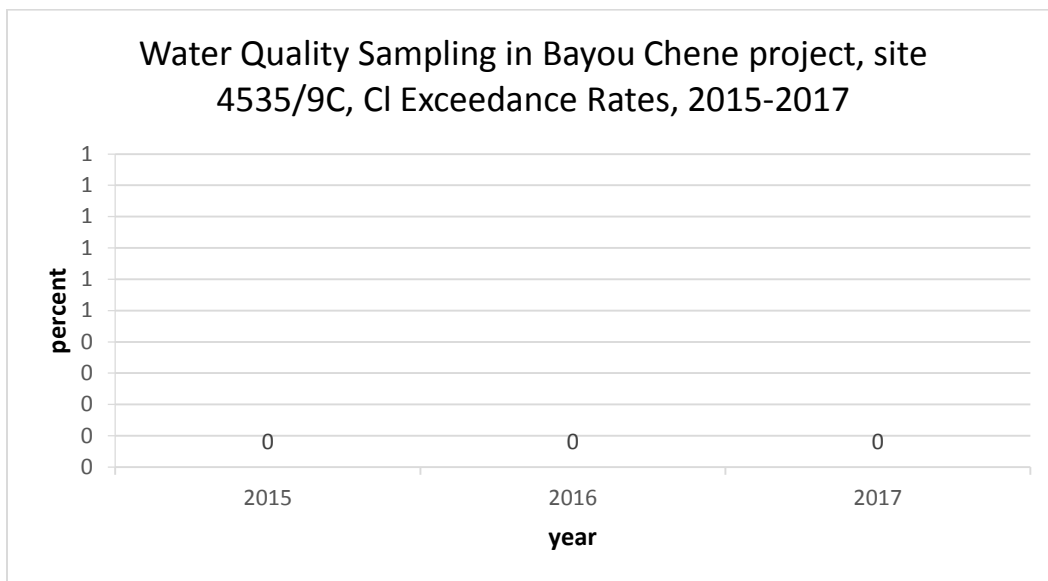


Figure 185 Water Quality Sampling in Bayou Chene project, site 4535/9C, Cl Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the site 4535/9C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 5.08 mg/L (September 2016) to 78.88 mg/L (November 2016). The trendline shows Cl concentrations are increasing. The exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples

collected from 2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

FI

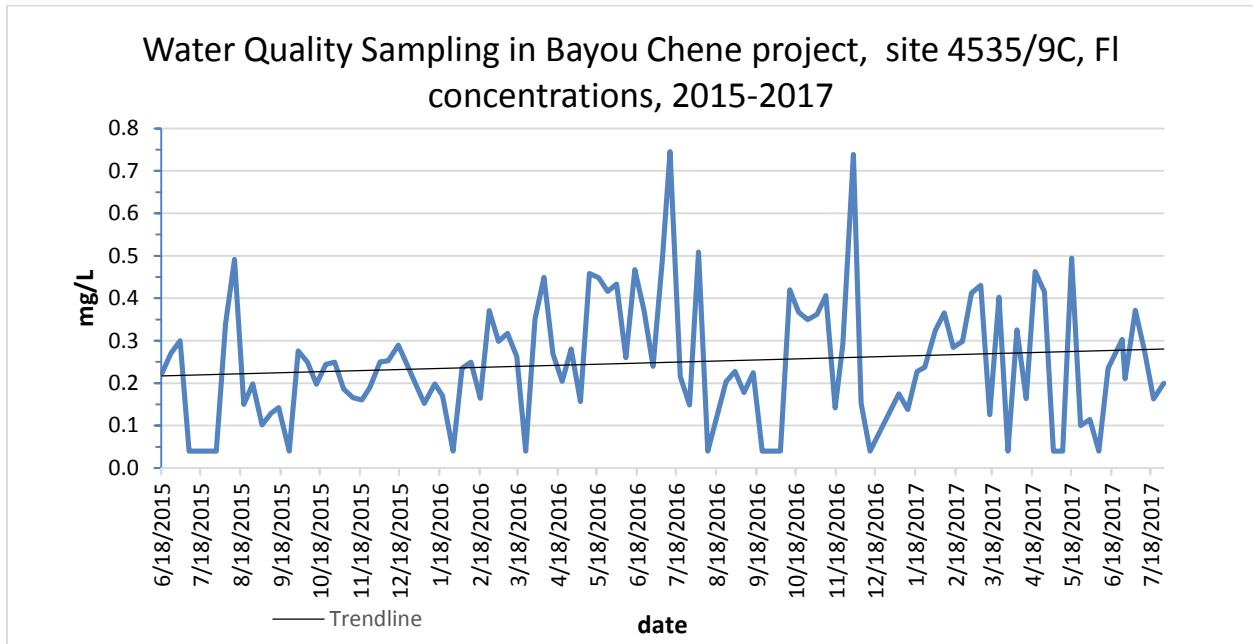


Figure 186 Water Quality Sampling in Bayou Chene project, site 4535/9C, FI concentrations, 2015-2017

Figure 18 outlines all FI concentrations collected from 2015 through 2017 at site 4535/9C. There is no standard for FI. FI concentrations ranged from 0.04 mg/L (value found intermittently through: July, September 2015; January, March, August-October, December 2016; March, May-June 2017) to 0.75 mg/L (July 2016). The trendline shows FI concentrations are slightly increasing.

SO₄

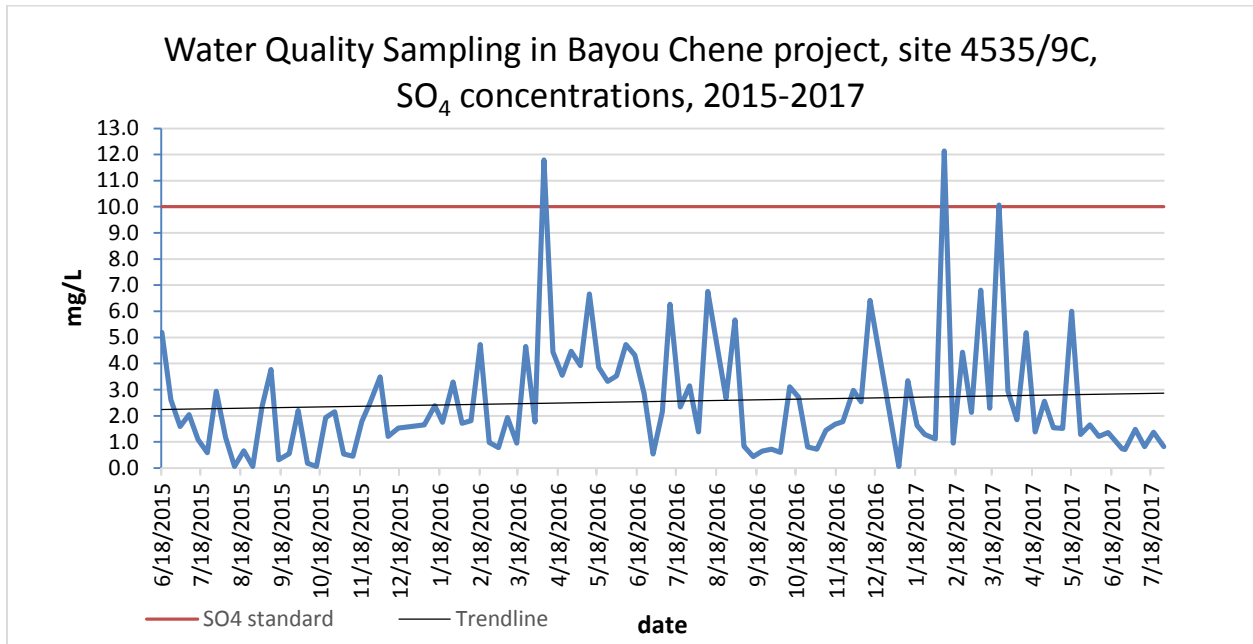


Figure 187 Water Quality Sampling in Bayou Chene project, site 4535/9C, SO₄ concentrations, 2015-2017

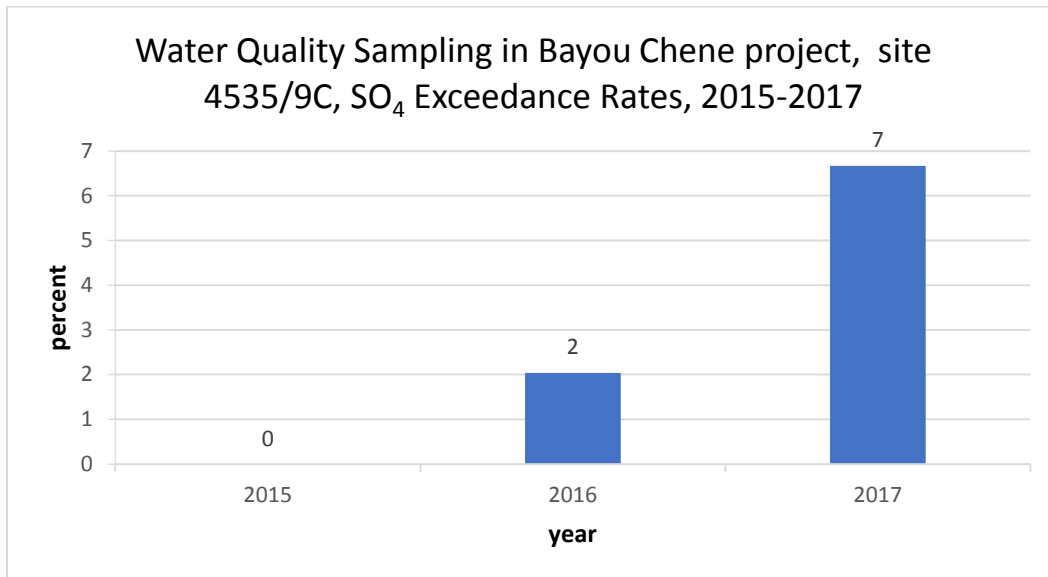


Figure 188 Water Quality Sampling in Bayou Chene project, site 4535/9C, SO₄ Exceedance Rates, 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the site 4535/9C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (value found intermittently through: August, October 2015; January 2017) to 12.13 mg/L (February 2017). The trendline shows SO₄ concentrations are slightly increasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). Rates fluctuated as low as 2 percent in 2016 and as high as 7 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples exceeded the state's standard. In

2016, there 49 samples taken, of which 1 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 2 samples did not meet the standard. Only 103 of the 106 samples collected from 2015 through 2017 were below the 10 mg/L standard.

SRP

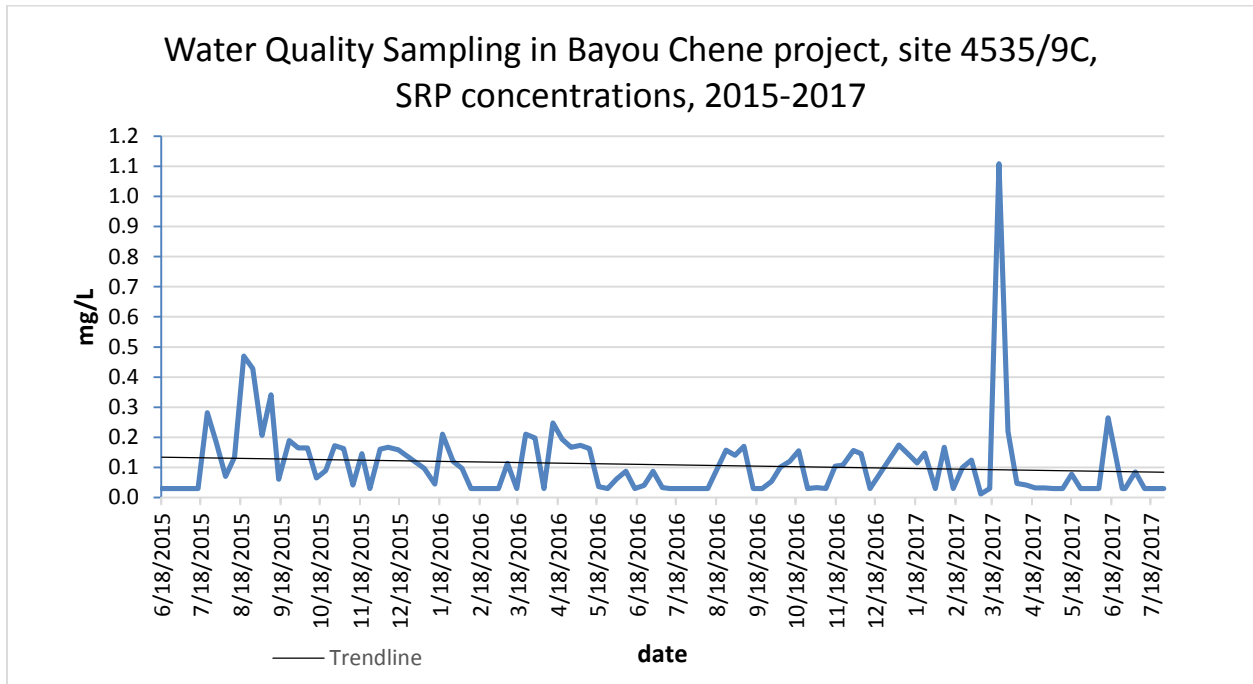


Figure 189 Water Quality Sampling in Bayou Chene project, site 4535/9C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for SRP. SRP concentrations ranged from 0.01 mg/L (March 2017) to 1.11 mg/L (March 2017). The trendline shows SRP concentrations are slightly decreasing.

TP

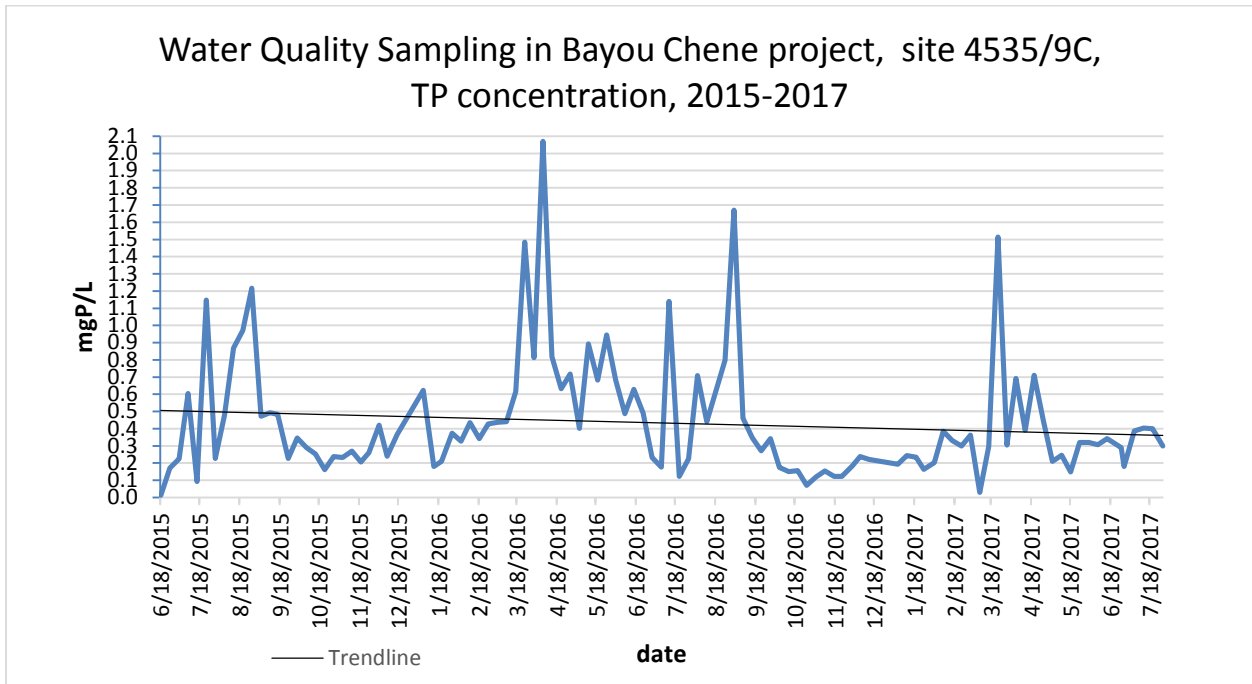


Figure 190 Water Quality Sampling in Bayou Chene project, site 4535/9C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for TP. TP concentrations ranged from 0.03 mg/L (June 2015) to 2.07 mg/L (April 2016). The trendline shows TP concentrations are slightly decreasing.

TKN

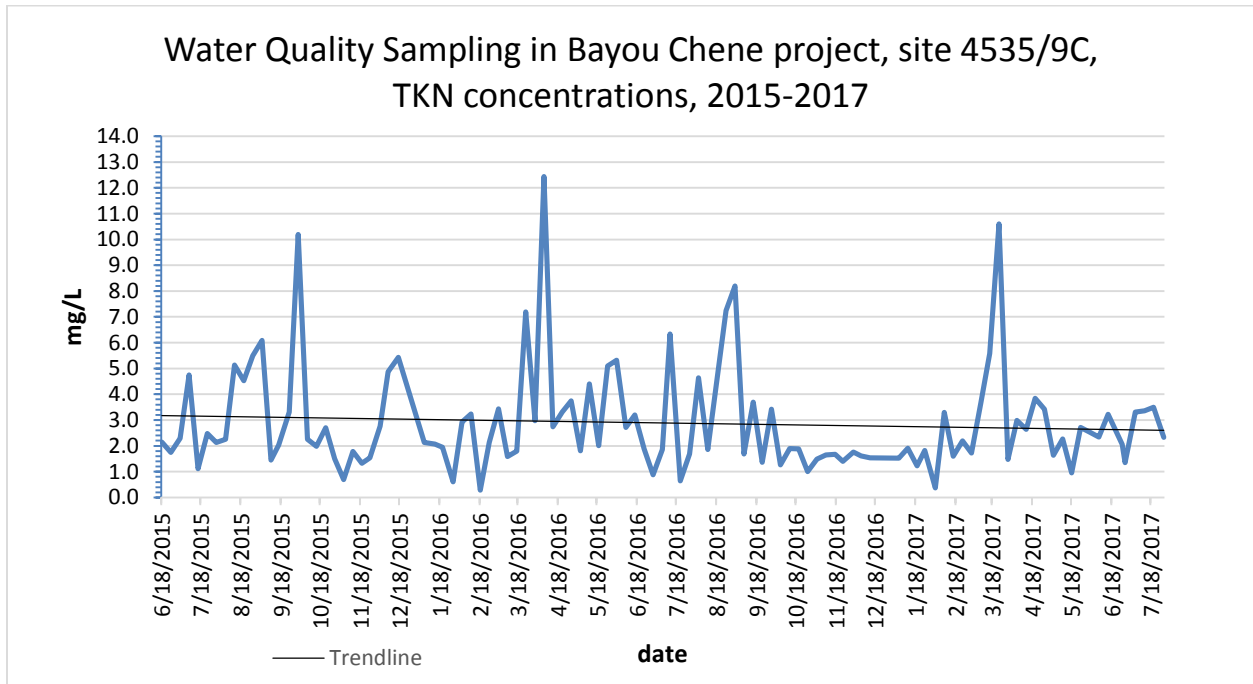


Figure 191 Water Quality Sampling in Bayou Chene project, site 4535/9C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for TKN. TKN concentrations ranged from 0.28 mg/L (February 2016) to 12.43 mg/L (April 2016). The trendline shows TKN concentrations are slightly decreasing.

BOD₅

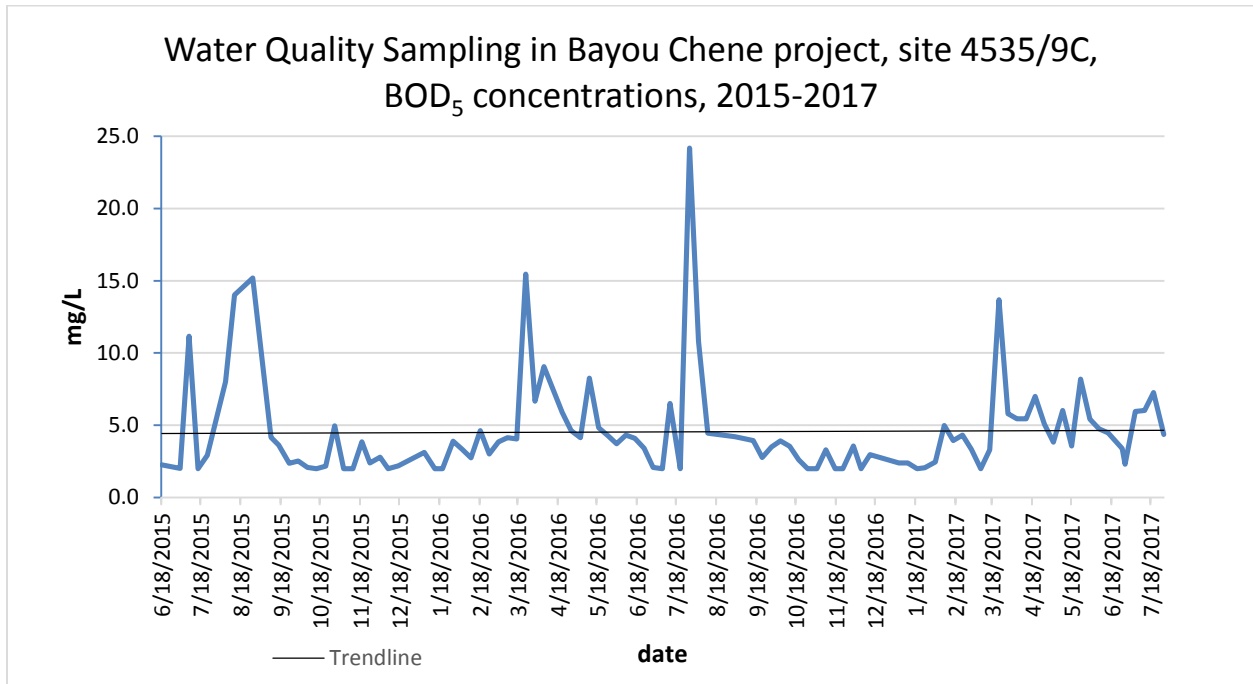


Figure 192 Water Quality Sampling in Bayou Chene project, site 4535/9C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the site 4535/9C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (value found intermittently through: July, October-December 2015; January, July, October-December 2016; January, March 2017) to 24.19 mg/L (July 2016). The trendline shows BOD₅ concentrations are slightly increasing. Only 99 samples were collected. Some sample dates in June 2015, July 2015, August 2015, September 2015, April 2016, August 2016, and September 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.

Site 4536/10C

DO

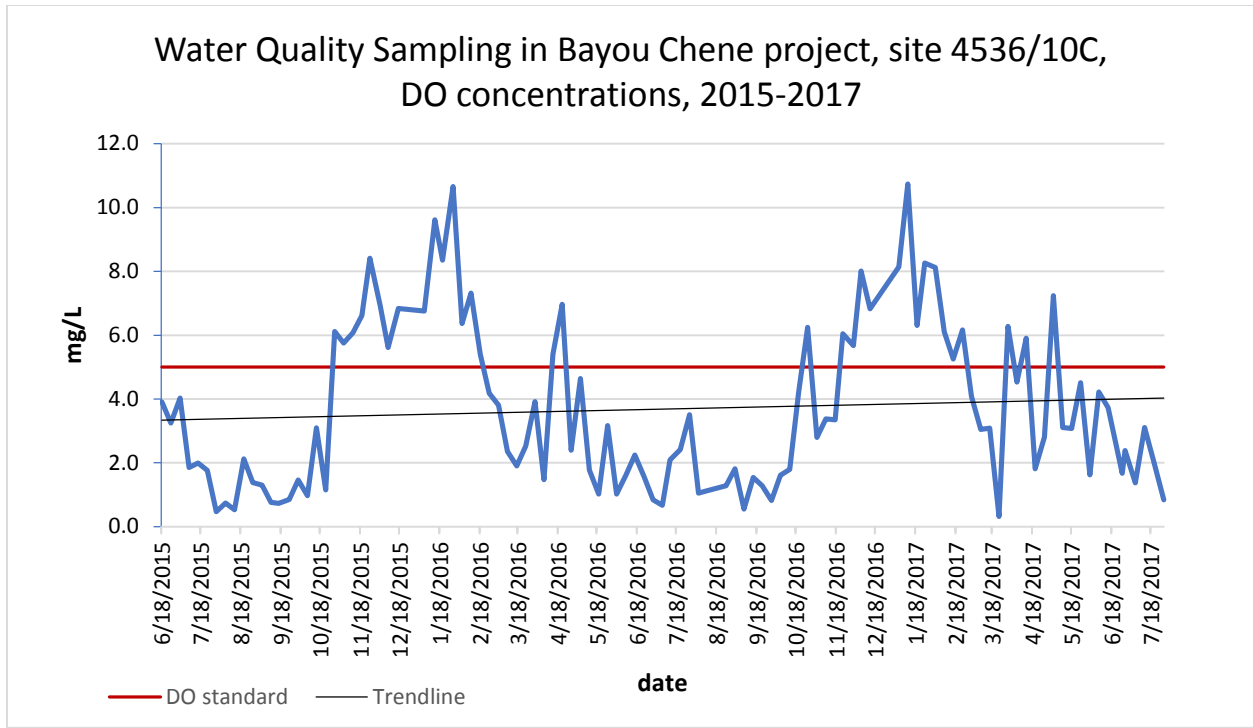


Figure 193 Water Quality Sampling in Bayou Chene project, site 4536/10C, DO concentrations, 2015-2017

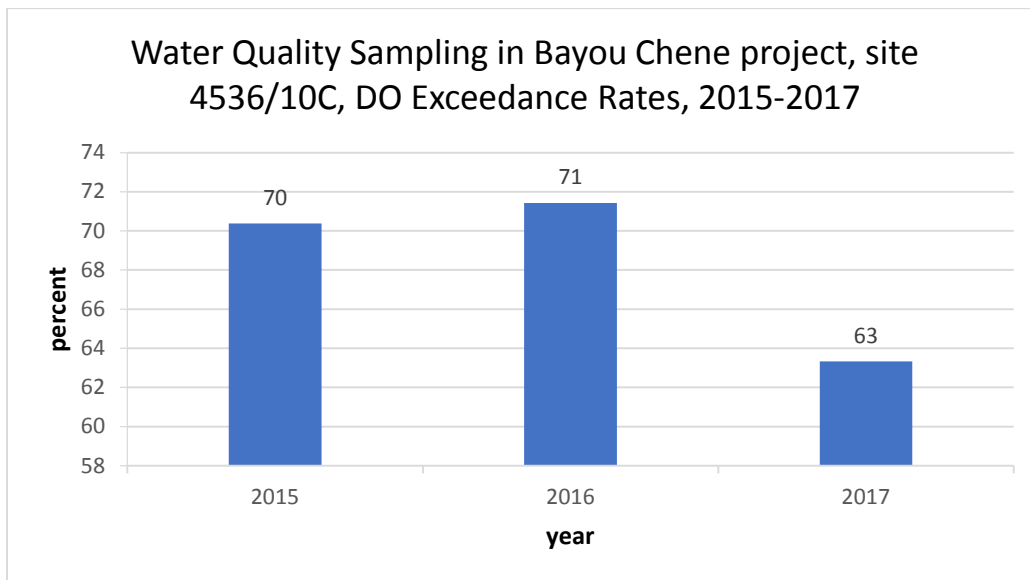


Figure 194 Water Quality Sampling in Bayou Chene project, site 4536/10C, DO Exceedance Rates, 2015-2017

Figure 1 outlines all DO concentrations collected from 2015 through 2017 at site 4536/10C. The DO standard is shown by a red line on the graph. DO concentrations ranged from 0.32 mg/L (March 2017) to 10.74 mg/L (January 2017). The trendline shows DO concentrations are slightly increasing. Data also

shows DO levels were highest in the cooler months (October through March). The exceedance rates were for DO from 2015 through 2017 (Figure 2). Rates fluctuated as high as 71 percent in 2016 and as low as 63 percent in 2017; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which 19 samples did not meet the standard. In 2016, there 49 samples taken, of which 35 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 19 samples did not meet the standard. Only 33 of the 106 samples collected from 2015 through 2017 were above the 5 mg/L standard.

Temperature

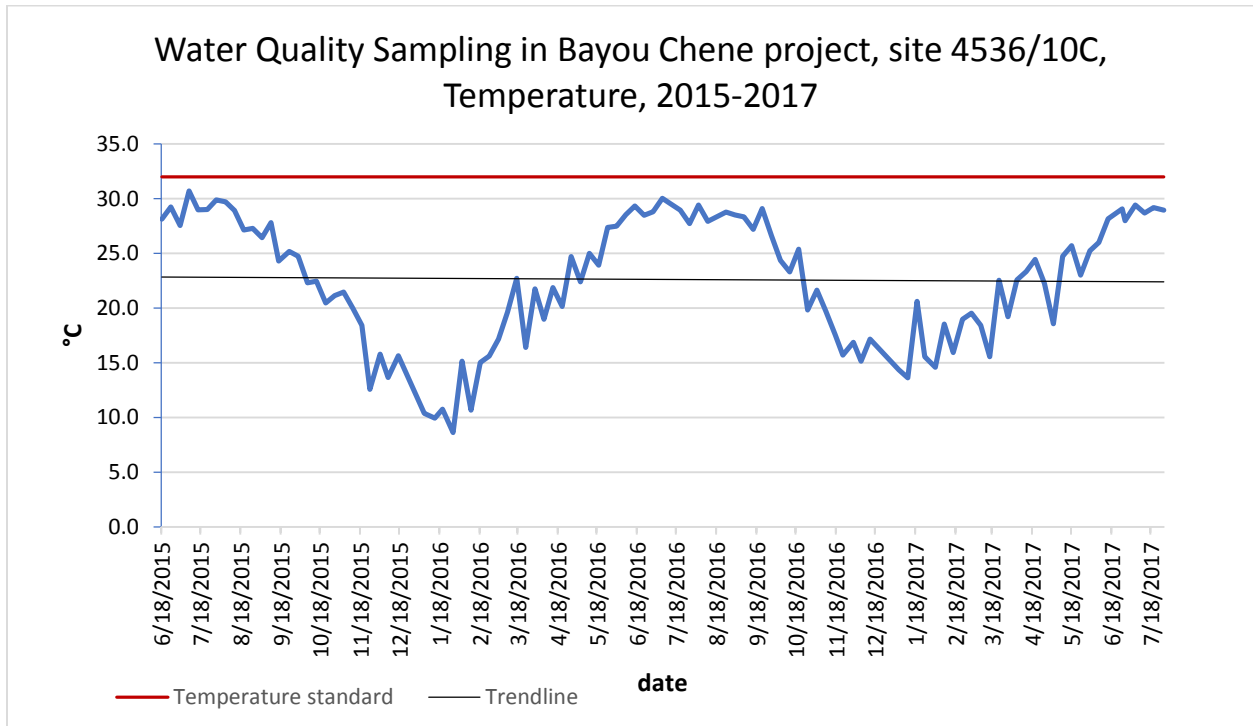


Figure 195 Water Quality Sampling in Bayou Chene project, site 4536/10C, Temperature, 2015-2017

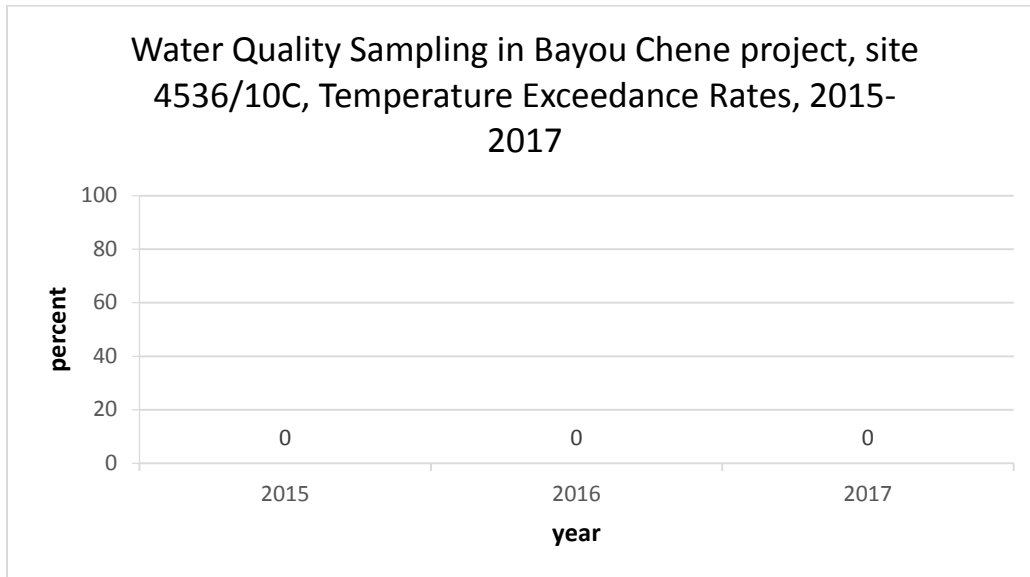


Figure 196 Water Quality Sampling in Bayou Chene project, site 4536/10C, Temperature Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 3 outlines all temperature values collected from 2015 through 2017 at the site 4536/10C. The temperature standard is shown by a red line on the graph. Temperatures ranged from 8.63 °C (January 2016) to 30.72 °C (July 2015). The trendline shows temperature values are slightly decreasing. Data also shows temperatures were highest during the summer months (May through July) and lowest in the

winter months (December through February). The exceedance rates were calculated for temperature from 2015 through 2017 (Figure 4). None of the samples collected from 2015 through 2017 exceeded the 32°C standard; however, sampling years 2015 and 2017 were not sampled for a full year.

Conductivity

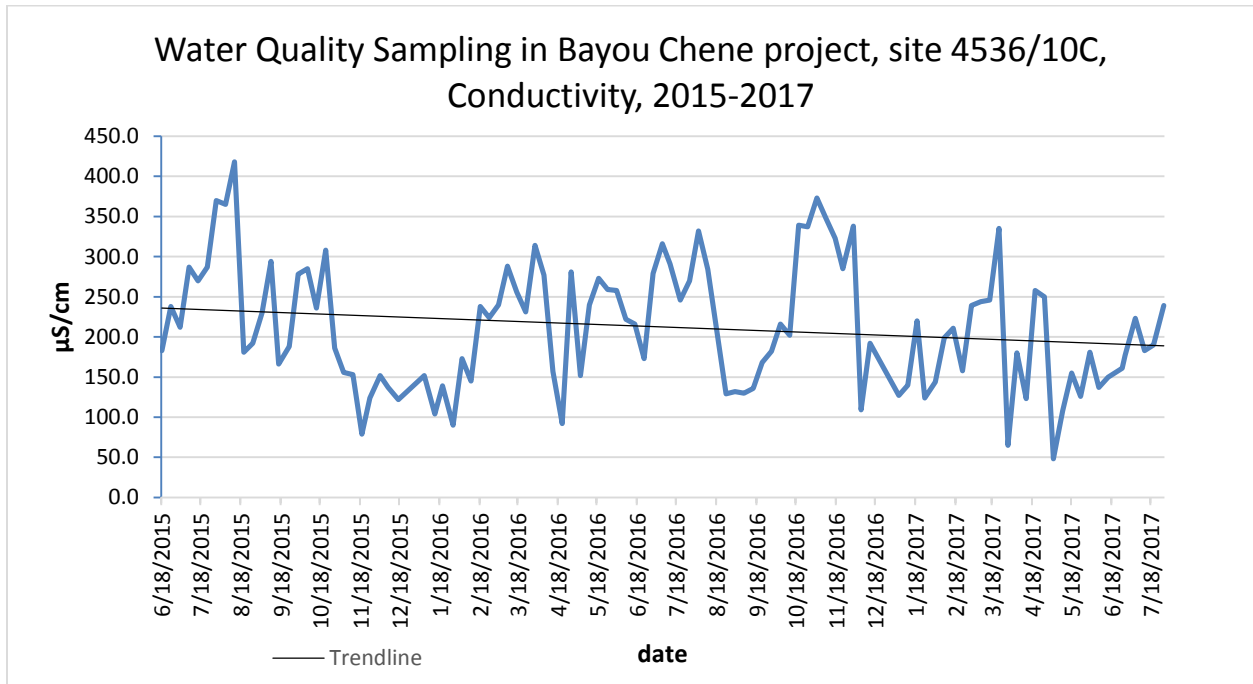


Figure 197 Water Quality Sampling in Bayou Chene project, site 4536/10C, Conductivity, 2015-2017

Figure 5 outlines all conductivity values collected from 2015 through 2017 at site 4536/10C. There is no standard for conductivity. Conductivity values ranged from 48 $\mu\text{S}/\text{cm}$ (May 2017) to 418 $\mu\text{S}/\text{cm}$ (August 2015). The trendline shows conductivity values are slightly decreasing.

pH

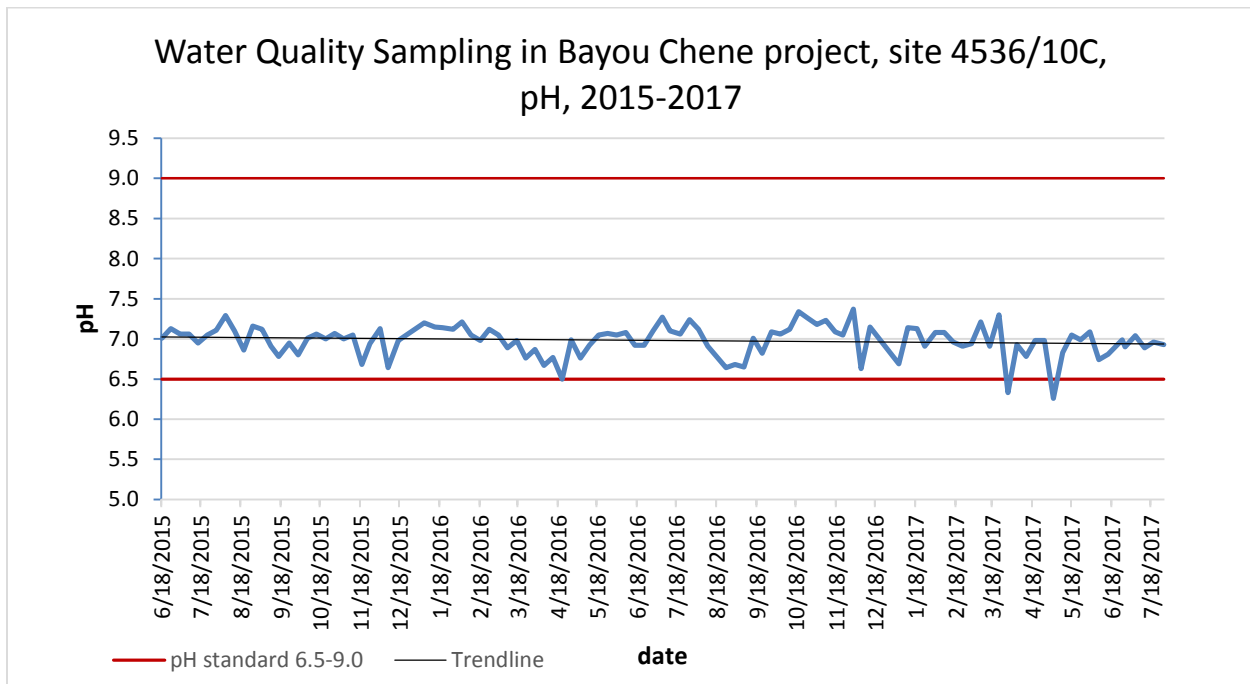


Figure 198 Water Quality Sampling in Bayou Chene project, site 4536/10C, pH, 2015-2017

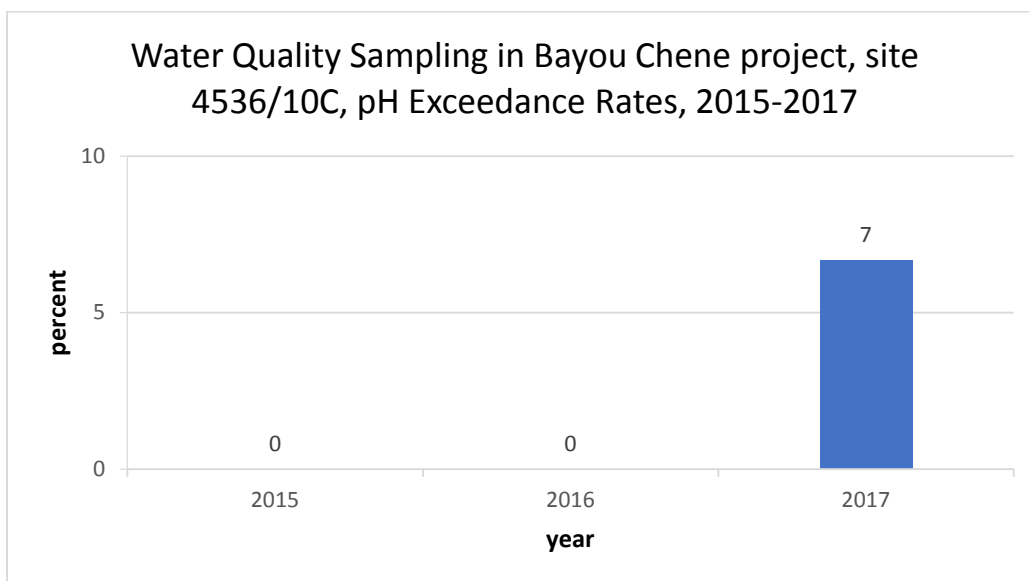


Figure 199 Water Quality Sampling in Bayou Chene project, site 4536/10C, pH Exceedance Rates, 2015-2017

Figure 6 outlines all pH values collected from 2015 through 2017 at the site 4536/10C. The pH standard is shown by two red lines on the graph. pH values ranged from 6.26 (May 2017) to 7.37 (December 2016). The trendline shows pH values are slightly decreasing. The exceedance rates were calculated for pH from 2015 through 2017 (Figure 7). Rates fluctuated as high as 7 percent in 2017 and did not exceed in 2015 or 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples were below the state's standard.

In 2016, there 49 samples taken, of which none of the samples were below the state's standard. In 2017, there were a total of 30 samples taken, of which 2 samples did not meet the standard. 104 of the 106 samples collected from 2015 through 2017 were within the 6.5-9 pH standard. No samples exceeded the maximum (9.0) pH standard.

Turbidity

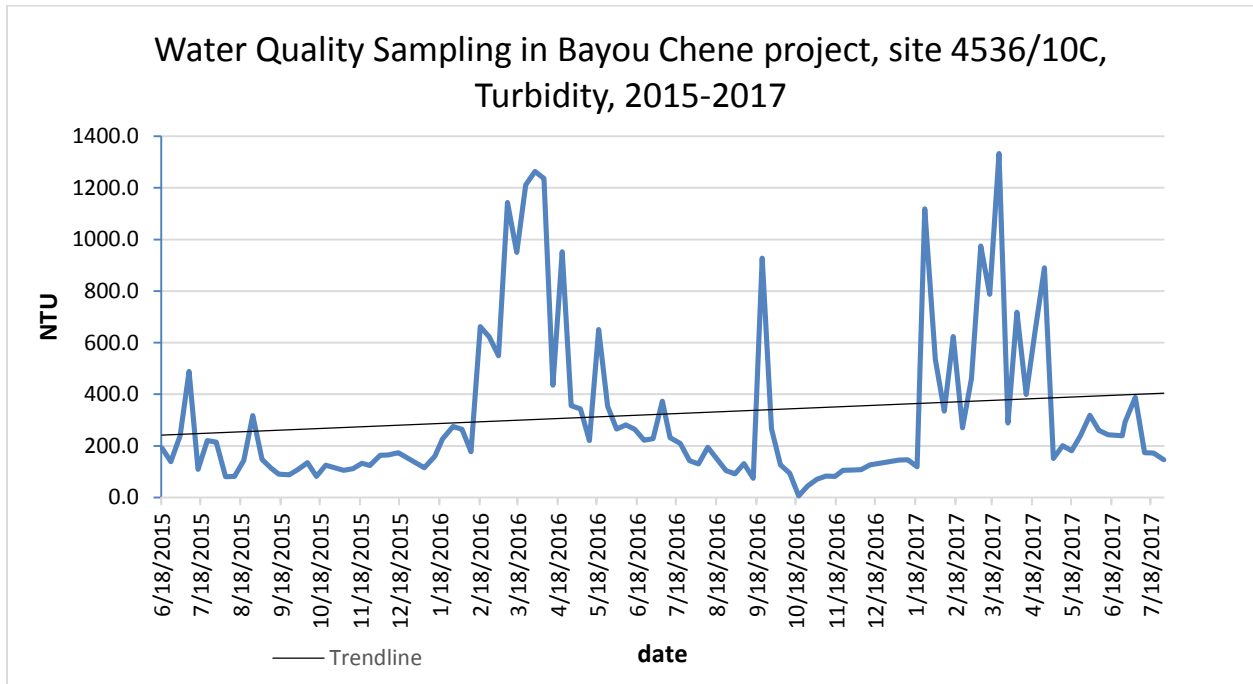


Figure 200 Water Quality Sampling in Bayou Chene project, site 4536/10C, Turbidity, 2015-2017

Figure 8 outlines all turbidity values collected from 2015 through 2017 at the site 4536/10C. There is no standard for turbidity. Turbidity values ranged from 6.7 NTU (October 2016) to 1332.9 NTU (March 2017). The trendline shows turbidity values are slightly increasing.

TSS

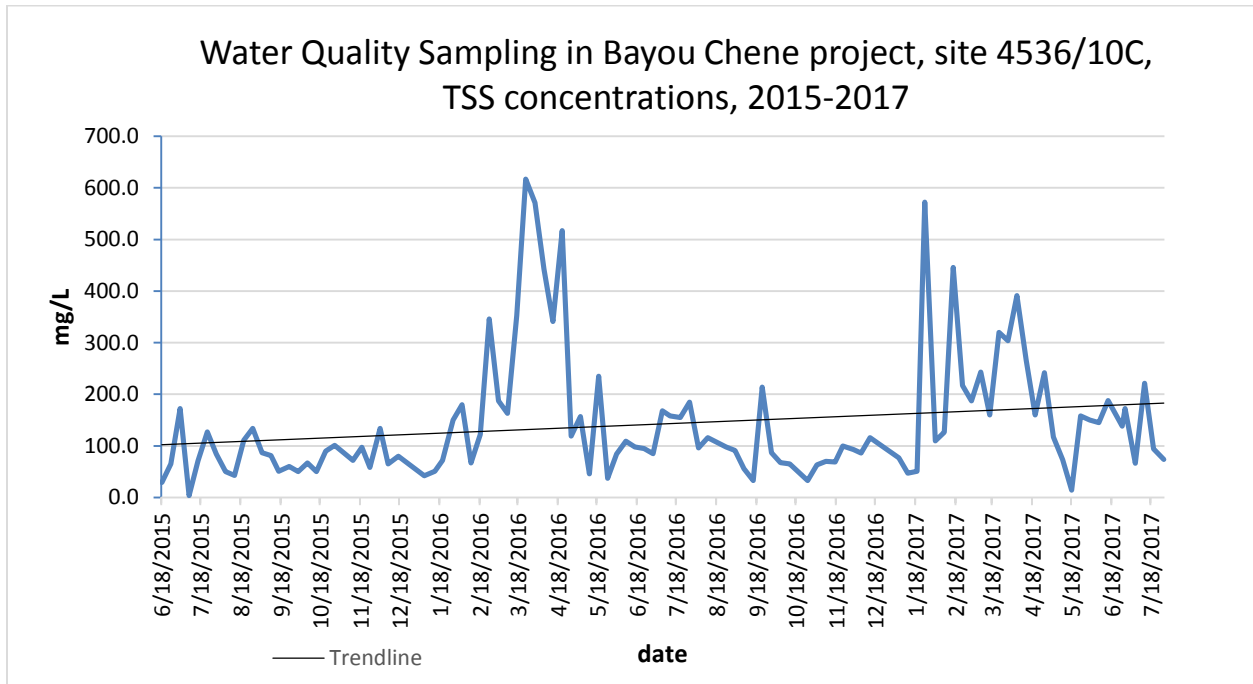


Figure 201 Water Quality Sampling in Bayou Chene project, site 4536/10C, TSS concentrations, 2015-2017

Figure 9 outlines all TSS concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for TSS. TSS concentrations ranged from 3.95 mg/L (July 2015) to 617.00 mg/L (March 2016). The trendline shows TSS concentrations are slightly increasing. Data also shows higher TSS values in the early spring months (March through April).

TDS

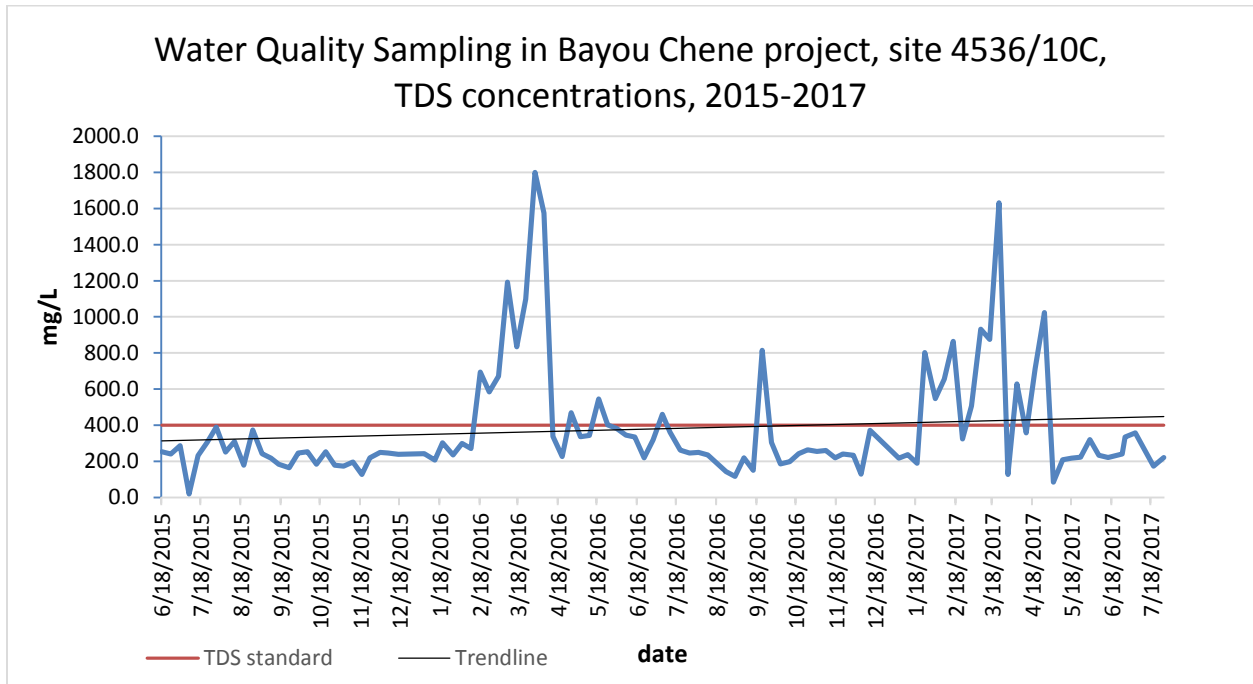


Figure 202 Water Quality Sampling in Bayou Chene project, site 4536/10C, TDS concentrations, 2015-2017

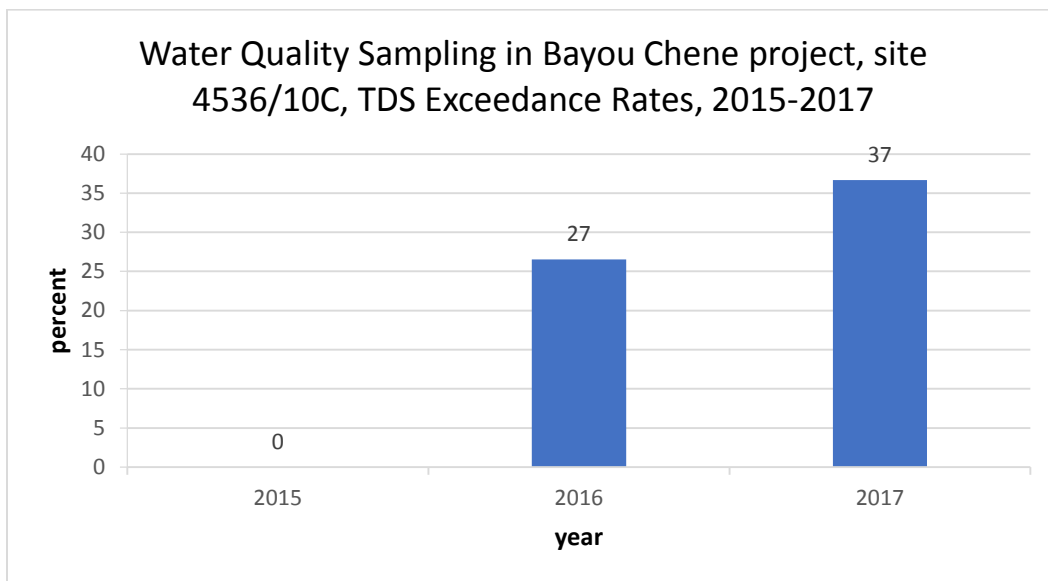


Figure 203 Water Quality Sampling in Bayou Chene project, site 4536/10C, TDS Exceedance Rates, 2015-2017

Figure 10 outlines all TDS concentrations collected from 2015 through 2017 at the site 4536/10C. The TDS standard is shown by a red line on the graph. TDS concentrations ranged from 20.1 mg/L (July 2015) to 1800.0 mg/L (March 2016). The trendline shows TDS concentrations are slightly increasing. Data also shows higher TDS values in the late winter to early spring months (February through April). The exceedance rates were calculated for TDS from 2015 through 2017 (Figure 11). Rates fluctuated as low as 27 percent in 2016 and as high as 37 percent in 2017 and did not exceed in 2015; however, sampling

years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples exceeded the state's standard. In 2016, there 49 samples taken, of which 13 did not meet the state's standard. In 2017, there were a total of 30 samples taken, of which 11 samples did not meet the standard. Only 82 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

TS

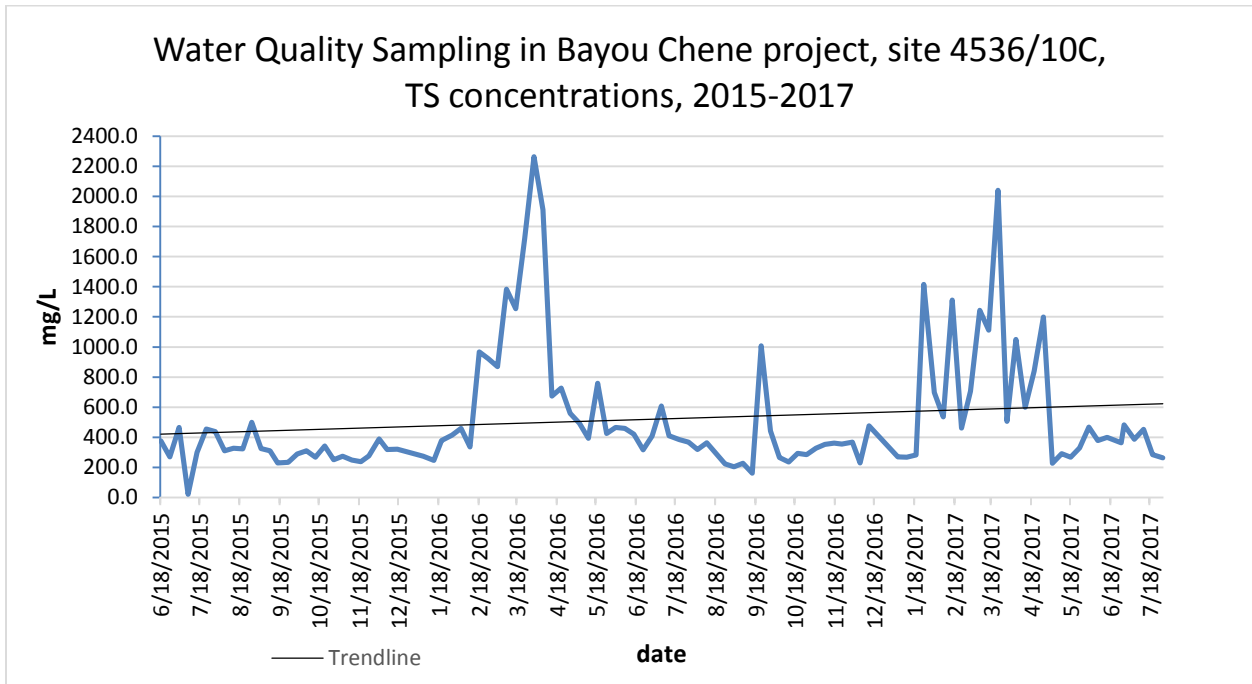


Figure 204 Water Quality Sampling in Bayou Chene project, site 4536/10C, TS concentrations, 2015-2017

Figure 12 outlines all TS concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for TS. TS concentrations ranged from 20.12 mg/L (July 2015) to 2264.00 mg/L (March 2016). The trendline shows TS concentrations are slightly increasing. Data also shows TS levels are highest during late winter to early spring months (February through April).

NO₃-N

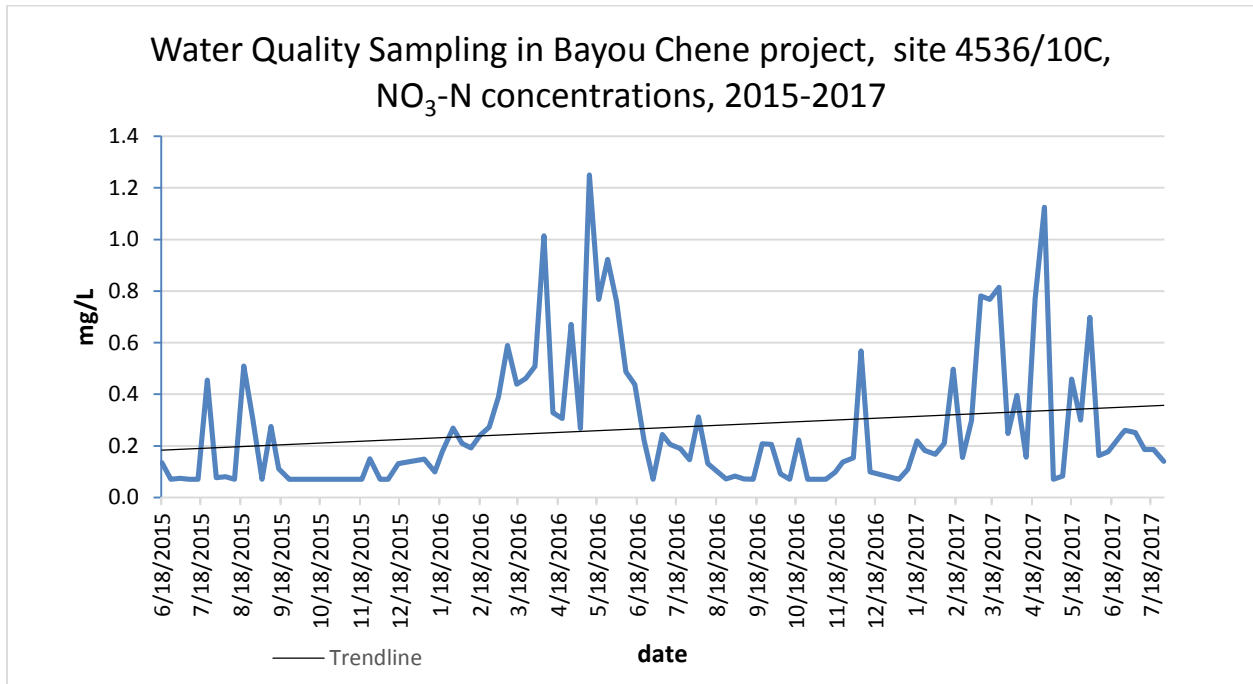


Figure 205 Water Quality Sampling in Bayou Chene project, site 4536/10C, NO₃-N concentrations, 2015-2017

Figure 13 outlines all NO₃-N concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for NO₃-N. NO₃-N concentrations ranged from 0.07 mg/L (value found intermittently through: June-December 2015; June, August-November 2016; January, May 2017) to 1.25 mg/L (May 2016). The trendline shows NO₃-N concentrations are slightly increasing.

NO₂-N

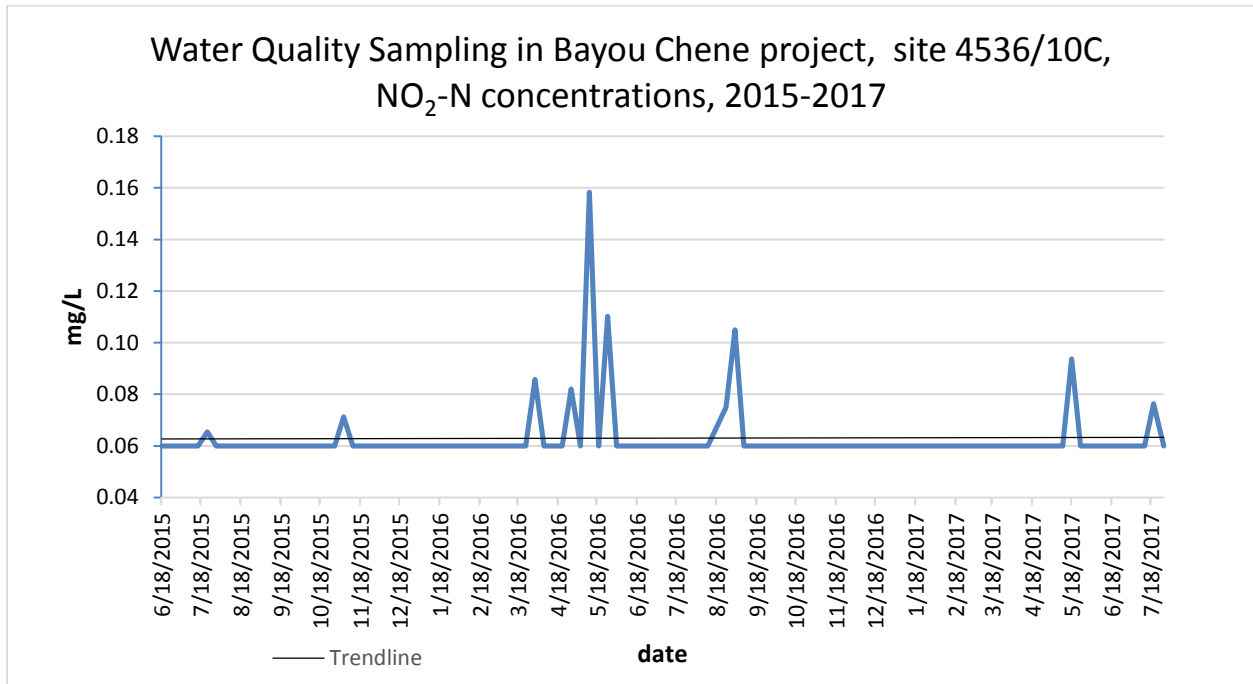


Figure 206 Water Quality Sampling in Bayou Chene project, site 4536/10C, NO₂-N concentrations, 2015-2017

Figure 14 outlines all NO₂-N concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for NO₂-N. NO₂-N concentrations ranged from 0.06 mg/L (intermittently each month) to 0.16 mg/L (May 2016). The trendline shows NO₂-N concentrations are slightly increasing.

NO₃/NO₂-N

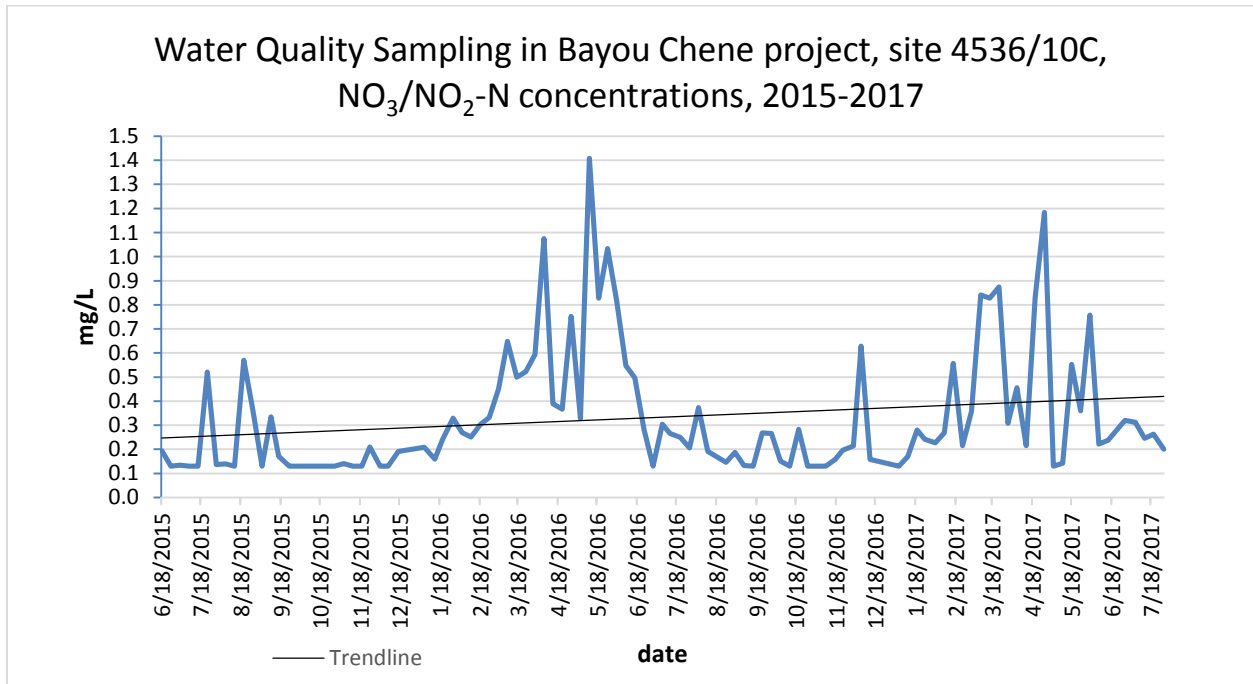


Figure 207 Water Quality Sampling in Bayou Chene project, site 4536/10C, NO₃/NO₂-N concentrations, 2015-2017

Figure 15 outlines all NO₃/NO₂-N concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for NO₃/NO₂-N. NO₃/NO₂-N concentrations ranged from 0.13 mg/L (value found intermittently through: June-December 2015; June, September-November 2016; January, May 2017) to 1.41 mg/L (May 2016). The trendline shows that NO₃/NO₂-N concentrations are slightly increasing.

Cl

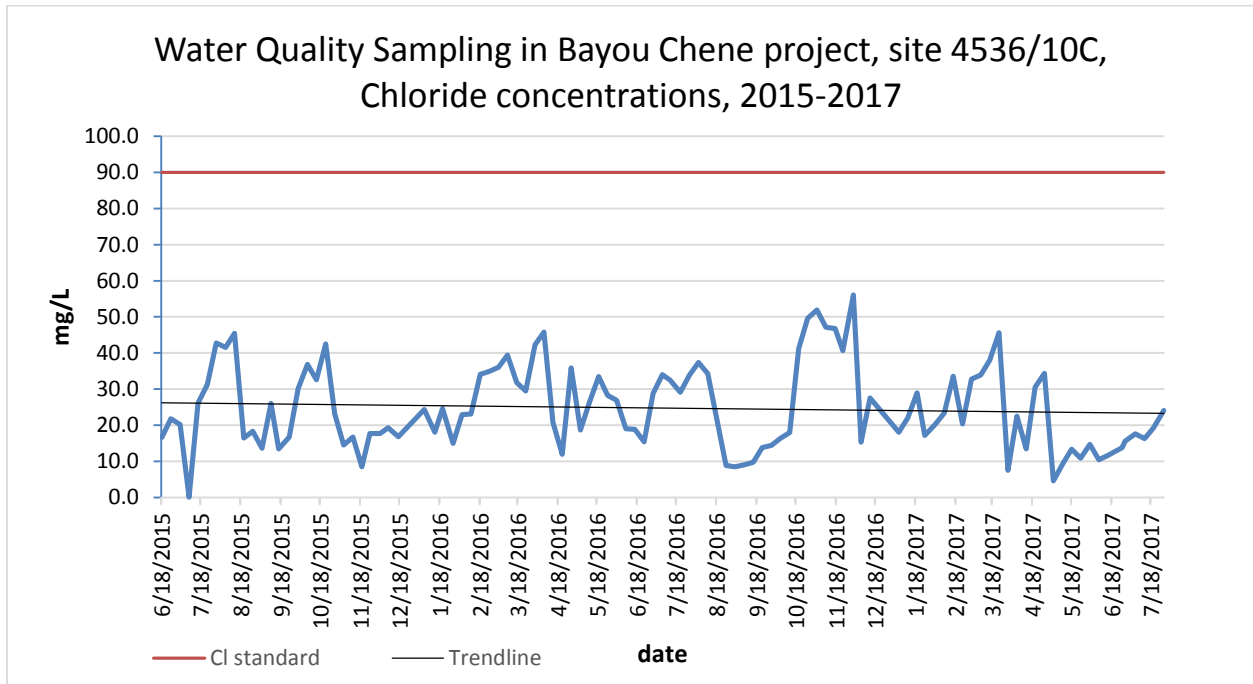


Figure 208 Water Quality Sampling in Bayou Chene project, site 4536/10C, Chloride concentrations, 2015-2017

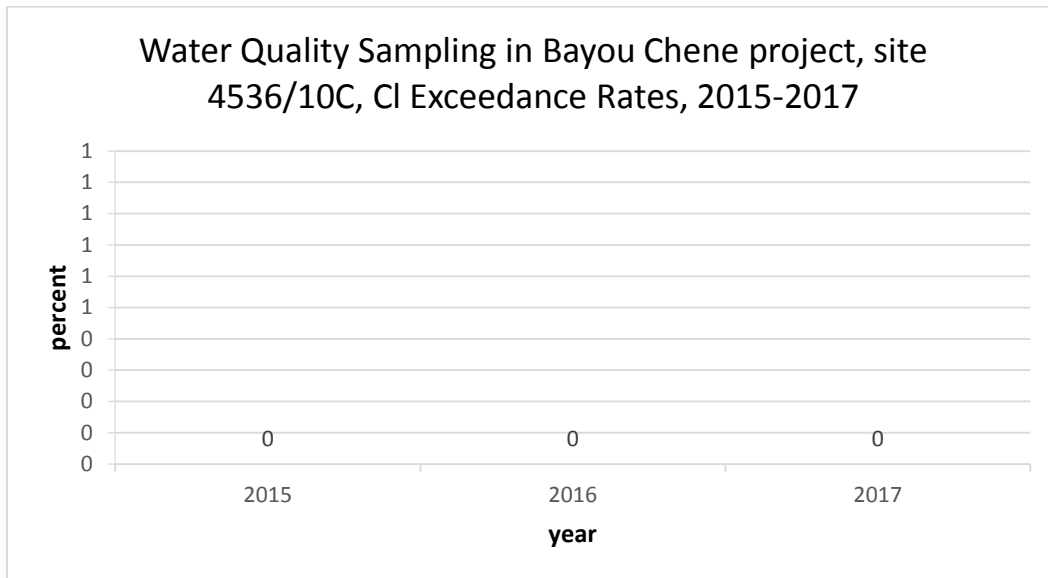


Figure 209 Water Quality Sampling in Bayou Chene project, site 4536/10C, Cl Exceedance Rates, 2015-2017; no values exceeded the standards for 2015-2017

Figure 16 outlines all Cl concentrations collected from 2015 through 2017 at the site 4536/10C. The Cl standard is shown by a red line on the graph. Cl concentrations ranged from 0.10 mg/L (July 2015) to 56.07 mg/L (December 2016). The trendline shows Cl concentrations are decreasing. The exceedance rates were calculated for Cl from 2015 through 2017 (Figure 17). None of the samples collected from

2015 through 2017 exceeded the Cl standard of 90 mg/L; however, sampling years 2015 and 2017 were not sampled for a full year.

Fl

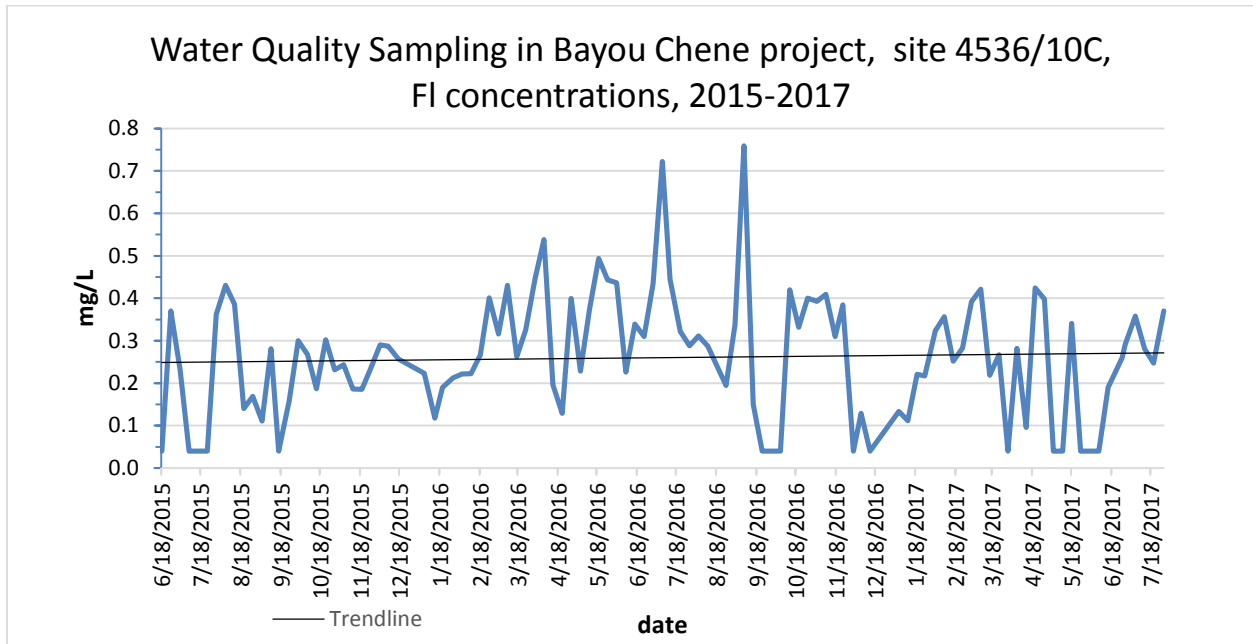


Figure 210 Water Quality Sampling in Bayou Chene project, site 4536/10C, Fl concentrations, 2015-2017

Figure 18 outlines all Fl concentrations collected from 2015 through 2017 at site 4536/10C. There is no standard for Fl. Fl concentrations ranged from 0.04 mg/L (value found intermittently through: June-July, September 2015; September-October, December 2016; March, May-June 2017) to 0.76 mg/L (September 2016). The trendline shows Fl concentrations are slightly increasing.

SO₄

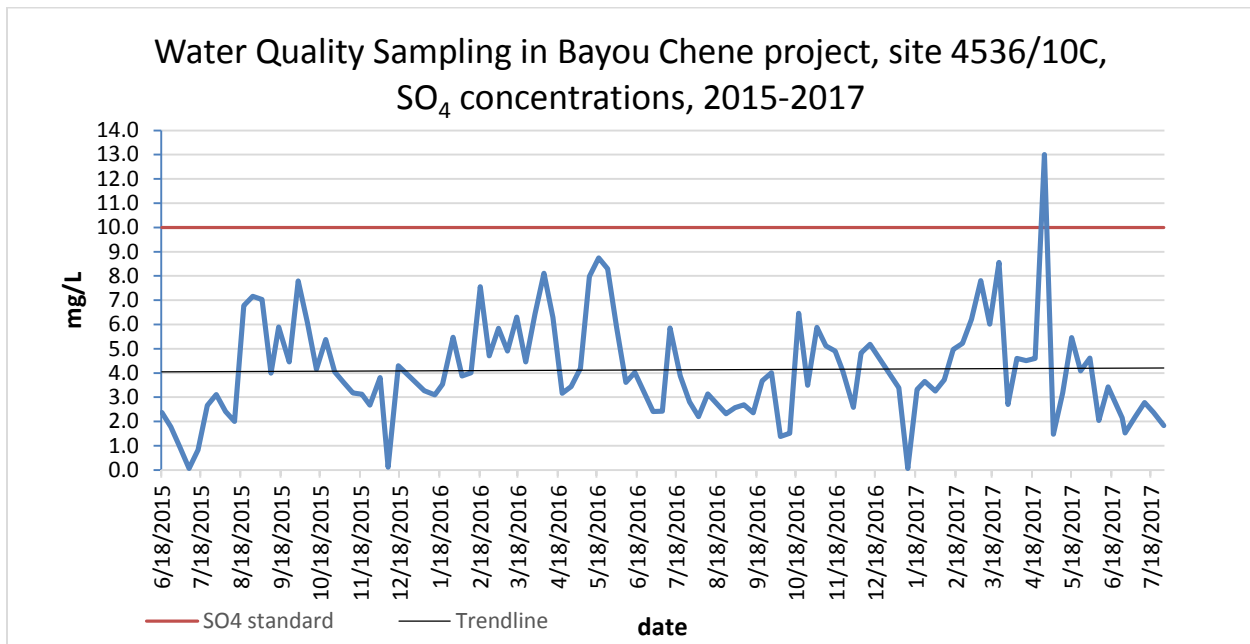


Figure 211 Water Quality Sampling in Bayou Chene project, site 4536/10C, SO₄ concentrations, 2015-2017

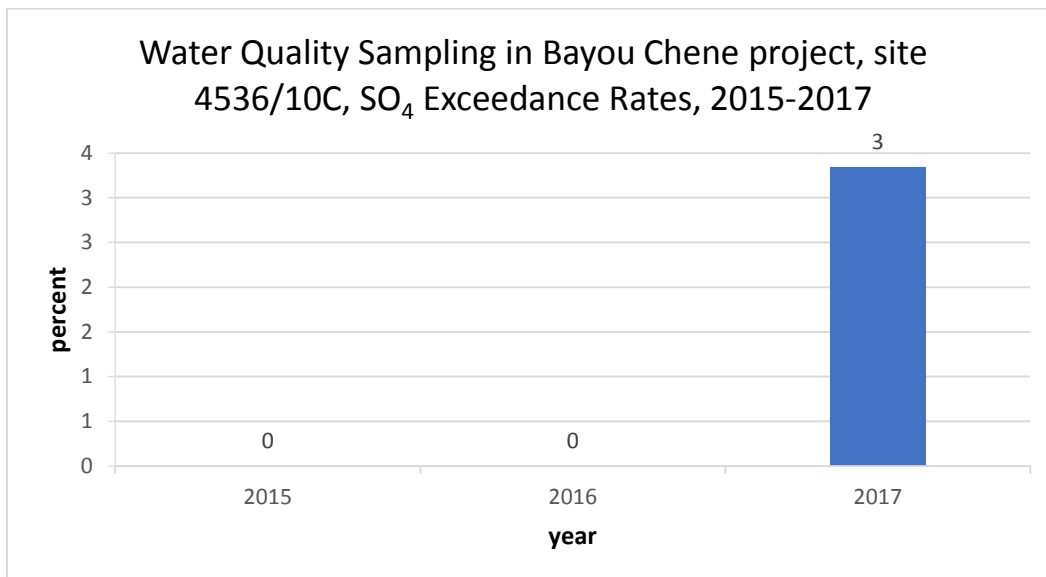


Figure 212 Water Quality Sampling in Bayou Chene project, site 4536/10C, SO₄ Exceedance Rates, 2015-2017

Figure 19 outlines all SO₄ concentrations collected from 2015 through 2017 at the site 4536/10C. The SO₄ standard is shown by a red line on the graph. SO₄ concentrations ranged from 0.06 mg/L (July 2015; January 2017) to 13.00 mg/L (April 2017). The trendline shows SO₄ concentrations are slightly increasing. The exceedance rates were calculated for SO₄ from 2015 through 2017 (Figure 20). Rates fluctuated as high as 3 percent in 2017 and did not exceed in 2015 or 2016; however, sampling years 2015 and 2017 were not sampled for a full year. In 2015, there were a total of 27 samples taken, of which none of the samples exceeded the state's standard. In 2016, there 49 samples taken, of which none of the samples

exceeded the state's standard. In 2017, there were a total of 30 samples taken, of which 1 sample did not meet the standard. 105 of the 106 samples collected from 2015 through 2017 were below the 400 mg/L standard.

SRP

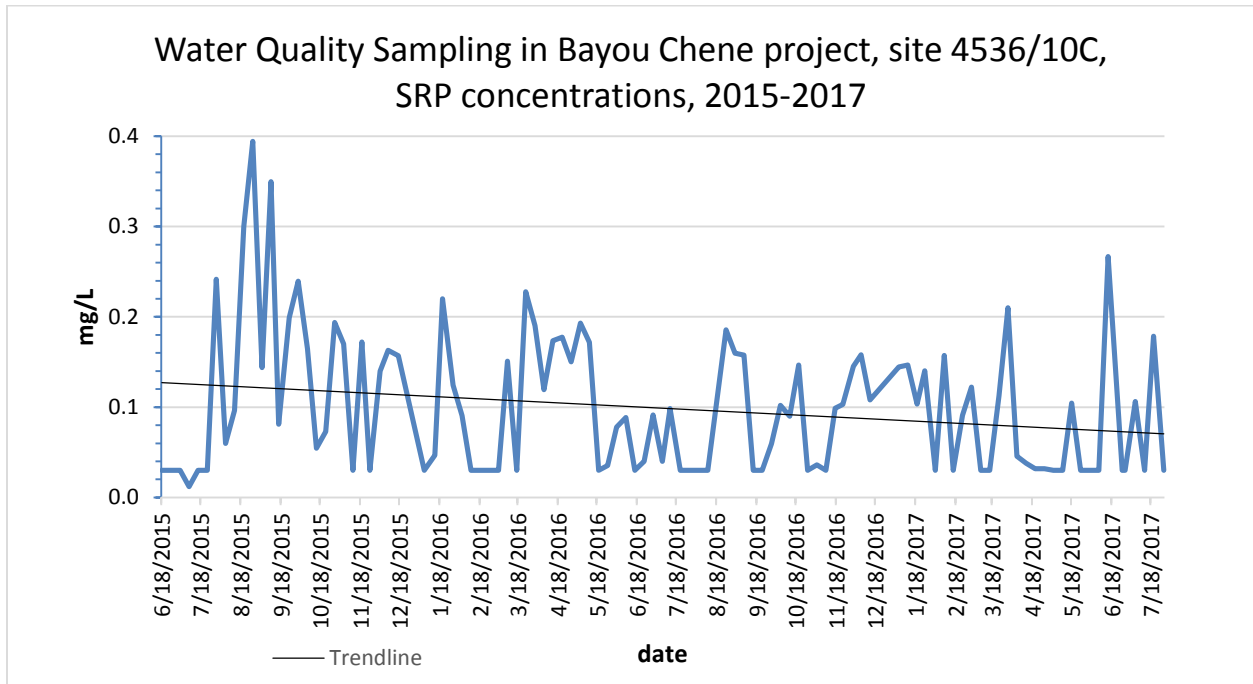


Figure 213 Water Quality Sampling in Bayou Chene project, site 4536/10C, SRP concentrations, 2015-2017

Figure 21 outlines all SRP concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for SRP. SRP concentrations ranged from 0.01 mg/L (July 2015) to 0.39 mg/L (August 2015). The trendline shows SRP concentrations are slightly decreasing.

TP

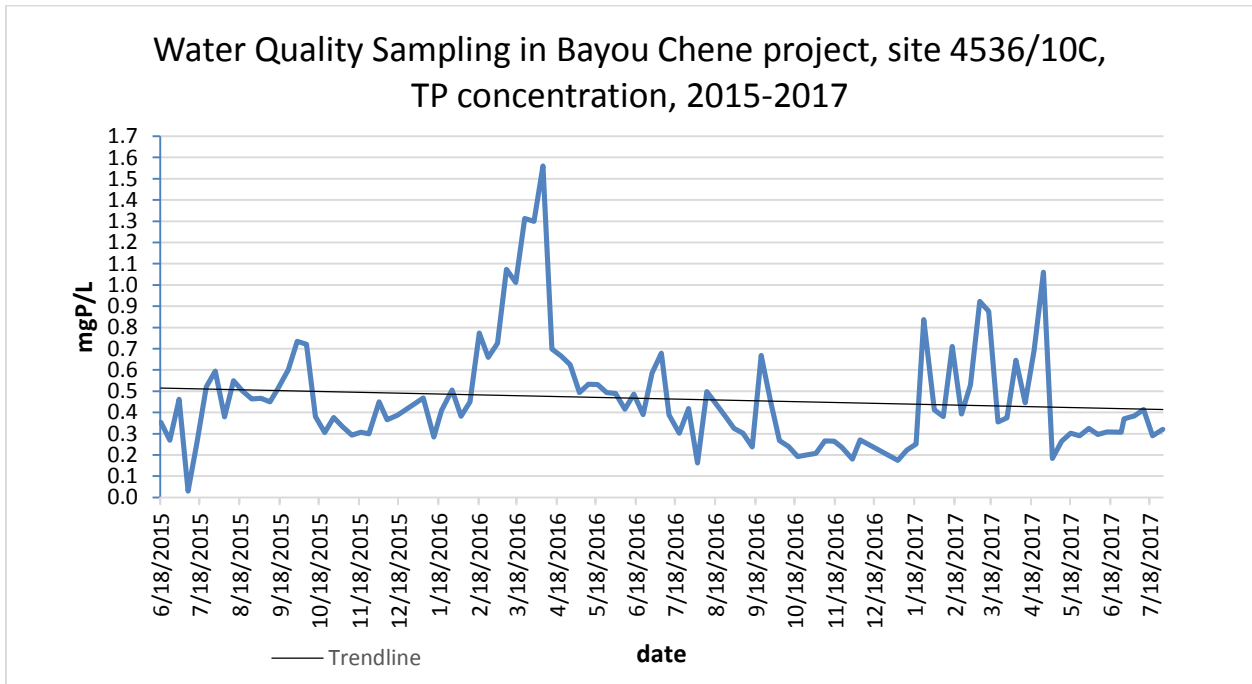


Figure 214 Water Quality Sampling in Bayou Chene project, site 4536/10C, TP concentration, 2015-2017

Figure 22 outlines all TP concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for TP. TP concentrations ranged from 0.03 mg/L (July 2015) to 1.56 mg/L (April 2016). The trendline shows TP concentrations are slightly decreasing. The data also shows TP levels are higher in the spring months (March through May).

TKN

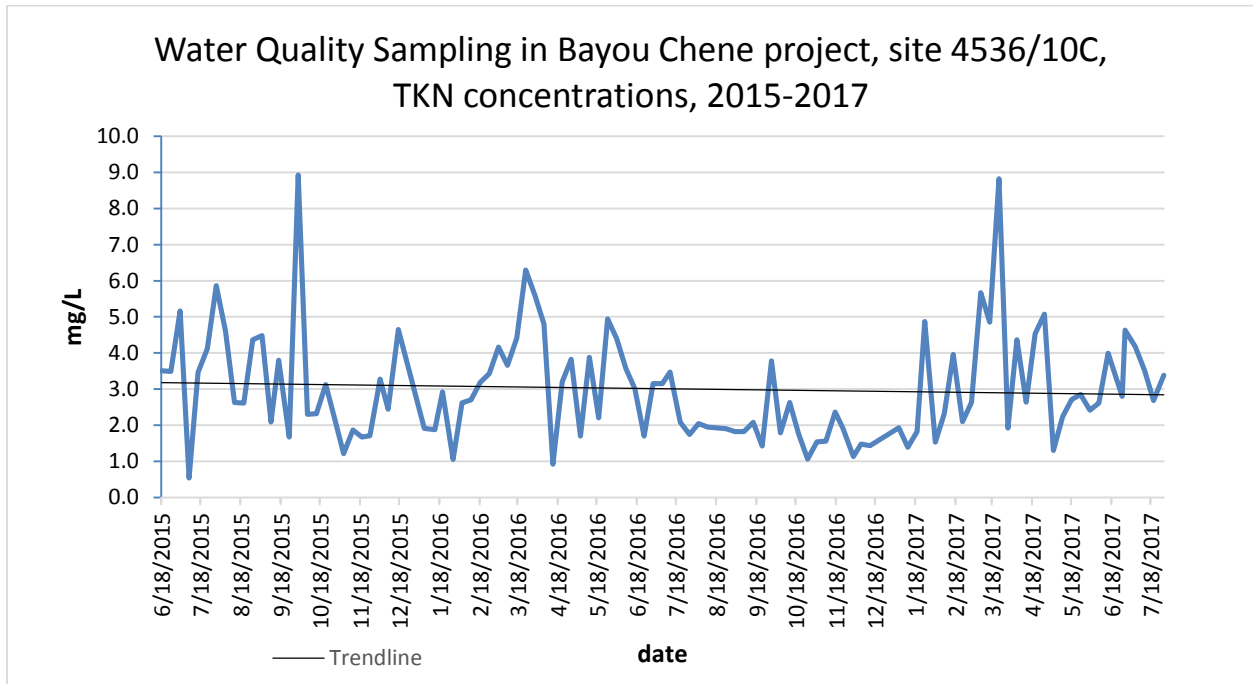


Figure 215 Water Quality Sampling in Bayou Chene project, site 4536/10C, TKN concentrations, 2015-2017

Figure 23 outlines all TKN concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for TKN. TKN concentrations ranged from 0.54 mg/L (July 2015) to 8.93 mg/L (October 2015). The trendline shows TKN concentrations are slightly decreasing.

BOD₅

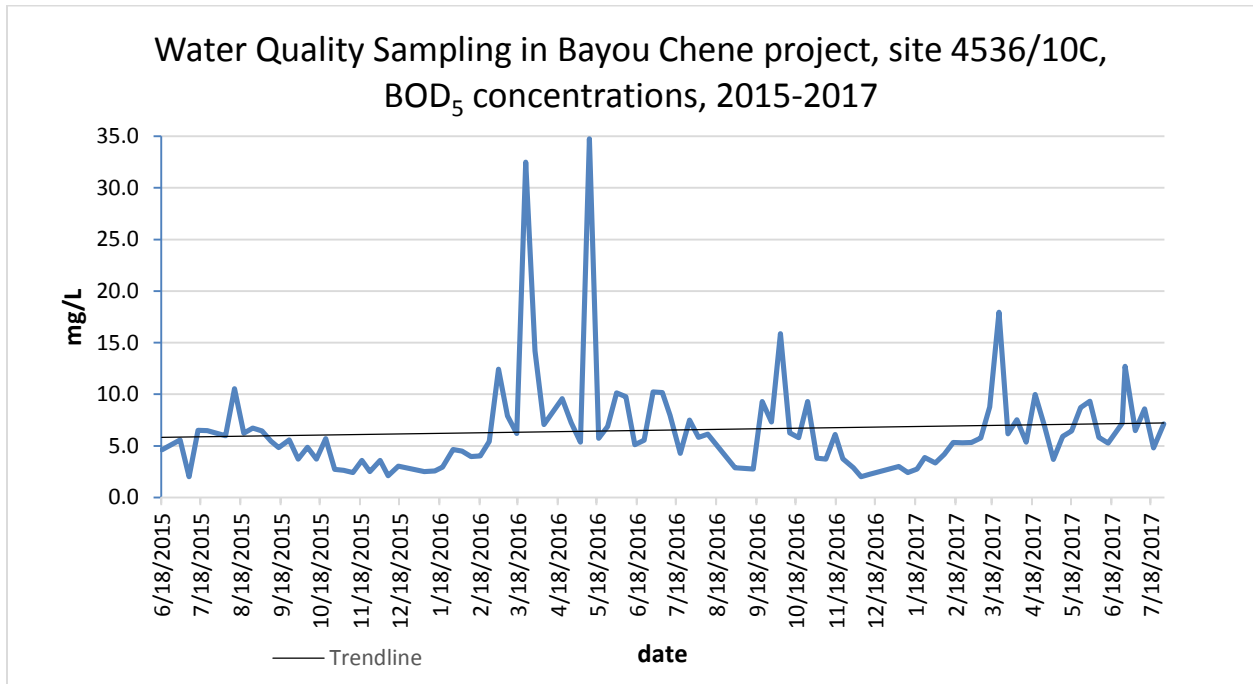


Figure 216 Water Quality Sampling in Bayou Chene project, site 4536/10C, BOD₅ concentrations, 2015-2017

Figure 24 outlines all BOD₅ concentrations collected from 2015 through 2017 at the site 4536/10C. There is no standard for BOD₅. BOD₅ concentrations ranged from 2.00 mg/L (July 2015; December 2016) to 34.74 mg/L (May 2016). The trendline shows BOD₅ concentrations are slightly increasing. Only 101 samples were collected. Some sample dates in June 2015, July 2015, April 2016, August 2016, and September 2016 were not accounted for; figure 24 accounts for these nulled data points and connected the empty points with a line.