

Segment 702A - Alligator Bayou

water and sediment toxicity

Segment Description

Alligator Bayou is a freshwater tributary to Taylor Bayou upstream of the saltwater barrier. Discharges to Alligator Bayou are primarily from municipal and industrial facilities, with a smaller amount from agricultural runoff.

The segment extends from the Alligator Bayou pump station at the Jefferson County hurricane protection levee (one mile downstream of Spur 215 in Port Arthur) to a point immediately upstream of the confluence with the city outfall canal in Jefferson county Drainage District Number 7.

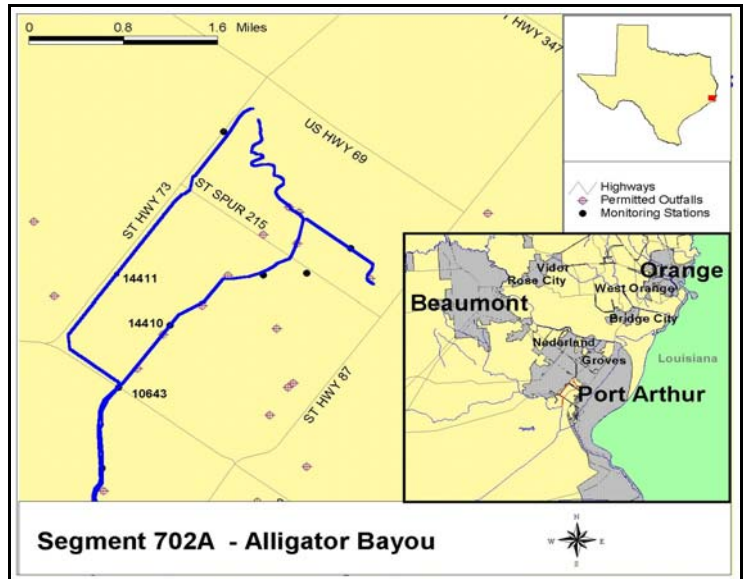
Listing Status

Alligator Bayou was identified as partially supporting the aquatic life use, due to ambient toxicity in water and sediment, on the state's 303(d) List for 2000. Because there were insufficient data available in 2002 to evaluate changes in water quality, the Bayou is also identified on the draft 2002 List. The use support will be reevaluated when sufficient data are available.

Test Results and Toxicity Identification

The water toxicity found in the initial samples from Station 14411 ceased to occur after August 2001. Toxicity identification evaluation (TIE) procedures were conducted on the toxic samples collected prior to August from Stations 14410 and 14411. Due to the high level of toxicity and the complex mixture of the compounds, identification of the cause is not possible with current technologies.

Considerable amounts of lethal and sublethal toxicity were found in sediments at each of the stations. Sediment toxicity is attributable to a combination of metals and organic compounds. The degree of contamination in Alligator Bayou below the Motiva discharge at Station 14410 is substantial, as indicated by the significant sample dilution (6.25%) required for TIE procedures.



Test Results - Water

Station	Lethal				Sublethal			
	Fathead		<i>C. dubia</i>		Fathead		<i>C. dubia</i>	
	# toxic	# tests	# toxic	# tests	# toxic	# tests	# toxic	# tests
10643	0	7	1	10	0	7	1	10
14410	1	7	1	11	1	7	5	11
14411	0	7	3	11	0	7	3	11

Test Results - Sediment

Station	Lethal				Sublethal			
	<i>C tentans</i>		<i>H azteca</i>		<i>C tentans</i>		<i>H azteca</i>	
	# toxic	# tests	# toxic	# tests	# toxic	# tests	# toxic	# tests
10643	4	4	3	4	1	1	2	3
14410	1	1	1	1	1	1	1	1
14411	0	1	0	1	1	1	1	1

Segment Recommendations:

Water and sediment toxicity tests indicate significant levels of toxicity to fish and invertebrates. Due to the complex nature of the compounds causing the toxicity, current technologies are unable to isolate a cause. Additional testing using more advanced techniques will be necessary to determine specific toxins.