Appendix G, Water Quality Technical Appendix
Attachment G.3   Bromide Modeling Results

The information contained in this attachment supports the quantitative assessment of the project alternatives' effects on bromide concentrations at Sacramento–San Joaquin Delta (Delta) assessment locations presented in Appendix G, Water Quality Technical Appendix, prepared in support of the Reinitiation of Consultation on the Long-term Operations of the Central Valley Project (CVP) and State Water Project (SWP) Environmental Impact Statement (EIS). This attachment presents the following information.

- The bromide modeling methodology.

- The source water concentrations used in the mass-balance modeling of bromide at the Delta assessment locations.

- Applicable water quality criteria for bromide used in the effects assessment.

- Tables and figures presenting modeled bromide concentrations at the Delta assessment locations for the No Action Alternative and the project alternatives.

G.3.1   Modeling Methodology

The method for calculating bromide concentrations for the Delta varied by assessment location. For Delta locations where the predominant source of bromide is sea water, bromide concentrations were determined by applying known relationships between electrical conductivity (EC), chloride, and bromide concentrations to Delta Simulation Model II (DSM2)-modeled EC. The Delta locations where bromide concentrations are more influenced by Delta inflows from the Sacramento and San Joaquin Rivers, a mass-balance approach was applied. Table G.3-1 summarizes the calculation method used for each Delta assessment location.

Table G.3-1. Delta Assessment Locations and Concentration Calculation Method

Assessment Location	Delta Region	Concentration Calculation Method
Barker Slough at North Bay Aqueduct	Northern	Mass-balance
Banks Pumping Plant	Export area	Mass-balance
Jones Pumping Plant	Export area	Mass-balance
San Joaquin River at Antioch	Western	Regression
Contra Costa Water District Pumping Plant #1	Interior	Regression

G.3.1.1   Mass-Balance Methodology
The mass-balance methodology used to calculate bromide concentrations used the DSM2-modeled average monthly source water flow fractions for each Delta assessment location. The

source water flow fraction output is the percentage of water at each assessment location constituted by the six primary source waters—Sacramento River (SAC), San Joaquin River (SJR), Yolo Bypass (YOL), Eastside Tributaries (EST), San Francisco Bay (BAY), and Delta Agricultural Return Waters (AGR). These flow fractions were used together with source water constituent concentrations to calculate a given constituent concentration at the assessment locations according to the following equation.

$$C_i = f_{SAC,i}(C_{SAC}) + f_{SJR,i}(C_{SJR}) + f_{YOL,i}(C_{YOL}) + f_{EST,i}(C_{EST}) + f_{BAY,i}(C_{BAY}) + f_{AGR,i}(C_{AGR})$$

In the above equation, C_i is the concentration at Delta assessment location i, $f_{X,i}$ is the average monthly flow fraction from source water X at assessment location i, and C_X is the source water X concentration. Source water concentrations input into the above equation are discussed below in Section G.3.2, *Source Water Concentrations*.

G.3.1.2   Regression Methodology

The regression methodology used known relationships between EC and chloride and chloride and bromide to calculate bromide concentrations at Delta assessment locations. These relationships were applied to the EC output from DSM2.

The EC-chloride relationship was developed based on data at Mallard Island, Jersey Island, and Old River at Rock Slough (Contra Costa Water District 1997:1). The relationship is defined by the following equation in which Cl is the chloride concentration in milligrams per liter (mg/L) and EC is in micromhos per centimeter (µmhos/cm).

$$Cl = max \begin{pmatrix} 0.15 * EC - 12 \\ 0.285 * EC - 50 \end{pmatrix}$$

The chloride-bromide relationship is approximately the same in multiple areas in the west Delta, including Old River at Rock Slough (Contra Costa Water District 1997:1) and Mallard Island (refer to Figure G.3-1). The relationship is defined by the following equation in which Br is the bromide concentration in mg/L and Cl is the chloride concentration in mg/L.

$$Br = 0.0035 * Cl$$

The chloride-bromide regression method was developed based on west Delta ratios of chloride to bromide that were indicative of sea-water influence, and so considered valid for that area.
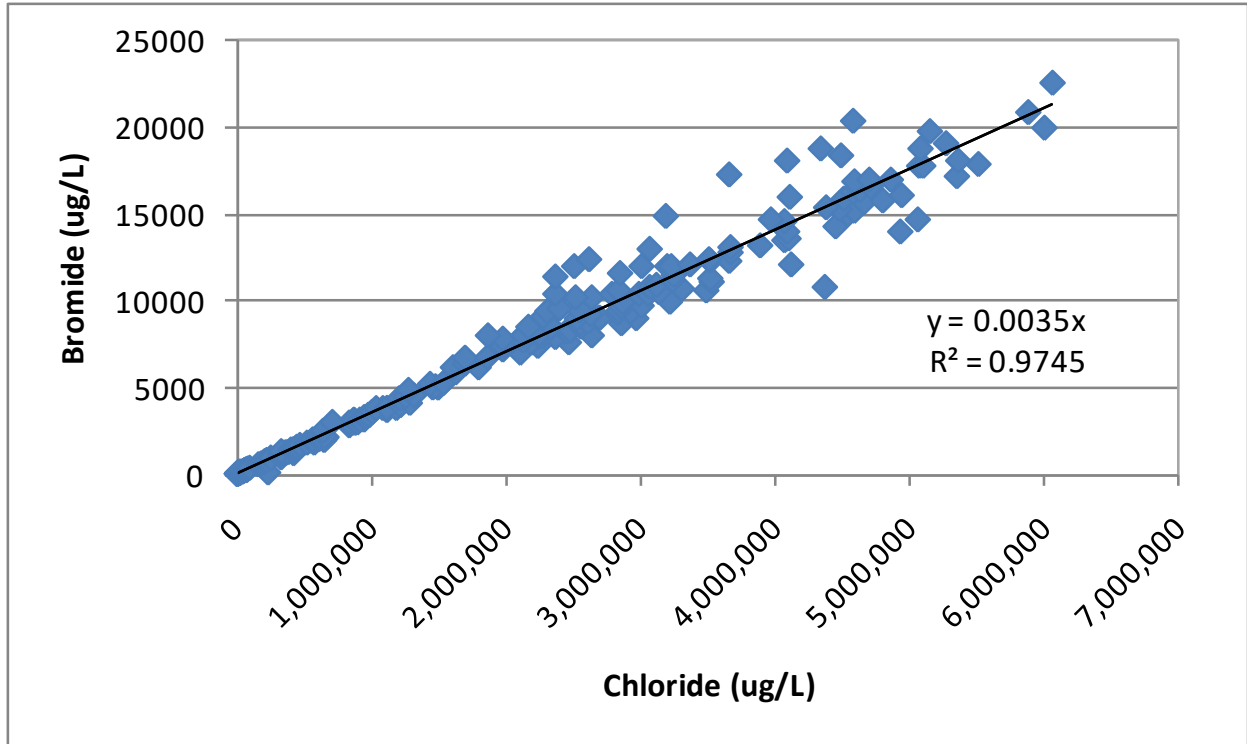
Figure G.3-1. Bromide to Chloride Ratio for Mallard Island Monitoring Station

G.3.2 Source Water Concentrations

An input to the mass-balance calculation of bromide concentrations at the Delta assessment locations is the concentration of bromide in the primary source waters to the Delta: SAC, SJR, YOL, EST, BAY, and AGR. The concentrations of bromide for all source waters except the San Joaquin River were based on historical data. Table G.3-2 provides summary statistics for the primary source water concentrations, as well as information on the source of the data. Due to data availability, Yolo Bypass concentrations were set equal to Sacramento River concentrations, which is the source of flows to the Yolo Bypass.

Table G.3-2. Source Water Bromide Concentrations (in micrograms per liter)

Data Parameter	SAC	SJR	BAY [a]	EST	AGR
Average	14	228	22,774	11	517
Minimum	1	10	28	10	20
Maximum	100	650	44,100	30	5,280
75th percentile	20	320	32,393	10	600
99th percentile	40	560	43,624	20.7	3,650
Data source	DWR 2020b	DWR 2020b	DWR 2020b	CEDEN, 2020 DWR 2020b	DWR 2020b

Data Parameter	SAC	SJR	BAY [a]	EST	AGR
Station(s)	SAC at Greene's Landing, SAC at Hood	SJR at Vernalis	Suisun Bay at Bulls Head near Martinez	Mokelumne River at Sacramento Road; at confluence with the South Mokelumne River	All data were pooled – see narrative description below
Date range	1990–2020	1990–2020	1980–2007	1990–2013	1990–2001
Non-detect results replaced with reporting limit for statistics	Yes	No	No	Yes	Yes
Data omitted	None	None	None	None	Yes – see narrative description below
Number of data points	1,136	933	319	94	1,017

SAC = Sacramento River; SJR = San Joaquin River; BAY = San Francisco Bay; EST = Eastside Tributaries; AGR = Delta Agricultural Return Waters; CEDEN = California Environmental Data Exchange Network; DWR = California Department of Water Resources.
[a] Data was calculated from the regressed relationship of bromide to chloride based on CEDEN data for chloride.

Each source water dataset was evaluated to determine whether the primary source water concentration should be represented by a single value or a different value for each month. Analysis of the Sacramento River (Kruskal Wallis; $p<0.05$) and Delta Agricultural Return Waters (Kruskal Wallis; $p<0.05$) datasets indicated significant differences in concentration by month. Concentrations in the Eastside Tributaries did not vary significantly among months (Kruskal Wallis; $p>0.05$). Due to the presence of a distinct monthly pattern in Sacramento River and Delta Agricultural Return Waters, monthly average concentrations were used for these locations in the mass-balance calculation. Due to the very limited dataset and lack of monthly patterns in the Eastside Tributaries, concentrations for this source water are represented by a single average of the entire dataset shown in Table G.3-2 in the mass-balance calculation. Tables G.3-3 and G.3-4 provide the monthly average concentrations for the Sacramento River and Delta Agricultural Return Waters used in the mass-balance calculation, respectively.

The source water concentrations for the San Joaquin River and San Francisco Bay were calculated in a different manner. Because San Joaquin River and San Francisco Bay bromide concentrations are closely related to flow, in addition to time of year, concentrations were calculated from DSM2-modeled EC. The EC-chloride regression equations defined below were applied to each modeled monthly average EC value for water years 1922–2021 to develop monthly average chloride concentrations for the modeled period, resulting in a time-series of monthly average chloride concentrations consisting of 1,200 values (i.e., 12 months times 100 years). In the following equation, Cl is the chloride concentration in mg/L and EC is in µmhos/cm.

$$San\ Joaquin\ River\ at\ Vernalis\ Cl = 0.1845 * EC\ at\ Vernalis - 23$$

$$San\ Francisco\ Bay\ at\ Martinez\ Cl = 0.285 * EC\ at\ Martinez - 50$$

The chloride-bromide regression equation defined in Section G.3.1.2, *Regression Methodology*, was applied to each monthly average chloride concentration to develop a time-series of monthly average bromide concentrations for the modeled period. The monthly average bromide concentrations were input as C_{SJR} and C_{BAY} in the mass-balance equation defined in Section G.3.1.1.

Table G.3-3. Monthly Average Source Water Bromide Concentrations for the Sacramento River (in micrograms per liter)

Data Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average concentration	14	15	14	14	14	14	12	15	17	12	16	14
Number of data points	92	95	98	98	95	97	96	101	101	91	84	88

Table G.3-4. Monthly Average Source Water Bromide Concentrations for Delta Agricultural Return Waters (in micrograms per liter)

Data Parameter	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average concentration	592	623	662	596	394	405	391	468	468	627	529	532
Number of data points	137	28	31	141	27	121	170	135	24	146	30	27

Additional notes regarding the calculation of Delta Agricultural Return Water concentrations are provided below.

Delta Agricultural Return Water. Agricultural return drains are distributed unevenly throughout the Delta. Water quality associated with these drains varies depending on the specific location of the drain within the Delta and largely coincides with the water quality of the water that is withdrawn from the Delta for application onto agricultural lands. To characterize bromide concentrations in agricultural drain water as a whole, the following process was followed.

1. All agricultural drain data from the California Department of Water Resources Water Data Library, which had historical bromide data, were compiled.

2. All agricultural drain data were pooled and the results summarized in Table G.3-2.

Data for the Byron Tract #2 (65,000 micrograms per liter [µg/L] on May 29, 1996) and Byron Tract #3 (46,800 µg/L on May 29, 1996) agricultural drains in the west Delta were omitted from the database due to their reported values being substantially outside the distribution of all other values.

G.3.3   Applicable Water Quality Objectives

There are presently no federal or state adopted numeric water quality criteria/objectives for

bromide. To evaluate the effects of the project alternatives on bromide, the assessment considered work by a panel of three water quality and treatment experts, engaged by the California Urban Water Agencies, which produced a report titled "Bay-Delta Water Quality Evaluation, Draft Final Report" (California Urban Water Agencies 1998).

California Urban Water Agencies had charged the panel with developing potential regulatory scenarios, defining appropriate treatment process criteria, and estimating the Delta source water quality required to achieve compliance under the anticipated regulatory scenarios. The panel identified two regulatory scenarios for their evaluation, a near-term scenario consisting of the then current (and still current today) treatment rules governing pathogen inactivation and disinfection and a long-term scenario which included the anticipated more stringent versions of these rules then under development (and not implemented). The panel focused on inactivation requirements and the disinfection byproduct precursors total organic carbon and bromide as the constituents in Delta water that would be most likely to drive treatment technology decisions.

For the near-term regulatory scenario evaluated by the panel consisted of drinking water maximum contaminant levels (MCLs) of 80 microgram per liter (µg/L) total trihalomethanes, 60 µg/L haloacetic acids, and 10 µg/L bromate (as running annual averages) as well as an additional 1- to 2-log inactivation of *Giardia*. The panel's findings for this scenario was total organic carbon concentrations ranging from 4 mg/L to 7 mg/L and bromide concentrations ranging from 100 µg/L to 300 µg/L to give users flexibility in their choice of treatment method (enhanced coagulation or ozone disinfection) (California Urban Water Agencies 1998:ES-2).

The long-term, more stringent scenario evaluated by the panel consisted of drinking water MCLs of 40 µg/L total trihalomethanes, 30 µg/L haloacetic acids, and 5 µg/L bromate (as running annual averages) as well as an additional 1- to 2-log inactivation of *Giardia* and 1-log inactivation of *Cryptosporidium*. The panel's basic finding for the long-term scenario was that it would be necessary to keep Delta water diverted for municipal use to no more than 3 mg/L total organic carbon and 50 µg/L bromide to give users flexibility in their choice of treatment method (enhanced coagulation or ozone disinfection). However, these thresholds for total trihalomethanes, haloacetic acids, and bromate have not been implemented as drinking water MCLs.

G.3.4   Modeling Results

The modeled monthly average concentrations of bromide at each Delta assessment location are presented on the following pages in tables and figures, in the following formats.

- Tables

  - Probability of exceedance of the monthly average concentrations for the entire simulation period (water years 1921–2021).

  - Average of monthly average concentrations for the entire simulation period (water years 1921–2021) and by water year type: wet, above normal, below normal, dry, and critical.

- Results shown for the No Action Alternative and each project alternative, and the project alternative minus the No Action Alternative.

- Monthly Average Plots

  - Average of monthly average concentrations for the entire simulation period (water years 1921–2021) and by water year type: wet, above normal, below normal, dry, and critical.

  - No Action Alternative and project alternatives shown on same plot.

- Exceedance Plots

  - Probability exceedance of the monthly average concentrations for the entire simulation period (water years 1921–2021).

  - No Action Alternative and project alternatives shown on same plot.

Table G.3-1-1-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	89	94	123	137	183	187	112	68	62	63	74	76
1%	88	93	115	133	156	150	112	68	61	62	72	76
5%	85	87	103	123	130	132	104	61	58	58	70	72
10%	81	84	99	113	123	127	101	58	56	51	67	66
25%	73	77	89	95	104	114	91	55	48	43	51	57
50%	68	73	84	66	73	88	82	51	46	41	49	54
75%	64	68	76	52	51	68	72	48	43	40	47	53
99.9%	58	62	63	43	42	52	55	34	40	36	45	50

Table G.3-1-1-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	70	73	84	74	80	92	83	52	47	43	51	56
Wet Water Years	67	72	84	62	62	74	76	49	43	40	47	53
Above Normal Water Years	69	75	87	76	83	90	79	49	44	41	47	53
Below Normal Water Years	69	73	84	72	75	84	79	51	46	42	49	56
Dry Water Years	69	73	82	78	89	105	88	52	47	41	50	55
Critical Water Years	75	76	86	92	103	117	91	58	57	55	67	68

Table G.3-1-2-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	88	94	123	138	184	188	120	68	61	55	67	72
1%	88	93	115	138	155	156	115	65	60	54	64	71
5%	84	88	104	125	132	141	110	61	57	53	64	69
10%	82	85	97	114	126	133	104	58	55	50	61	65
25%	74	79	91	96	107	117	95	54	48	42	51	57
50%	68	74	85	66	74	89	84	51	45	41	49	54
75%	66	68	78	53	51	68	72	48	43	40	48	53
99.9%	61	63	68	43	42	52	54	34	40	36	46	50

Table G.3-1-2-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 1

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	71	74	85	76	81	94	84	52	47	42	51	56
Wet Water Years	69	74	85	62	62	74	77	49	43	40	48	54
Above Normal Water Years	70	75	87	77	83	90	80	49	44	40	48	54
Below Normal Water Years	70	73	84	73	76	85	80	52	45	41	50	56
Dry Water Years	70	74	84	82	91	105	89	52	47	41	50	56
Critical Water Years	76	78	88	95	106	125	100	58	56	51	62	66

Table G.3-1-2-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	0	0	2	0	1	8	0	-1	-8	-7	-4
1%	0	0	0	4	0	7	3	-3	-1	-8	-8	-4
5%	-1	1	1	3	2	9	6	0	-1	-5	-6	-3
10%	0	0	-2	1	4	6	3	0	-1	-1	-6	-2
25%	2	2	2	2	2	3	4	0	0	0	0	0
50%	1	1	1	-1	1	1	2	1	-1	-1	0	0
75%	2	1	1	0	0	0	-1	0	0	0	0	1
99.9%	2	1	5	0	0	0	0	0	0	0	1	0

Table G.3-1-2-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1	1	1	2	1	2	2	0	-1	-1	0	0
Wet Water Years	2	1	0	0	0	0	0	0	0	0	0	1
Above Normal Water Years	1	0	0	0	0	0	1	0	-1	-1	1	1
Below Normal Water Years	1	0	0	1	1	1	1	0	-1	-1	1	1
Dry Water Years	1	1	2	4	2	0	0	0	0	0	0	0
Critical Water Years	1	2	2	3	3	9	8	0	-1	-4	-5	-2

Table G.3-1-3-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	91	94	121	137	183	187	117	70	64	61	74	75
1%	88	92	114	137	155	150	112	68	62	60	73	74
5%	84	88	102	122	130	132	104	61	58	57	70	71
10%	82	84	97	112	122	125	101	58	55	52	68	69
25%	73	78	89	92	102	115	92	55	48	43	51	57
50%	67	72	83	66	74	88	82	51	46	41	49	54
75%	63	67	77	52	51	68	72	48	43	40	47	53
99.9%	56	60	63	43	42	52	54	34	40	36	46	50

Table G.3-1-3-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	69	73	84	74	80	92	83	52	47	43	52	57
Wet Water Years	67	72	85	62	62	74	76	49	43	40	48	53
Above Normal Water Years	70	74	86	76	83	90	79	49	44	41	47	53
Below Normal Water Years	69	73	84	72	75	84	79	52	46	42	49	55
Dry Water Years	68	72	81	77	88	105	88	52	47	42	50	56
Critical Water Years	75	75	86	93	102	117	93	58	57	54	67	69

Table G.3-1-3-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	2	0	-2	1	0	0	5	1	3	-2	0	-1
1%	0	-1	-1	4	0	0	0	0	1	-2	1	-2
5%	-1	1	-1	-1	0	0	0	0	0	-1	0	-1
10%	0	0	-2	-2	0	-2	0	0	-1	0	0	3
25%	1	1	0	-2	-2	1	1	0	0	0	0	0
50%	-1	-1	-1	0	0	0	0	0	0	0	0	0
75%	-1	-1	0	0	0	0	0	0	0	0	0	0
99.9%	-3	-2	0	0	0	0	0	0	0	0	1	0

Table G.3-1-3-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	0	0	0	0	0	0	0	0	0	0	0	0
Wet Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal Water Years	0	0	-1	0	0	0	0	0	0	0	0	0
Below Normal Water Years	-1	0	0	0	0	0	0	0	0	0	0	0
Dry Water Years	-1	-1	0	-1	-1	0	0	0	0	0	0	1
Critical Water Years	-1	0	-1	0	-1	0	2	0	0	-1	0	1

Table G.3-1-4-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	91	94	121	137	183	188	119	68	60	56	67	78
1%	87	92	114	137	155	152	112	65	60	55	66	72
5%	83	85	102	122	131	141	111	62	57	53	63	69
10%	81	83	97	109	122	133	104	60	56	51	62	65
25%	73	76	89	94	102	115	94	55	48	43	51	57
50%	67	71	84	66	74	88	83	51	46	41	49	54
75%	63	67	76	52	51	68	72	48	43	40	47	53
99.9%	59	62	63	43	42	52	54	34	40	36	46	50

Table G.3-1-4-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	69	73	84	74	80	93	84	52	47	43	51	56
Wet Water Years	67	72	85	62	62	74	76	49	43	40	48	53
Above Normal Water Years	69	74	86	76	83	90	79	49	44	41	47	53
Below Normal Water Years	68	72	83	72	75	84	79	52	46	42	49	56
Dry Water Years	68	72	82	78	89	105	88	52	47	42	50	56
Critical Water Years	73	74	86	92	102	123	100	58	56	52	63	67

Table G.3-1-4-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	3	0	-2	1	0	0	7	-1	-2	-7	-7	2
1%	-1	-1	0	4	0	2	1	-3	-1	-8	-7	-3
5%	-1	-1	-1	-1	1	9	7	2	-1	-5	-7	-3
10%	0	-1	-2	-4	-1	6	3	2	-1	-1	-6	-1
25%	1	-1	-1	0	-2	1	3	0	0	0	0	0
50%	-1	-1	0	0	0	0	1	0	0	0	0	0
75%	-1	-1	0	0	0	0	0	0	0	0	0	0
99.9%	0	0	0	0	0	0	0	0	0	0	1	1

Table G.3-1-4-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-1	-1	0	0	0	1	1	0	0	0	-1	0
Wet Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal Water Years	0	0	-1	0	0	0	0	0	0	0	0	0
Below Normal Water Years	-1	-1	-1	0	0	0	0	0	0	0	0	0
Dry Water Years	-1	-1	0	-1	0	0	0	0	0	0	0	1
Critical Water Years	-2	-2	-1	0	0	7	9	0	-1	-3	-5	-1

Table G.3-1-5-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	87	94	121	137	183	188	119	68	60	55	66	75
1%	87	94	116	137	155	152	113	65	60	55	65	72
5%	83	87	103	116	129	141	112	62	57	53	63	68
10%	80	84	98	110	122	133	104	60	56	51	62	65
25%	73	77	89	92	102	117	94	55	48	43	51	57
50%	67	72	84	66	74	88	83	51	46	41	49	54
75%	63	67	77	52	51	68	72	48	44	40	47	53
99.9%	55	60	65	43	42	52	54	34	40	36	46	50

Table G.3-1-5-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	69	73	84	74	80	93	84	52	47	43	51	56
Wet Water Years	67	72	85	62	62	74	76	49	43	40	48	53
Above Normal Water Years	69	74	86	76	83	90	79	49	44	41	47	53
Below Normal Water Years	68	72	83	72	75	84	79	52	46	42	49	55
Dry Water Years	68	72	82	78	88	105	88	52	47	42	50	55
Critical Water Years	74	77	87	91	102	124	100	58	56	51	62	66

Table G.3-1-5-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-1	0	-1	1	0	0	7	-1	-2	-8	-9	-1
1%	-1	1	1	4	0	2	1	-4	-1	-7	-8	-3
5%	-2	0	0	-7	-1	9	7	2	-1	-5	-6	-4
10%	-1	0	-1	-3	0	6	3	2	0	-1	-6	-1
25%	0	0	0	-2	-2	3	3	0	0	0	0	0
50%	-1	-1	0	0	0	0	1	0	0	0	0	0
75%	-1	-1	1	0	0	0	0	0	0	0	0	0
99.9%	-3	-2	2	0	0	0	0	0	0	0	1	0

Table G.3-1-5-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-1	0	0	0	0	1	1	0	0	0	-1	0
Wet Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Below Normal Water Years	-1	-1	-1	0	0	0	0	0	0	0	0	0
Dry Water Years	-1	-1	0	-1	-1	0	0	0	0	0	0	0
Critical Water Years	-1	1	1	-1	0	7	9	0	-1	-3	-5	-2

Table G.3-1-6-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	89	93	121	137	183	188	119	64	60	54	66	75
1%	87	92	115	137	155	152	112	64	59	54	65	72
5%	83	85	102	115	129	141	111	62	57	53	63	68
10%	78	84	98	109	122	130	103	60	55	50	61	65
25%	73	77	89	94	104	115	94	54	48	43	51	57
50%	67	72	84	66	73	88	83	51	46	42	49	54
75%	63	67	77	52	51	68	72	48	43	40	47	53
99.9%	55	60	65	43	42	52	54	34	40	36	46	50

Table G.3-1-6-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	69	73	84	74	80	93	84	51	47	43	51	56
Wet Water Years	67	72	84	62	62	74	76	49	43	40	48	53
Above Normal Water Years	69	75	86	76	83	90	79	49	44	41	47	53
Below Normal Water Years	68	72	83	72	75	84	79	51	46	42	49	55
Dry Water Years	68	72	82	78	88	105	88	52	47	42	50	55
Critical Water Years	74	77	87	91	102	123	100	58	56	51	62	66

Table G.3-1-6-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	-1	-2	1	0	0	7	-4	-2	-8	-9	-1
1%	-1	-1	0	4	0	2	1	-4	-2	-8	-7	-3
5%	-1	-2	-1	-8	-1	9	6	1	-1	-5	-7	-4
10%	-3	0	-1	-4	0	3	3	2	-1	-1	-6	-1
25%	0	0	0	0	-1	1	3	-1	0	0	0	-1
50%	-1	-1	0	0	0	0	1	0	0	0	0	0
75%	-1	0	1	0	0	0	0	0	0	0	0	0
99.9%	-3	-2	2	0	0	0	0	0	0	0	1	0

Table G.3-1-6-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-1	0	0	0	0	1	1	0	0	0	-1	0
Wet Water Years	0	0	0	0	0	0	0	0	0	0	0	0
Above Normal Water Years	0	0	-1	0	0	0	0	0	0	0	0	0
Below Normal Water Years	-1	-1	-1	0	0	0	0	-1	0	0	0	0
Dry Water Years	-1	-1	0	0	0	0	0	-1	0	0	0	0
Critical Water Years	-1	1	1	-1	-1	6	8	0	-1	-4	-5	-2

Table G.3-1-7-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	87	95	121	157	194	223	131	72	65	55	66	70
1%	87	94	114	143	170	165	130	72	60	54	66	69
5%	83	88	107	126	148	151	121	63	59	52	62	66
10%	80	84	100	117	134	140	109	61	55	50	61	62
25%	74	80	94	99	107	125	100	57	49	46	54	58
50%	69	74	87	69	76	96	86	54	47	44	52	56
75%	66	69	79	55	52	70	76	51	45	43	50	55
99.9%	60	63	67	45	43	56	51	33	42	37	47	49

Table G.3-1-7-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 3

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	71	75	87	79	85	100	89	54	48	45	53	57
Wet Water Years	69	74	88	67	66	80	83	53	45	42	50	56
Above Normal Water Years	70	75	89	81	90	101	89	53	46	44	52	56
Below Normal Water Years	70	74	86	75	80	88	83	53	48	45	53	57
Dry Water Years	70	74	85	83	92	112	92	53	48	43	50	54
Critical Water Years	75	78	89	97	107	128	100	59	57	50	62	64

Table G.3-1-7-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-2	0	-2	21	11	36	20	4	3	-8	-8	-6
1%	-2	1	0	10	15	16	18	3	-1	-9	-6	-7
5%	-1	2	4	3	18	20	17	2	1	-6	-7	-6
10%	-1	0	1	4	11	13	8	3	-1	-1	-6	-4
25%	1	3	5	5	3	11	10	2	1	3	3	1
50%	2	1	3	3	3	8	3	3	1	3	3	2
75%	3	1	3	2	1	3	3	3	1	2	3	2
99.9%	2	1	4	2	1	4	-3	-1	2	1	2	-1

Table G.3-1-7-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1	1	3	5	4	8	6	2	1	1	1	1
Wet Water Years	2	2	4	5	4	6	6	5	1	2	3	3
Above Normal Water Years	1	0	3	5	7	11	9	3	1	4	5	3
Below Normal Water Years	1	1	2	4	5	4	4	1	2	3	4	2
Dry Water Years	1	1	3	4	3	7	4	1	1	1	1	-1
Critical Water Years	0	2	3	5	4	11	9	2	0	-4	-5	-4

Table G.3-1-8-A. Barker Slough at North Bay Aqueduct, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	91	94	121	137	183	187	117	68	62	61	75	75
1%	88	92	114	137	155	149	112	67	62	61	74	74
5%	84	88	102	123	129	132	104	61	59	56	70	71
10%	81	84	97	111	122	126	100	58	56	54	65	70
25%	73	78	89	94	102	115	91	55	48	43	51	57
50%	68	73	84	66	73	88	82	51	46	41	49	54
75%	64	68	76	52	51	68	72	48	43	40	48	53
99.9%	56	60	65	43	42	52	54	34	40	36	45	49

Table G.3-1-8-B. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), Alternative 4

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	70	74	84	74	80	92	83	52	47	43	52	57
Wet Water Years	67	72	84	62	62	74	76	49	43	40	48	53
Above Normal Water Years	70	74	86	76	83	90	79	49	44	40	48	53
Below Normal Water Years	69	73	83	71	75	84	79	51	46	42	49	55
Dry Water Years	69	73	82	78	88	105	88	52	47	42	50	55
Critical Water Years	75	77	87	93	102	117	93	58	57	54	67	69

Table G.3-1-8-C. Barker Slough at North Bay Aqueduct, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	2	0	-2	1	0	0	5	0	0	-1	0	-1
1%	0	-1	-1	3	0	0	0	-1	1	-1	1	-1
5%	-1	1	-1	0	-1	0	0	0	1	-2	0	-1
10%	0	0	-2	-3	0	-1	-1	0	-1	2	-2	4
25%	0	1	0	-1	-2	1	0	0	0	0	0	0
50%	0	0	0	0	0	0	0	0	0	0	0	0
75%	1	0	0	0	0	0	0	0	0	0	0	1
99.9%	-3	-2	2	0	0	0	0	0	0	0	0	-1

Table G.3-1-8-D. Barker Slough at North Bay Aqueduct, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	0	0	0	0	0	0	0	0	0	0	0	0
Wet Water Years	0	0	0	0	0	0	0	0	0	0	0	1
Above Normal Water Years	1	0	-1	0	0	0	0	0	0	0	0	1
Below Normal Water Years	0	0	-1	0	0	0	0	0	0	0	0	0
Dry Water Years	0	0	0	0	-1	0	0	0	0	0	0	0
Critical Water Years	0	1	1	1	0	1	2	0	0	0	0	1

Table G.3-2-1-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	546	610	711	646	574	473	346	356	498	529	613	613
1%	544	607	695	645	563	401	312	325	471	522	570	549
5%	500	564	665	604	425	361	292	245	341	450	515	510
10%	488	533	590	525	384	309	272	219	268	383	466	493
25%	459	457	504	384	296	278	241	185	161	182	314	434
50%	411	367	414	281	234	255	222	168	143	151	210	330
75%	132	144	231	190	173	152	129	120	132	121	130	152
99.9%	70	22	6	4	3	5	2	1	8	80	94	88

Table G.3-2-1-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	310	313	381	297	230	220	185	148	161	183	243	308
Wet Water Years	278	252	234	166	135	118	84	62	110	126	129	143
Above Normal Water Years	308	287	401	277	207	203	182	149	138	113	130	161
Below Normal Water Years	254	269	401	303	233	247	199	160	143	149	236	418
Dry Water Years	331	345	468	376	282	264	235	178	142	174	296	381
Critical Water Years	399	449	471	420	336	321	276	242	320	394	472	491

Table G.3-2-2-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	613	680	627	648	600	432	312	254	413	521	464	539
1%	579	647	624	643	593	426	291	237	357	463	456	507
5%	548	605	597	587	499	379	270	229	282	347	387	479
10%	513	591	583	526	424	333	264	208	233	257	359	452
25%	487	507	551	450	338	257	229	177	167	192	304	432
50%	453	450	439	278	202	189	200	154	132	148	237	410
75%	417	373	214	148	131	133	127	110	114	116	191	368
99.9%	71	22	6	5	3	4	2	1	7	87	95	85

Table G.3-2-2-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 1

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	435	425	393	297	229	197	175	136	145	169	250	392
Wet Water Years	398	349	235	151	115	100	82	59	97	128	173	359
Above Normal Water Years	469	451	413	254	168	161	170	134	115	106	199	435
Below Normal Water Years	428	411	386	286	236	198	184	149	134	146	263	385
Dry Water Years	449	452	485	407	294	236	220	168	145	179	300	396
Critical Water Years	454	511	520	438	376	339	263	212	265	307	339	414

Table G.3-2-2-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	67	70	-84	2	25	-40	-34	-103	-85	-7	-148	-74
1%	35	40	-71	-2	31	25	-22	-88	-114	-59	-114	-42
5%	48	42	-68	-17	74	18	-22	-16	-60	-103	-128	-31
10%	25	58	-7	1	39	24	-8	-11	-35	-126	-107	-41
25%	28	49	47	66	42	-21	-13	-9	7	11	-10	-2
50%	43	83	24	-3	-32	-65	-22	-14	-11	-3	27	81
75%	285	230	-17	-42	-41	-19	-3	-10	-17	-6	61	215
99.9%	1	0	0	0	0	0	0	0	-1	6	1	-3

Table G.3-2-2-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	125	111	11	0	-1	-23	-10	-12	-16	-14	7	85
Wet Water Years	120	97	1	-15	-20	-18	-1	-3	-13	2	44	217
Above Normal Water Years	160	165	12	-23	-39	-41	-12	-14	-23	-7	70	274
Below Normal Water Years	175	142	-15	-17	4	-48	-15	-11	-9	-3	27	-33
Dry Water Years	118	107	17	31	12	-28	-15	-10	3	5	4	16
Critical Water Years	55	62	49	18	40	19	-13	-30	-55	-88	-134	-77

Table G.3-2-3-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	546	614	728	631	578	474	358	346	495	546	548	537
1%	545	612	673	631	563	424	313	326	454	504	535	536
5%	509	584	628	589	429	355	291	249	358	413	509	514
10%	496	564	575	489	383	312	272	216	266	362	465	490
25%	465	469	504	382	284	282	236	181	166	187	303	433
50%	404	350	411	284	237	257	217	162	149	150	217	354
75%	133	144	229	192	174	150	134	113	132	121	140	166
99.9%	71	22	6	4	3	5	2	1	7	86	95	84

Table G.3-2-3-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	313	316	378	295	231	222	184	144	163	182	249	312
Wet Water Years	278	250	229	166	133	116	84	59	109	129	137	149
Above Normal Water Years	314	289	385	282	207	200	176	138	138	112	149	173
Below Normal Water Years	255	272	391	302	235	248	199	156	147	151	247	411
Dry Water Years	335	344	473	372	282	267	233	175	150	180	309	400
Critical Water Years	404	462	477	410	341	329	274	237	316	373	443	478

Table G.3-2-3-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	4	17	-14	3	1	13	-10	-2	17	-65	-76
1%	1	5	-22	-14	0	23	1	0	-17	-18	-35	-14
5%	9	20	-37	-15	4	-6	-1	4	17	-36	-6	4
10%	7	30	-14	-36	-2	2	0	-3	-2	-20	-1	-3
25%	6	11	0	-2	-12	4	-5	-4	6	6	-10	-1
50%	-7	-17	-3	4	3	3	-5	-7	6	-1	7	24
75%	2	0	-2	2	1	-2	5	-7	0	0	10	14
99.9%	2	0	0	0	0	0	0	0	0	6	0	-4

Table G.3-2-3-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	2	3	-3	-2	1	2	-1	-4	2	-1	5	5
Wet Water Years	0	-2	-4	1	-2	-2	0	-2	-1	3	8	6
Above Normal Water Years	5	3	-16	5	0	-2	-5	-10	0	-1	19	12
Below Normal Water Years	2	3	-10	-1	2	2	0	-5	4	2	11	-8
Dry Water Years	3	0	5	-4	0	3	-2	-3	8	6	13	19
Critical Water Years	5	14	6	-10	5	9	-2	-5	-4	-21	-29	-13

Table G.3-2-4-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	590	638	727	631	578	453	322	260	401	542	489	524
1%	546	619	673	631	563	424	291	249	366	470	476	512
5%	538	583	628	590	430	366	276	221	255	329	422	470
10%	500	561	583	503	383	321	255	205	228	265	369	451
25%	468	469	502	382	287	288	236	181	165	187	281	413
50%	411	354	419	287	239	257	219	162	149	150	218	349
75%	134	143	229	192	174	151	134	113	132	121	140	166
99.9%	71	22	6	4	3	5	2	1	7	87	95	84

Table G.3-2-4-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	316	317	377	296	231	224	182	139	154	170	231	302
Wet Water Years	277	250	229	167	133	116	84	59	109	129	137	149
Above Normal Water Years	314	290	381	283	208	201	176	138	138	112	149	173
Below Normal Water Years	266	281	397	304	235	247	199	156	148	152	248	407
Dry Water Years	337	344	466	367	282	267	233	175	150	179	307	399
Critical Water Years	410	461	479	417	340	340	259	208	257	297	331	418

Table G.3-2-4-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	44	28	17	-14	3	-20	-24	-96	-97	14	-123	-89
1%	2	12	-22	-14	0	22	-21	-77	-105	-52	-94	-37
5%	38	19	-37	-15	5	5	-16	-24	-86	-121	-93	-39
10%	12	27	-7	-22	-1	12	-17	-14	-41	-118	-97	-42
25%	9	12	-1	-1	-10	10	-5	-4	4	5	-32	-21
50%	1	-13	4	7	6	2	-3	-7	6	-1	8	19
75%	2	-1	-2	2	1	-1	5	-7	0	0	10	14
99.9%	2	0	0	0	0	0	0	0	0	6	0	-4

Table G.3-2-4-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	6	4	-4	-1	1	3	-4	-9	-8	-13	-13	-6
Wet Water Years	-1	-2	-4	1	-2	-1	1	-2	-1	3	8	7
Above Normal Water Years	5	3	-20	6	1	-1	-5	-10	0	-1	20	12
Below Normal Water Years	12	13	-4	1	2	1	0	-4	5	2	12	-12
Dry Water Years	6	-1	-2	-9	0	3	-2	-3	8	5	11	18
Critical Water Years	11	12	8	-3	4	19	-16	-33	-63	-97	-141	-73

Table G.3-2-5-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	573	630	731	641	752	463	326	262	401	554	480	524
1%	569	630	719	631	573	435	298	251	364	470	472	521
5%	557	589	636	574	431	404	291	226	258	329	421	493
10%	502	564	583	476	384	364	281	209	227	263	365	467
25%	469	468	500	382	291	333	256	189	168	188	295	424
50%	424	358	412	286	240	270	234	172	152	151	227	363
75%	133	144	229	192	174	160	134	115	136	123	139	164
99.9%	71	22	6	4	3	5	2	1	8	87	95	84

Table G.3-2-5-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	319	319	379	296	235	244	193	145	155	171	234	308
Wet Water Years	284	256	234	168	133	121	85	61	109	129	136	149
Above Normal Water Years	316	292	384	283	208	223	193	149	142	114	145	169
Below Normal Water Years	266	275	404	309	237	288	217	163	150	152	252	419
Dry Water Years	336	346	467	360	282	299	256	186	152	182	320	414
Critical Water Years	414	465	472	420	365	346	262	210	257	299	334	422

Table G.3-2-5-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	26	20	21	-5	178	-10	-20	-95	-97	25	-133	-89
1%	25	23	24	-14	10	34	-14	-74	-107	-52	-98	-28
5%	57	25	-29	-31	6	43	-1	-19	-83	-120	-94	-16
10%	13	31	-6	-49	-1	55	9	-10	-42	-120	-100	-26
25%	10	11	-3	-2	-6	55	14	4	7	6	-18	-10
50%	13	-9	-3	6	7	15	12	3	9	1	17	33
75%	1	1	-2	2	1	8	5	-5	4	1	9	12
99.9%	2	0	0	0	0	0	0	0	0	7	0	-4

Table G.3-2-5-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	9	6	-2	-1	5	24	8	-3	-6	-12	-9	0
Wet Water Years	6	5	0	2	-2	3	1	-1	-1	3	7	6
Above Normal Water Years	8	6	-17	6	1	21	11	0	3	1	15	8
Below Normal Water Years	12	6	3	6	4	42	17	3	7	3	16	1
Dry Water Years	5	1	-1	-16	1	35	22	8	10	8	24	34
Critical Water Years	15	17	1	0	29	25	-13	-32	-62	-95	-138	-70

Table G.3-2-6-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	614	645	731	706	577	457	322	257	374	535	483	514
1%	565	634	715	637	563	424	298	246	306	402	480	508
5%	555	594	632	586	436	397	290	218	246	301	424	494
10%	508	563	581	476	373	364	281	212	219	261	361	475
25%	460	463	507	376	289	333	255	191	164	188	303	423
50%	417	351	406	287	237	273	234	172	147	155	222	355
75%	133	144	230	192	174	155	133	115	133	126	137	164
99.9%	71	22	6	4	3	5	2	1	8	86	95	83

Table G.3-2-6-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	317	317	380	297	231	244	193	145	151	170	232	307
Wet Water Years	278	250	233	168	133	120	85	61	109	130	135	148
Above Normal Water Years	316	294	383	281	207	223	192	149	140	116	141	167
Below Normal Water Years	265	277	400	305	236	288	216	162	146	155	245	418
Dry Water Years	334	344	473	366	283	300	256	188	149	185	322	413
Critical Water Years	417	458	469	424	337	347	261	205	240	284	329	421

Table G.3-2-6-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	68	36	21	61	2	-16	-24	-100	-124	6	-129	-99
1%	21	27	20	-8	0	23	-14	-79	-165	-120	-90	-41
5%	54	30	-33	-19	11	36	-2	-27	-95	-148	-91	-16
10%	19	30	-8	-49	-11	55	9	-8	-49	-122	-105	-18
25%	1	6	3	-8	-8	55	14	6	3	6	-10	-11
50%	6	-16	-8	6	3	18	12	4	4	4	12	26
75%	1	0	-1	2	1	3	4	-5	2	4	7	12
99.9%	2	0	0	0	0	0	0	0	0	6	0	-5

Table G.3-2-6-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	7	4	-2	0	1	24	7	-3	-11	-13	-12	-1
Wet Water Years	0	-1	-1	2	-2	2	1	-1	-1	3	6	6
Above Normal Water Years	8	7	-18	4	0	20	11	0	1	3	11	6
Below Normal Water Years	12	8	-1	2	3	42	17	2	2	5	9	-1
Dry Water Years	3	0	5	-10	1	36	22	10	7	11	26	32
Critical Water Years	18	10	-1	4	1	26	-15	-37	-79	-111	-143	-70

Table G.3-2-7-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	480	574	557	505	545	443	330	292	365	300	336	340
1%	478	572	544	472	454	440	325	280	294	287	324	337
5%	433	545	508	430	389	417	317	270	272	258	312	321
10%	390	504	468	400	362	401	311	264	258	251	247	271
25%	275	382	422	319	309	340	298	258	243	236	212	156
50%	222	288	328	263	238	241	227	187	224	191	158	137
75%	154	174	206	198	184	141	118	117	179	155	144	122
99.9%	67	18	6	4	3	4	2	1	2	98	110	91

Table G.3-2-7-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 3

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	231	289	310	257	230	238	200	170	200	194	180	161
Wet Water Years	190	226	254	174	133	116	76	57	132	197	176	130
Above Normal Water Years	241	268	302	255	205	212	172	154	207	204	169	139
Below Normal Water Years	209	259	291	264	261	278	217	196	209	198	169	137
Dry Water Years	240	318	328	294	281	292	278	231	230	155	143	138
Critical Water Years	305	409	411	342	310	349	306	263	255	233	263	294

Table G.3-2-7-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-66	-36	-153	-140	-29	-30	-16	-65	-133	-228	-277	-273
1%	-66	-35	-151	-173	-108	39	13	-45	-177	-235	-246	-212
5%	-67	-19	-157	-174	-36	56	25	25	-69	-191	-203	-189
10%	-99	-30	-122	-125	-22	92	39	45	-10	-132	-219	-222
25%	-184	-75	-81	-64	13	63	57	73	82	54	-102	-278
50%	-189	-79	-87	-17	5	-14	5	18	81	40	-52	-193
75%	22	30	-25	8	12	-11	-11	-3	48	34	14	-30
99.9%	-2	-4	0	0	0	-1	0	0	-6	18	16	3

Table G.3-2-7-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-79	-24	-71	-40	0	18	15	22	39	11	-63	-147
Wet Water Years	-88	-26	20	8	-2	-1	-8	-5	22	71	47	-13
Above Normal Water Years	-67	-18	-99	-22	-2	10	-10	5	69	91	40	-22
Below Normal Water Years	-45	-10	-110	-39	28	31	17	36	66	49	-67	-281
Dry Water Years	-92	-26	-140	-82	-1	28	44	53	89	-19	-152	-243
Critical Water Years	-94	-40	-60	-78	-26	28	31	21	-65	-161	-209	-197

Table G.3-2-8-A. Banks Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	561	638	646	660	556	449	343	338	474	547	548	544
1%	549	631	643	606	496	401	314	330	456	503	541	540
5%	519	587	573	514	429	360	296	239	359	428	516	518
10%	497	560	535	457	401	309	265	220	269	360	469	491
25%	467	471	490	364	278	282	237	181	161	190	315	438
50%	410	372	422	260	224	248	217	161	150	149	235	375
75%	208	248	236	197	166	149	135	113	132	121	174	310
99.9%	74	22	6	4	3	5	2	1	7	85	95	84

Table G.3-2-8-B. Banks Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 4

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	344	361	371	278	223	218	183	143	162	182	264	373
Wet Water Years	309	290	235	168	130	113	84	59	109	127	165	276
Above Normal Water Years	354	352	373	245	197	195	175	138	138	110	192	339
Below Normal Water Years	306	347	388	276	223	245	199	155	145	147	245	417
Dry Water Years	358	383	446	337	274	264	232	173	147	180	314	404
Critical Water Years	418	475	475	415	335	321	272	238	315	380	445	479

Table G.3-2-8-C. Banks Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	15	29	-64	14	-18	-24	-3	-19	-24	19	-65	-69
1%	5	24	-52	-39	-67	-1	2	4	-15	-19	-28	-9
5%	19	24	-92	-90	4	-1	4	-6	18	-22	1	8
10%	8	26	-54	-68	16	0	-6	1	1	-23	3	-2
25%	8	14	-14	-19	-18	4	-4	-4	1	8	2	4
50%	0	5	7	-20	-10	-7	-6	-7	7	-2	25	45
75%	76	104	5	6	-7	-3	6	-7	0	0	44	158
99.9%	4	0	0	0	0	0	0	0	0	5	0	-4

Table G.3-2-8-D. Banks Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	34	47	-10	-19	-7	-3	-2	-5	1	-1	20	66
Wet Water Years	31	39	2	2	-5	-5	0	-2	-1	1	36	134
Above Normal Water Years	45	66	-28	-32	-10	-7	-6	-11	0	-3	62	178
Below Normal Water Years	52	78	-13	-26	-10	-1	-1	-6	2	-2	9	-2
Dry Water Years	27	38	-22	-39	-8	0	-3	-5	5	6	18	24
Critical Water Years	19	27	4	-5	-1	0	-3	-4	-5	-14	-27	-12

Table G.3-3-1-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	524	594	660	614	565	466	336	342	484	516	602	597
1%	522	586	641	591	554	408	320	319	460	515	562	542
5%	483	549	623	576	428	383	309	253	334	441	510	495
10%	471	515	558	498	388	339	289	234	274	384	455	482
25%	446	448	473	396	316	300	257	198	178	200	314	424
50%	397	378	419	290	250	278	233	178	164	174	220	325
75%	172	200	253	209	176	154	129	123	147	154	164	177
99.9%	79	21	7	5	3	7	4	2	5	96	117	122

Table G.3-3-1-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	319	335	376	302	242	234	193	155	173	204	258	313
Wet Water Years	291	281	249	179	143	121	85	62	118	157	161	169
Above Normal Water Years	319	316	395	290	222	213	185	153	155	149	162	183
Below Normal Water Years	272	301	390	311	246	264	208	168	161	175	247	406
Dry Water Years	337	358	451	375	298	285	248	190	162	190	296	374
Critical Water Years	394	450	450	410	344	341	291	250	318	390	467	482

Table G.3-3-2-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	589	626	593	593	578	445	319	265	399	507	455	512
1%	558	623	586	590	565	441	300	247	350	458	441	474
5%	529	586	566	561	481	396	285	238	283	345	383	452
10%	489	567	551	518	438	353	280	222	243	266	359	431
25%	460	489	524	433	347	287	240	188	186	207	303	416
50%	428	439	441	297	233	226	212	169	156	176	249	396
75%	396	377	245	186	161	144	129	115	137	149	209	351
99.9%	79	21	7	5	3	6	4	2	5	97	117	120

Table G.3-3-2-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 1

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	415	423	389	307	245	219	183	144	162	192	260	377
Wet Water Years	383	357	256	174	130	110	84	60	109	159	196	338
Above Normal Water Years	447	450	409	275	197	182	176	142	141	145	220	412
Below Normal Water Years	405	411	377	300	254	228	193	158	157	173	269	375
Dry Water Years	426	442	468	403	312	268	232	179	166	195	300	386
Critical Water Years	439	499	501	431	380	361	278	226	271	309	338	405

Table G.3-3-2-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	65	32	-67	-21	14	-21	-18	-77	-85	-9	-147	-85
1%	36	37	-55	-2	11	33	-20	-73	-110	-58	-121	-69
5%	46	37	-57	-15	53	13	-24	-15	-52	-95	-127	-43
10%	18	51	-6	21	51	14	-9	-12	-31	-119	-96	-51
25%	15	40	51	37	31	-12	-16	-10	8	7	-11	-8
50%	31	61	23	8	-18	-52	-20	-9	-8	2	29	71
75%	224	177	-8	-24	-15	-10	0	-8	-10	-5	45	174
99.9%	0	0	0	0	0	-1	0	0	0	1	0	-1

Table G.3-3-2-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	96	88	14	4	3	-15	-10	-11	-12	-12	2	64
Wet Water Years	92	76	7	-6	-13	-11	0	-2	-9	2	34	169
Above Normal Water Years	128	134	14	-15	-25	-30	-9	-11	-15	-4	58	228
Below Normal Water Years	133	110	-13	-10	8	-36	-15	-10	-4	-2	22	-32
Dry Water Years	89	84	17	28	14	-17	-16	-11	4	5	3	12
Critical Water Years	45	49	51	21	36	19	-13	-25	-47	-81	-128	-77

Table G.3-3-3-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	527	598	670	603	565	466	346	332	481	532	541	531
1%	527	596	623	592	557	425	317	319	436	500	526	524
5%	492	566	591	562	456	377	309	256	349	408	503	504
10%	479	541	546	469	386	342	288	231	266	347	452	479
25%	447	457	472	395	306	305	255	194	184	206	302	421
50%	380	364	421	299	254	278	228	172	168	178	225	351
75%	173	202	253	212	177	154	132	117	150	155	171	189
99.9%	80	21	7	5	3	7	4	2	5	96	116	120

Table G.3-3-3-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	321	337	374	301	242	236	192	151	175	203	262	317
Wet Water Years	290	280	246	180	141	120	85	60	118	160	168	174
Above Normal Water Years	324	319	383	295	222	211	182	145	155	148	178	195
Below Normal Water Years	274	304	382	309	247	265	209	165	165	177	257	399
Dry Water Years	339	358	455	371	297	288	247	188	168	195	308	391
Critical Water Years	399	461	457	403	350	351	289	246	314	369	436	468

Table G.3-3-3-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	3	4	10	-11	0	0	10	-10	-3	16	-62	-66
1%	4	10	-18	0	3	17	-3	0	-24	-15	-37	-18
5%	9	17	-32	-14	28	-6	0	3	15	-33	-8	9
10%	8	26	-12	-29	-2	3	-1	-3	-9	-37	-3	-3
25%	1	9	-1	-1	-10	6	-2	-4	6	6	-12	-2
50%	-17	-14	3	9	3	0	-4	-6	4	3	5	26
75%	2	2	0	3	1	-1	4	-6	3	1	7	12
99.9%	1	0	0	0	0	0	0	0	0	0	-1	-2

Table G.3-3-3-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	2	2	-2	-1	1	2	-1	-3	1	-1	4	3
Wet Water Years	-1	-1	-4	0	-2	-2	0	-2	0	3	6	4
Above Normal Water Years	4	3	-12	5	0	-2	-3	-7	0	-1	16	11
Below Normal Water Years	1	3	-8	-1	1	1	1	-3	3	2	10	-7
Dry Water Years	3	0	4	-3	0	3	-1	-2	6	4	12	17
Critical Water Years	5	11	7	-6	6	9	-2	-5	-4	-21	-31	-14

Table G.3-3-4-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	567	603	670	603	565	457	324	268	392	529	478	502
1%	526	602	623	592	557	439	298	256	361	464	466	498
5%	516	564	591	563	428	402	288	236	256	323	412	453
10%	484	543	560	469	386	345	273	223	236	273	367	440
25%	450	458	472	389	307	308	254	194	183	200	285	403
50%	394	367	422	303	254	279	231	172	168	178	228	348
75%	173	202	252	212	176	155	132	117	150	155	172	188
99.9%	80	21	7	5	3	7	4	2	5	96	116	120

Table G.3-3-4-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	324	338	373	301	242	237	190	148	167	192	244	306
Wet Water Years	290	280	246	180	141	120	85	61	118	160	168	174
Above Normal Water Years	324	319	379	296	223	212	182	146	155	148	178	194
Below Normal Water Years	283	312	388	311	248	262	208	166	165	177	257	395
Dry Water Years	341	358	448	367	297	288	247	188	168	194	307	390
Critical Water Years	405	458	462	407	347	361	275	223	263	297	328	409

Table G.3-3-4-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	43	9	10	-11	0	-9	-12	-74	-93	13	-125	-95
1%	4	16	-18	0	3	31	-21	-63	-99	-51	-96	-44
5%	33	15	-32	-13	0	19	-21	-17	-79	-118	-98	-42
10%	13	28	3	-29	-2	6	-16	-10	-39	-111	-88	-42
25%	5	10	-1	-7	-10	8	-3	-4	4	0	-29	-21
50%	-3	-11	3	13	3	1	-1	-6	4	3	8	23
75%	1	2	-1	2	0	1	4	-6	3	1	8	11
99.9%	1	0	0	0	0	0	0	0	0	0	-1	-2

Table G.3-3-4-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	5	3	-3	-1	0	3	-3	-7	-7	-13	-14	-7
Wet Water Years	-1	-1	-4	1	-2	-1	0	-1	0	3	6	4
Above Normal Water Years	4	3	-16	6	1	-1	-3	-7	0	-1	16	11
Below Normal Water Years	11	11	-3	0	2	-2	0	-2	4	3	10	-11
Dry Water Years	4	-1	-3	-8	-1	3	-1	-2	6	4	11	16
Critical Water Years	10	8	12	-3	3	20	-16	-28	-55	-93	-138	-73

Table G.3-3-5-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	551	611	673	603	711	464	329	269	392	536	468	499
1%	544	605	663	593	567	458	312	258	359	463	464	494
5%	530	569	597	537	455	421	304	239	258	323	411	472
10%	484	549	552	461	387	400	296	230	235	271	363	457
25%	452	459	482	389	307	362	275	204	186	205	296	415
50%	400	375	420	302	255	289	243	183	170	178	237	356
75%	171	204	253	212	177	160	133	121	153	156	171	186
99.9%	80	21	7	5	3	7	4	2	5	96	116	120

Table G.3-3-5-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	326	340	376	301	246	260	201	153	168	193	248	311
Wet Water Years	296	286	249	181	141	126	86	62	118	160	166	174
Above Normal Water Years	326	321	383	297	223	235	196	154	158	150	175	192
Below Normal Water Years	283	305	396	315	249	308	223	171	167	178	262	406
Dry Water Years	341	359	450	360	298	323	269	200	170	197	320	404
Critical Water Years	408	463	459	409	369	366	278	223	263	299	331	412

Table G.3-3-5-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	27	17	13	-11	146	-1	-7	-73	-92	20	-135	-98
1%	22	20	22	1	14	50	-7	-61	-101	-53	-99	-48
5%	47	21	-27	-39	28	38	-5	-14	-76	-118	-99	-23
10%	14	34	-5	-36	-1	61	8	-4	-39	-113	-92	-25
25%	6	10	9	-7	-9	62	18	6	8	5	-18	-9
50%	3	-3	2	13	4	12	10	5	6	4	17	31
75%	0	4	0	2	0	6	4	-2	5	2	7	8
99.9%	1	0	0	0	0	0	0	0	0	0	-1	-2

Table G.3-3-5-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	7	5	0	-1	4	26	8	-1	-5	-11	-10	-2
Wet Water Years	4	4	0	2	-2	5	2	0	0	3	5	4
Above Normal Water Years	6	5	-12	6	1	23	11	1	3	1	13	8
Below Normal Water Years	11	5	5	5	3	44	16	4	6	3	14	-1
Dry Water Years	4	1	-1	-14	0	38	21	9	8	7	23	30
Critical Water Years	13	14	9	-1	25	24	-13	-27	-55	-90	-136	-70

Table G.3-3-6-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	589	615	673	609	565	460	326	266	367	518	477	494
1%	537	609	660	606	556	439	313	254	303	398	471	486
5%	531	575	594	560	432	419	304	234	251	301	414	477
10%	490	539	550	462	384	400	296	227	227	269	360	459
25%	442	453	484	392	307	361	273	206	181	203	303	413
50%	397	369	425	304	255	294	243	184	166	180	234	349
75%	171	203	252	212	176	156	132	121	153	159	170	186
99.9%	80	21	7	5	3	7	4	2	5	96	116	120

Table G.3-3-6-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	325	338	376	302	242	260	200	153	164	192	246	311
Wet Water Years	291	281	249	181	141	124	86	61	118	161	166	173
Above Normal Water Years	326	323	382	294	222	235	196	154	156	153	171	190
Below Normal Water Years	283	308	391	312	249	308	223	171	163	180	256	405
Dry Water Years	339	358	456	365	298	324	269	202	168	199	321	403
Critical Water Years	411	456	457	412	344	368	277	220	248	285	327	412

Table G.3-3-6-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	65	21	13	-5	0	-6	-11	-76	-117	2	-126	-103
1%	15	24	18	14	3	31	-7	-65	-157	-118	-92	-56
5%	48	26	-29	-16	4	36	-5	-19	-84	-139	-97	-17
10%	20	24	-7	-35	-4	61	7	-7	-48	-115	-95	-23
25%	-3	4	11	-5	-9	62	16	8	3	3	-12	-11
50%	0	-9	7	15	5	16	10	6	2	6	14	24
75%	-1	4	-1	2	0	2	4	-2	5	5	6	9
99.9%	1	0	0	0	0	1	0	0	0	0	-1	-2

Table G.3-3-6-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	6	3	1	-1	0	25	7	-2	-9	-12	-12	-3
Wet Water Years	0	0	-1	2	-2	3	1	-1	0	3	4	4
Above Normal Water Years	6	7	-13	4	0	22	10	2	1	4	10	7
Below Normal Water Years	11	7	1	2	3	44	15	3	2	6	8	-1
Dry Water Years	2	0	5	-10	0	39	21	11	6	9	25	29
Critical Water Years	16	6	7	2	0	27	-14	-31	-70	-105	-140	-71

Table G.3-3-7-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	468	549	552	513	551	454	332	289	360	301	334	339
1%	463	548	539	465	478	452	330	288	297	292	324	337
5%	425	518	485	428	390	438	321	282	281	264	313	321
10%	385	492	462	402	376	422	319	277	269	259	251	275
25%	286	385	415	331	331	357	307	265	254	242	218	174
50%	238	317	353	281	257	265	231	188	234	200	173	156
75%	185	207	226	219	195	144	122	120	191	167	158	142
99.9%	76	19	8	5	3	6	5	3	3	98	131	119

Table G.3-3-7-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 3

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	249	309	320	271	244	252	205	175	206	203	192	178
Wet Water Years	216	257	272	189	142	119	78	59	132	206	191	152
Above Normal Water Years	258	292	318	278	220	220	175	156	210	213	183	158
Below Normal Water Years	231	288	303	281	276	293	220	198	217	208	183	158
Dry Water Years	255	329	337	307	299	313	285	237	243	166	155	155
Critical Water Years	311	408	396	343	326	372	314	272	263	237	265	295

Table G.3-3-7-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-56	-45	-108	-101	-14	-12	-5	-53	-125	-215	-268	-258
1%	-59	-37	-102	-126	-75	44	11	-31	-162	-223	-238	-206
5%	-59	-31	-139	-148	-38	55	12	29	-53	-177	-198	-174
10%	-85	-23	-96	-95	-12	83	30	43	-5	-125	-204	-208
25%	-159	-64	-58	-65	15	57	50	67	76	42	-97	-249
50%	-160	-61	-66	-8	6	-12	-2	10	71	26	-47	-169
75%	14	8	-27	9	19	-10	-7	-3	43	13	-6	-35
99.9%	-3	-1	0	0	0	-1	1	0	-2	2	14	-3

Table G.3-3-7-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-70	-26	-56	-31	2	17	12	20	33	-2	-67	-136
Wet Water Years	-75	-24	23	10	-1	-2	-6	-2	15	49	30	-17
Above Normal Water Years	-61	-24	-76	-13	-2	7	-10	3	55	64	21	-26
Below Normal Water Years	-41	-13	-87	-30	30	29	12	31	56	33	-65	-248
Dry Water Years	-81	-30	-114	-68	2	28	37	47	82	-24	-142	-219
Critical Water Years	-83	-42	-54	-67	-18	30	23	22	-55	-153	-202	-187

Table G.3-3-8-A. Jones Pumping Plant, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	536	616	609	626	558	456	337	325	460	534	542	533
1%	530	616	604	580	484	434	320	322	438	499	533	533
5%	492	566	542	490	444	388	310	249	348	425	512	500
10%	473	540	500	444	395	338	279	231	270	346	458	473
25%	449	459	462	378	306	304	255	193	179	209	317	423
50%	390	385	420	275	242	271	228	171	168	172	248	365
75%	232	280	257	217	174	152	132	118	151	155	196	305
99.9%	81	21	7	5	3	7	4	2	5	96	116	120

Table G.3-3-8-B. Jones Pumping Plant, Monthly Average Bromide (in micrograms per liter), Alternative 4

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	345	372	366	286	237	232	191	151	174	203	274	366
Wet Water Years	314	311	250	181	138	117	84	60	118	159	189	273
Above Normal Water Years	357	370	373	262	214	207	181	145	155	147	213	334
Below Normal Water Years	311	362	380	287	237	262	208	164	162	174	256	403
Dry Water Years	357	388	430	340	291	285	246	187	166	196	312	396
Critical Water Years	409	470	455	410	348	343	287	247	313	375	439	469

Table G.3-3-8-C. Jones Pumping Plant, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	12	22	-51	12	-7	-10	1	-17	-24	18	-61	-64
1%	8	31	-37	-11	-70	26	1	3	-22	-16	-30	-9
5%	8	18	-81	-86	16	5	1	-4	13	-16	1	5
10%	3	25	-57	-54	7	-1	-10	-2	-4	-38	3	-9
25%	3	10	-11	-19	-10	4	-2	-4	1	9	3	-1
50%	-7	7	1	-14	-8	-6	-5	-7	5	-3	28	40
75%	60	80	4	8	-2	-2	4	-6	4	1	32	127
99.9%	2	0	0	0	0	0	0	0	0	0	-1	-2

Table G.3-3-8-D. Jones Pumping Plant, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	26	37	-9	-16	-5	-2	-2	-4	0	-1	16	53
Wet Water Years	23	29	1	1	-4	-4	-1	-2	0	2	28	104
Above Normal Water Years	37	54	-22	-28	-8	-6	-4	-8	0	-2	51	151
Below Normal Water Years	39	62	-11	-24	-9	-1	0	-4	1	-1	8	-4
Dry Water Years	20	30	-21	-34	-7	0	-2	-4	4	6	16	21
Critical Water Years	15	20	5	0	4	2	-4	-3	-5	-14	-28	-13

Table G.3-4-1-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7462	7677	6113	4964	3743	2409	4204	5611	5008	6034	6663	6813
1%	7451	7473	5948	4819	2636	1951	3651	5455	4941	5810	6023	6476
5%	6779	6913	5168	4259	1809	1103	2185	4007	4680	5419	5671	6249
10%	6505	6458	4765	3739	1255	781	1327	2598	4137	4821	5486	6080
25%	5898	5787	4064	2006	573	183	433	823	1411	2635	4028	5801
50%	4850	3067	2495	440	91	89	98	281	958	1715	3037	4603
75%	811	2399	639	79	71	71	73	87	461	907	1774	1137
99.9%	102	62	51	43	50	43	38	37	47	126	597	265

Table G.3-4-1-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	3562	3912	2459	1205	442	266	445	798	1345	2066	3117	3687
Wet Water Years	2903	2801	780	115	71	69	69	122	398	763	1637	1086
Above Normal Water Years	3447	3833	2255	606	121	75	84	203	627	924	1796	1085
Below Normal Water Years	2762	3487	2769	949	294	122	203	386	1128	1844	3237	4917
Dry Water Years	3868	4539	3399	1991	613	289	332	632	1287	2538	3933	5712
Critical Water Years	5258	5463	3821	2748	1282	906	1862	3214	3964	4886	5503	6096

Table G.3-4-2-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	6849	7862	6151	5607	3607	1974	1997	3421	5068	5153	5092	6353
1%	6766	7749	5994	5333	2883	1710	1955	3357	4887	4710	4985	6253
5%	6512	6905	5550	4650	2244	1249	1545	2727	3952	4231	4783	5881
10%	6177	6303	5277	4318	1657	925	969	1767	2119	3369	4694	5789
25%	5502	5759	4808	3412	1050	268	449	916	1420	2529	4040	5401
50%	4939	5238	3387	871	103	98	104	417	884	1689	2981	4681
75%	4112	4344	885	76	72	67	70	89	414	1014	2604	3944
99.9%	121	61	51	43	50	43	38	37	46	122	598	347

Table G.3-4-2-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 1

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	4715	4692	2905	1626	613	283	351	697	1135	1874	3273	4567
Wet Water Years	4131	3613	1024	187	80	70	73	151	321	808	2395	3615
Above Normal Water Years	4928	4753	2636	761	155	79	87	266	505	986	2585	3990
Below Normal Water Years	4557	4390	3219	1472	483	165	241	513	895	1713	3036	4356
Dry Water Years	4945	5348	4129	2799	921	355	385	719	1332	2496	3928	5347
Critical Water Years	5381	5882	4241	3315	1629	858	1143	2202	3083	3763	4693	5803

Table G.3-4-2-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-613	185	38	643	-136	-436	-2208	-2189	59	-881	-1571	-459
1%	-685	276	46	514	247	-241	-1696	-2098	-54	-1099	-1038	-223
5%	-267	-8	382	391	435	147	-640	-1279	-729	-1189	-887	-369
10%	-328	-155	512	579	402	144	-358	-831	-2018	-1452	-792	-292
25%	-396	-28	745	1406	477	84	16	93	9	-106	11	-400
50%	90	2171	891	431	12	9	6	136	-75	-26	-56	78
75%	3301	1945	246	-3	1	-4	-3	2	-47	107	830	2807
99.9%	19	-1	0	0	0	0	0	0	-1	-4	2	82

Table G.3-4-2-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	1152	780	446	421	170	17	-94	-101	-211	-192	156	879
Wet Water Years	1228	813	244	72	9	0	4	29	-77	44	758	2529
Above Normal Water Years	1481	920	381	155	33	4	3	63	-121	63	789	2905
Below Normal Water Years	1796	903	451	523	189	43	38	127	-233	-131	-200	-561
Dry Water Years	1077	809	731	808	307	66	53	87	45	-42	-5	-365
Critical Water Years	123	420	420	567	347	-48	-718	-1012	-881	-1123	-810	-293

Table G.3-4-3-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7556	7523	6388	5036	4780	2683	4349	5331	5018	5623	5919	6842
1%	7419	7104	5783	4974	3963	2082	3704	5297	4900	5602	5821	6592
5%	6963	6964	4923	4178	1762	1030	2070	4146	4646	5399	5690	6301
10%	6539	6381	4572	3639	1198	846	1153	2460	4197	4763	5076	6109
25%	5993	5789	4123	1748	464	167	489	920	1514	2672	4113	5854
50%	4863	3026	2342	415	91	89	100	419	937	1686	3000	4864
75%	831	2379	617	78	71	71	72	91	448	985	1852	1189
99.9%	129	62	51	43	50	43	38	37	47	125	605	352

Table G.3-4-3-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	3586	3871	2421	1145	443	271	449	846	1332	2054	3130	3731
Wet Water Years	2938	2804	765	107	71	69	71	150	398	794	1741	1133
Above Normal Water Years	3504	3551	2113	599	122	75	85	261	611	969	1873	1154
Below Normal Water Years	2748	3483	2750	968	285	119	225	514	1141	1804	3088	4934
Dry Water Years	3874	4531	3452	1819	525	279	353	709	1329	2569	4018	5800
Critical Water Years	5306	5466	3672	2624	1433	951	1825	3153	3819	4714	5376	6074

Table G.3-4-3-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	93	-154	274	71	1037	274	144	-280	9	-412	-743	29
1%	-32	-368	-164	155	1326	131	53	-158	-41	-208	-202	115
5%	183	51	-245	-81	-47	-72	-115	139	-35	-21	19	52
10%	34	-76	-193	-99	-57	65	-174	-138	60	-57	-409	28
25%	95	2	60	-257	-108	-17	55	97	103	37	85	53
50%	13	-41	-153	-25	0	0	2	138	-21	-29	-37	261
75%	20	-21	-22	0	0	0	-2	5	-12	78	78	52
99.9%	27	0	0	0	0	0	0	0	0	0	9	87

Table G.3-4-3-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	24	-41	-38	-61	1	4	4	48	-13	-12	13	43
Wet Water Years	35	3	-15	-7	0	0	1	28	0	31	104	47
Above Normal Water Years	57	-281	-142	-7	0	0	0	58	-15	45	77	69
Below Normal Water Years	-14	-4	-19	20	-8	-3	22	128	13	-40	-149	16
Dry Water Years	6	-8	53	-172	-88	-10	21	77	42	31	84	88
Critical Water Years	48	3	-149	-124	150	45	-36	-61	-145	-171	-127	-22

Table G.3-4-4-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7662	7076	6738	5021	3835	2074	2240	3421	5019	5208	5138	6851
1%	7478	6988	6691	4819	2770	2055	1934	3293	4910	4778	4947	6685
5%	7208	6402	5480	4181	1760	1028	1375	2586	3781	4164	4772	6485
10%	6846	6198	4572	3579	1195	618	906	1680	2125	3355	4597	6236
25%	5996	5756	4121	1727	454	162	364	919	1496	2575	4095	5925
50%	4879	3024	2253	460	91	89	100	418	935	1700	3012	4896
75%	831	2377	619	78	71	71	72	91	448	986	1852	1191
99.9%	129	62	51	43	50	43	38	37	47	126	605	352

Table G.3-4-4-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	3625	3818	2427	1133	416	240	334	689	1207	1900	3019	3769
Wet Water Years	2935	2815	769	108	71	69	70	150	398	794	1742	1133
Above Normal Water Years	3535	3504	2075	600	122	75	85	262	612	969	1871	1152
Below Normal Water Years	2811	3430	2762	971	287	120	226	514	1138	1834	3122	4975
Dry Water Years	3899	4513	3379	1779	522	279	353	710	1330	2566	4014	5799
Critical Water Years	5414	5244	3832	2609	1266	758	1105	2172	3039	3724	4650	6270

Table G.3-4-4-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	199	-601	625	56	92	-336	-1965	-2190	10	-827	-1525	39
1%	28	-485	744	0	134	104	-1717	-2162	-32	-1032	-1076	208
5%	429	-511	312	-78	-49	-75	-811	-1420	-900	-1256	-898	236
10%	341	-260	-193	-160	-60	-163	-421	-917	-2013	-1465	-889	156
25%	98	-31	57	-278	-119	-21	-70	96	86	-60	67	124
50%	29	-43	-242	20	1	0	2	138	-23	-16	-25	293
75%	20	-22	-20	0	0	0	-2	5	-12	79	78	53
99.9%	27	0	0	0	0	0	0	0	0	0	9	88

Table G.3-4-4-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	62	-93	-32	-72	-26	-27	-111	-109	-138	-166	-98	82
Wet Water Years	32	14	-11	-7	0	0	1	28	0	31	104	47
Above Normal Water Years	88	-329	-181	-6	1	0	1	58	-15	45	75	66
Below Normal Water Years	50	-56	-6	22	-7	-2	22	128	11	-10	-114	58
Dry Water Years	31	-26	-20	-212	-91	-10	21	78	42	28	81	88
Critical Water Years	155	-218	12	-139	-16	-148	-757	-1041	-925	-1161	-853	174

Table G.3-4-5-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7779	7217	6589	7238	6116	2174	2247	3416	5021	5273	5205	6917
1%	7725	7055	6548	5016	3869	2075	1946	3251	4873	4801	5062	6642
5%	7338	6442	5545	4273	1860	1024	1360	2555	3892	4217	4797	6494
10%	6966	6051	4487	3558	1188	594	845	1664	2122	3381	4735	6270
25%	5971	5739	4029	1824	497	140	306	929	1544	2666	4168	5915
50%	4804	3084	2296	588	93	89	98	397	943	1706	3025	4906
75%	830	2435	619	78	71	73	76	93	450	943	1859	1189
99.9%	129	62	51	43	50	43	38	37	47	126	610	354

Table G.3-4-5-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	3645	3795	2436	1198	462	231	311	675	1218	1908	3035	3779
Wet Water Years	2990	2791	775	116	71	69	71	150	406	781	1734	1138
Above Normal Water Years	3533	3555	2093	604	122	78	84	228	628	946	1837	1155
Below Normal Water Years	2836	3367	2869	1026	286	106	184	508	1162	1842	3121	4986
Dry Water Years	3877	4513	3332	1831	555	225	295	677	1336	2603	4080	5804
Critical Water Years	5451	5168	3815	2857	1503	798	1099	2171	3042	3754	4696	6301

Table G.3-4-5-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	317	-459	475	2273	2373	-236	-1957	-2195	13	-762	-1458	105
1%	275	-418	600	197	1233	123	-1705	-2204	-68	-1008	-961	165
5%	559	-471	377	14	51	-79	-826	-1451	-788	-1202	-873	245
10%	461	-407	-278	-181	-67	-187	-482	-934	-2015	-1439	-751	189
25%	73	-48	-35	-181	-75	-44	-128	106	133	31	139	114
50%	-46	17	-200	148	2	0	1	116	-15	-9	-12	303
75%	18	35	-20	0	0	2	2	6	-10	36	85	52
99.9%	28	0	0	0	0	0	0	0	0	0	13	90

Table G.3-4-5-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	83	-116	-23	-7	20	-35	-134	-123	-127	-158	-82	92
Wet Water Years	87	-9	-5	2	0	0	2	28	8	17	96	52
Above Normal Water Years	86	-278	-162	-2	1	3	0	25	1	22	41	70
Below Normal Water Years	74	-120	100	77	-7	-16	-19	121	34	-2	-116	69
Dry Water Years	10	-26	-67	-160	-59	-64	-36	45	48	65	147	92
Critical Water Years	193	-294	-5	109	221	-108	-763	-1042	-922	-1132	-807	205

Table G.3-4-6-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7802	7369	7152	5525	3780	2020	2136	3211	4826	5244	5074	6928
1%	7702	7043	6569	5042	2357	1986	1831	2985	4282	4551	5012	6734
5%	7282	6593	5188	4322	1528	934	1250	2168	3406	4128	4818	6486
10%	6840	6122	4630	3647	1146	484	771	1440	1945	3469	4652	6263
25%	5928	5694	4032	1781	509	140	251	729	1471	2671	4183	5885
50%	4740	3045	2223	576	91	88	93	263	945	1758	2935	4883
75%	829	2433	619	78	71	73	75	90	481	916	1859	1197
99.9%	129	62	51	43	50	43	38	37	47	135	597	344

Table G.3-4-6-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	3608	3791	2446	1165	410	215	269	557	1151	1893	3013	3765
Wet Water Years	2890	2799	780	111	71	70	71	144	406	777	1720	1131
Above Normal Water Years	3547	3518	2068	597	122	78	82	169	603	929	1785	1142
Below Normal Water Years	2783	3350	2798	989	286	106	132	355	1122	1830	3076	4935
Dry Water Years	3869	4498	3416	1860	549	220	235	538	1259	2610	4081	5801
Critical Water Years	5457	5202	3844	2661	1187	707	987	1875	2806	3688	4675	6299

Table G.3-4-6-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	339	-308	1039	560	37	-389	-2069	-2400	-182	-791	-1589	116
1%	252	-430	621	223	-280	35	-1820	-2470	-660	-1259	-1011	257
5%	503	-320	20	63	-281	-169	-935	-1838	-1274	-1291	-853	237
10%	335	-336	-135	-92	-109	-296	-556	-1158	-2192	-1351	-834	182
25%	30	-93	-32	-224	-64	-43	-182	-94	60	36	155	84
50%	-109	-22	-273	136	0	-1	-5	-18	-13	42	-102	281
75%	18	34	-20	-1	0	2	1	3	20	9	85	59
99.9%	28	0	0	0	0	0	0	0	0	9	0	80

Table G.3-4-6-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	46	-121	-13	-41	-32	-51	-176	-241	-194	-172	-104	78
Wet Water Years	-13	-2	0	-4	0	0	2	22	8	13	83	45
Above Normal Water Years	99	-314	-187	-9	0	3	-2	-34	-23	5	-11	56
Below Normal Water Years	21	-136	29	41	-8	-16	-71	-31	-6	-13	-161	17
Dry Water Years	1	-41	17	-131	-65	-70	-97	-94	-28	72	148	89
Critical Water Years	199	-261	23	-87	-95	-199	-874	-1339	-1158	-1198	-829	203

Table G.3-4-7-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7397	7464	6494	3567	2203	2144	4037	4605	3264	3910	4206	5586
1%	7171	7379	5710	3460	1470	1012	1777	3515	2924	3908	4150	5535
5%	6926	6432	4993	2389	1083	518	1271	2468	2556	3229	3976	5441
10%	6347	6107	4769	1757	454	454	583	1258	2089	2558	3337	4838
25%	4528	5540	2033	774	169	113	201	516	1215	1877	1825	2839
50%	3112	2496	794	112	90	87	93	142	818	1439	1574	2410
75%	694	790	210	77	72	76	76	79	522	852	1132	791
99.9%	75	61	49	43	47	41	36	32	38	90	273	101

Table G.3-4-7-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 3

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	2884	3130	1503	575	228	172	272	507	966	1531	1735	2230
Wet Water Years	2154	2250	407	82	73	73	72	80	414	637	939	750
Above Normal Water Years	2762	2694	795	137	78	77	89	115	652	1258	1297	749
Below Normal Water Years	2343	2368	1512	432	129	89	119	274	1045	1842	1773	2486
Dry Water Years	3060	3711	2051	745	236	144	173	408	858	1542	1635	2707
Critical Water Years	4614	5035	3208	1726	727	566	1105	2008	2279	2966	3621	5111

Table G.3-4-7-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-66	-213	380	-1397	-1540	-265	-167	-1006	-1745	-2124	-2457	-1227
1%	-280	-94	-237	-1358	-1166	-939	-1874	-1940	-2017	-1902	-1873	-942
5%	147	-481	-175	-1870	-726	-584	-914	-1539	-2124	-2191	-1694	-808
10%	-158	-350	4	-1981	-801	-327	-744	-1340	-2048	-2262	-2149	-1243
25%	-1370	-247	-2031	-1231	-403	-70	-232	-306	-196	-758	-2203	-2962
50%	-1737	-571	-1702	-328	-1	-2	-5	-139	-141	-277	-1463	-2192
75%	-118	-1609	-429	-2	1	5	3	-7	61	-55	-642	-347
99.9%	-27	-1	-2	0	-3	-1	-2	-5	-8	-36	-323	-164

Table G.3-4-7-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-678	-782	-956	-630	-214	-94	-173	-291	-380	-535	-1382	-1458
Wet Water Years	-749	-550	-373	-32	3	3	3	-43	16	-126	-698	-336
Above Normal Water Years	-685	-1139	-1460	-469	-44	2	5	-88	25	334	-499	-337
Below Normal Water Years	-419	-1119	-1256	-517	-165	-33	-84	-112	-83	-2	-1464	-2432
Dry Water Years	-807	-828	-1347	-1246	-377	-145	-159	-224	-429	-996	-2298	-3005
Critical Water Years	-644	-427	-613	-1022	-555	-340	-757	-1206	-1685	-1920	-1882	-986

Table G.3-4-8-A. San Joaquin River at Antioch, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	7617	7467	6726	4953	2955	2384	4231	5315	5343	5662	5991	6804
1%	7425	7137	6435	4737	2741	1864	3700	5313	5146	5598	5948	6435
5%	7040	6845	4831	3769	2331	1166	2032	4027	4679	5448	5666	6306
10%	6553	6416	4608	3593	1360	833	1166	2465	4312	4517	5032	6186
25%	6034	5839	3874	1982	525	169	401	915	1537	2596	4022	5827
50%	4693	4377	1974	371	90	88	100	429	937	1665	2906	4916
75%	2407	3256	691	78	70	70	71	91	446	969	2501	2738
99.9%	150	62	51	43	50	43	38	37	47	124	598	347

Table G.3-4-8-B. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), Alternative 4

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	4232	4300	2299	1087	457	278	453	851	1348	2028	3349	4330
Wet Water Years	3546	3184	744	99	71	69	70	150	397	792	2307	2517
Above Normal Water Years	4309	4221	1703	336	101	74	84	263	613	961	2586	2713
Below Normal Water Years	3777	4132	2621	816	285	119	215	519	1158	1745	3020	4912
Dry Water Years	4505	4914	3219	1866	649	305	348	712	1334	2503	3920	5761
Critical Water Years	5466	5590	3801	2607	1348	963	1867	3172	3894	4733	5352	6115

Table G.3-4-8-C. San Joaquin River at Antioch, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	155	-210	613	-11	-788	-26	27	-295	335	-372	-672	-9
1%	-25	-335	487	-81	104	-88	49	-142	205	-211	-75	-42
5%	260	-68	-337	-490	522	63	-153	20	-2	28	-5	57
10%	48	-42	-157	-146	106	52	-161	-133	175	-303	-454	106
25%	137	52	-190	-24	-47	-14	-32	92	126	-39	-7	26
50%	-157	1310	-521	-69	0	-1	2	149	-21	-51	-130	314
75%	1595	857	52	-1	-1	-1	-2	5	-14	62	727	1600
99.9%	48	0	0	0	0	0	0	0	0	-2	2	83

Table G.3-4-8-D. San Joaquin River at Antioch, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	670	388	-161	-119	15	12	7	53	3	-37	232	642
Wet Water Years	643	383	-36	-15	0	0	1	28	-2	28	670	1430
Above Normal Water Years	862	388	-552	-270	-20	-1	0	60	-13	37	790	1627
Below Normal Water Years	1015	646	-148	-132	-9	-3	12	133	30	-99	-217	-5
Dry Water Years	638	375	-180	-125	35	15	17	81	46	-35	-13	50
Critical Water Years	207	127	-20	-141	66	57	6	-42	-70	-153	-151	18

Table G.3-5-1-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	816	863	928	889	746	465	440	603	582	609	724	727
1%	784	840	926	868	713	421	296	496	578	599	659	613
5%	661	793	863	808	551	237	246	275	452	541	552	595
10%	649	762	785	758	404	174	192	211	289	451	497	578
25%	584	606	732	498	263	136	153	137	100	180	331	497
50%	475	470	601	269	132	109	126	112	91	124	200	400
75%	77	138	299	100	96	94	103	97	82	84	107	133
99.9%	64	68	42	24	24	21	19	18	48	57	68	65

Table G.3-5-1-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	360	395	510	325	199	127	135	135	130	170	245	335
Wet Water Years	315	309	282	132	125	96	96	80	70	79	106	120
Above Normal Water Years	339	364	528	263	134	111	144	117	86	88	112	133
Below Normal Water Years	269	313	526	337	159	115	135	120	91	131	245	465
Dry Water Years	386	434	648	453	246	128	126	122	95	168	300	445
Critical Water Years	520	610	666	514	357	206	207	285	370	449	525	574

Table G.3-5-2-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	862	1112	1177	911	897	445	288	289	483	588	507	630
1%	790	969	992	868	855	411	277	273	468	495	470	583
5%	747	910	882	838	757	341	234	226	325	366	429	536
10%	661	825	836	766	613	222	174	158	191	288	369	517
25%	598	674	785	635	392	160	123	117	100	164	311	495
50%	536	591	629	321	126	97	102	100	86	112	238	465
75%	491	505	374	97	85	83	89	83	75	84	176	424
99.9%	62	63	40	24	23	20	19	18	49	57	68	67

Table G.3-5-2-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 1

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	532	574	565	373	254	131	116	108	111	145	247	446
Wet Water Years	484	467	335	139	121	94	86	69	66	78	153	395
Above Normal Water Years	580	613	595	298	122	90	109	97	79	84	192	474
Below Normal Water Years	517	542	561	376	218	107	102	99	87	122	257	429
Dry Water Years	538	608	707	556	361	137	113	109	96	167	305	460
Critical Water Years	585	712	736	573	482	251	193	195	266	309	361	509

Table G.3-5-2-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	46	249	250	22	151	-20	-152	-314	-99	-21	-217	-97
1%	7	129	66	0	141	-10	-19	-222	-110	-104	-190	-29
5%	86	117	19	30	206	104	-12	-49	-127	-175	-123	-59
10%	11	62	51	8	209	47	-18	-54	-98	-163	-128	-61
25%	15	68	53	137	129	24	-30	-21	1	-16	-21	-3
50%	62	121	28	51	-6	-12	-24	-12	-6	-12	38	65
75%	415	367	75	-2	-11	-11	-13	-14	-7	1	69	291
99.9%	-2	-5	-2	0	-1	-2	-1	0	1	0	0	1

Table G.3-5-2-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 1 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	173	178	56	48	55	4	-19	-27	-19	-25	2	111
Wet Water Years	169	158	53	8	-3	-2	-10	-11	-4	-1	47	274
Above Normal Water Years	240	250	67	35	-12	-20	-35	-20	-7	-3	80	341
Below Normal Water Years	248	229	35	38	59	-8	-33	-21	-4	-9	12	-36
Dry Water Years	152	174	59	103	115	10	-13	-13	0	-1	5	14
Critical Water Years	65	102	69	60	125	44	-14	-91	-105	-140	-164	-65

Table G.3-5-3-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	818	846	940	909	762	471	442	592	597	619	635	609
1%	773	838	934	878	716	437	310	508	584	578	606	607
5%	714	815	828	794	578	244	211	295	459	501	560	591
10%	662	767	783	687	427	189	167	182	301	436	509	570
25%	582	605	725	483	235	139	134	120	102	175	324	497
50%	477	464	596	253	135	112	108	102	91	128	204	414
75%	77	138	293	100	95	95	95	85	80	85	121	141
99.9%	65	68	41	24	24	21	19	18	47	57	68	66

Table G.3-5-3-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	364	396	502	318	198	129	122	122	128	167	252	342
Wet Water Years	319	309	275	127	125	95	85	69	69	79	111	129
Above Normal Water Years	354	362	487	259	144	113	112	97	84	90	133	151
Below Normal Water Years	271	315	518	330	161	116	115	101	91	132	256	462
Dry Water Years	386	434	658	450	232	126	118	112	97	171	316	468
Critical Water Years	524	613	663	492	362	223	208	276	360	423	499	559

Table G.3-5-3-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	3	-18	13	21	16	6	1	-11	15	10	-89	-118
1%	-11	-1	8	10	3	16	15	12	6	-21	-54	-5
5%	53	23	-34	-14	27	7	-36	20	6	-40	8	-4
10%	13	5	-2	-71	23	14	-25	-29	12	-16	12	-8
25%	-2	-1	-8	-15	-29	3	-19	-17	2	-5	-7	-1
50%	2	-6	-5	-16	3	3	-18	-10	-1	5	4	14
75%	1	0	-6	1	-1	1	-8	-12	-2	2	13	9
99.9%	1	-1	-2	0	0	0	0	0	0	0	0	1

Table G.3-5-3-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 With TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	5	1	-7	-7	-1	3	-13	-13	-2	-3	6	7
Wet Water Years	5	0	-7	-5	0	-1	-11	-10	-1	0	6	8
Above Normal Water Years	15	-2	-41	-4	10	2	-32	-20	-2	2	20	18
Below Normal Water Years	3	2	-8	-7	2	1	-20	-19	0	2	11	-3
Dry Water Years	0	1	10	-2	-14	-1	-8	-10	1	3	17	23
Critical Water Years	4	4	-3	-22	6	16	0	-9	-11	-26	-27	-15

Table G.3-5-4-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	830	845	1005	960	762	433	306	294	458	613	510	605
1%	824	841	941	878	716	402	262	272	454	511	507	582
5%	764	808	821	807	547	246	213	221	310	361	441	542
10%	687	774	784	720	427	208	167	161	184	301	383	522
25%	611	606	707	500	235	140	134	120	102	166	306	495
50%	483	456	589	261	141	112	108	102	91	127	214	405
75%	77	138	292	100	95	94	95	85	80	85	121	142
99.9%	65	68	41	24	24	21	19	18	47	57	68	66

Table G.3-5-4-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	374	397	498	322	194	129	118	108	112	149	228	333
Wet Water Years	319	309	274	127	125	95	85	69	69	79	111	129
Above Normal Water Years	359	361	478	258	141	112	112	97	84	90	133	150
Below Normal Water Years	292	324	522	339	162	116	115	101	91	133	254	457
Dry Water Years	392	433	646	438	230	126	118	112	97	171	315	467
Critical Water Years	550	609	654	523	346	220	186	190	259	306	356	510

Table G.3-5-4-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	15	-19	77	72	16	-32	-134	-309	-125	3	-214	-122
1%	40	2	15	10	3	-19	-34	-224	-124	-88	-153	-30
5%	103	16	-42	-1	-4	9	-34	-55	-142	-180	-112	-52
10%	37	12	-1	-38	23	34	-25	-50	-106	-150	-114	-56
25%	27	0	-26	2	-29	4	-19	-17	2	-14	-26	-2
50%	8	-14	-12	-8	9	3	-18	-10	-1	3	14	6
75%	0	0	-8	1	-1	1	-8	-11	-2	2	13	9
99.9%	1	-1	-2	0	0	0	0	0	0	0	0	1

Table G.3-5-4-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Without VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	15	1	-12	-4	-4	2	-17	-27	-18	-22	-18	-2
Wet Water Years	5	0	-7	-4	0	-1	-12	-10	-1	0	6	8
Above Normal Water Years	19	-2	-50	-4	7	2	-32	-20	-2	2	20	17
Below Normal Water Years	23	11	-4	1	3	1	-20	-19	0	2	9	-8
Dry Water Years	7	-1	-2	-14	-16	-1	-8	-10	1	3	15	22
Critical Water Years	31	0	-12	9	-11	14	-22	-95	-112	-143	-170	-64

Table G.3-5-5-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	837	868	1039	1101	1190	516	315	297	458	630	534	607
1%	822	855	939	963	753	429	274	276	447	514	505	605
5%	791	788	814	797	521	262	247	221	307	359	449	570
10%	698	764	782	682	435	208	218	163	182	303	392	548
25%	610	604	716	507	242	166	175	137	105	174	322	500
50%	500	465	560	268	141	139	146	116	90	126	226	426
75%	78	140	300	100	95	104	108	90	82	85	117	141
99.9%	65	68	41	24	24	21	18	18	48	57	68	66

Table G.3-5-5-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	378	399	499	326	203	149	149	119	113	151	234	341
Wet Water Years	326	316	280	133	126	98	99	72	69	79	110	129
Above Normal Water Years	362	363	484	259	141	143	181	119	86	90	128	146
Below Normal Water Years	295	322	536	360	164	156	163	115	93	134	261	471
Dry Water Years	391	436	644	425	232	145	151	128	99	177	333	486
Critical Water Years	554	609	635	538	395	240	191	192	259	308	364	517

Table G.3-5-5-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	21	5	111	213	444	51	-125	-306	-124	21	-190	-120
1%	38	16	13	95	40	7	-21	-220	-131	-85	-154	-8
5%	130	-5	-48	-11	-30	26	1	-54	-146	-182	-103	-25
10%	49	2	-2	-75	31	34	26	-48	-107	-148	-105	-30
25%	26	-2	-16	9	-21	30	22	-1	6	-5	-10	3
50%	25	-5	-41	-1	9	30	20	4	-1	2	26	26
75%	1	2	0	1	-1	10	5	-7	0	2	10	8
99.9%	1	-1	-2	0	0	0	-1	0	0	0	0	1

Table G.3-5-5-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Delta VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	18	4	-11	1	5	22	14	-16	-17	-20	-11	6
Wet Water Years	12	7	-2	1	1	2	3	-8	-1	0	4	9
Above Normal Water Years	23	0	-45	-4	7	32	37	2	0	3	15	14
Below Normal Water Years	26	9	10	23	5	41	28	-5	1	3	17	5
Dry Water Years	5	3	-4	-28	-14	17	25	6	4	9	33	41
Critical Water Years	35	-1	-31	24	39	34	-17	-93	-111	-141	-161	-57

Table G.3-5-6-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	861	877	1036	1349	759	432	305	282	424	612	540	607
1%	809	877	939	883	716	413	273	264	365	440	513	598
5%	789	817	841	784	520	249	248	196	275	321	434	573
10%	690	763	790	678	426	206	224	157	156	289	387	532
25%	604	597	733	486	238	168	173	132	100	168	310	502
50%	502	461	556	265	138	137	145	113	89	120	215	416
75%	77	142	300	100	95	103	107	89	81	85	112	142
99.9%	64	68	41	24	24	21	18	18	47	57	68	66

Table G.3-5-6-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	375	396	500	325	195	145	148	115	107	147	229	339
Wet Water Years	319	309	281	129	125	97	99	72	69	79	109	128
Above Normal Water Years	362	368	482	257	137	141	180	117	85	89	122	143
Below Normal Water Years	293	321	530	344	163	156	163	110	90	133	252	469
Dry Water Years	390	434	653	438	232	145	150	125	96	176	332	484
Critical Water Years	552	601	638	537	348	220	186	178	227	288	355	516

Table G.3-5-6-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	45	14	108	461	12	-33	-135	-321	-158	2	-184	-120
1%	26	37	13	15	3	-8	-23	-232	-213	-159	-146	-15
5%	128	24	-21	-24	-32	12	2	-79	-177	-220	-119	-22
10%	41	1	5	-79	22	31	32	-54	-133	-162	-110	-46
25%	21	-9	1	-12	-25	31	20	-5	1	-12	-21	5
50%	27	-9	-45	-4	6	28	19	1	-2	-3	15	16
75%	1	4	1	0	-1	10	5	-8	-1	2	5	9
99.9%	1	-1	-2	0	0	0	-1	0	0	0	0	1

Table G.3-5-6-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 2 Without TUCP Systemwide VA minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	15	1	-9	0	-4	18	13	-20	-24	-23	-16	4
Wet Water Years	5	0	0	-3	0	2	3	-8	-1	0	3	8
Above Normal Water Years	22	5	-47	-6	3	30	36	0	-1	2	10	10
Below Normal Water Years	24	8	4	7	4	41	28	-10	-2	3	7	4
Dry Water Years	5	0	5	-14	-14	17	24	3	0	8	32	39
Critical Water Years	32	-9	-28	24	-9	14	-22	-108	-143	-161	-171	-58

Table G.3-5-7-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	692	841	831	811	683	426	433	523	415	318	326	401
1%	689	841	797	637	382	387	408	329	332	292	324	373
5%	599	755	709	542	338	325	346	295	274	216	283	360
10%	491	732	639	430	296	294	305	285	199	188	210	310
25%	295	488	585	260	188	236	263	247	163	137	113	120
50%	163	310	293	169	154	157	203	210	144	110	98	102
75%	71	84	98	105	107	103	150	157	103	98	90	78
99.9%	65	67	28	24	21	18	15	12	24	57	70	66

Table G.3-5-7-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 3

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	218	319	345	215	167	173	202	191	141	125	122	133
Wet Water Years	162	243	256	125	133	152	137	99	83	94	90	81
Above Normal Water Years	216	293	280	159	137	174	229	207	134	111	95	82
Below Normal Water Years	186	243	285	208	163	184	227	222	137	130	108	106
Dry Water Years	217	341	387	250	184	160	206	212	149	106	100	115
Critical Water Years	354	529	561	376	233	215	257	273	241	215	249	329

Table G.3-5-7-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	-123	-22	-97	-77	-63	-39	-8	-80	-168	-292	-398	-326
1%	-95	2	-130	-231	-331	-34	112	-167	-246	-307	-336	-239
5%	-62	-38	-154	-266	-214	88	100	19	-178	-325	-270	-235
10%	-158	-30	-146	-327	-108	119	113	74	-90	-263	-287	-268
25%	-289	-118	-147	-238	-75	99	110	109	63	-43	-219	-377
50%	-312	-160	-308	-100	22	48	77	98	53	-14	-102	-298
75%	-5	-54	-201	5	11	9	47	60	21	14	-18	-55
99.9%	1	-1	-15	0	-3	-3	-5	-6	-24	0	1	0

Table G.3-5-7-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 3 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	-142	-76	-165	-110	-31	46	67	56	11	-45	-124	-201
Wet Water Years	-152	-67	-26	-6	8	56	41	20	12	15	-16	-40
Above Normal Water Years	-124	-71	-248	-104	3	63	85	90	47	24	-18	-51
Below Normal Water Years	-82	-70	-241	-129	4	69	92	102	45	-1	-137	-359
Dry Water Years	-169	-93	-261	-203	-62	33	80	90	54	-62	-200	-330
Critical Water Years	-165	-81	-106	-137	-123	8	49	-12	-129	-234	-276	-245

Table G.3-5-8-A. Contra Costa Water District Pumping Plant #1, Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	816	862	995	962	710	402	409	582	586	624	635	627
1%	780	856	984	854	628	331	326	511	572	597	616	611
5%	694	814	831	704	562	262	203	272	468	515	575	594
10%	664	773	777	591	415	212	169	193	307	432	500	566
25%	595	623	713	394	248	133	130	118	102	180	337	497
50%	483	480	590	214	125	107	106	101	90	126	230	412
75%	189	301	337	101	93	93	93	85	80	85	171	324
99.9%	65	69	41	24	24	21	19	18	47	57	68	66

Table G.3-5-8-B. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), Alternative 4

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	409	469	520	282	191	126	120	121	129	170	271	413
Wet Water Years	357	372	295	123	125	94	84	69	69	79	149	282
Above Normal Water Years	414	460	509	180	125	114	110	97	84	90	189	337
Below Normal Water Years	346	437	554	278	144	112	114	100	91	132	254	465
Dry Water Years	424	499	650	386	241	129	118	109	96	174	321	473
Critical Water Years	547	636	686	500	342	206	205	276	364	433	499	561

Table G.3-5-8-C. Contra Costa Water District Pumping Plant #1, Difference in Exceedance Probabilities for Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Probability of Exceedance	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
0.1%	0	-2	67	74	-37	-63	-32	-21	4	14	-88	-99
1%	-4	16	58	-14	-86	-90	30	15	-6	-2	-43	-1
5%	33	21	-32	-103	11	25	-43	-3	15	-26	22	0
10%	15	11	-8	-166	11	37	-24	-18	17	-19	3	-12
25%	12	17	-20	-104	-15	-3	-23	-20	2	0	6	0
50%	8	10	-12	-55	-7	-1	-20	-10	-1	3	30	13
75%	112	163	38	2	-3	-1	-9	-12	-2	2	63	192
99.9%	1	1	-1	0	0	0	0	0	-1	0	0	1

Table G.3-5-8-D. Contra Costa Water District Pumping Plant #1, Difference in Monthly Average Bromide (in micrograms per liter), Alternative 4 minus No Action Alternative

Average	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Full Simulation Period	50	73	10	-43	-8	0	-14	-14	-2	0	25	78
Wet Water Years	43	63	13	-8	0	-2	-12	-11	-1	0	43	161
Above Normal Water Years	74	97	-19	-83	-9	3	-34	-21	-2	2	77	204
Below Normal Water Years	77	124	28	-59	-15	-3	-21	-20	0	2	9	0
Dry Water Years	38	65	2	-67	-5	2	-8	-13	1	6	21	27
Critical Water Years	27	27	20	-14	-15	-1	-2	-9	-6	-16	-26	-13
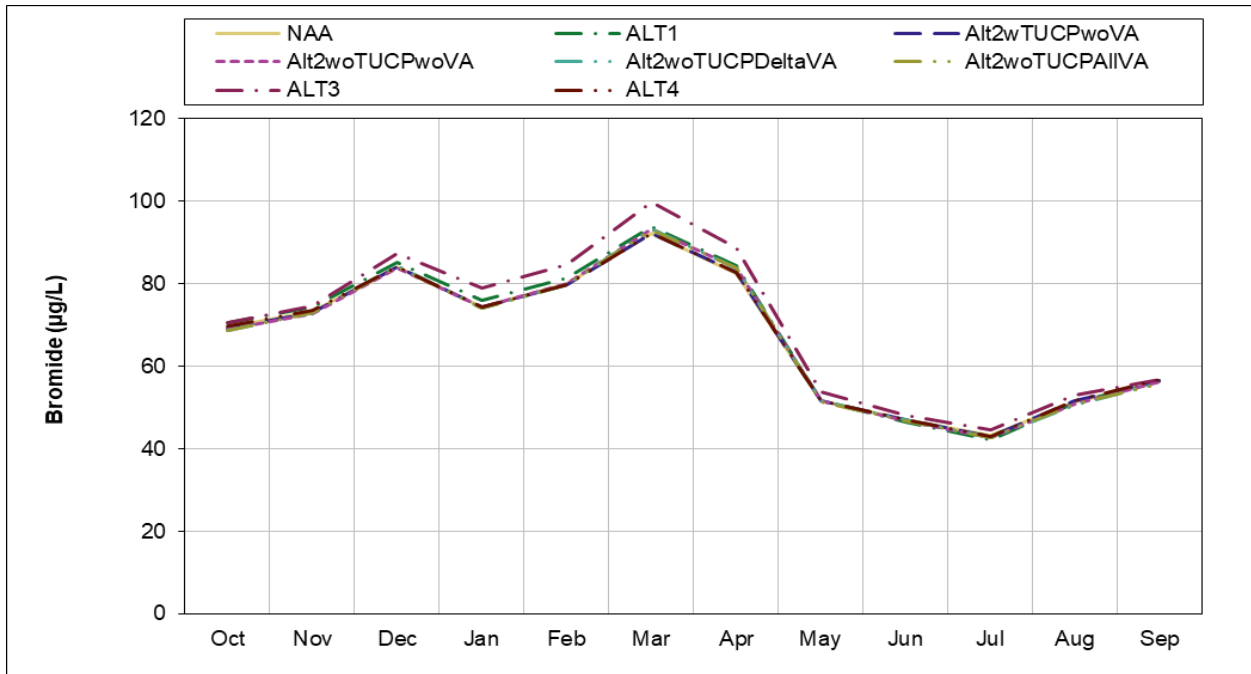
Figure G.3-1-1. Barker Slough at North Bay Aqueduct, Long term Monthly Average Bromide (in micrograms per liter)
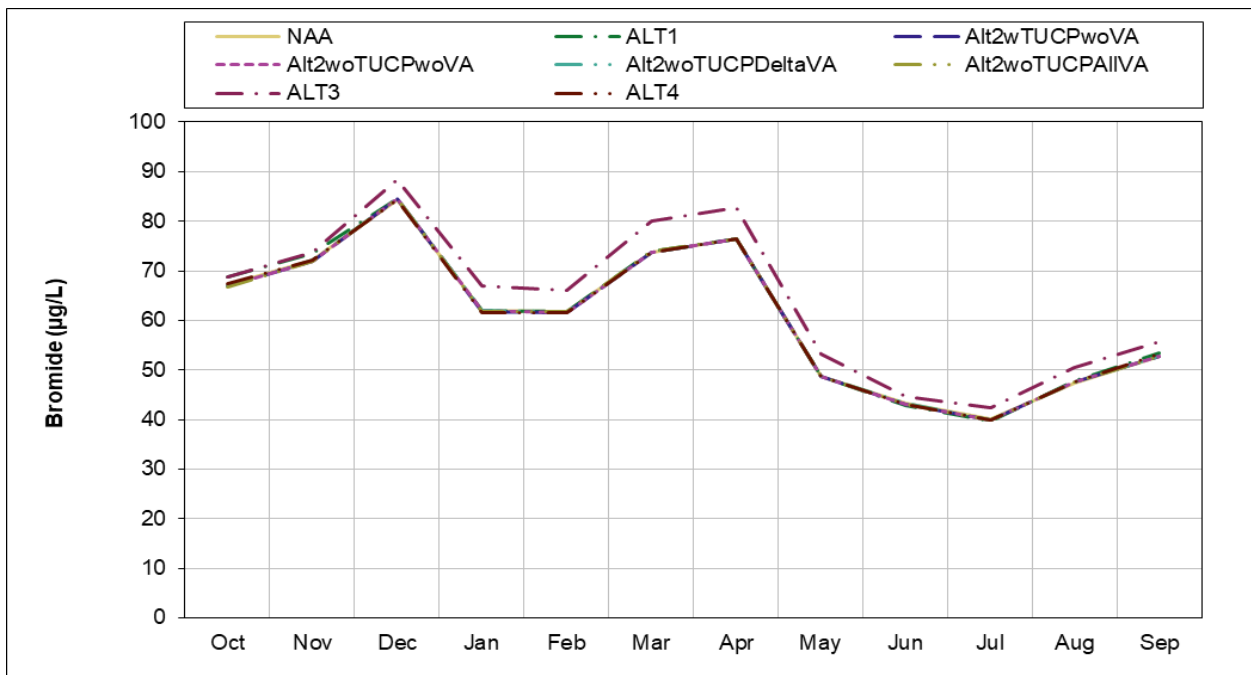
Figure G.3-1-2. Barker Slough at North Bay Aqueduct, Wet Year Monthly Average Bromide (in micrograms per liter)
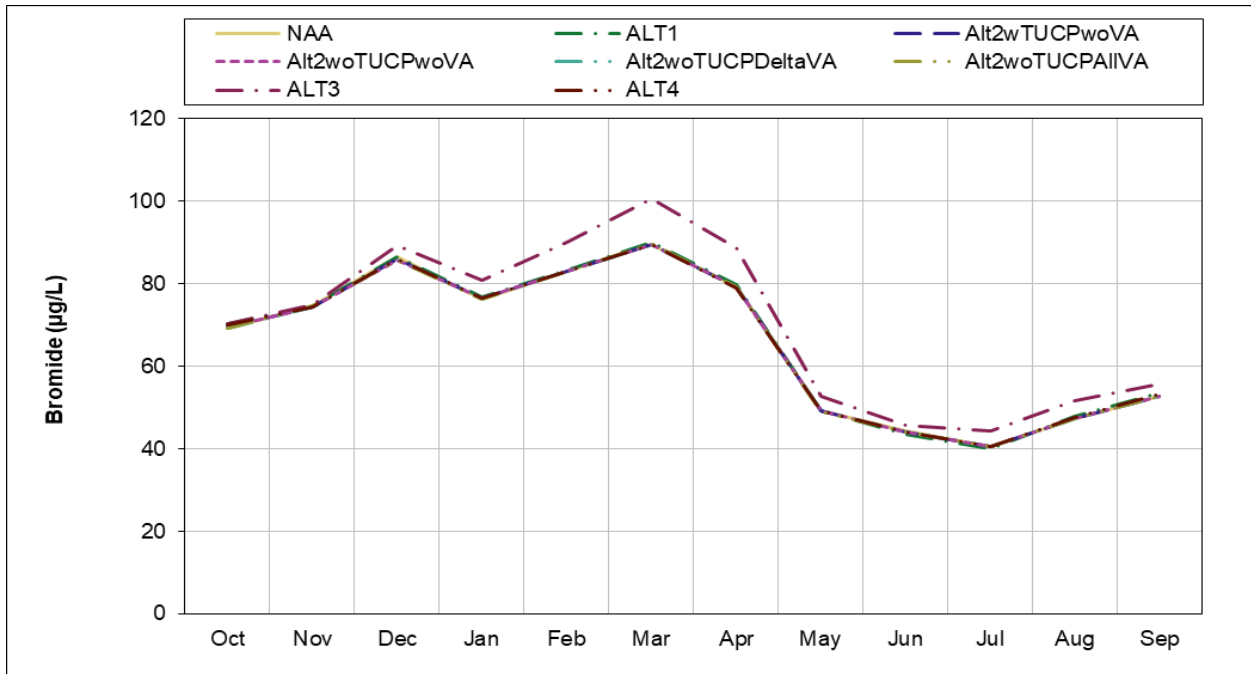
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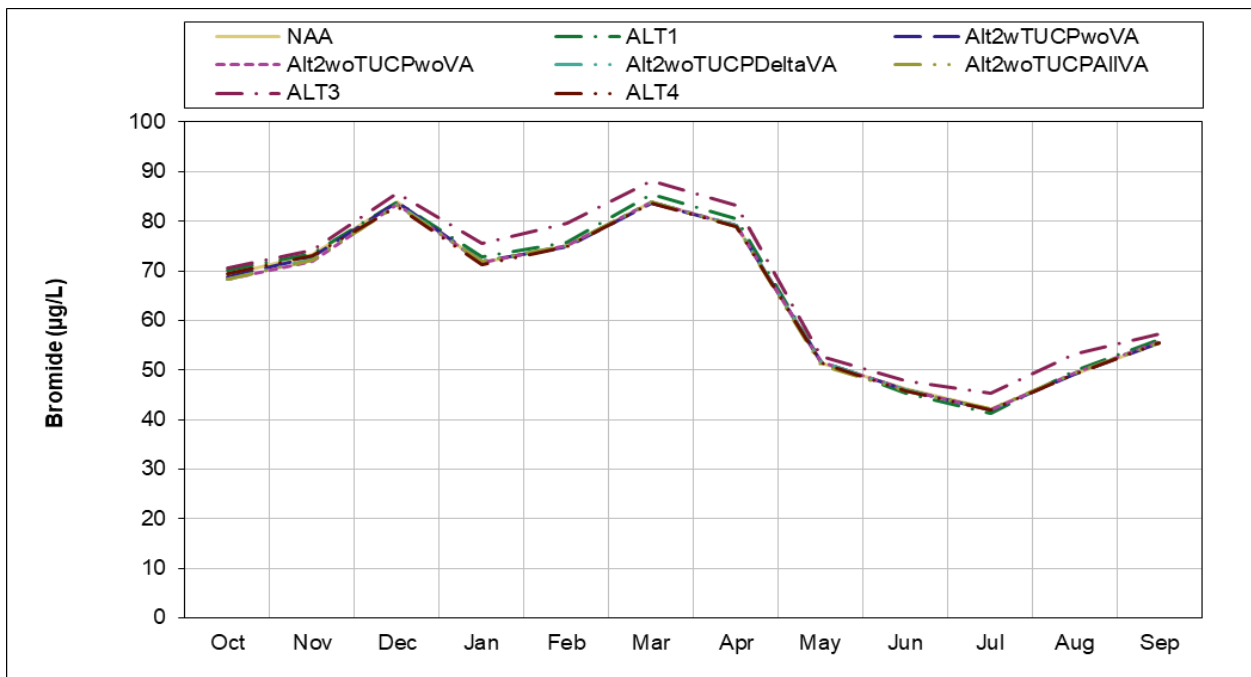
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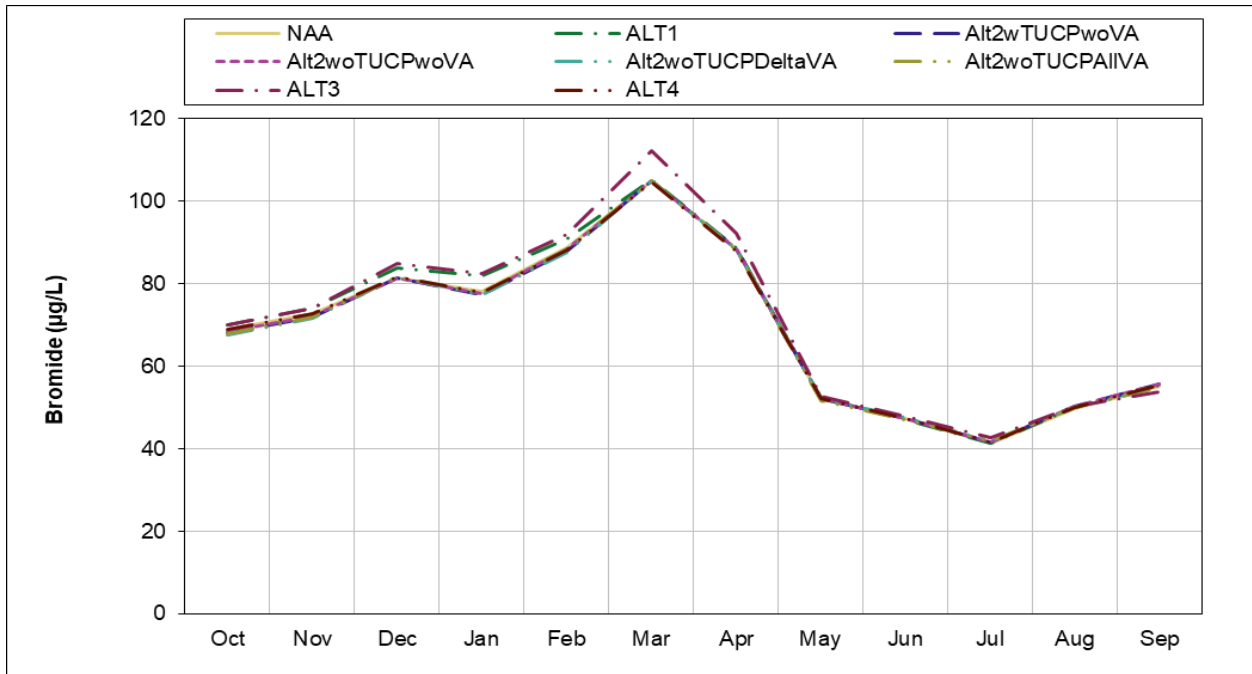
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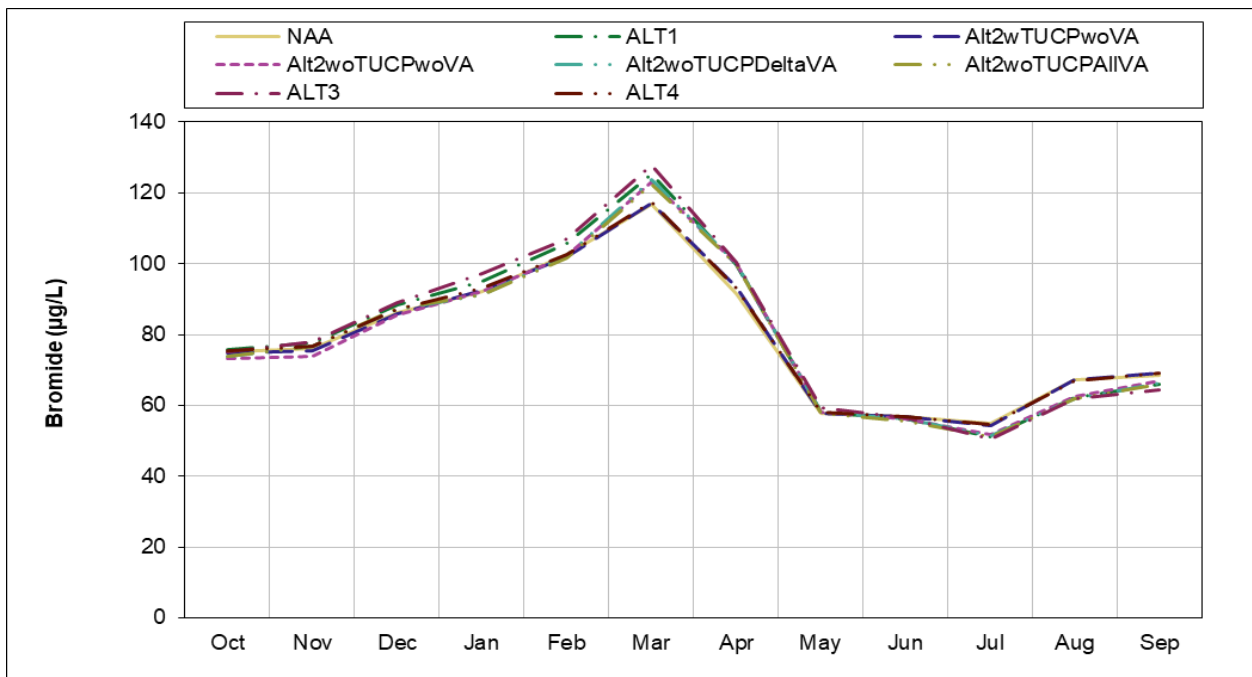
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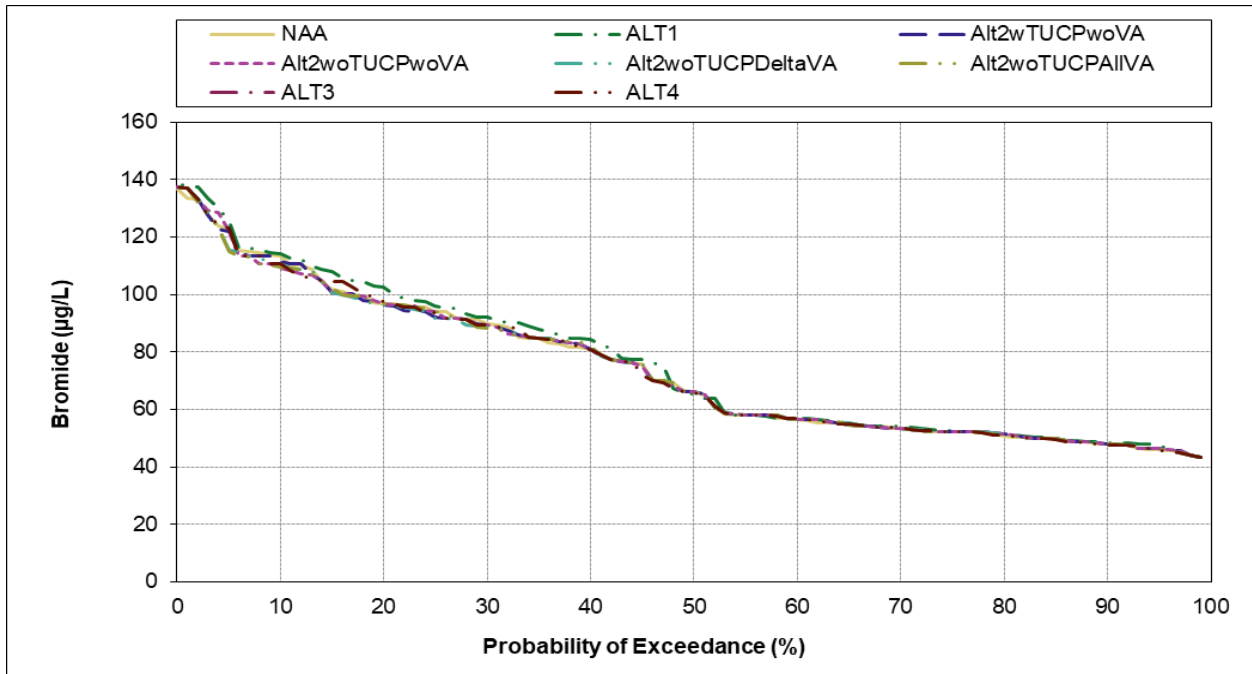
Figure G.3-1-7. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), January
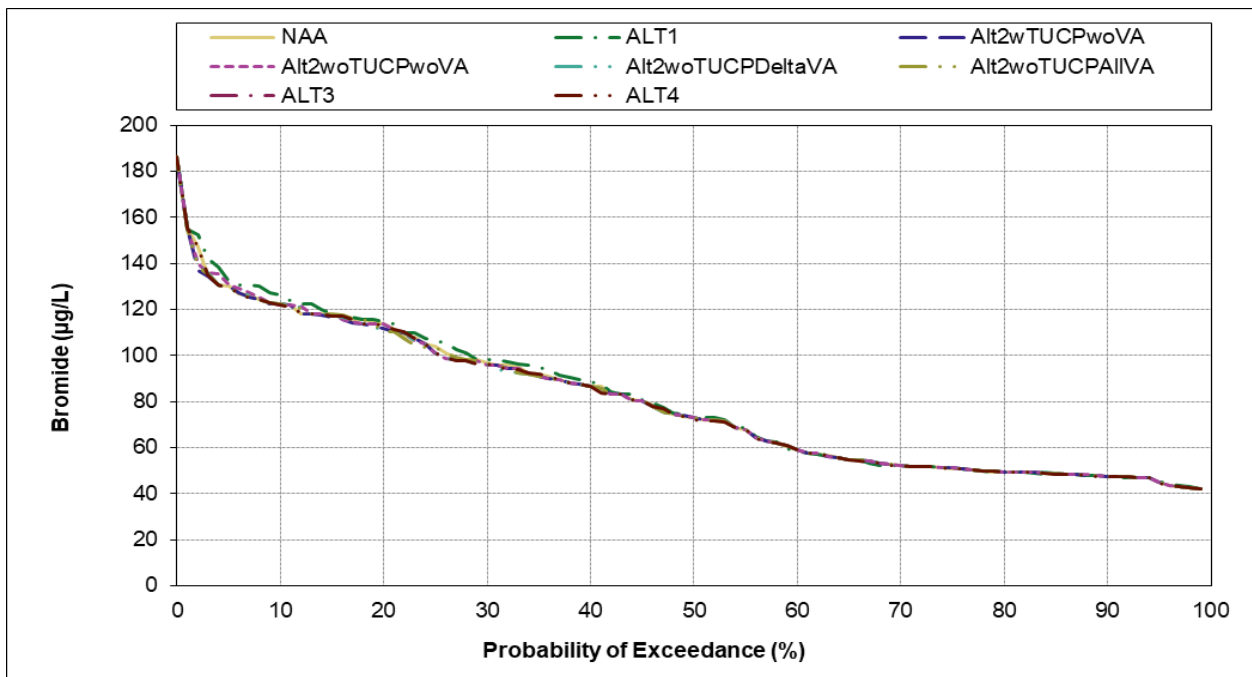
Figure G.3-1-8. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), February
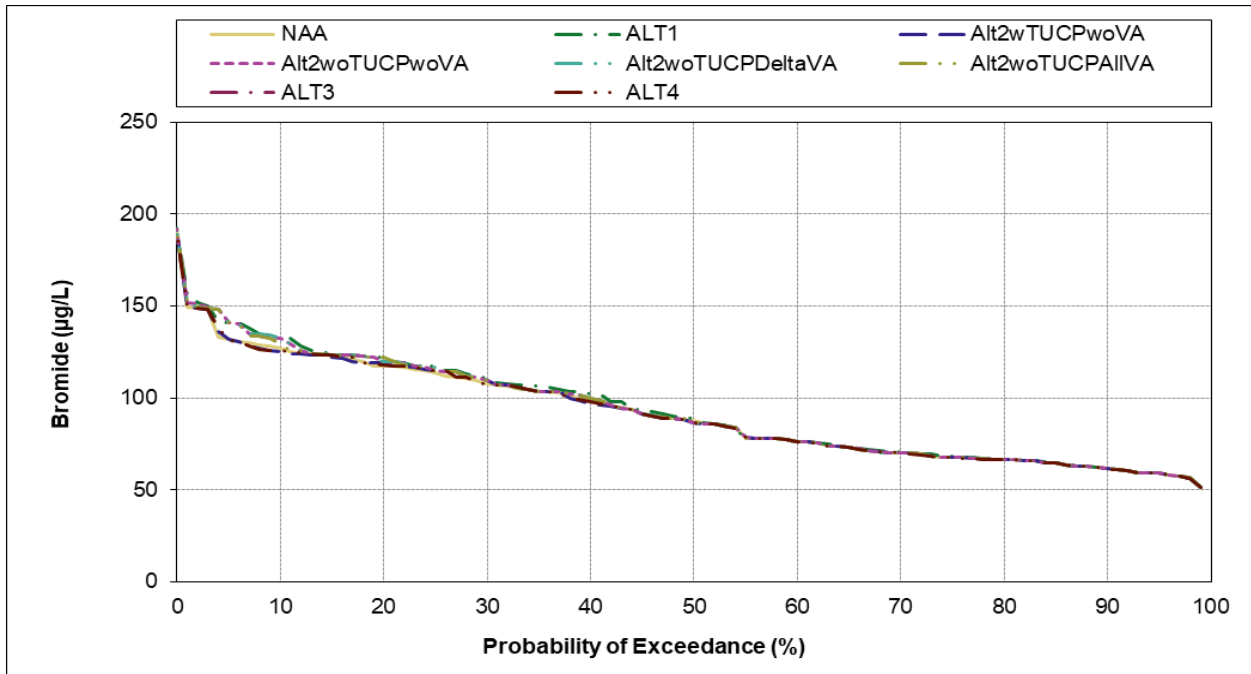
Figure G.3-1-9. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), March
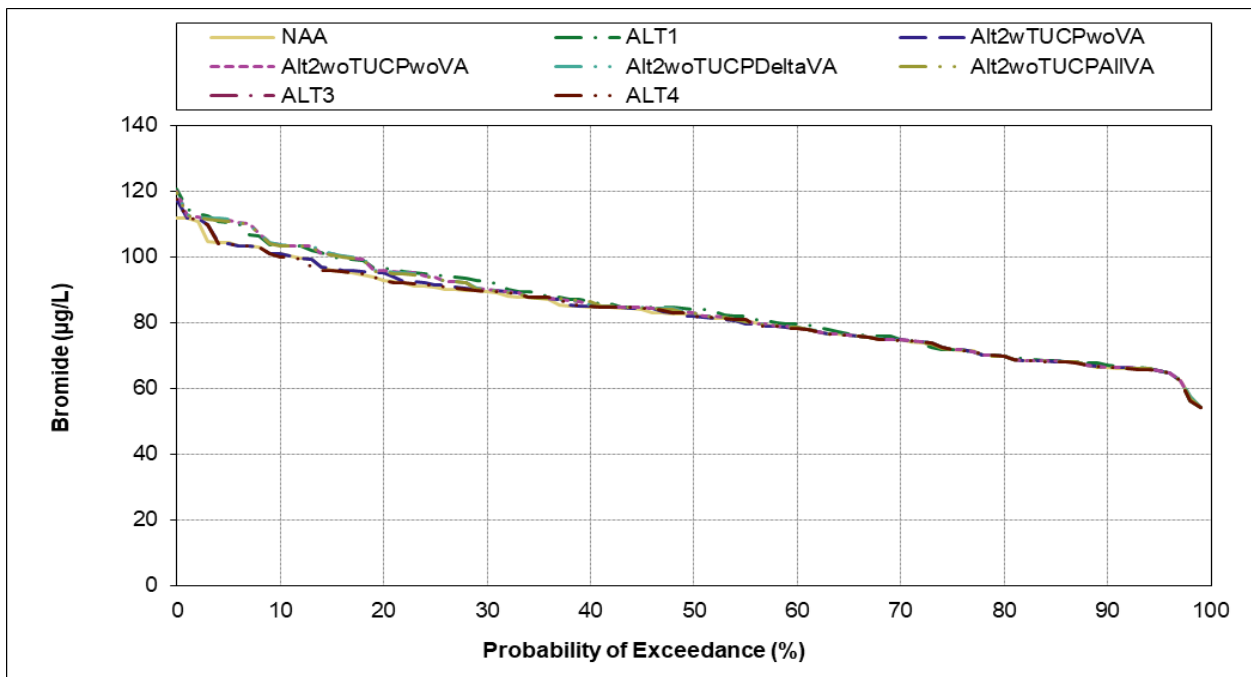
Figure G.3-1-10. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), April
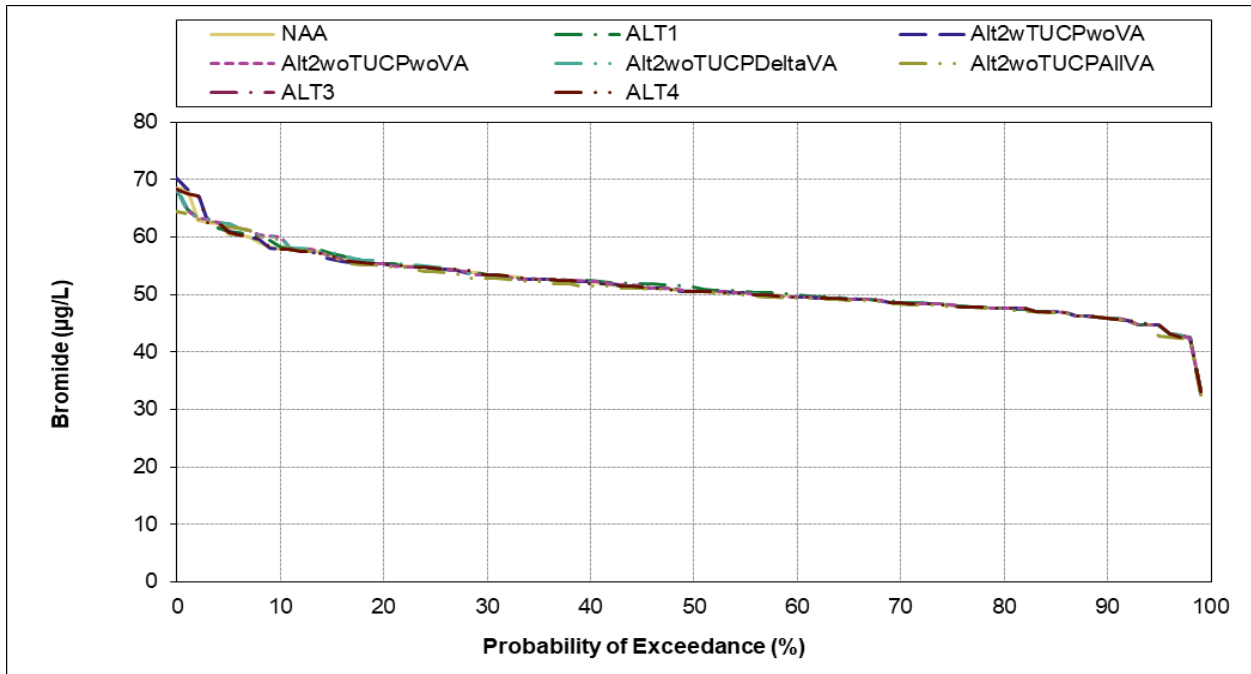
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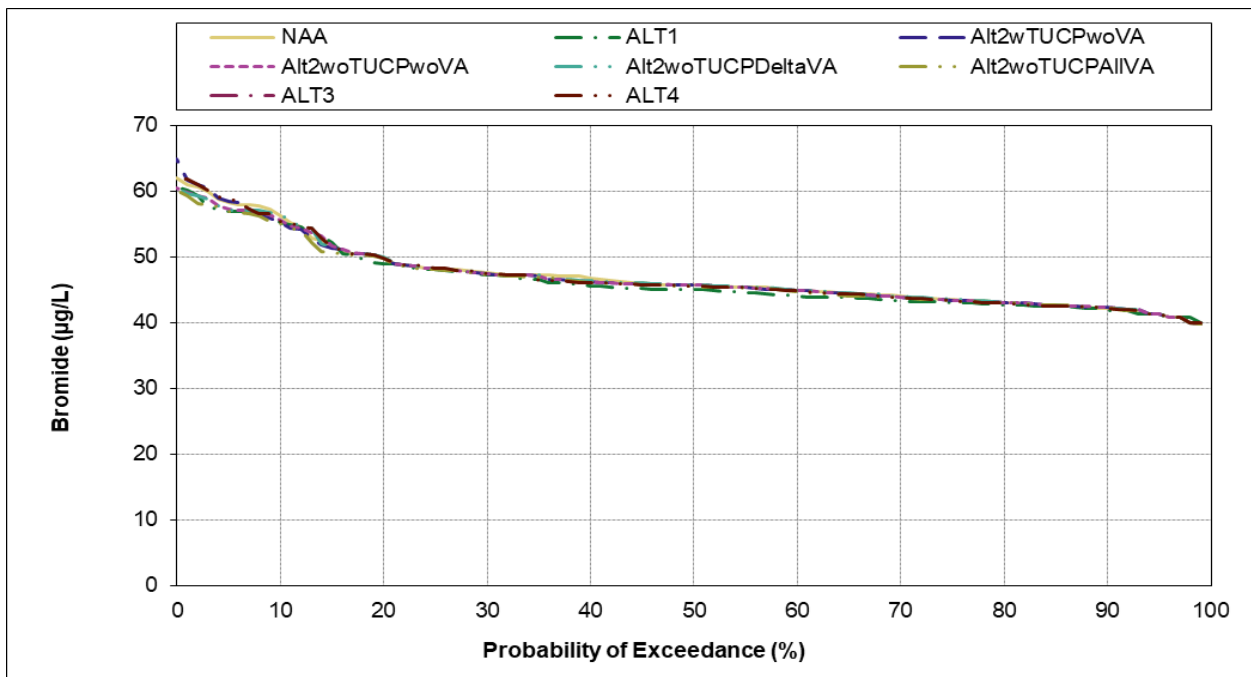
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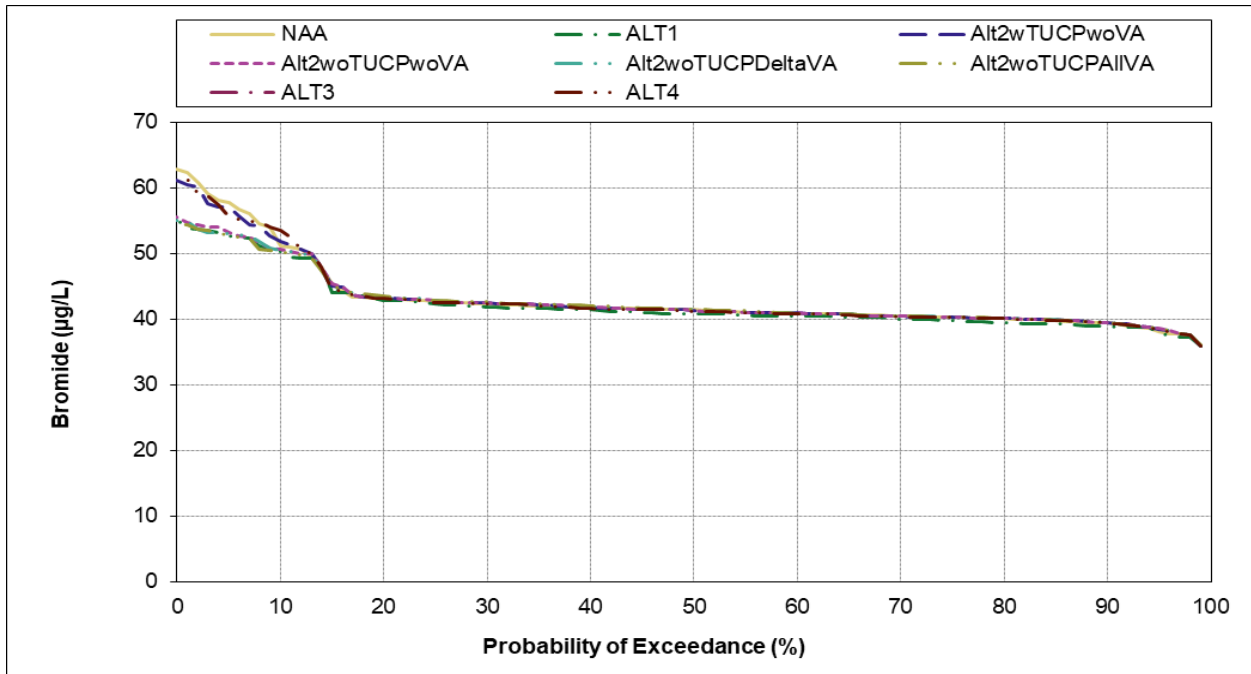
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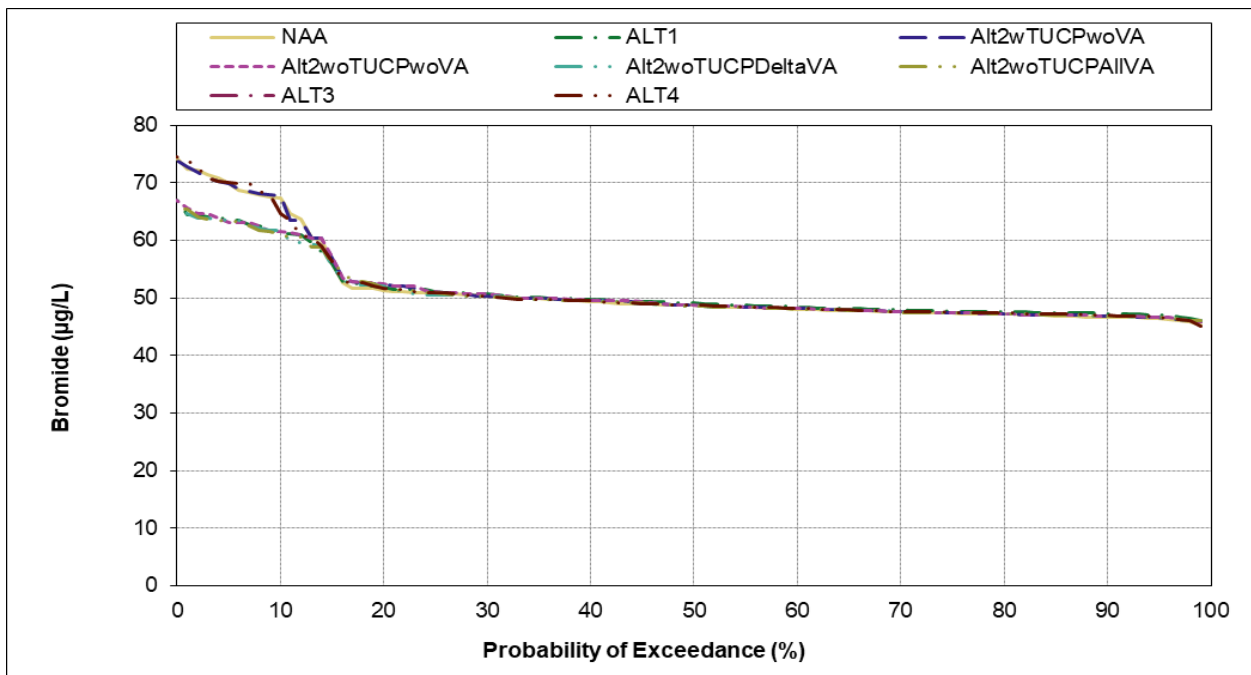
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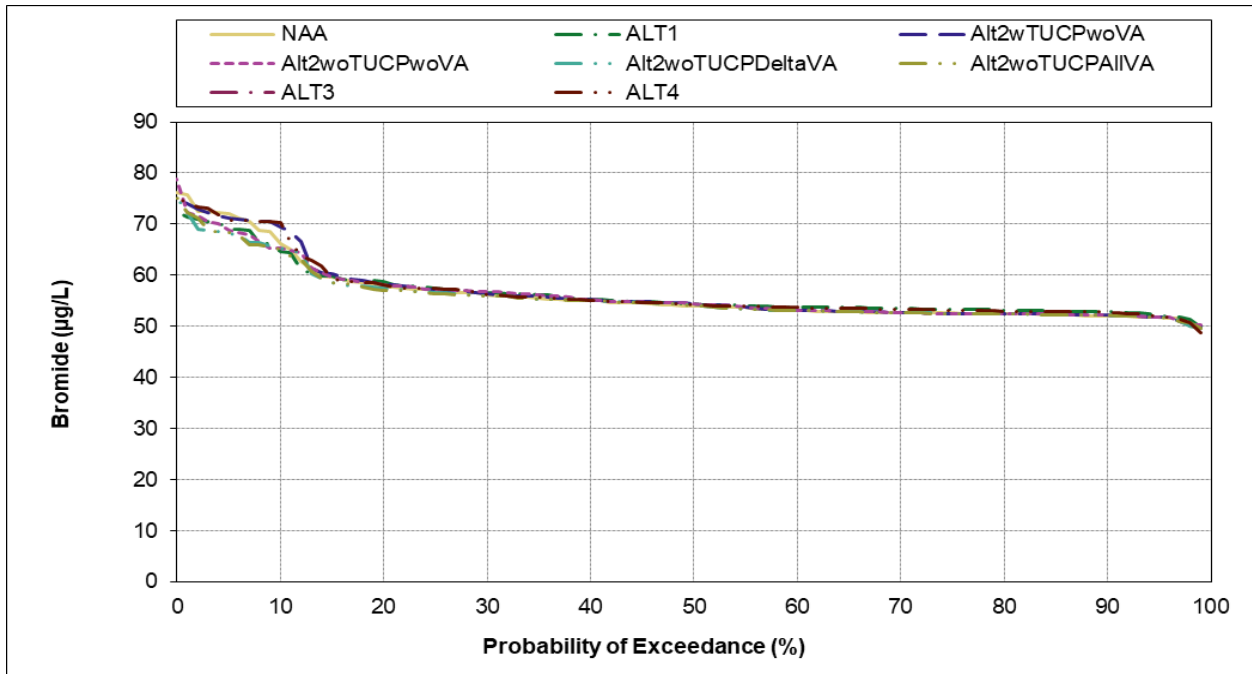
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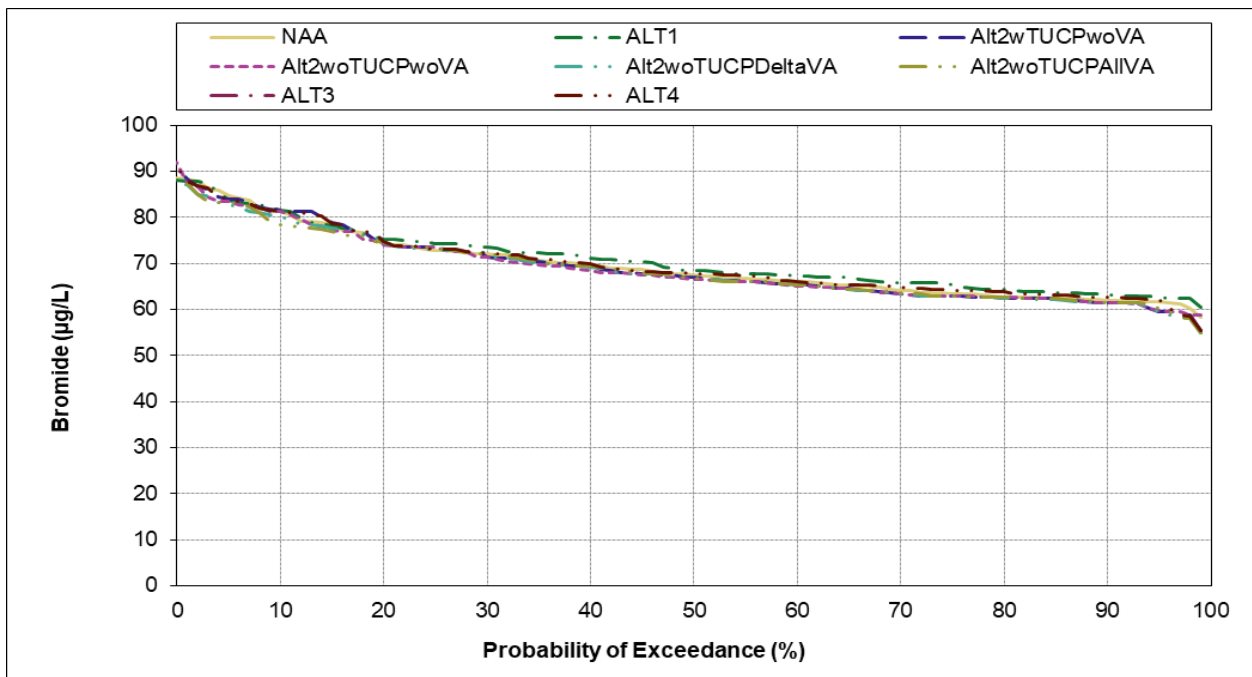
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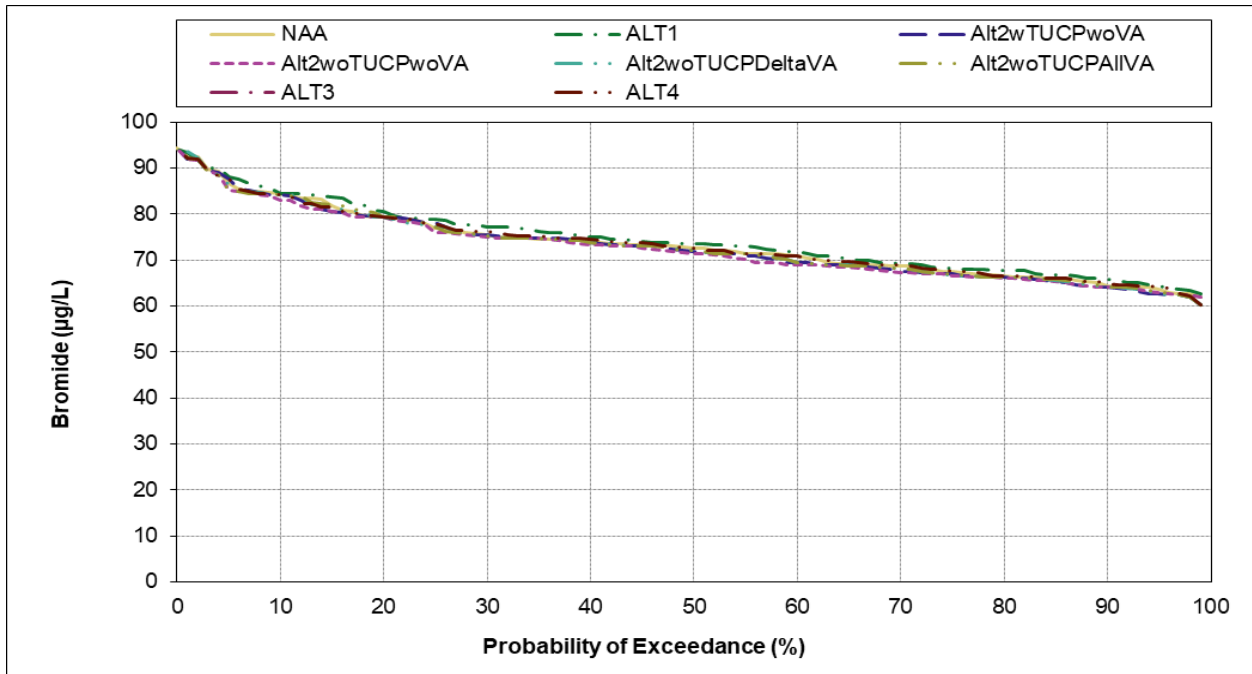
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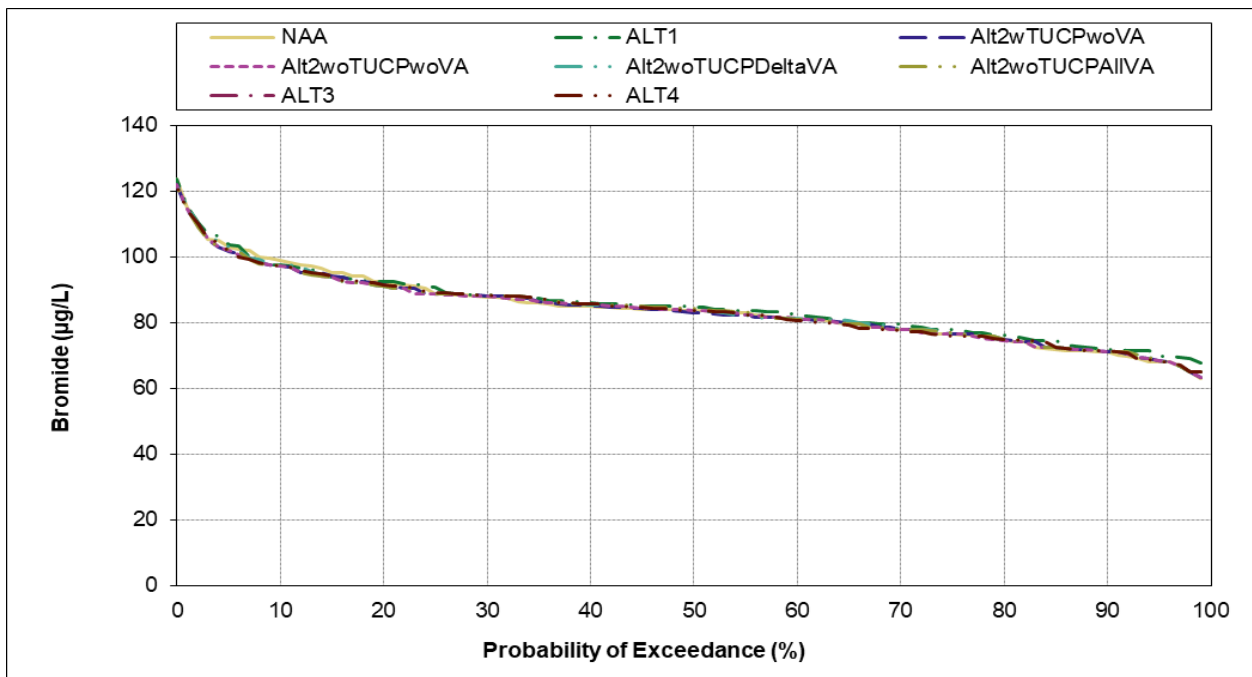
Figure G.3-1-18. Barker Slough at North Bay Aqueduct, Monthly Average Bromide (in micrograms per liter), December
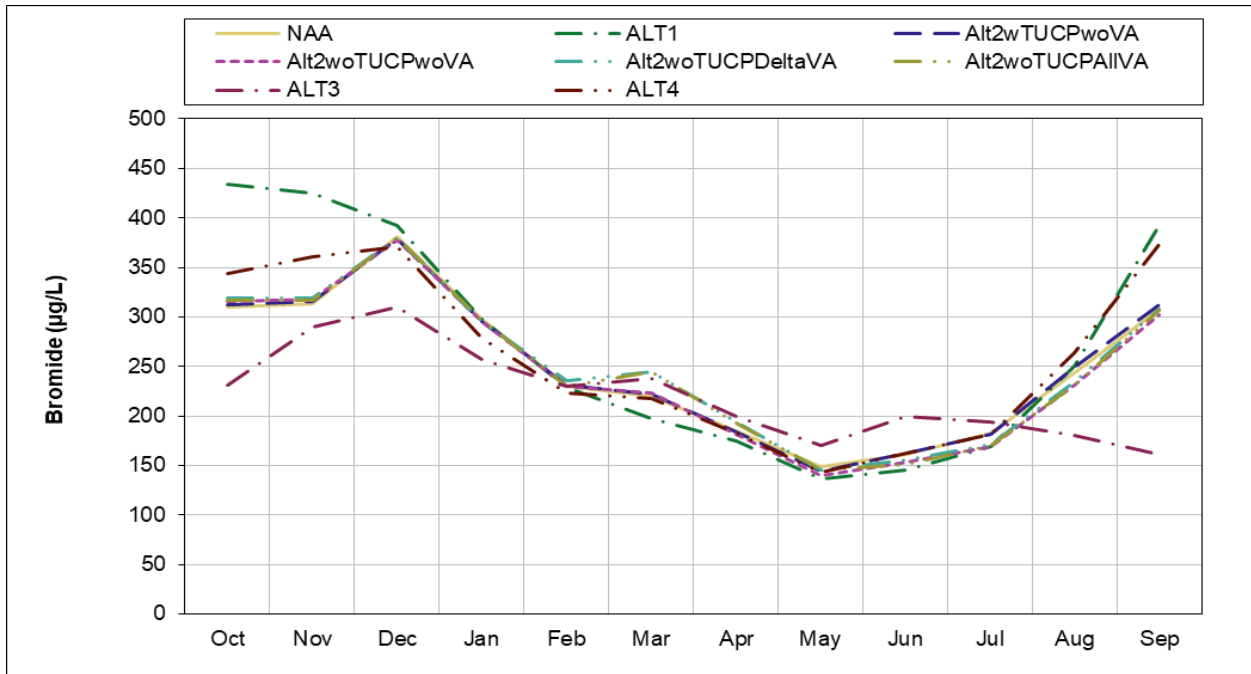
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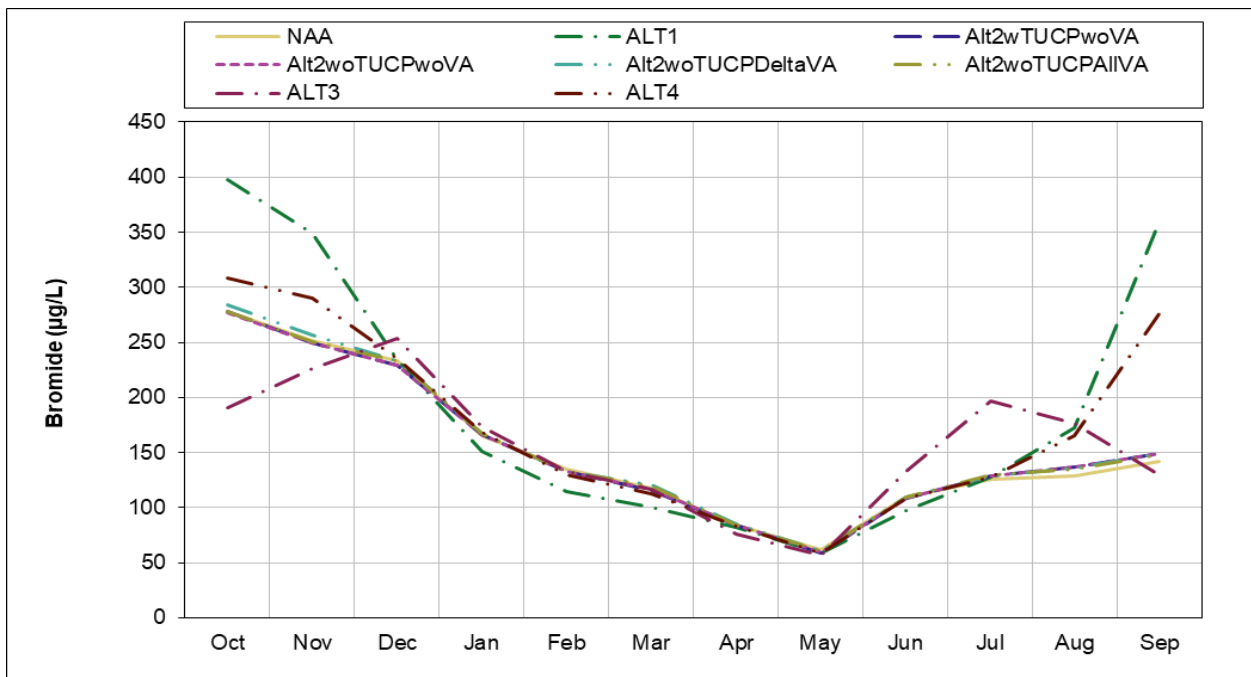
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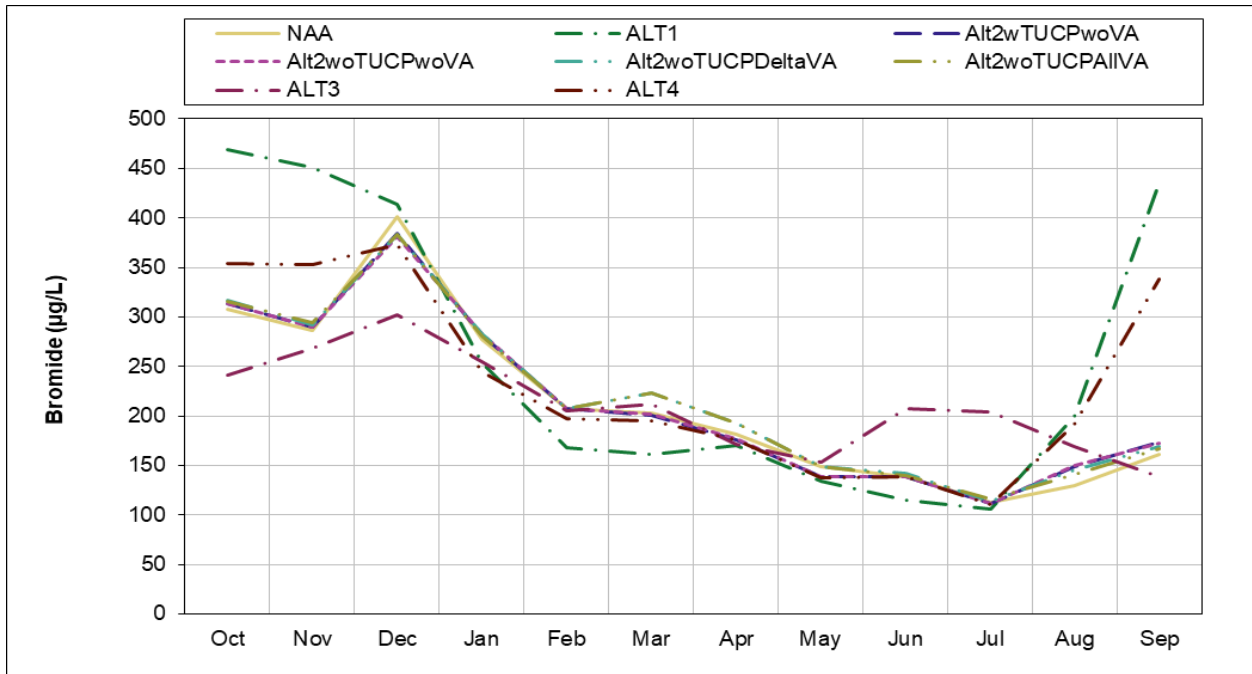
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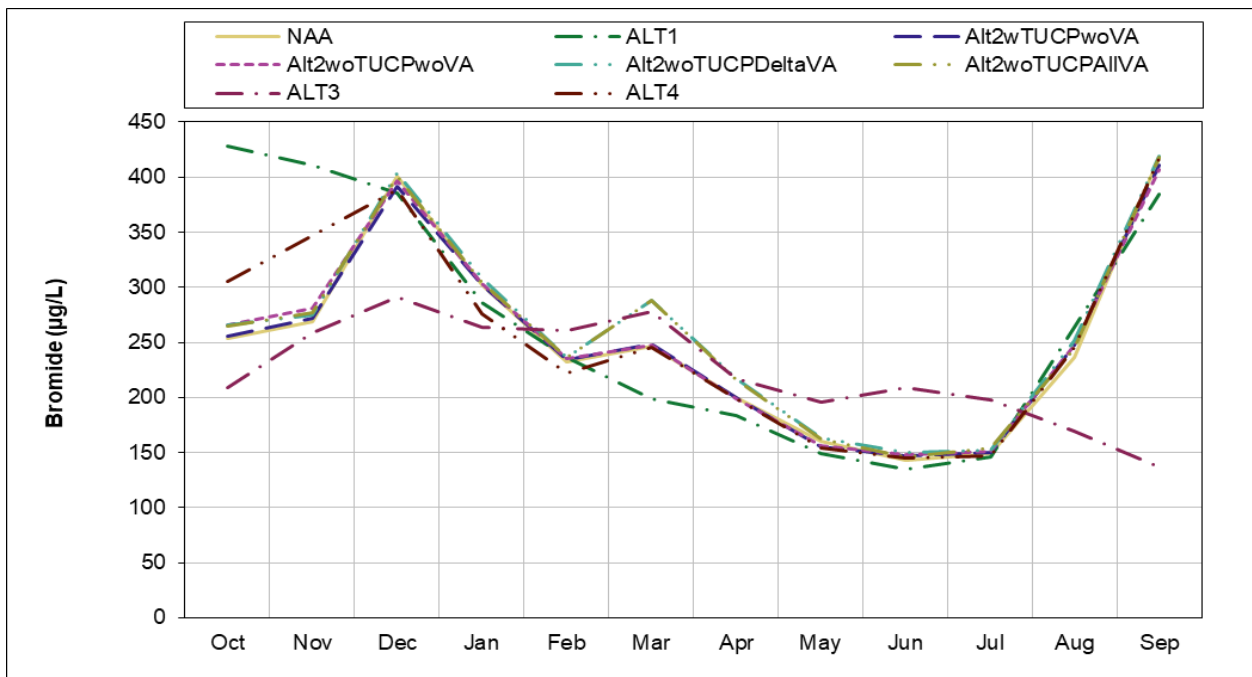
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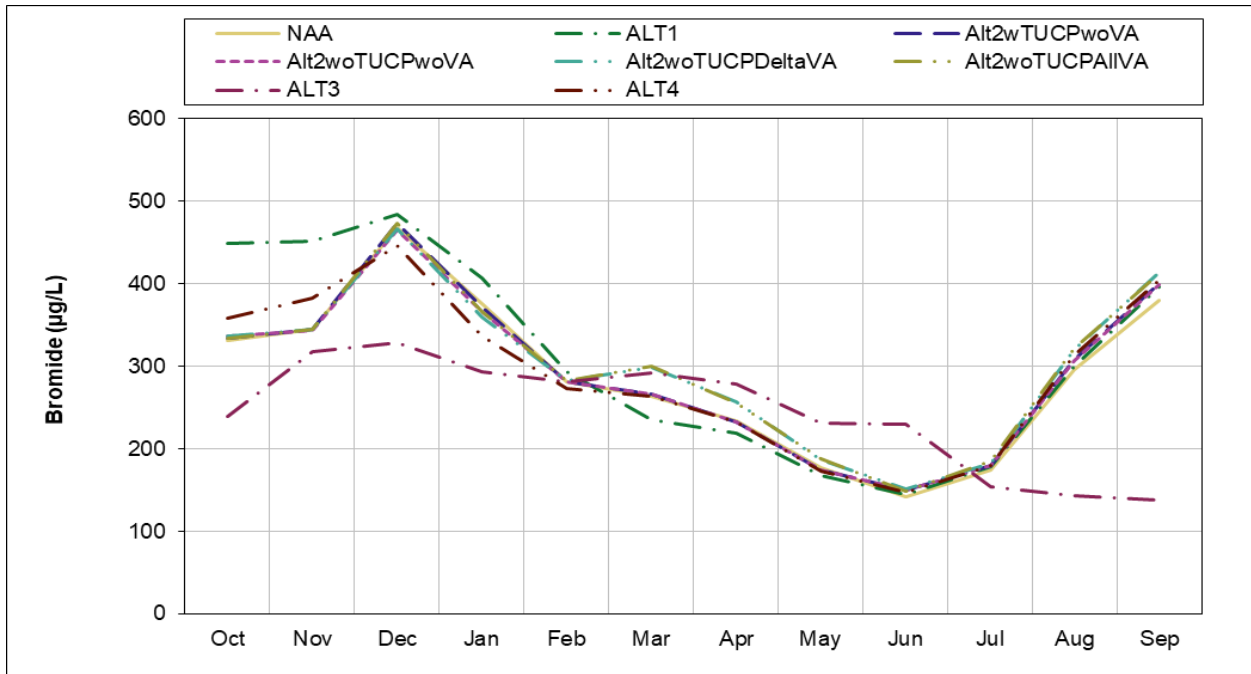
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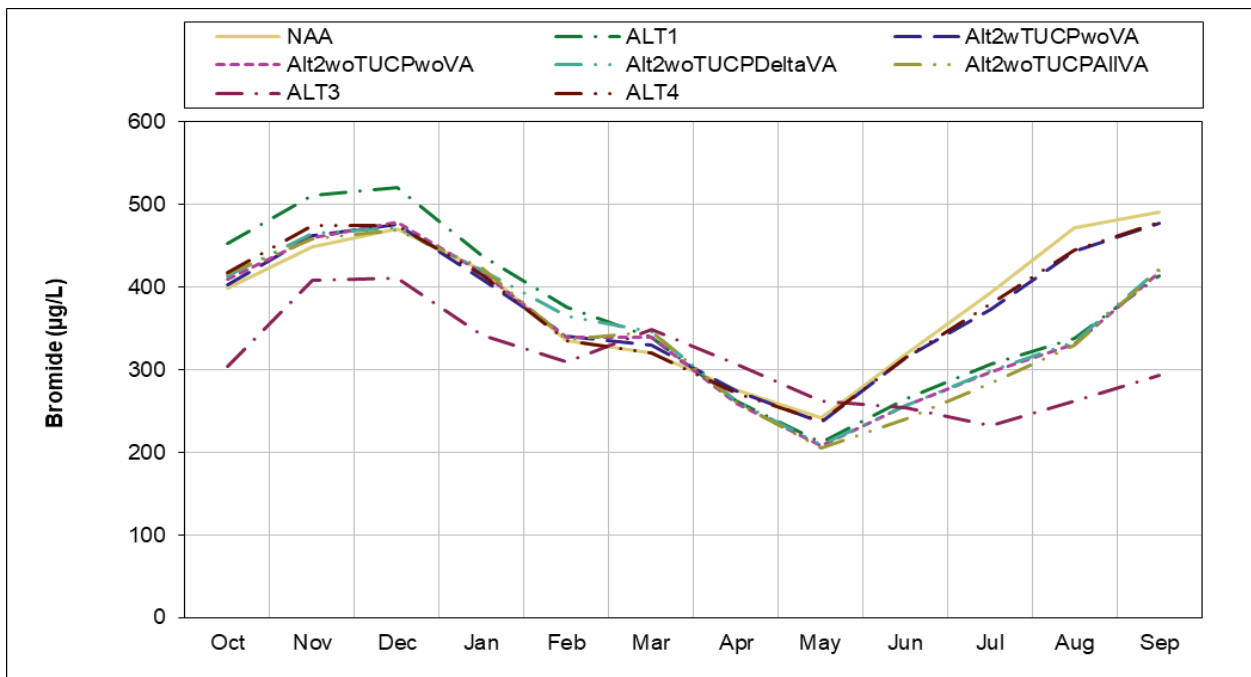
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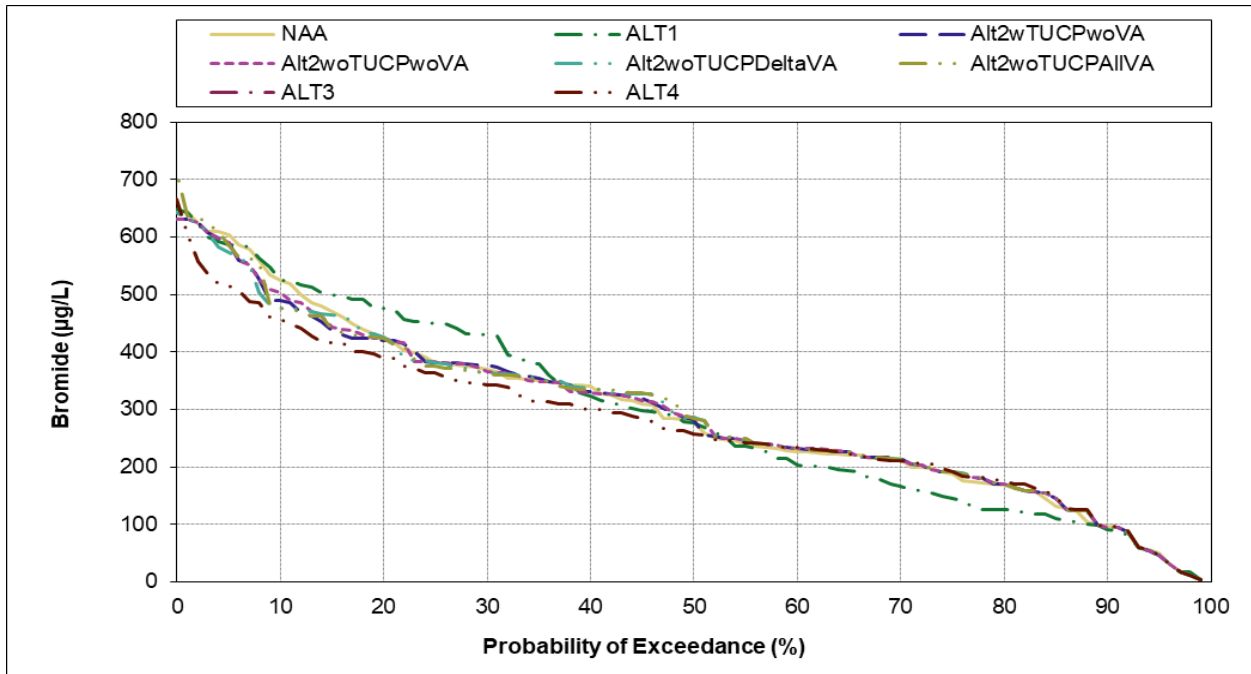
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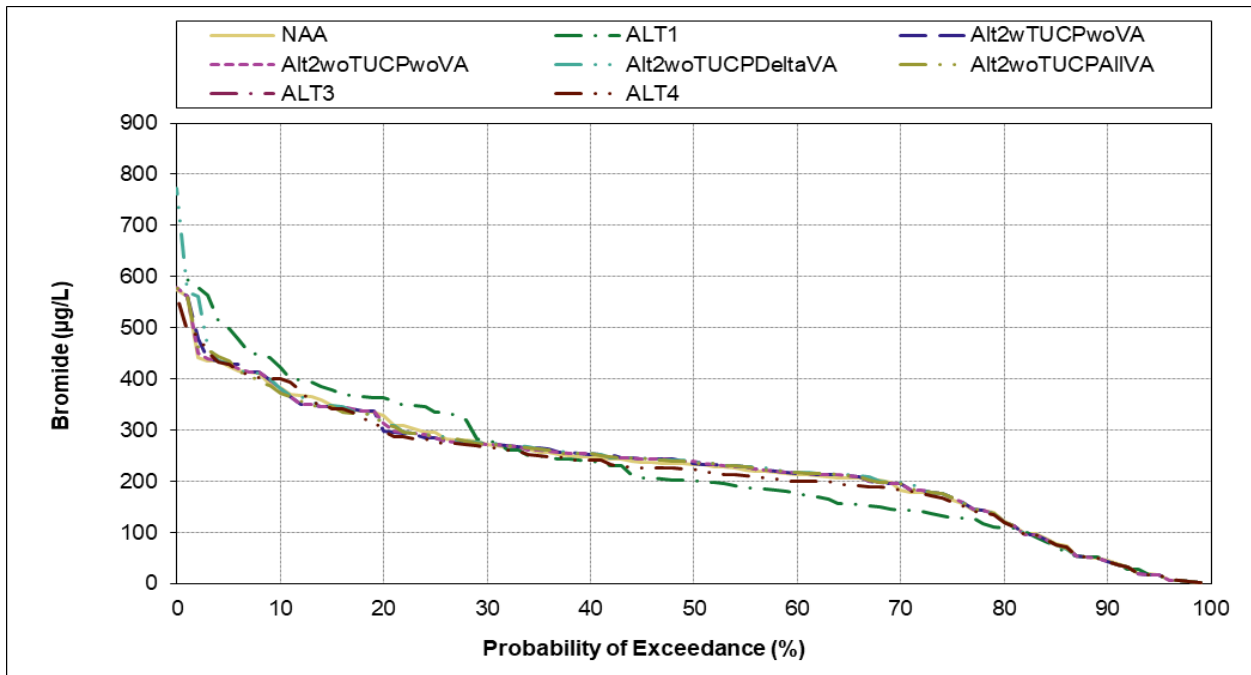
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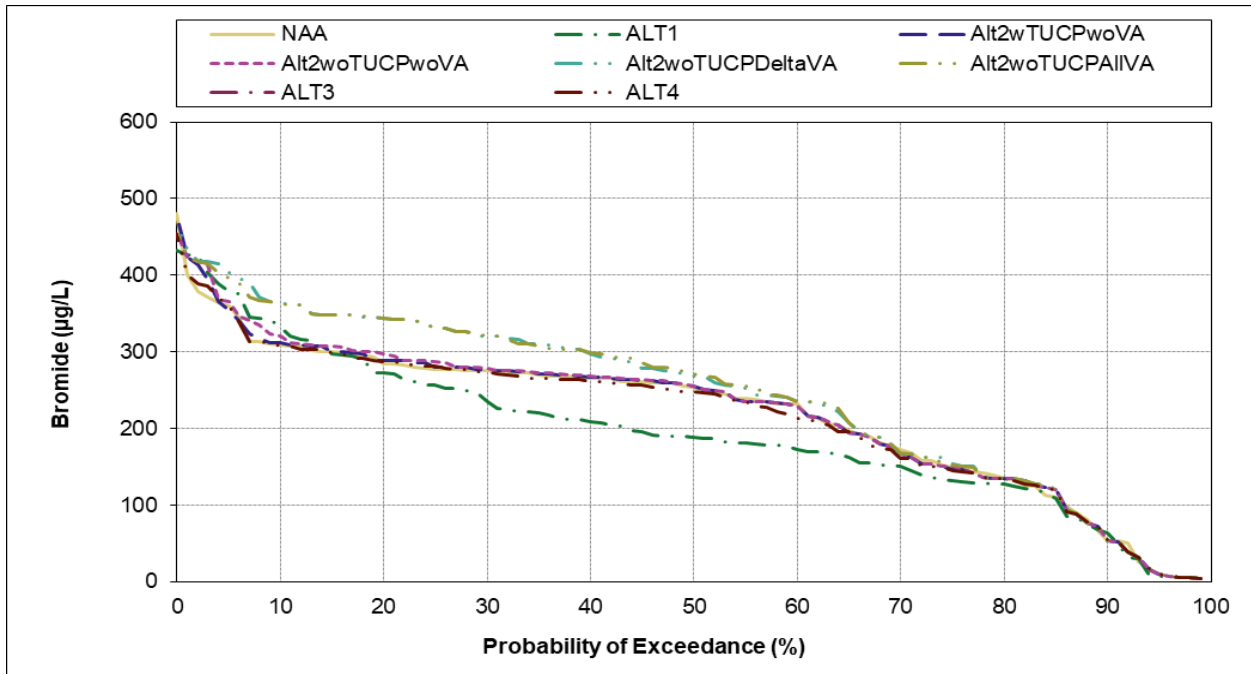
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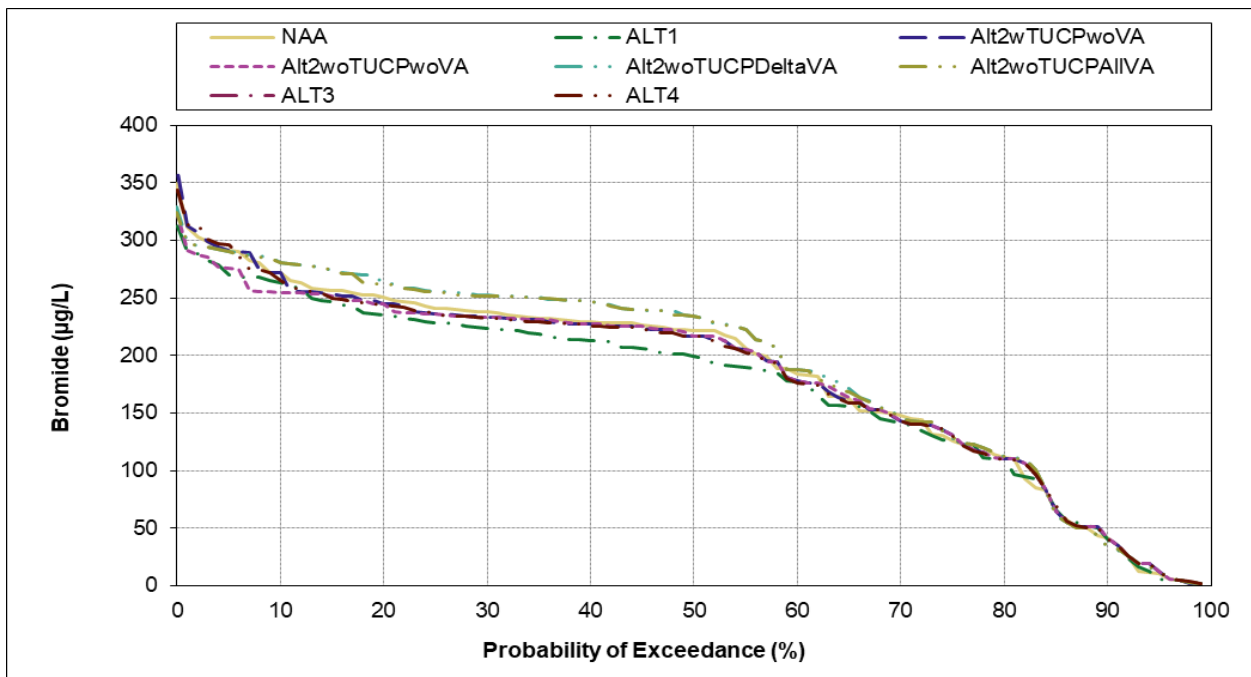
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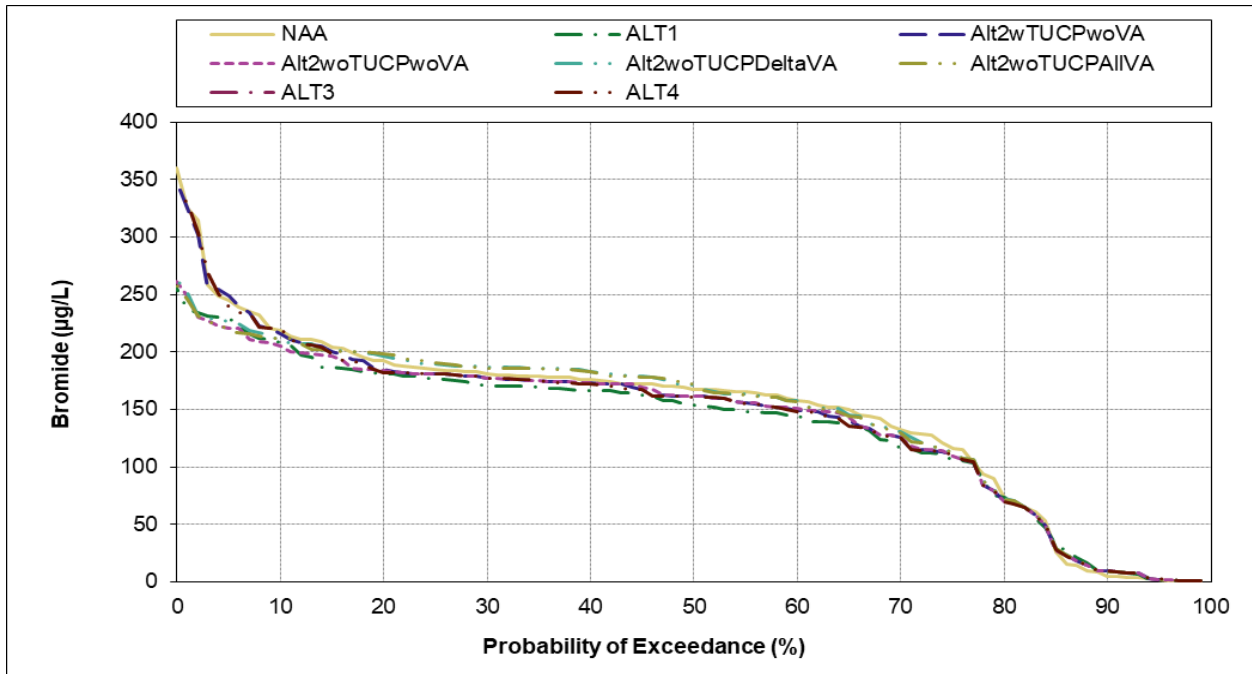
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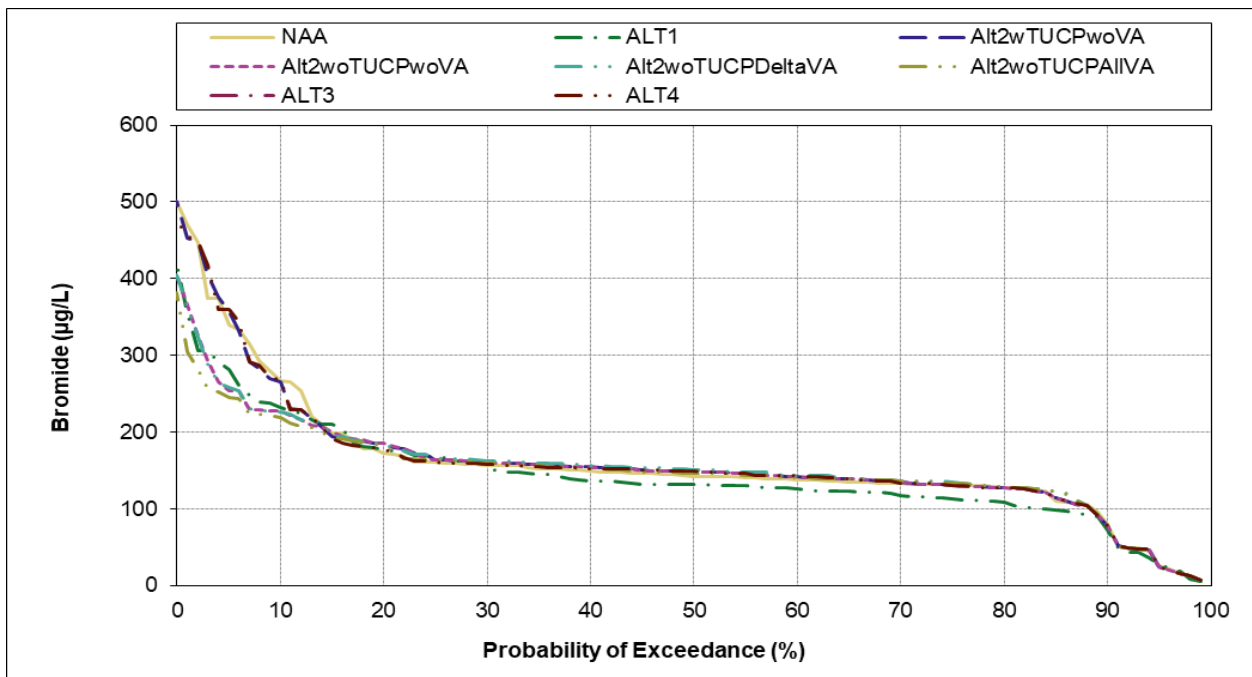
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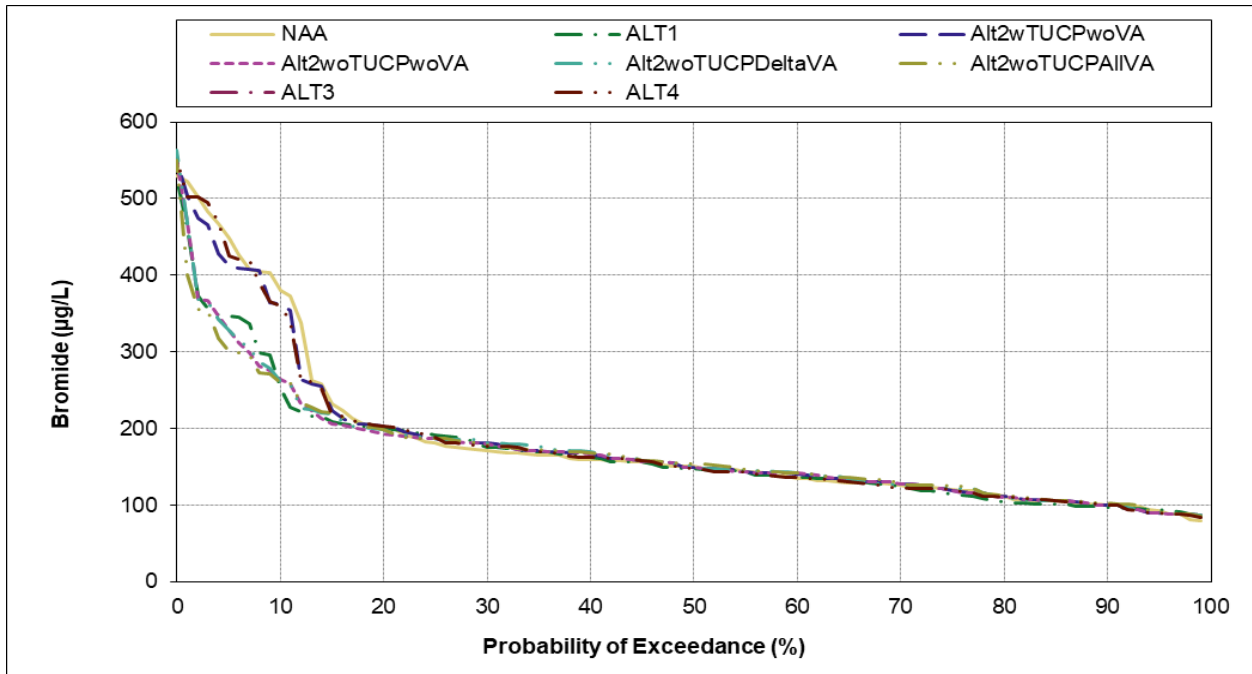
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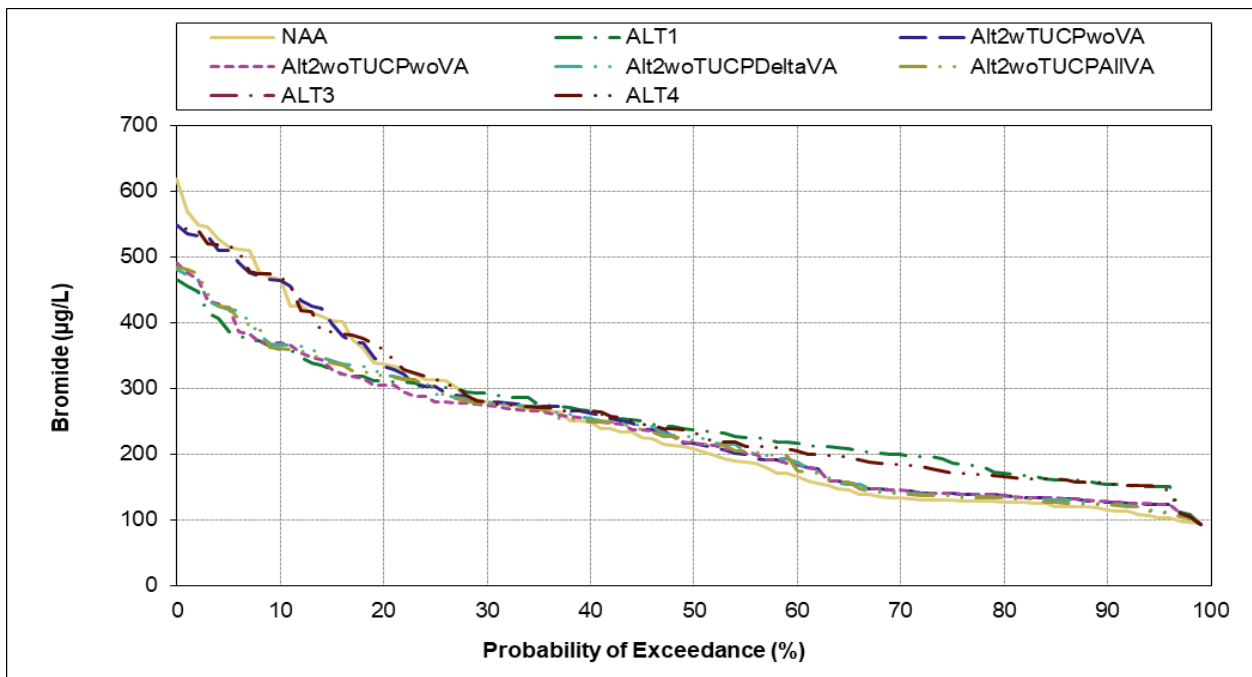
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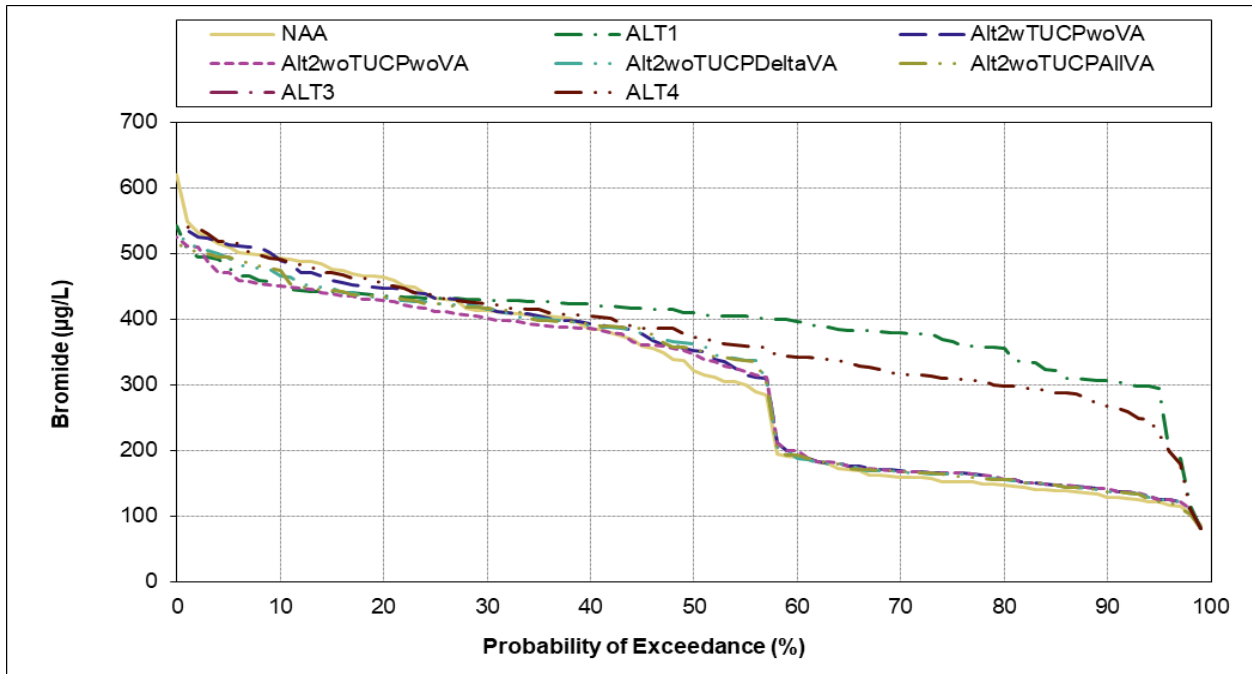
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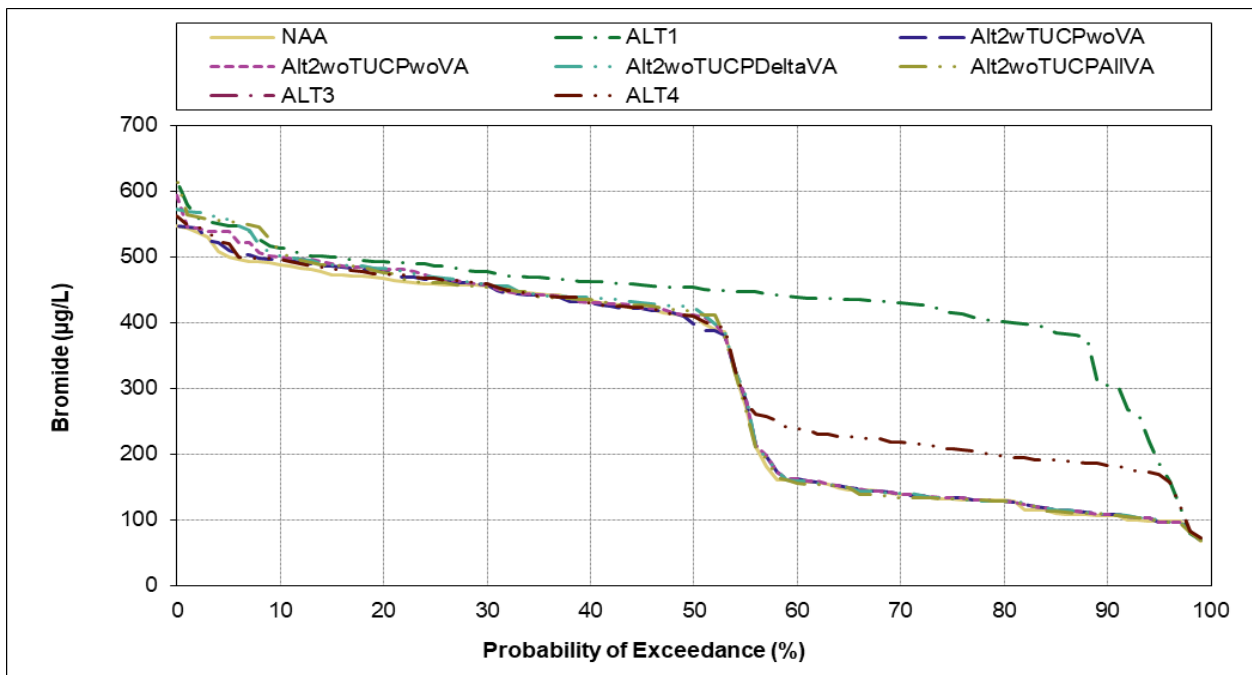
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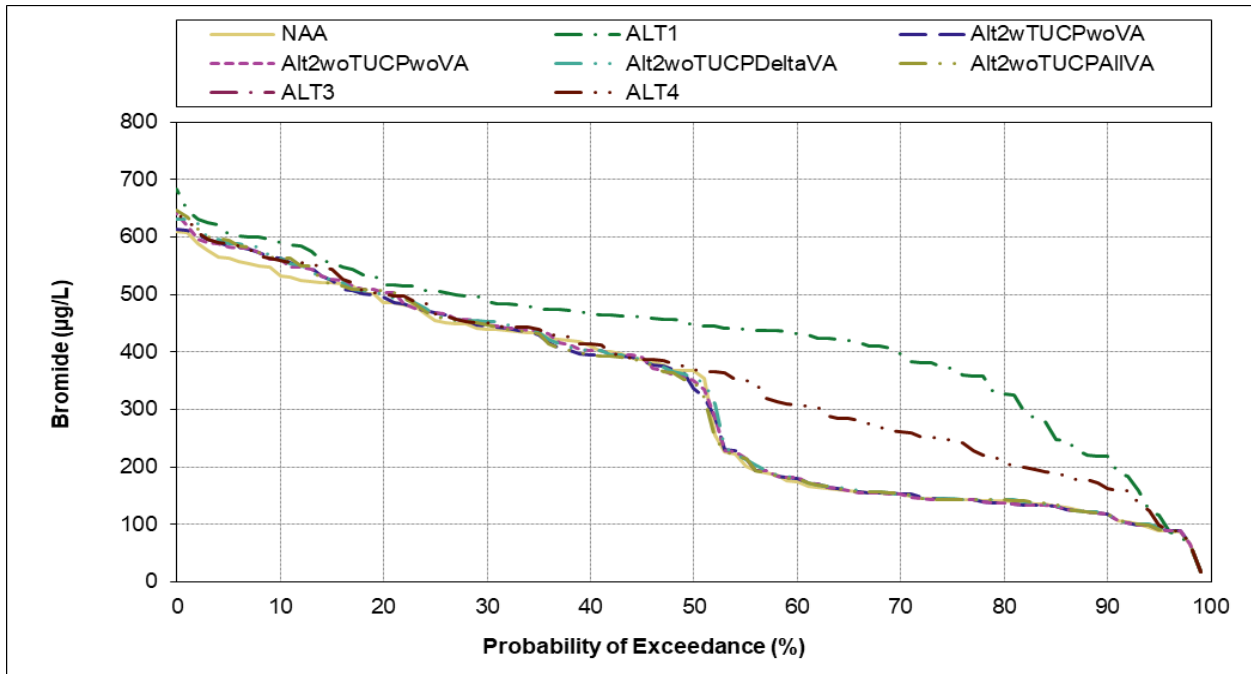
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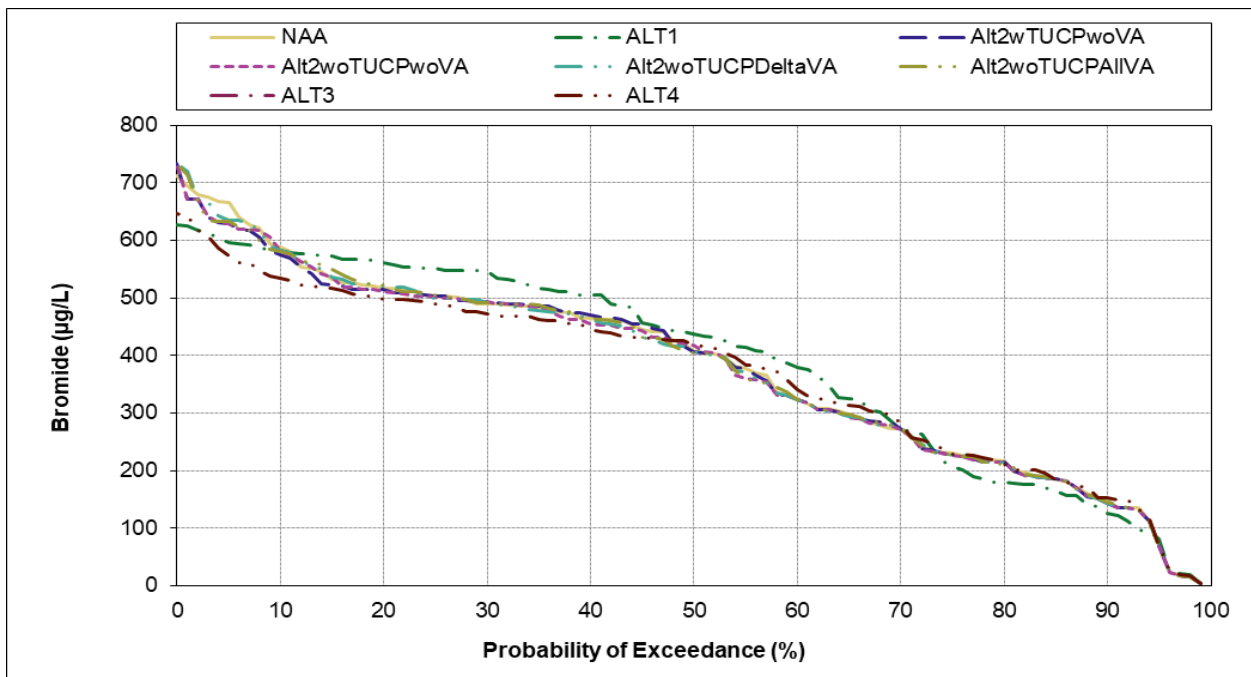
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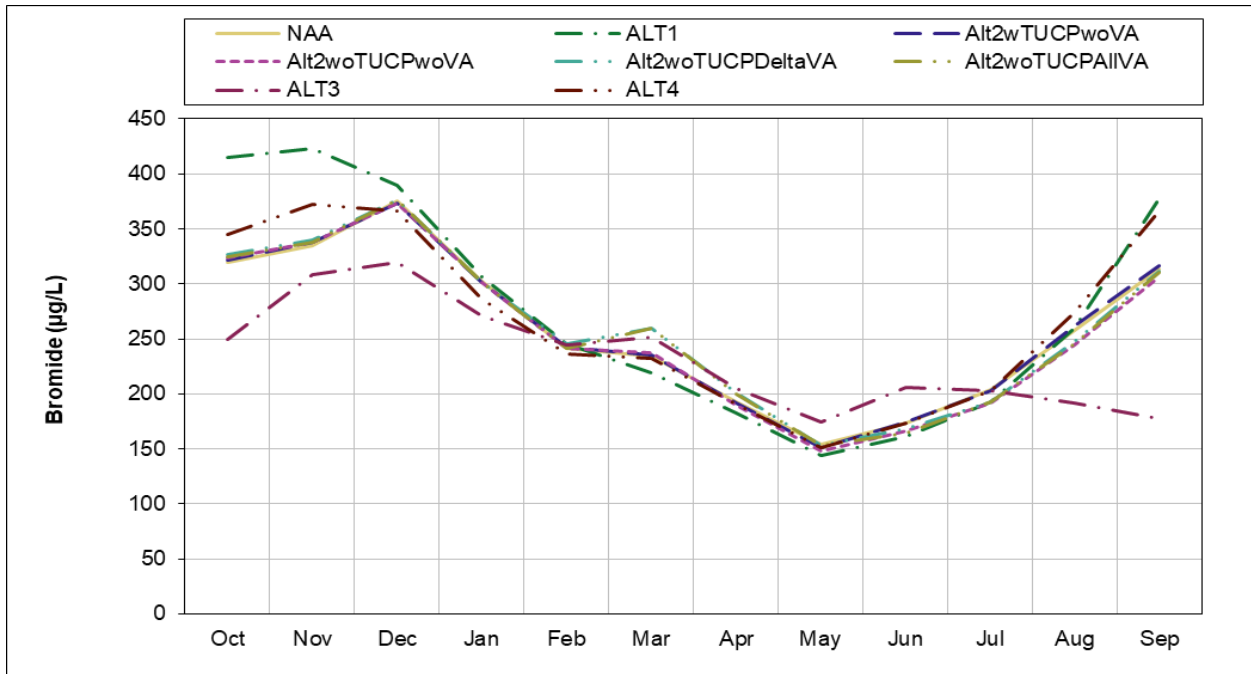
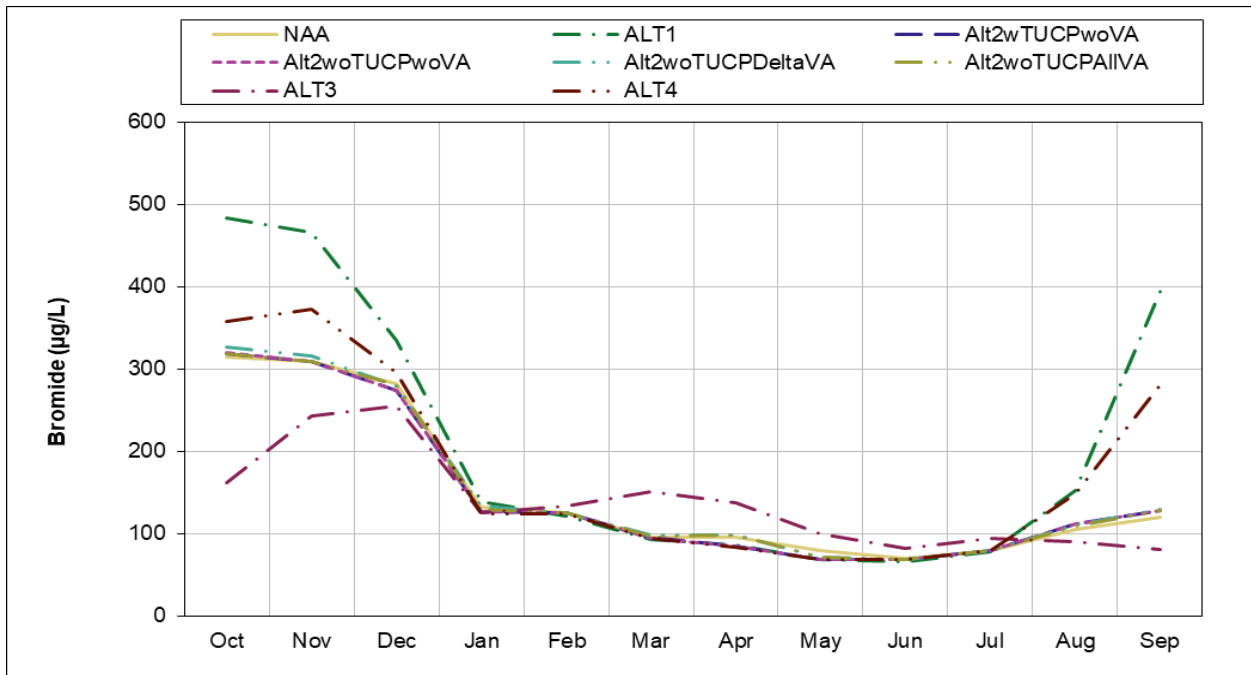Figure G.3-3-1. Jones Pumping Plant, Long term Monthly Average Bromide (in micrograms per liter)
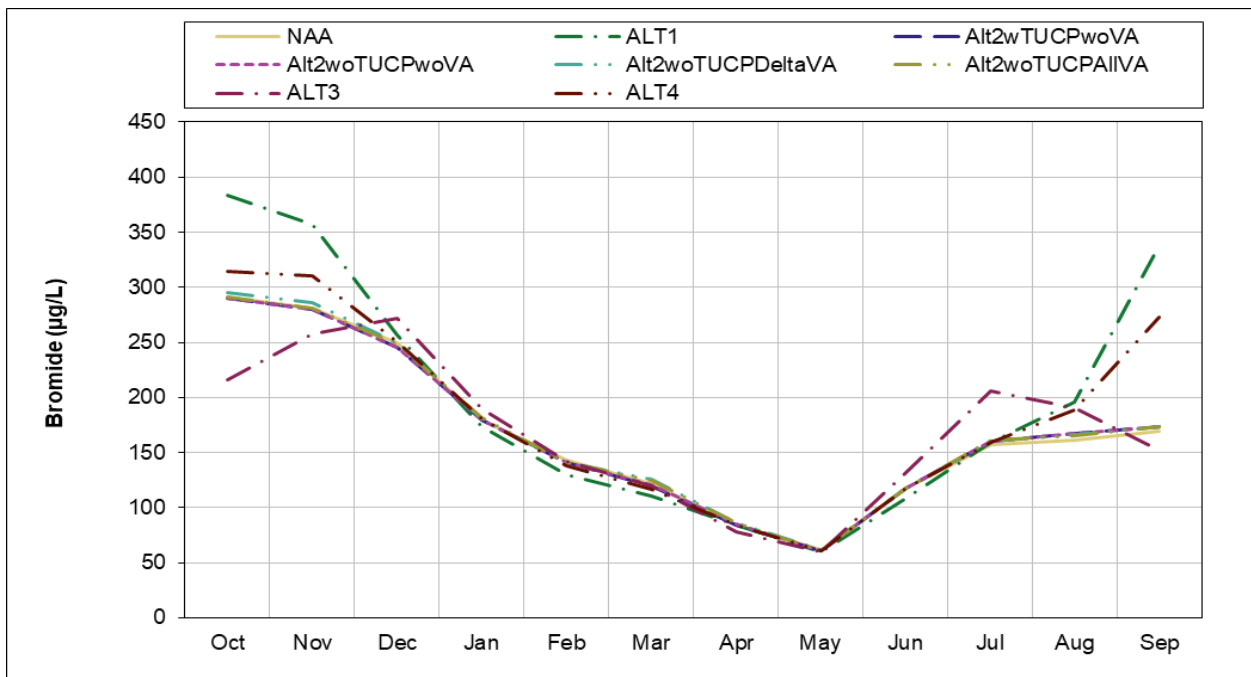
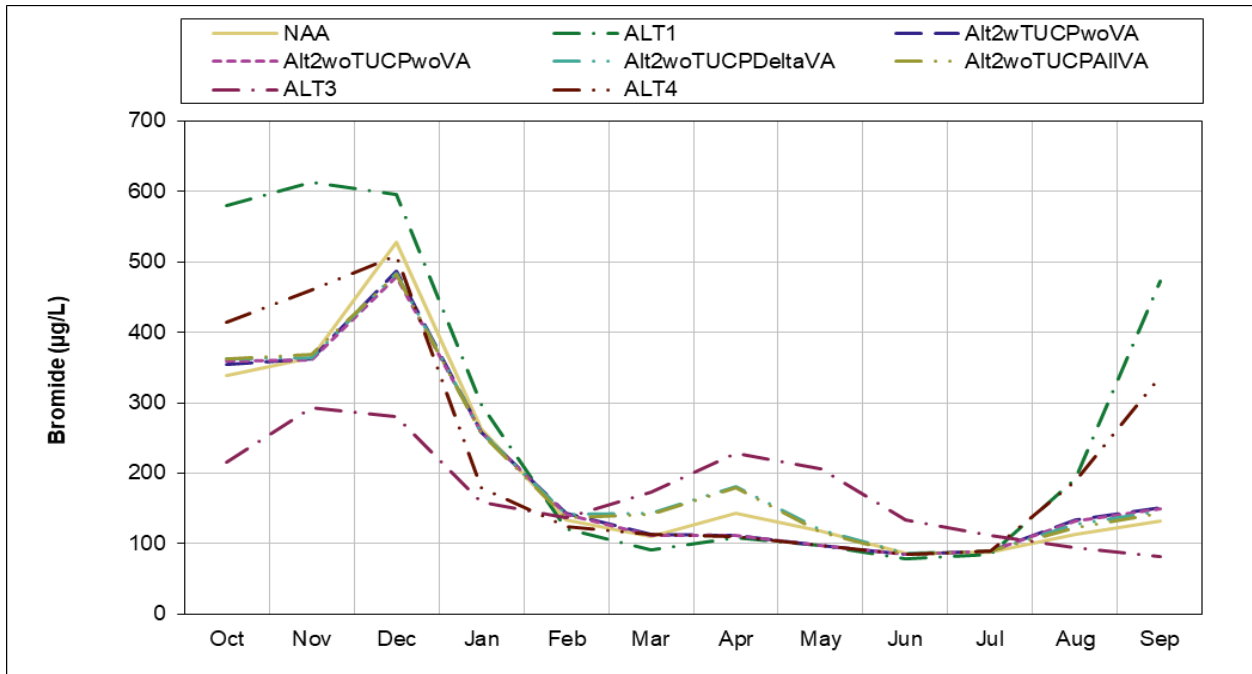Figure G.3-3-2. Jones Pumping Plant, Wet Year Monthly Average Bromide (in micrograms per liter)
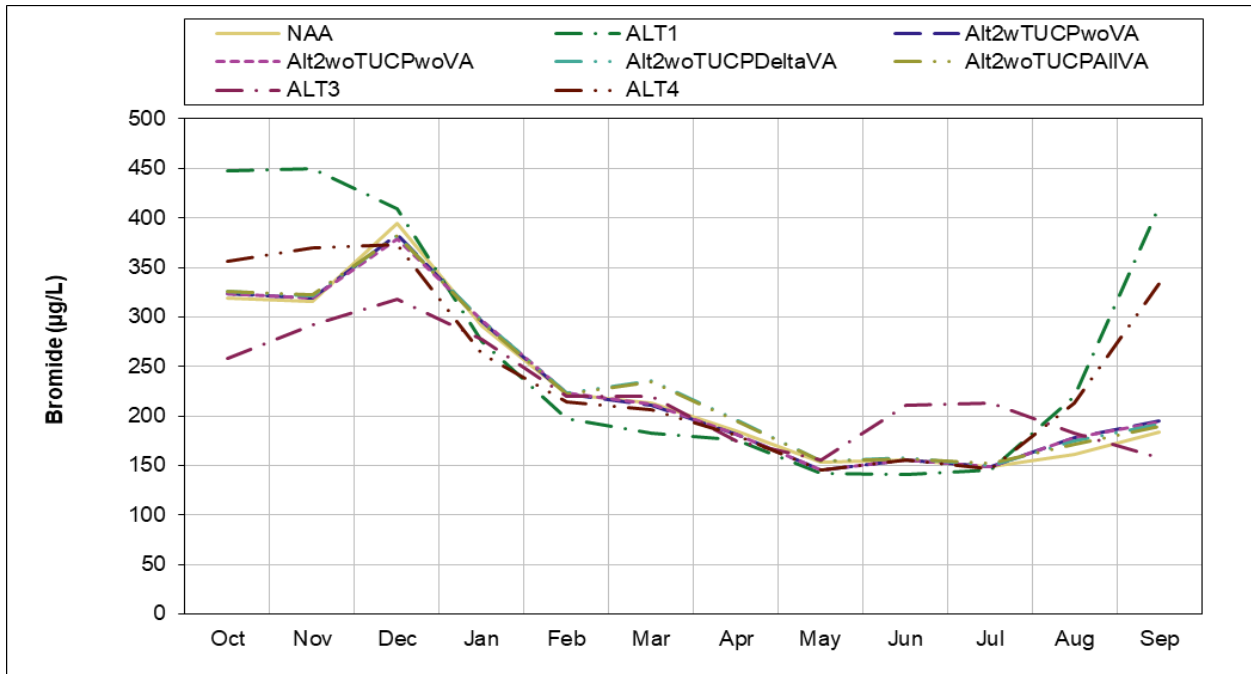
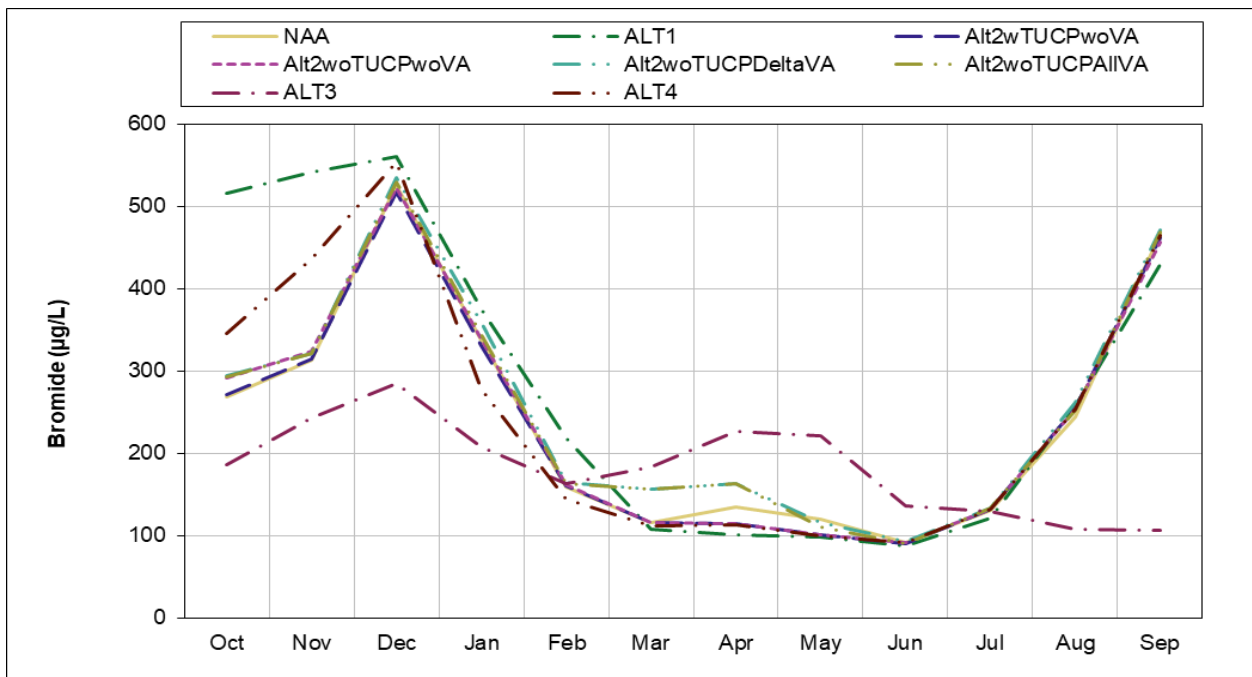Figure G.3-3-3. Jones Pumping Plant, Above Normal Year Monthly Average Bromide (in micrograms per liter)
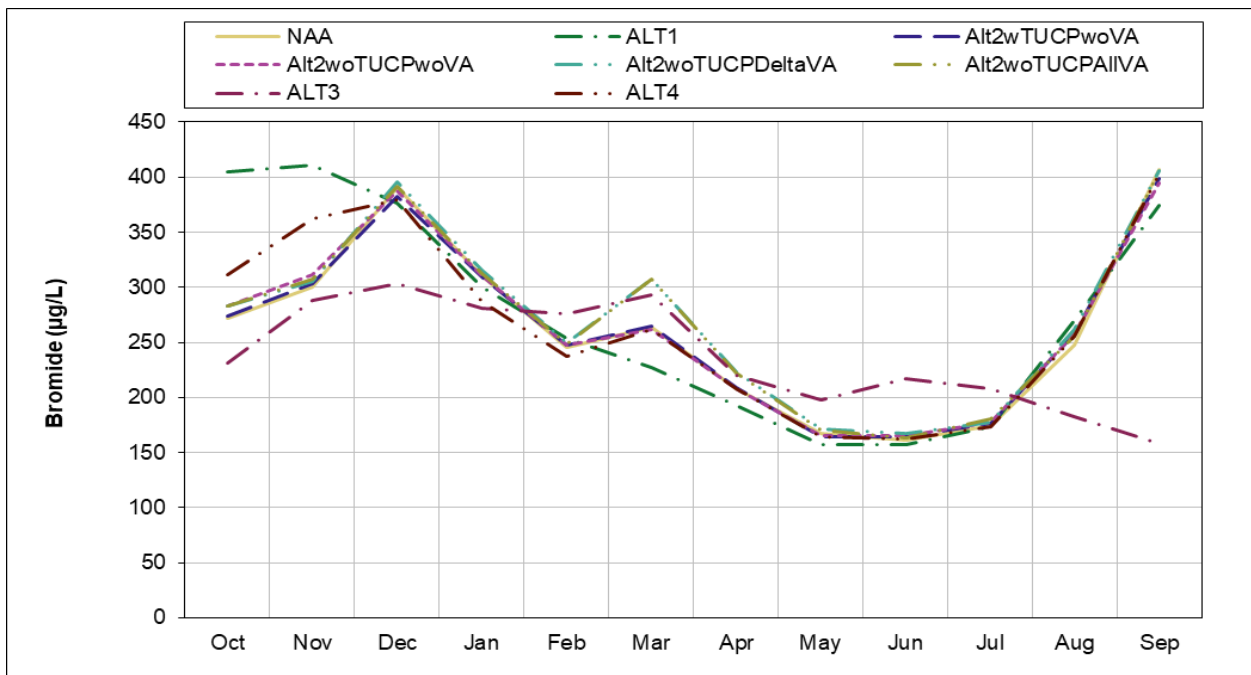
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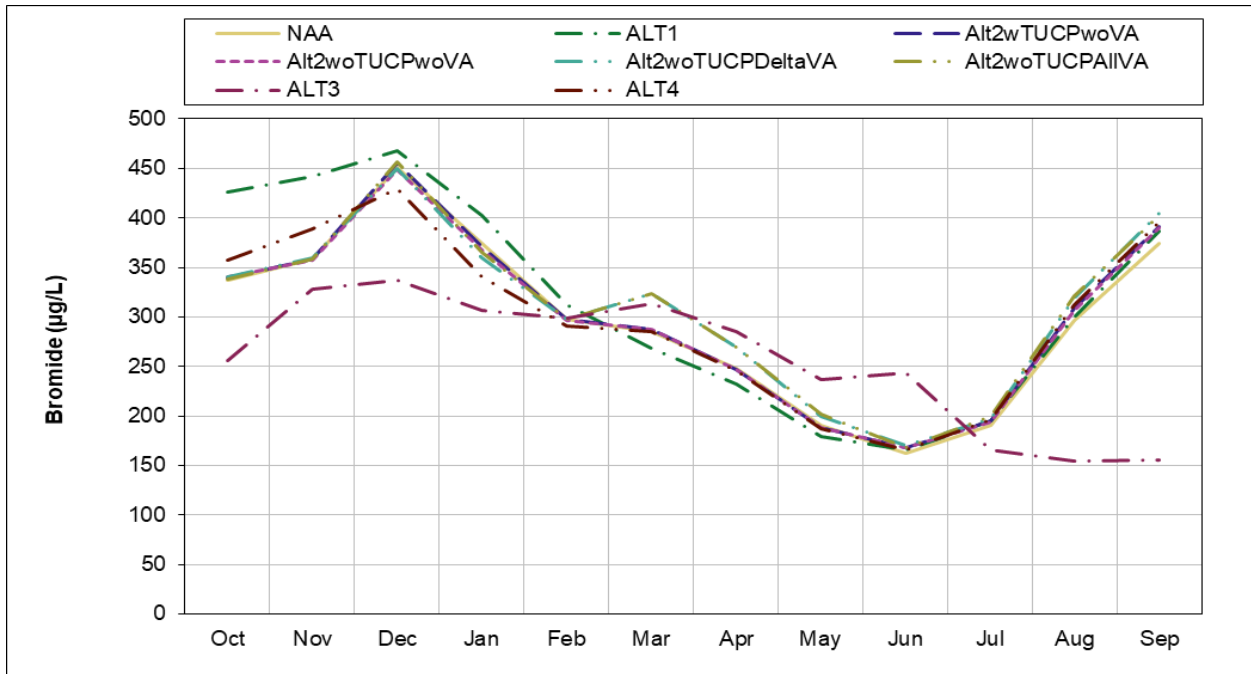
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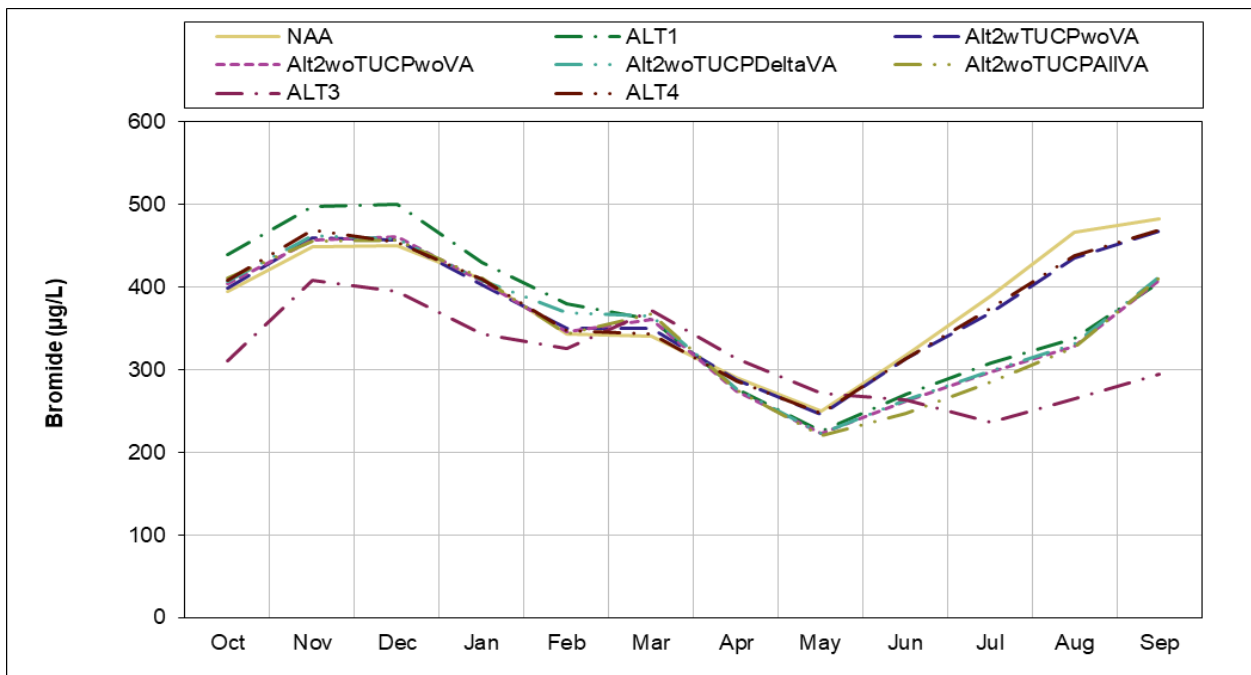
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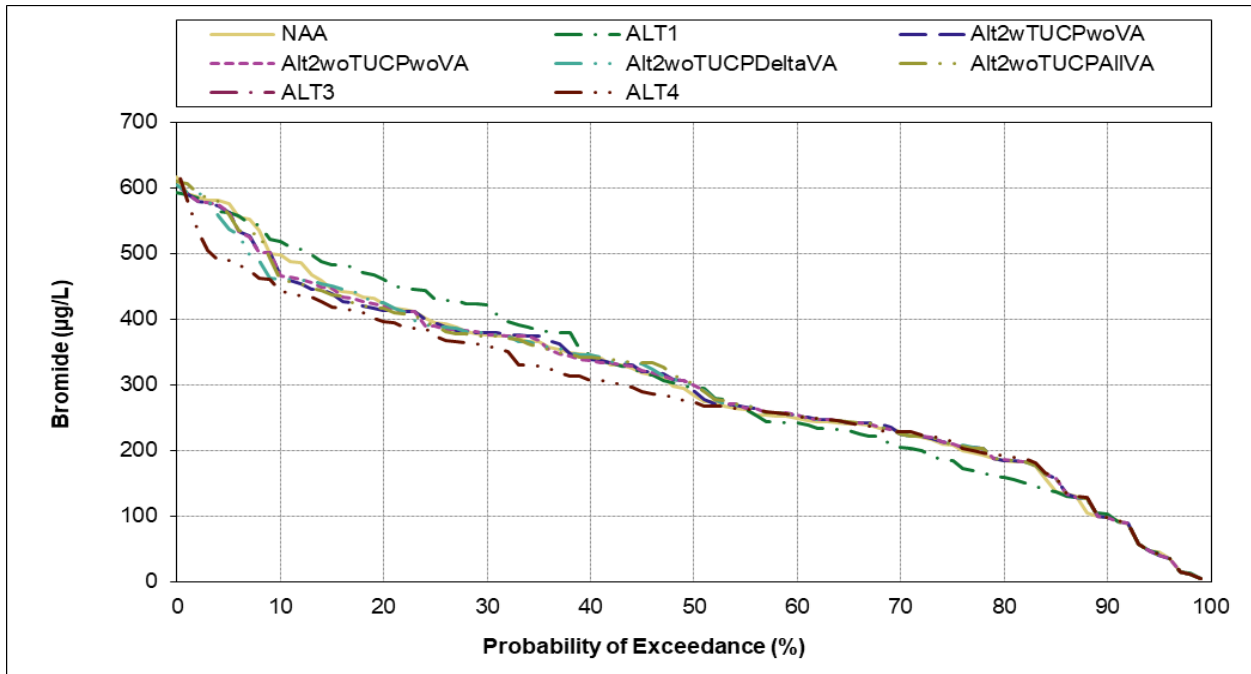
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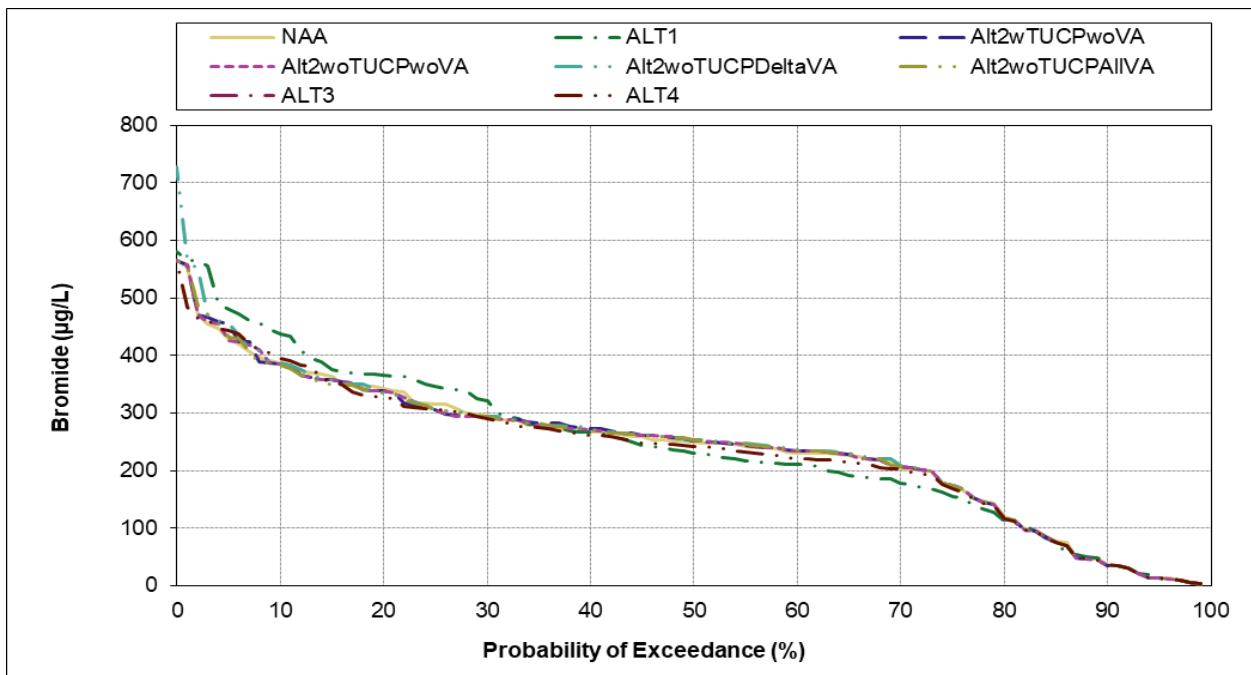
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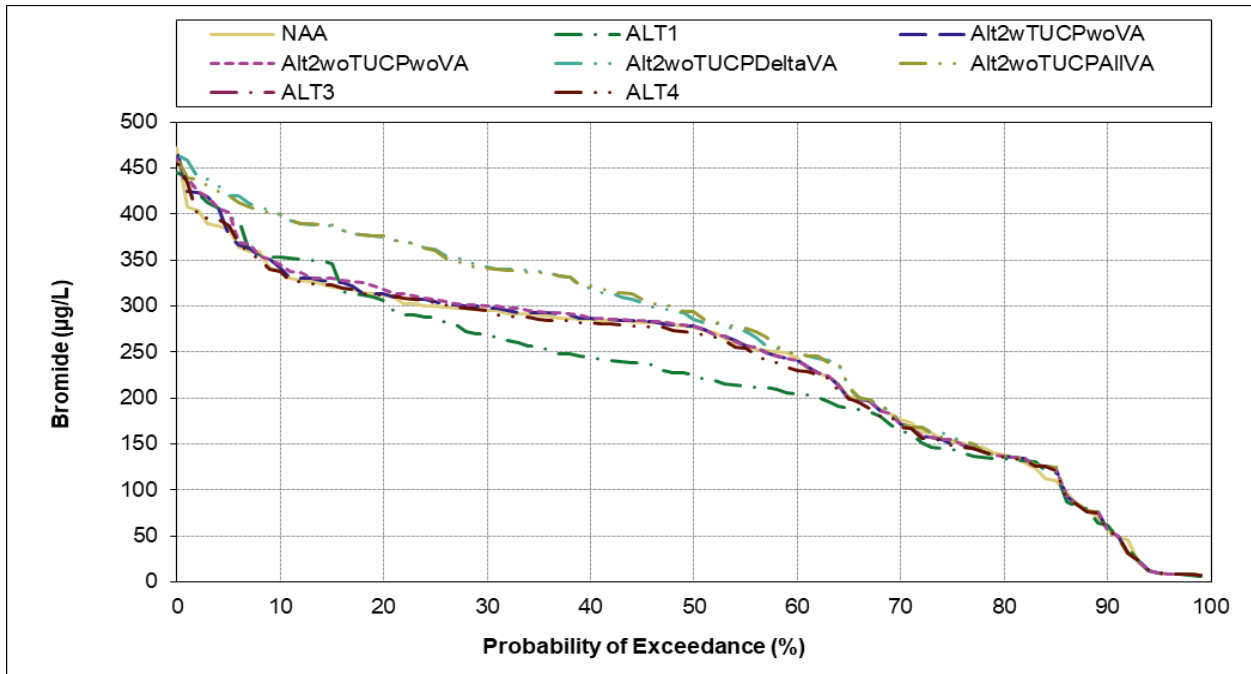
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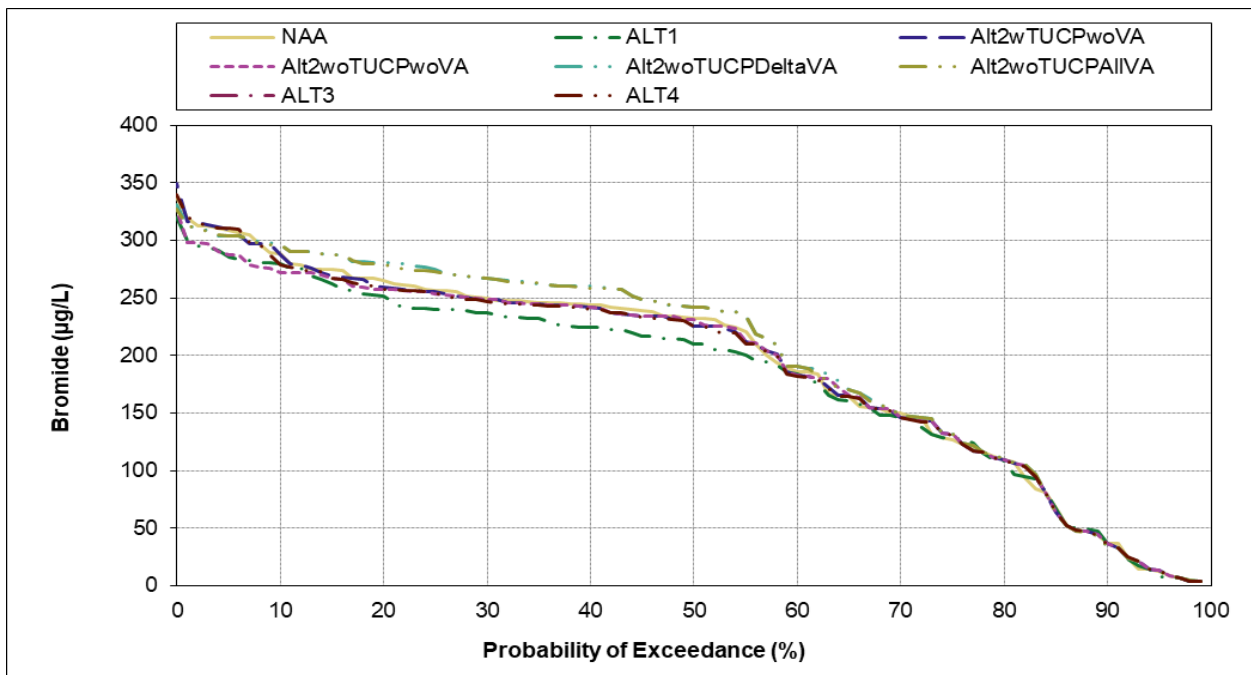
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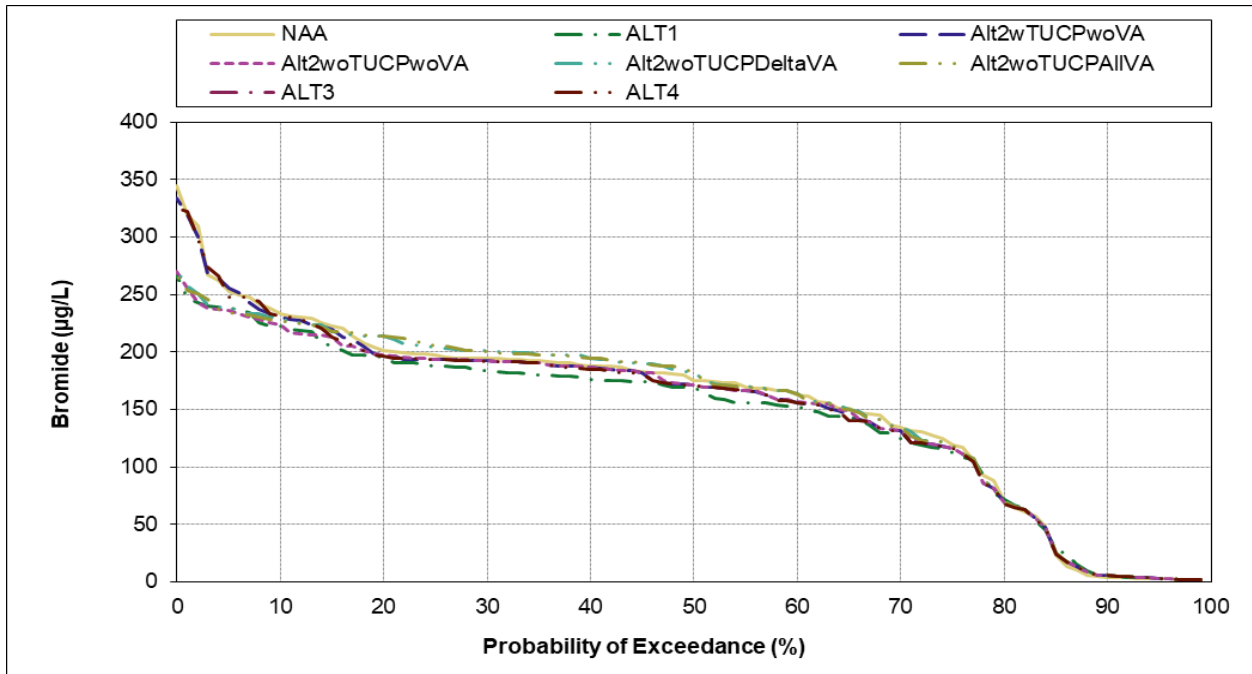
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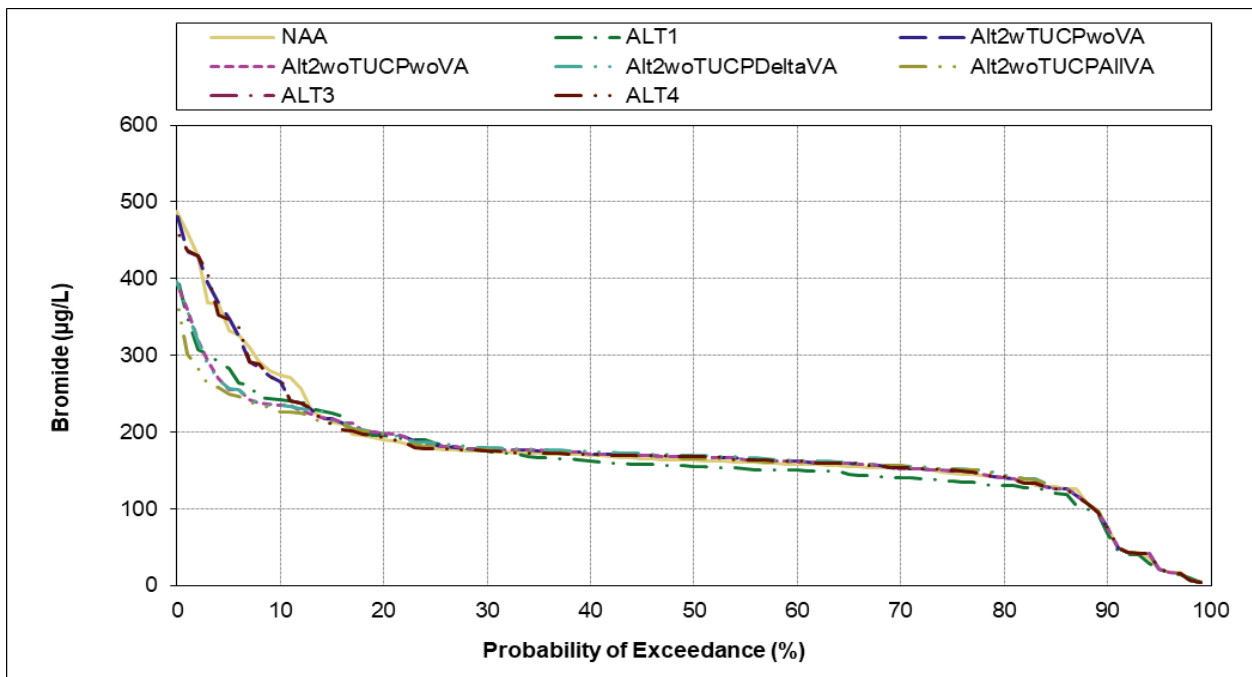
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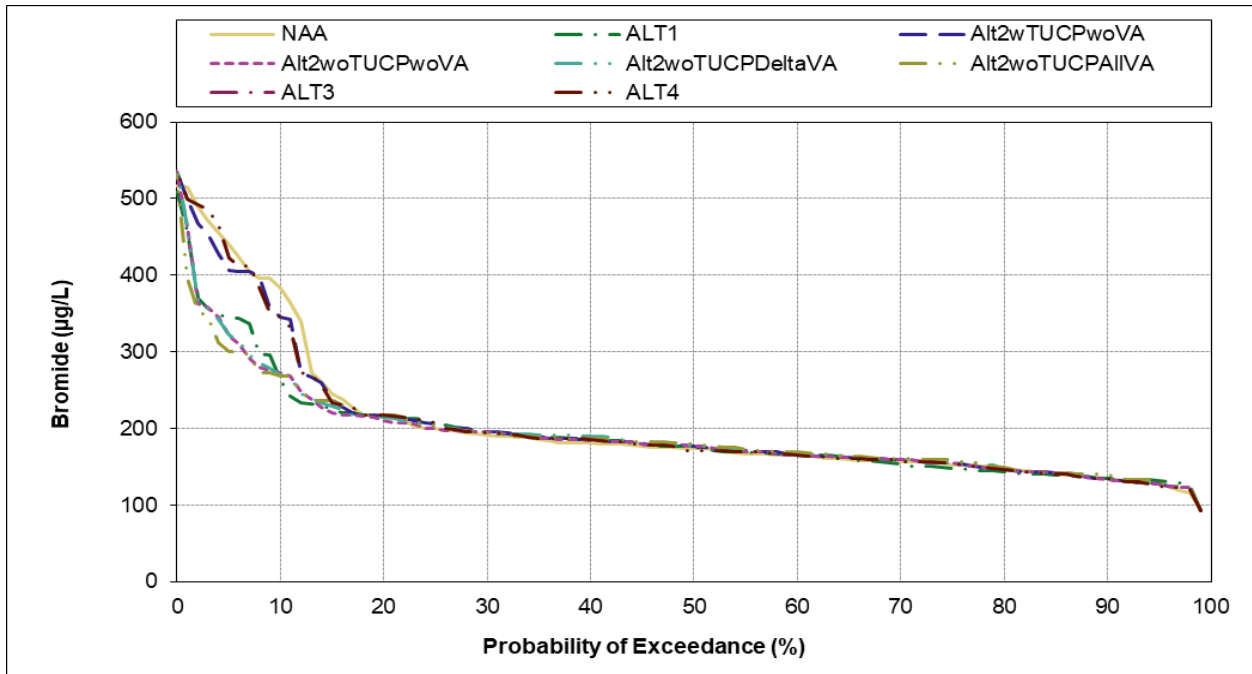
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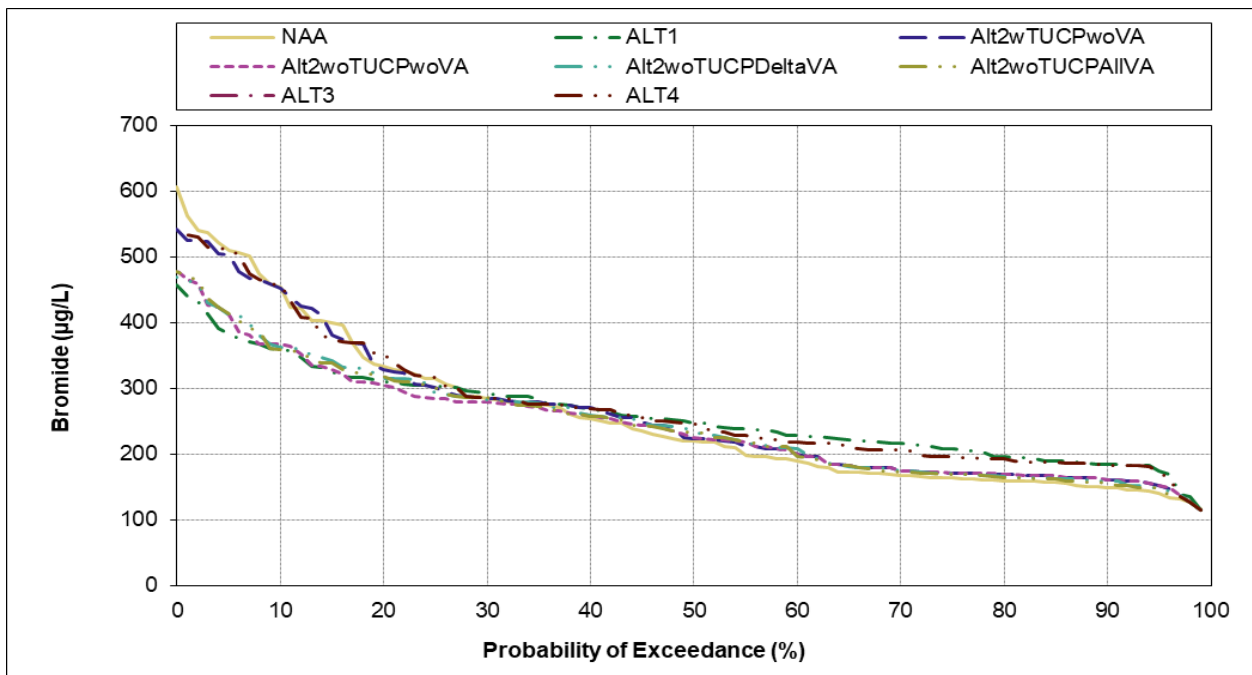
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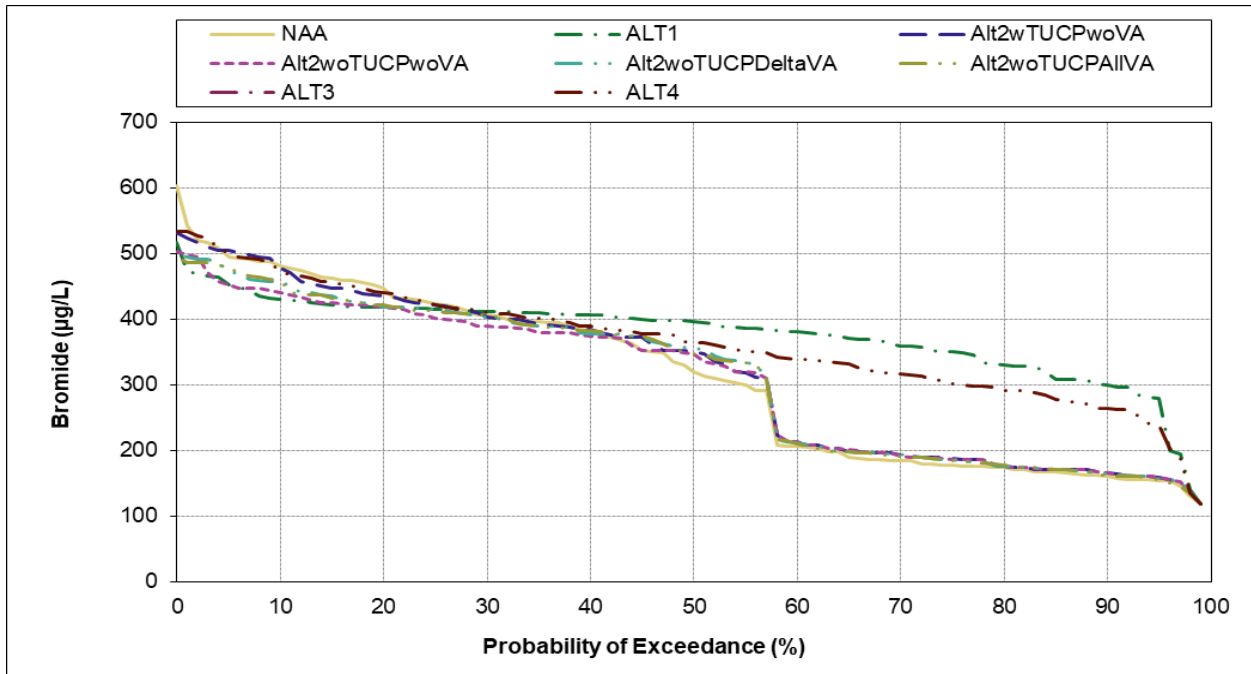
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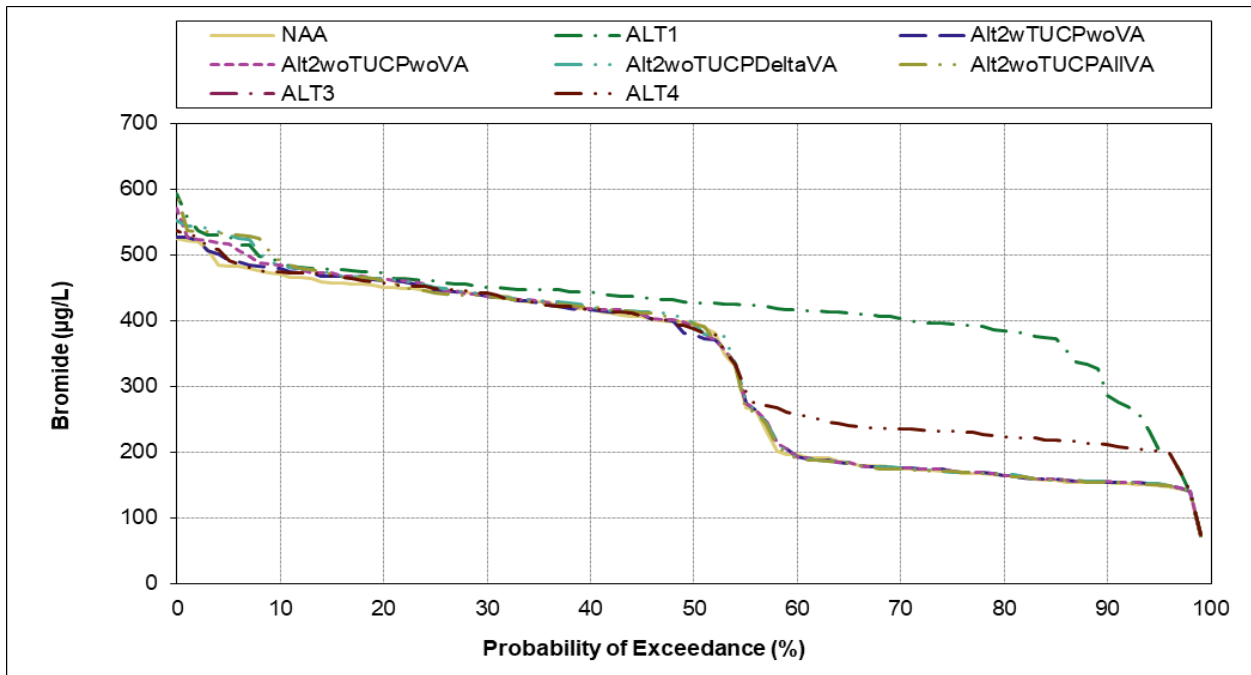
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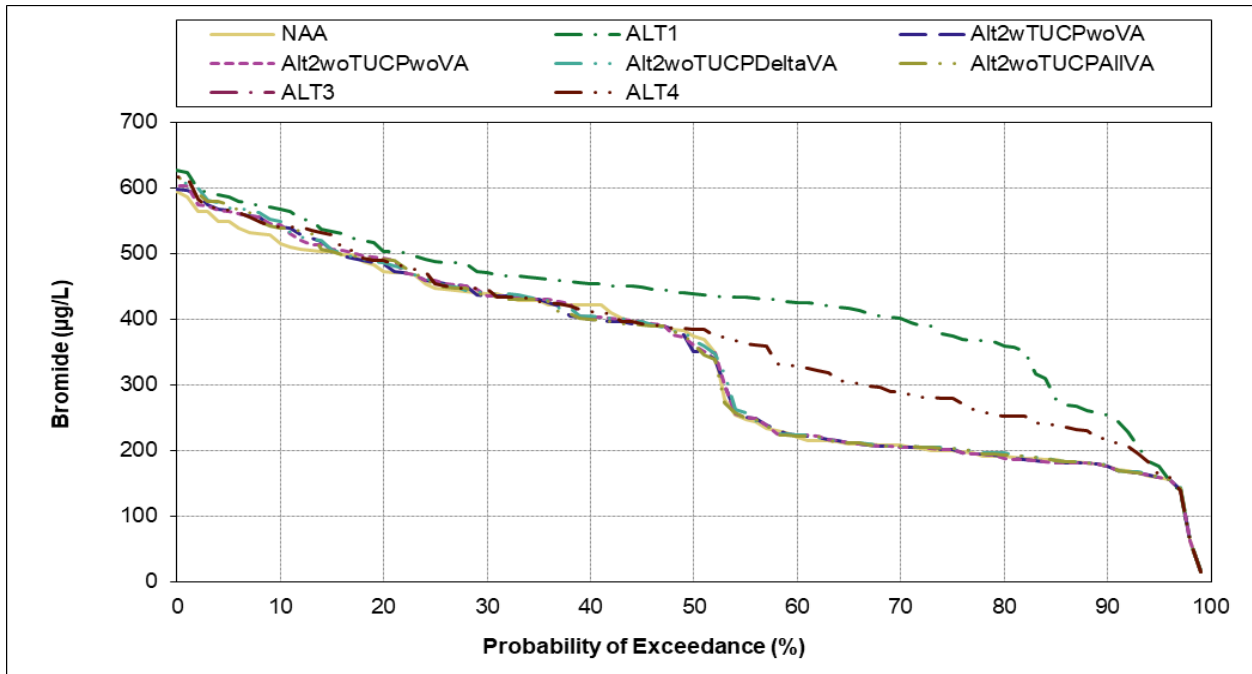
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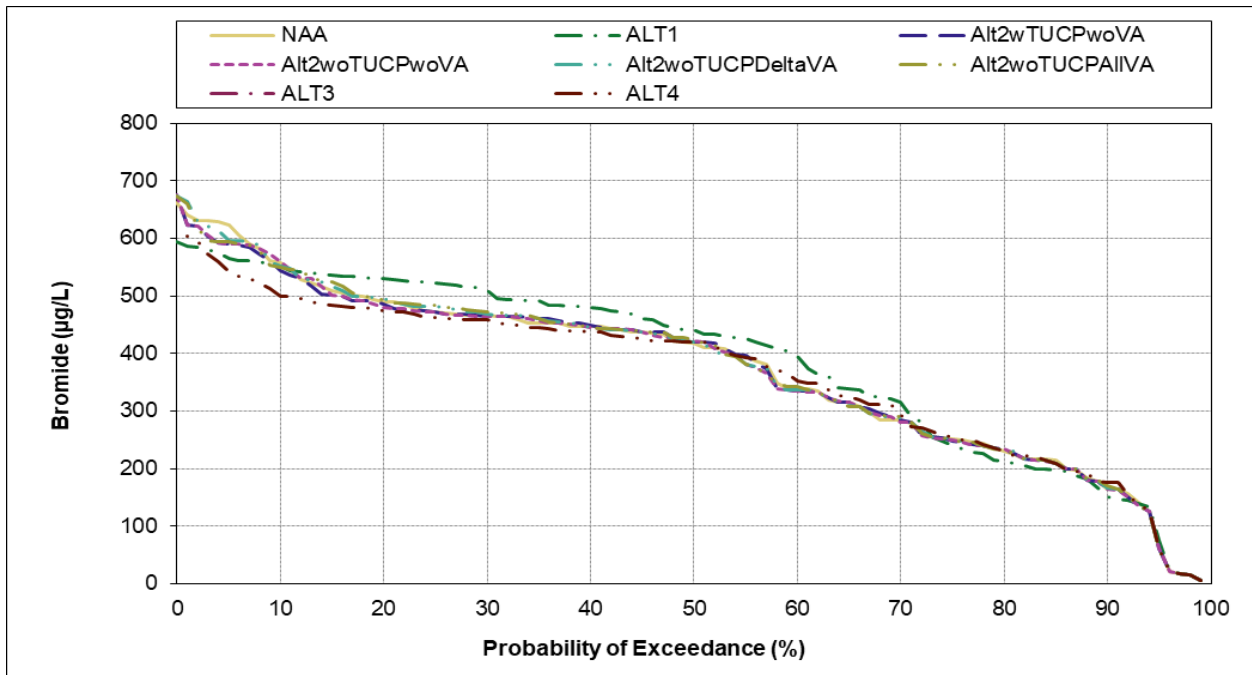
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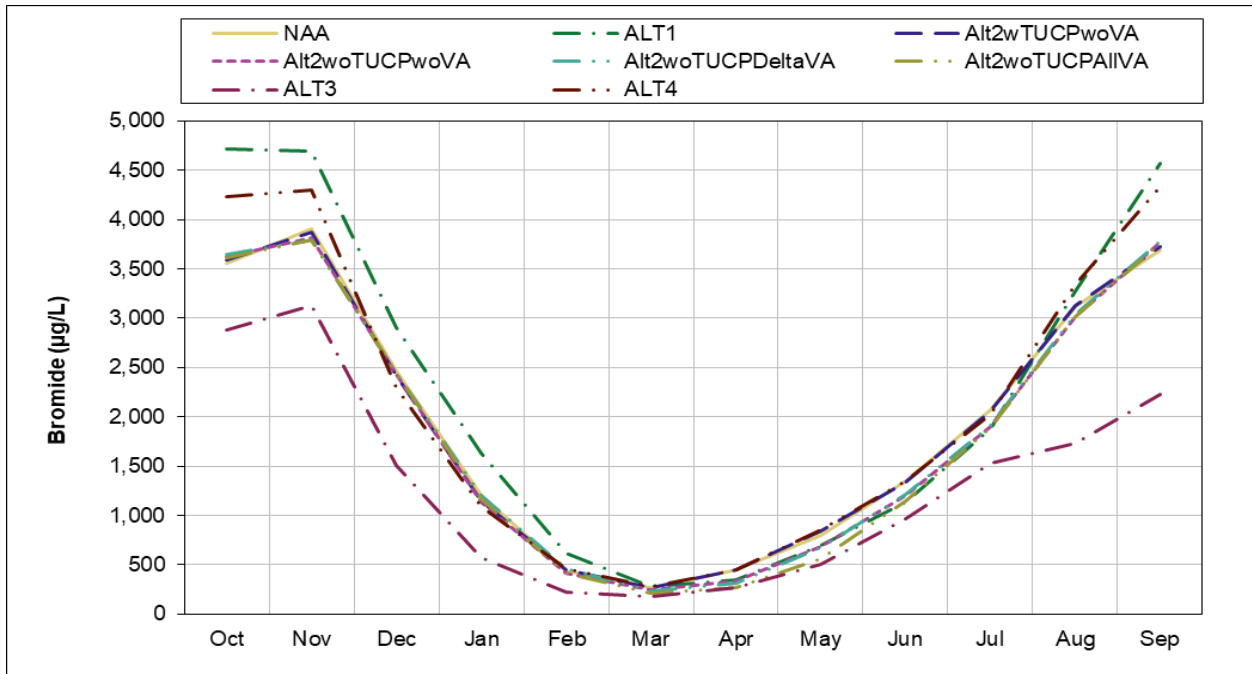
Figure G.3-4-1. San Joaquin River at Antioch, Long term Monthly Average Bromide (in micrograms per liter)
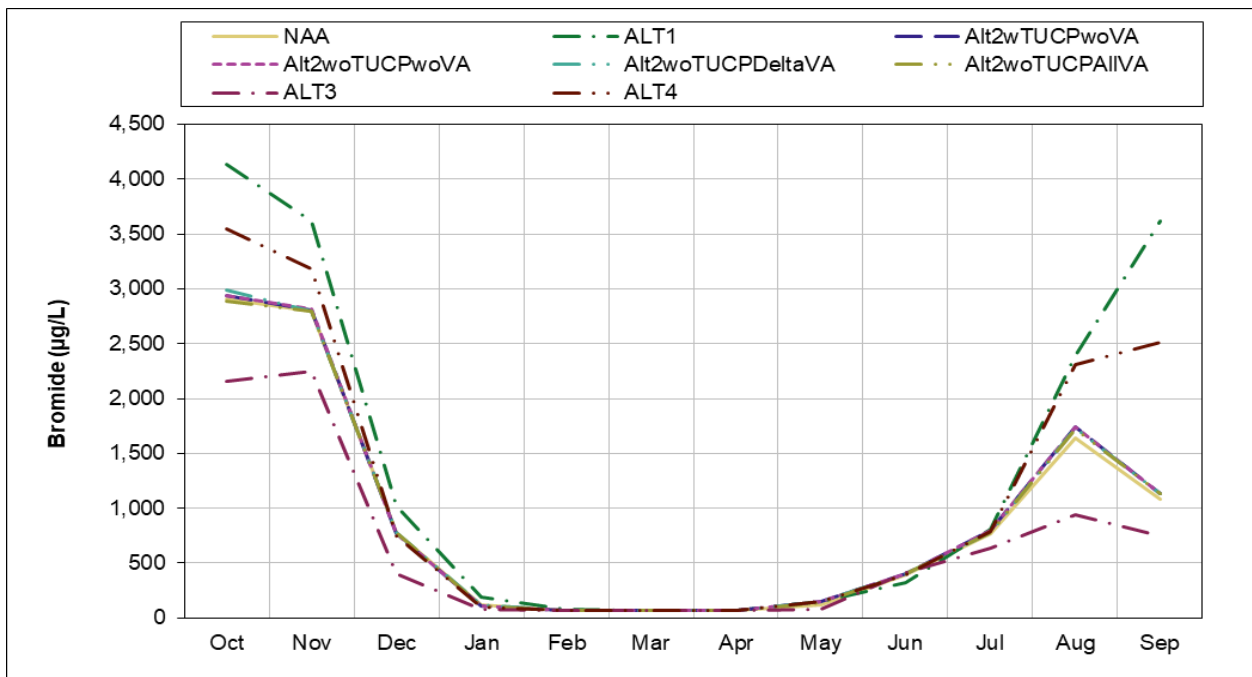
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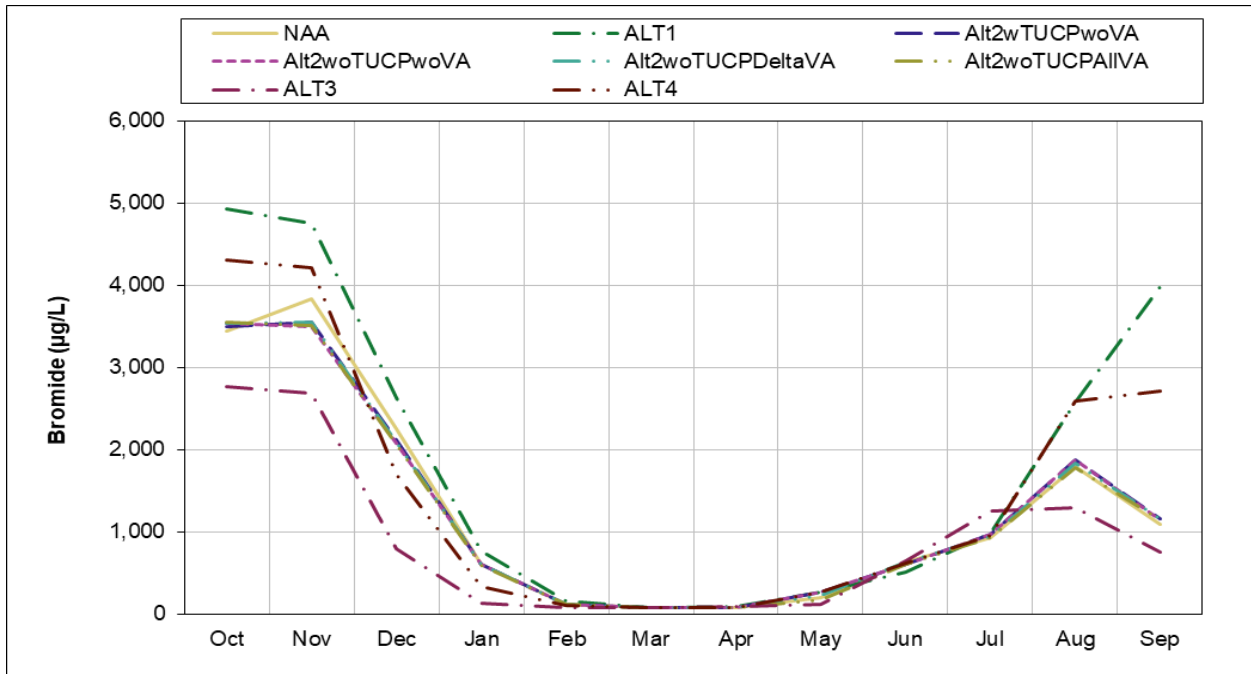
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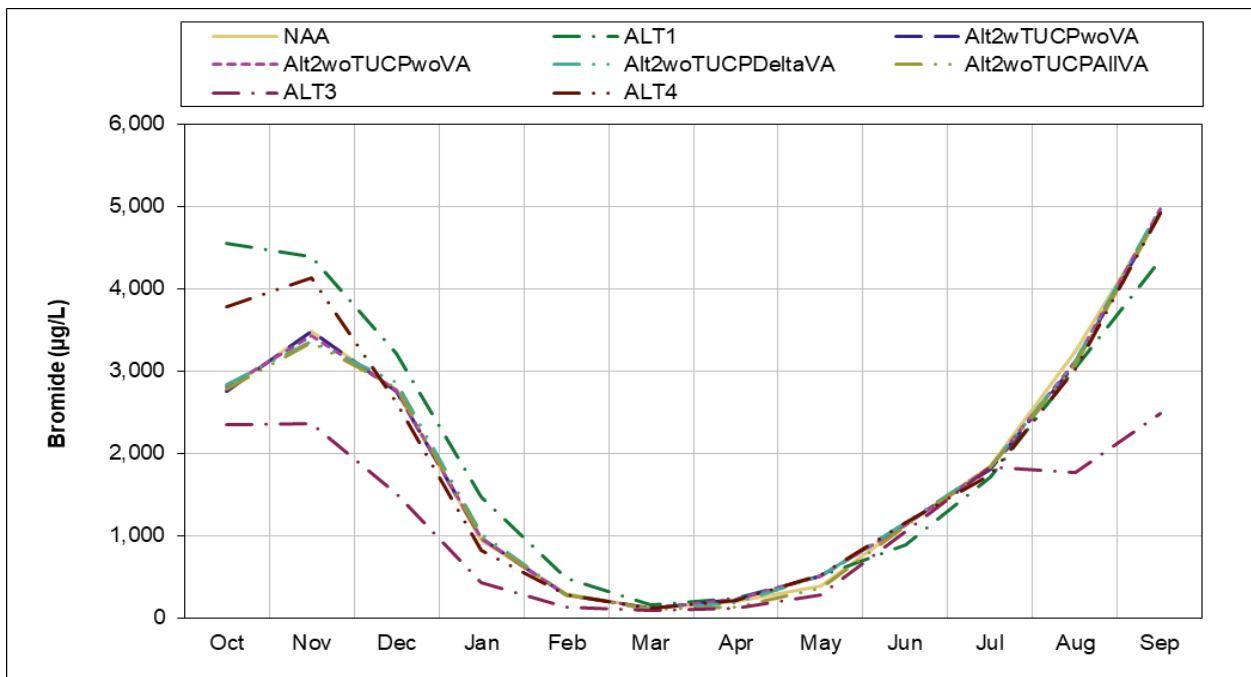
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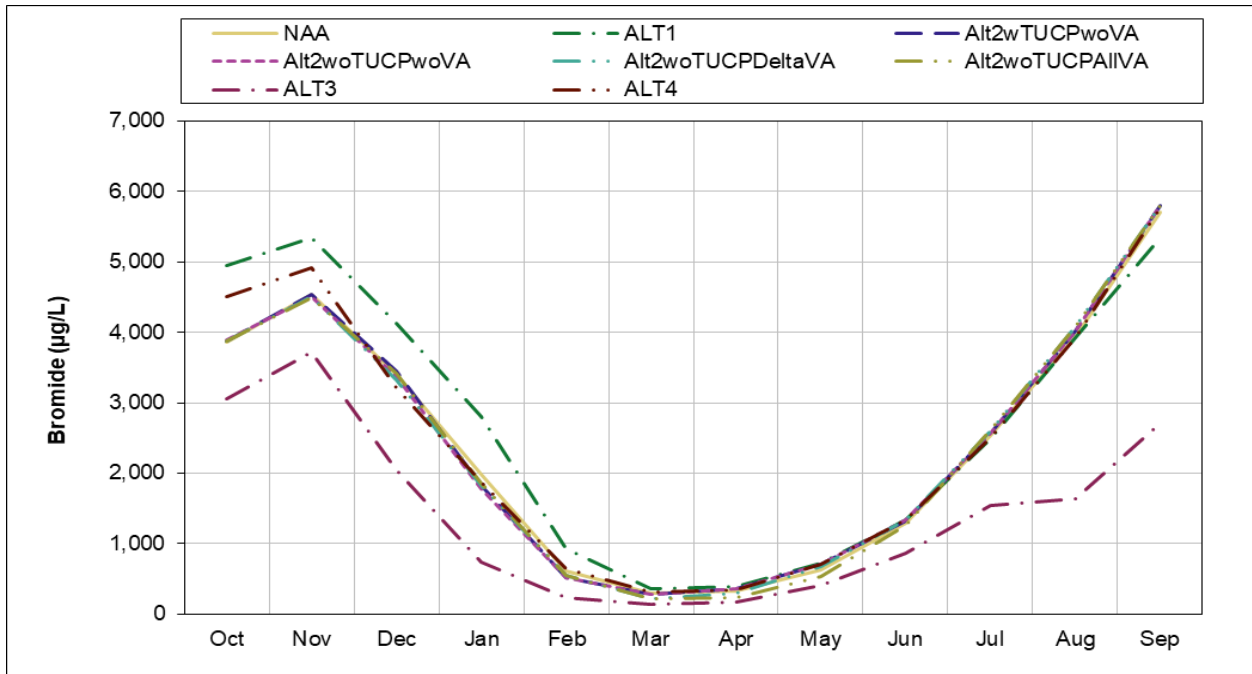
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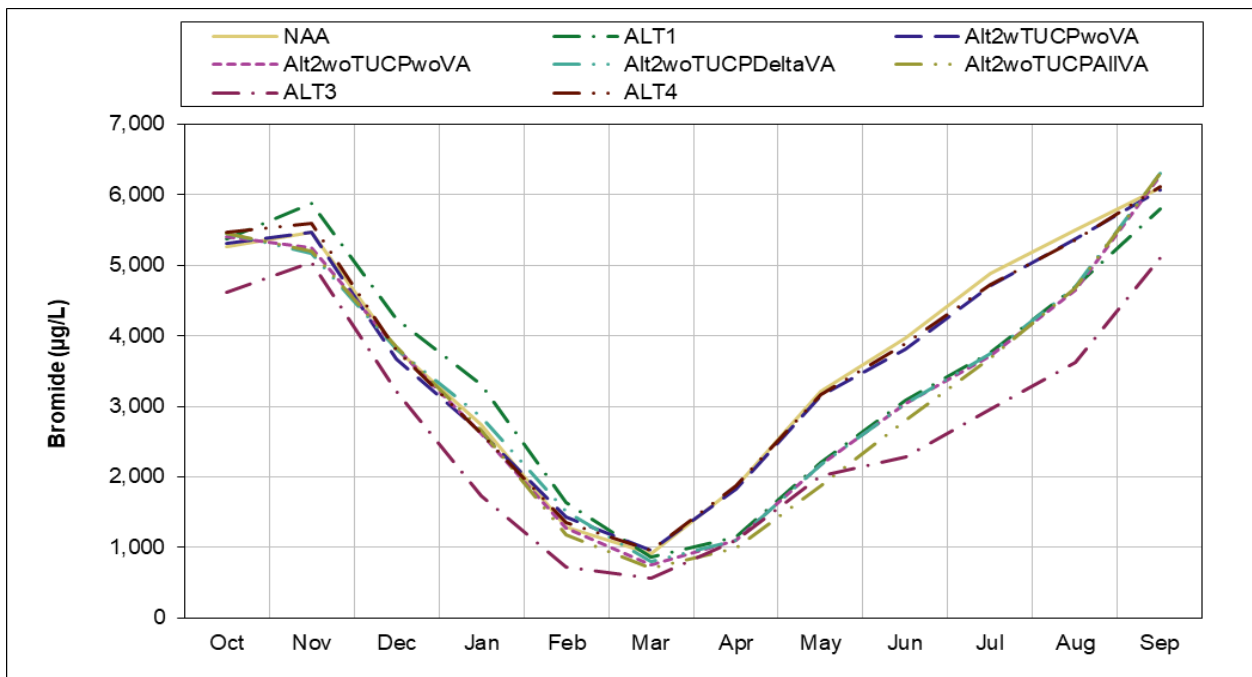
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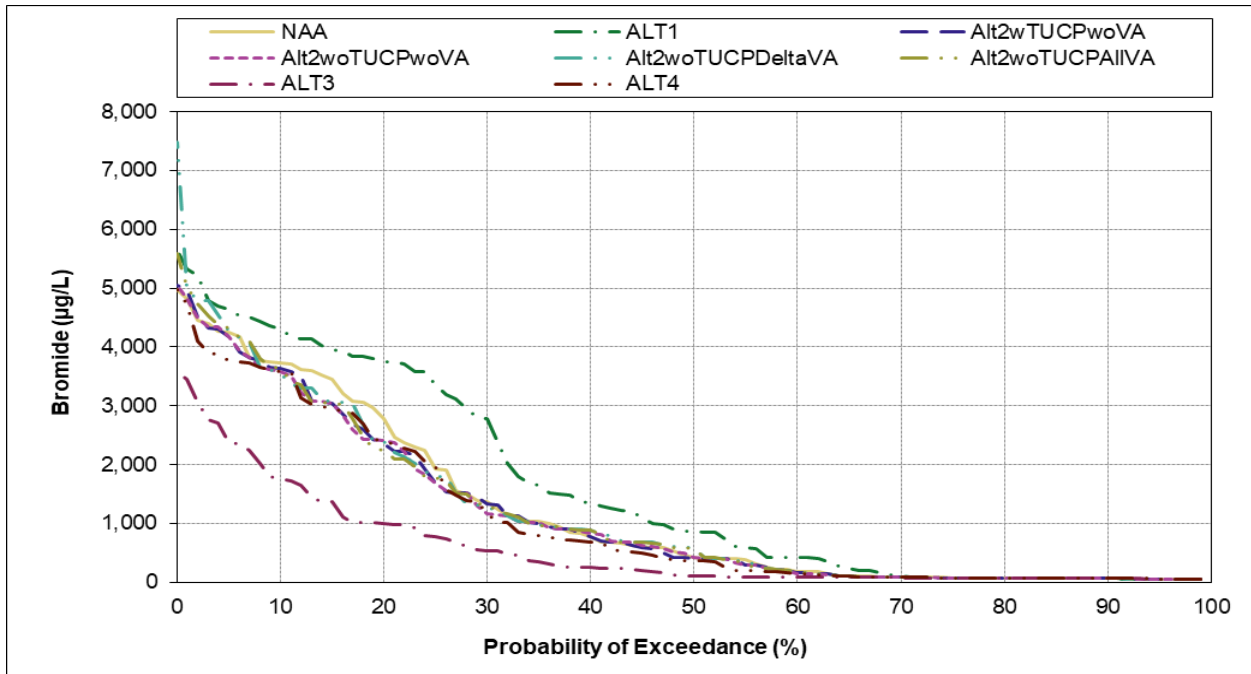
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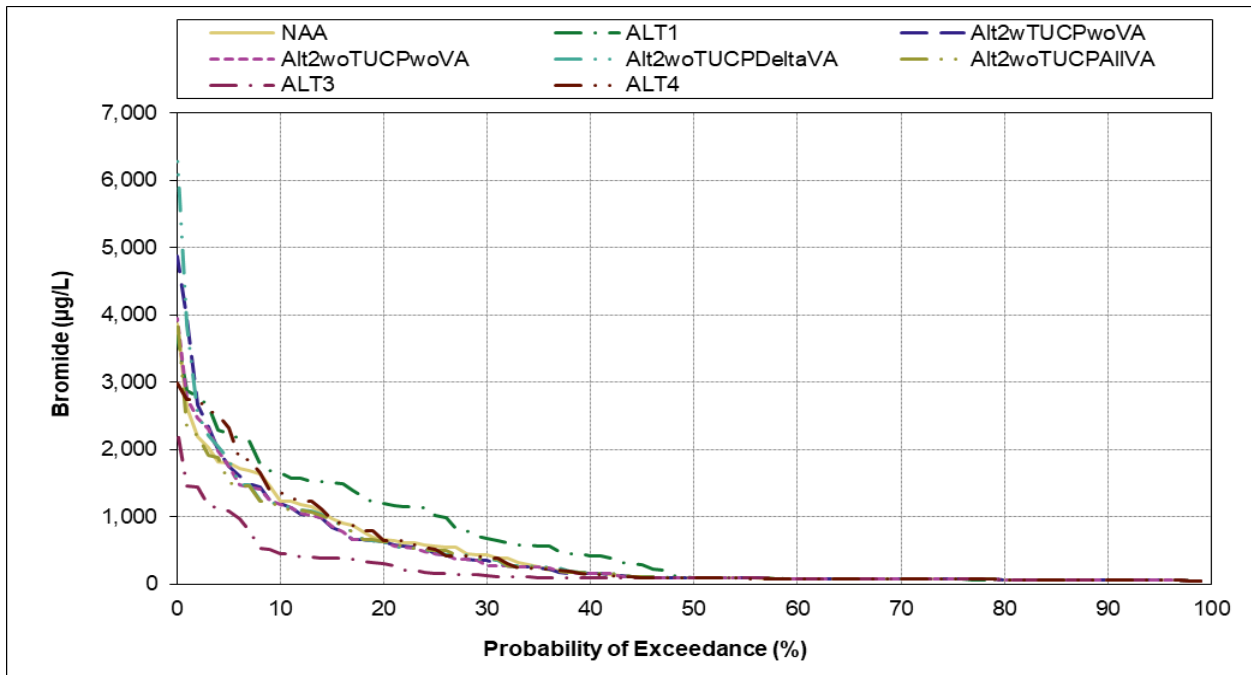
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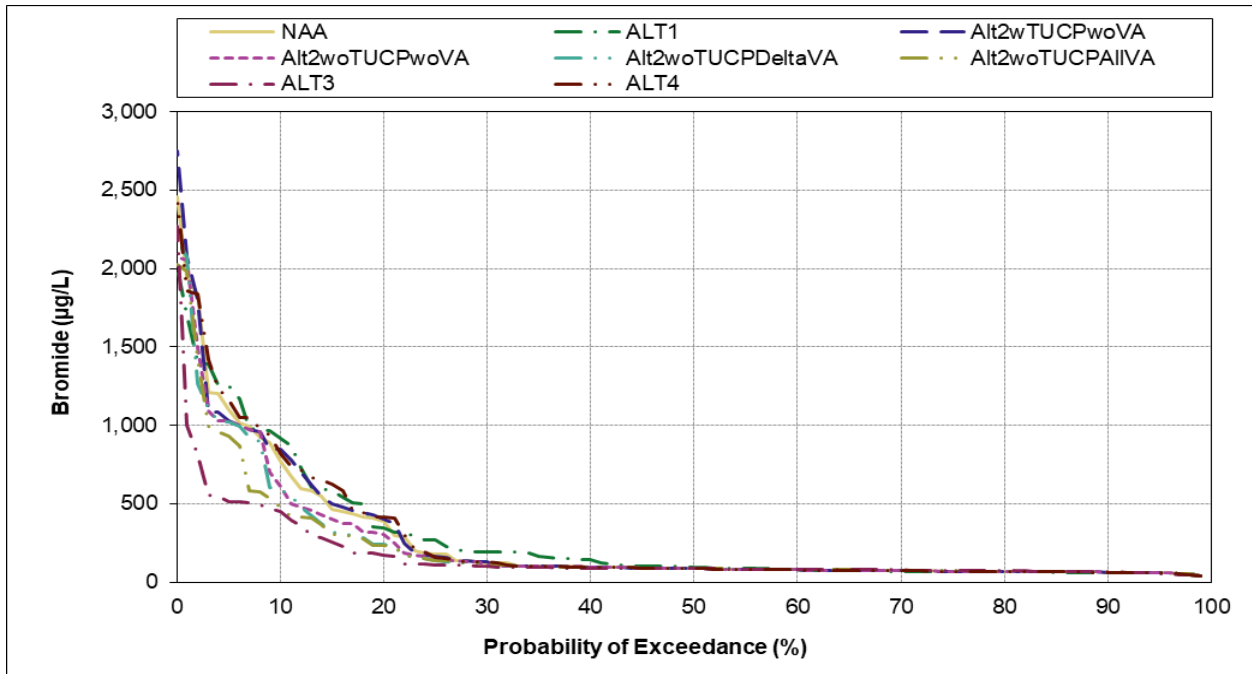
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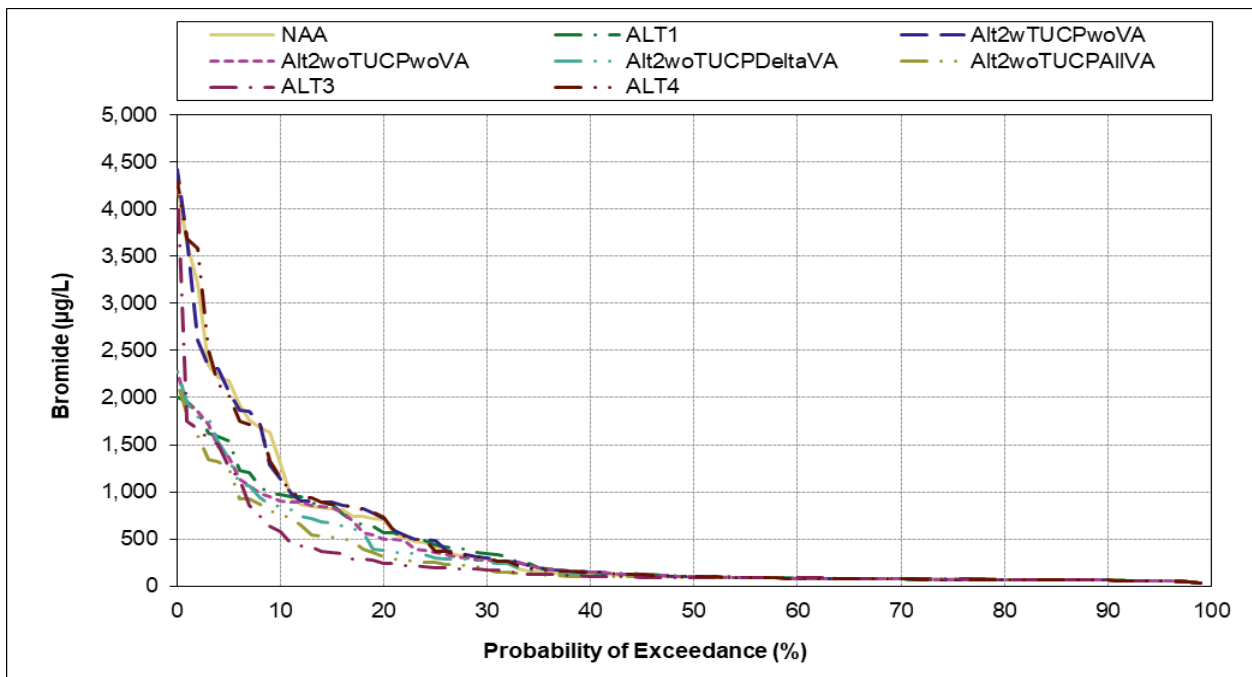
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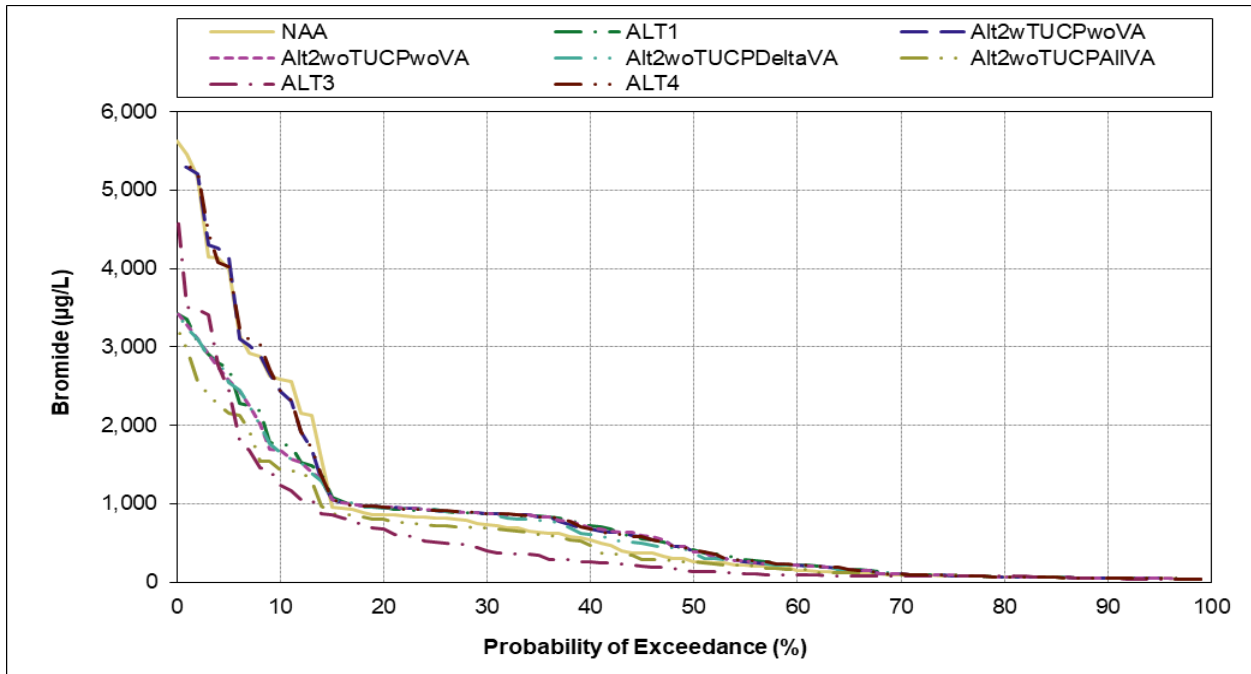
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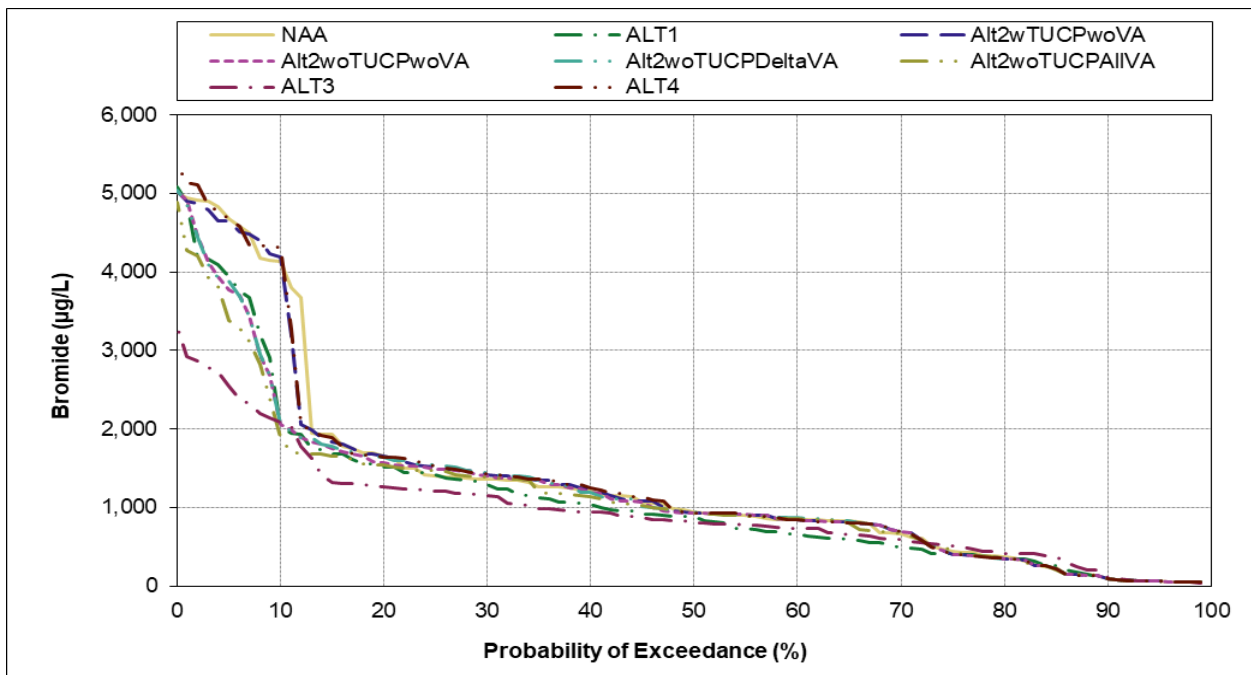
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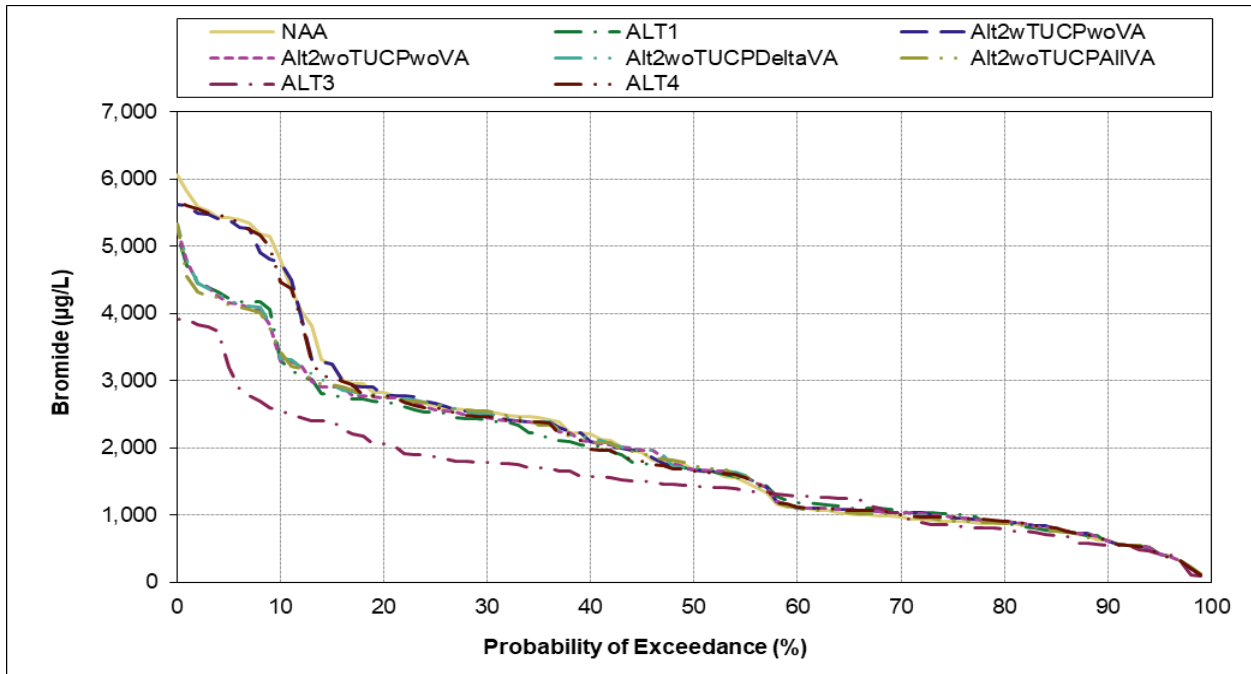
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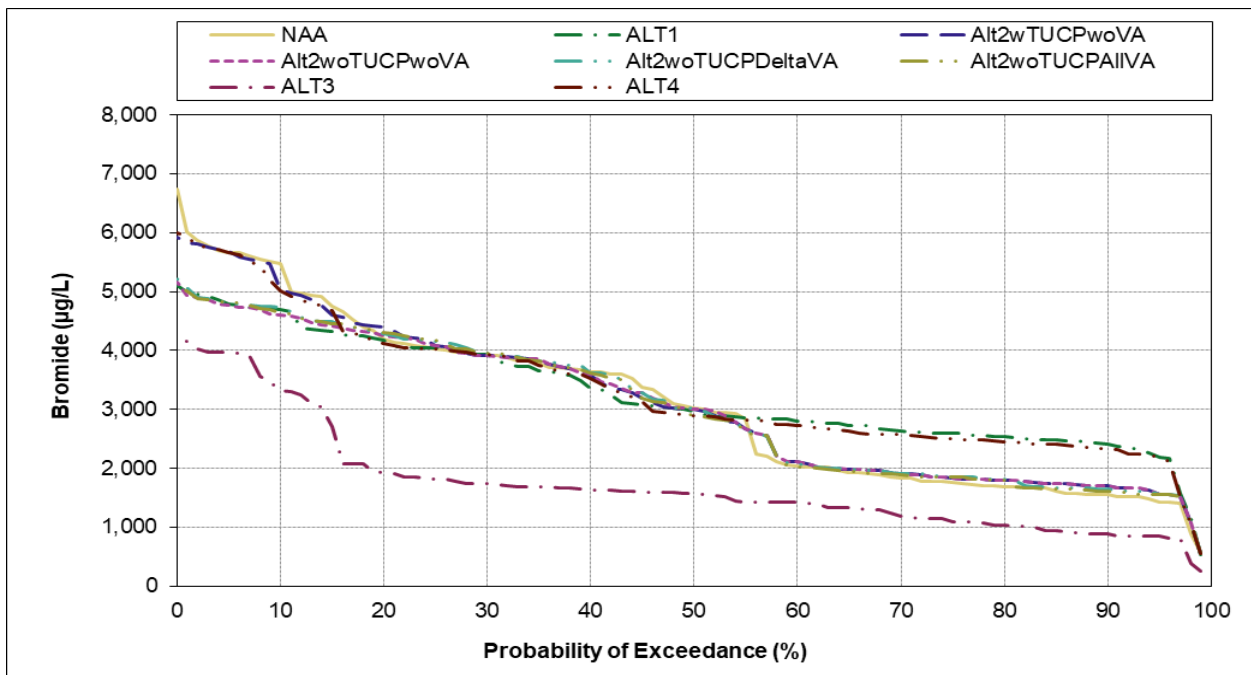
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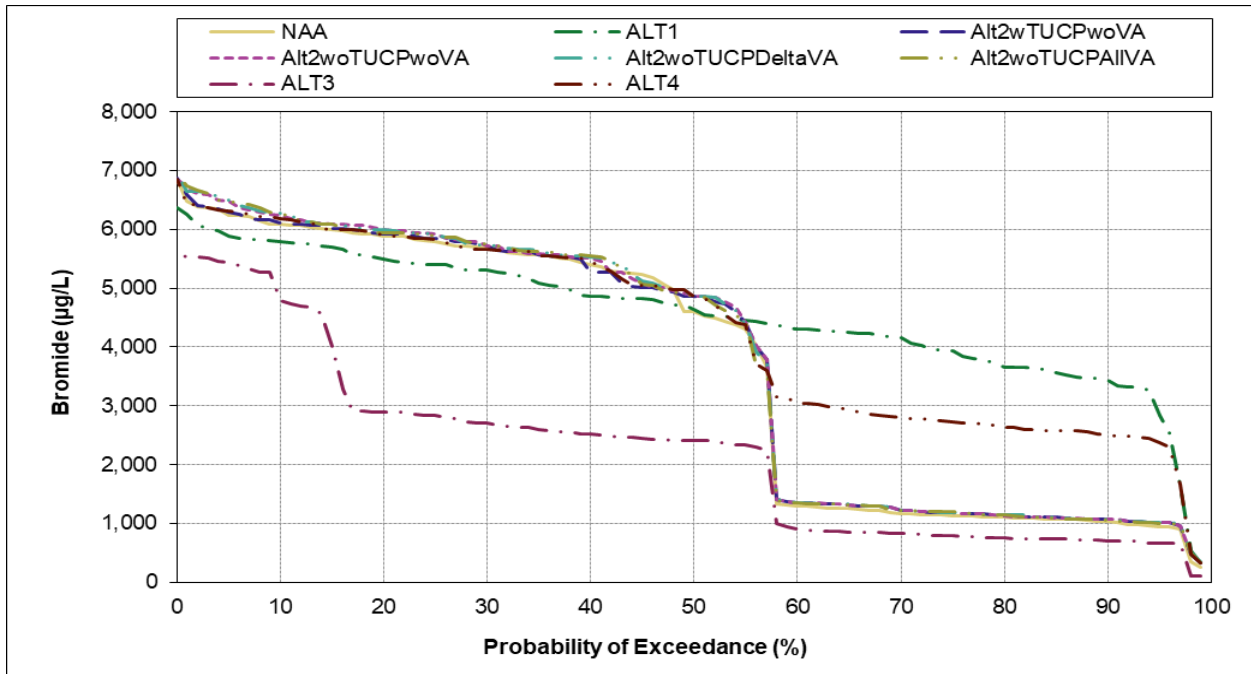
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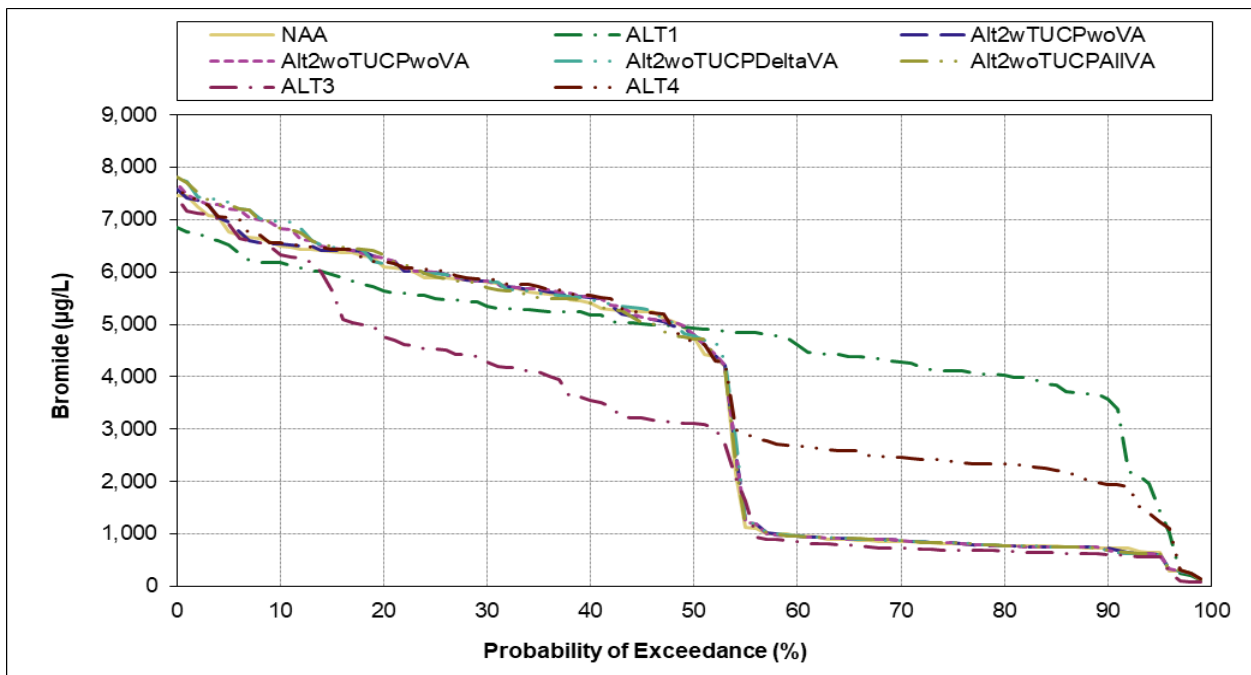
Figure G.3-4-16. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), October
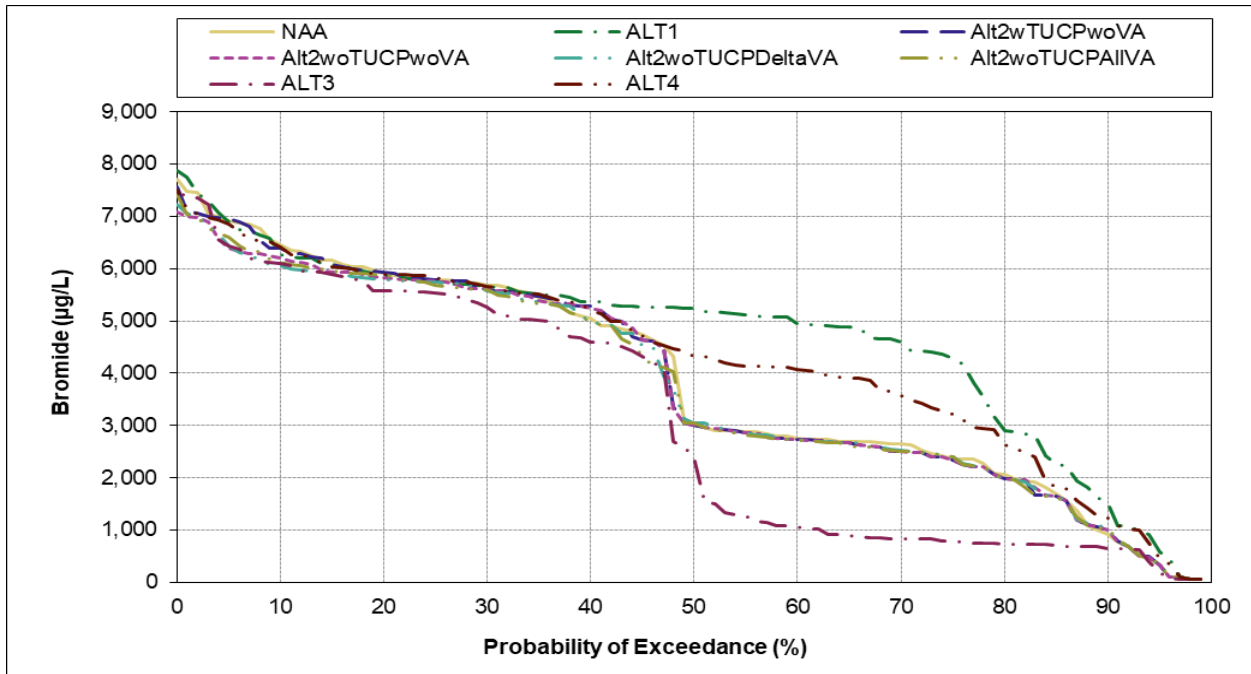
Figure G.3-4-17. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), November
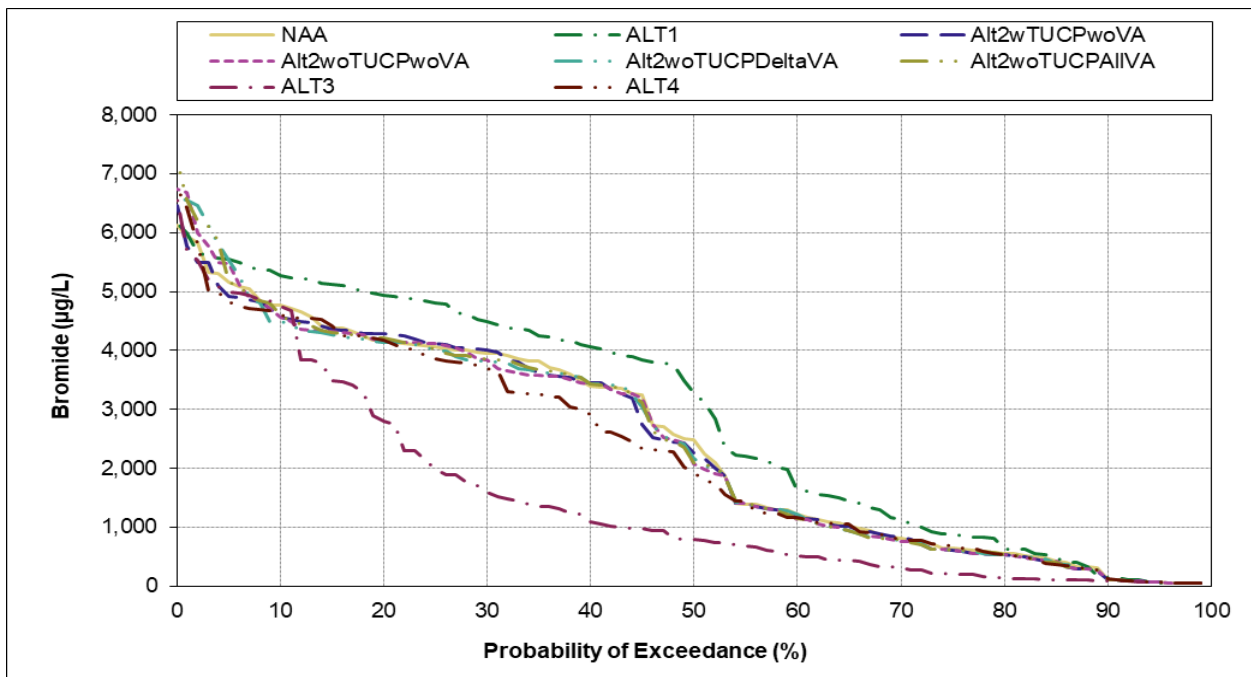
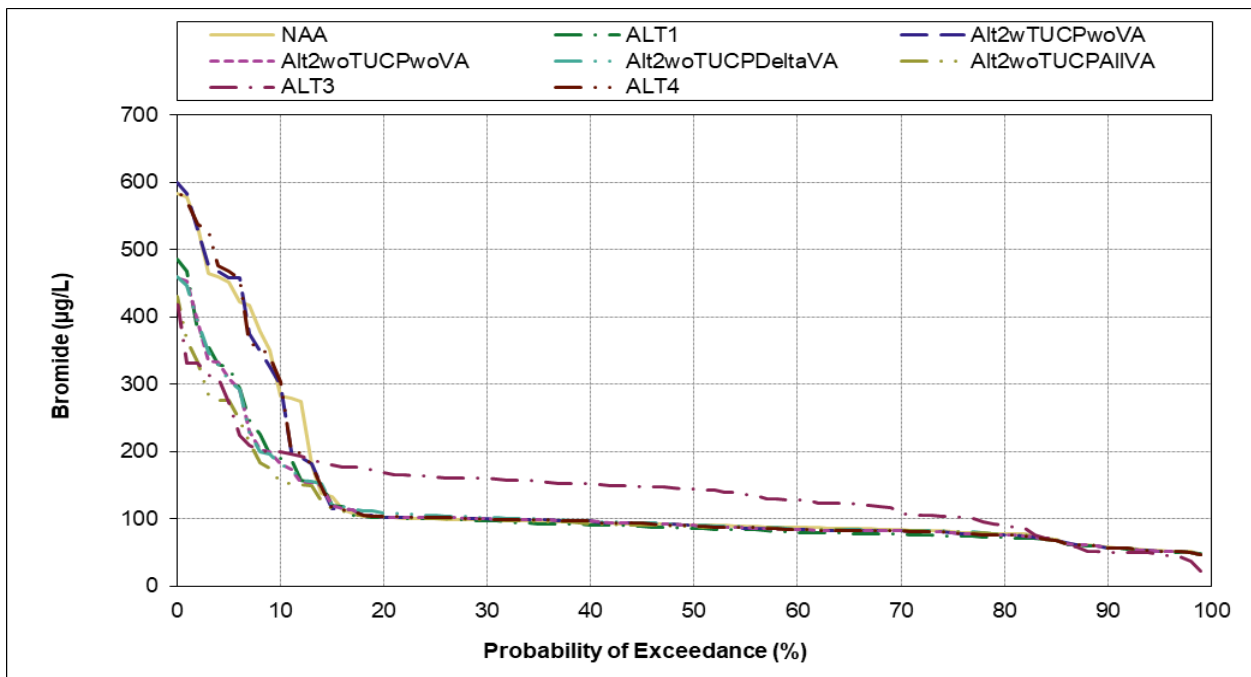Figure G.3-4-18. San Joaquin River at Antioch, Monthly Average Bromide (in micrograms per liter), December
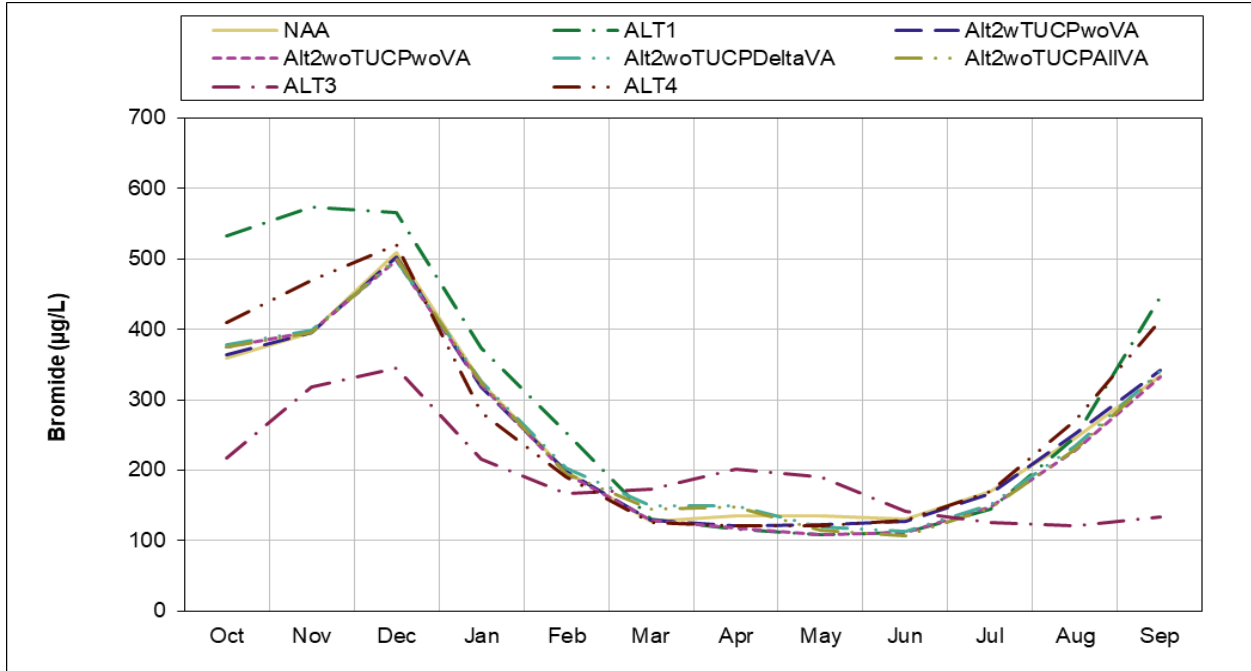
Figure G.3-5-1. Contra Costa Water District Pumping Plant #1, Long term Monthly Average Bromide (in micrograms per liter)

Figure G.3-5-2. Contra Costa Water District Pumping Plant #1, Wet Year Monthly Average Bromide (in micrograms per liter)
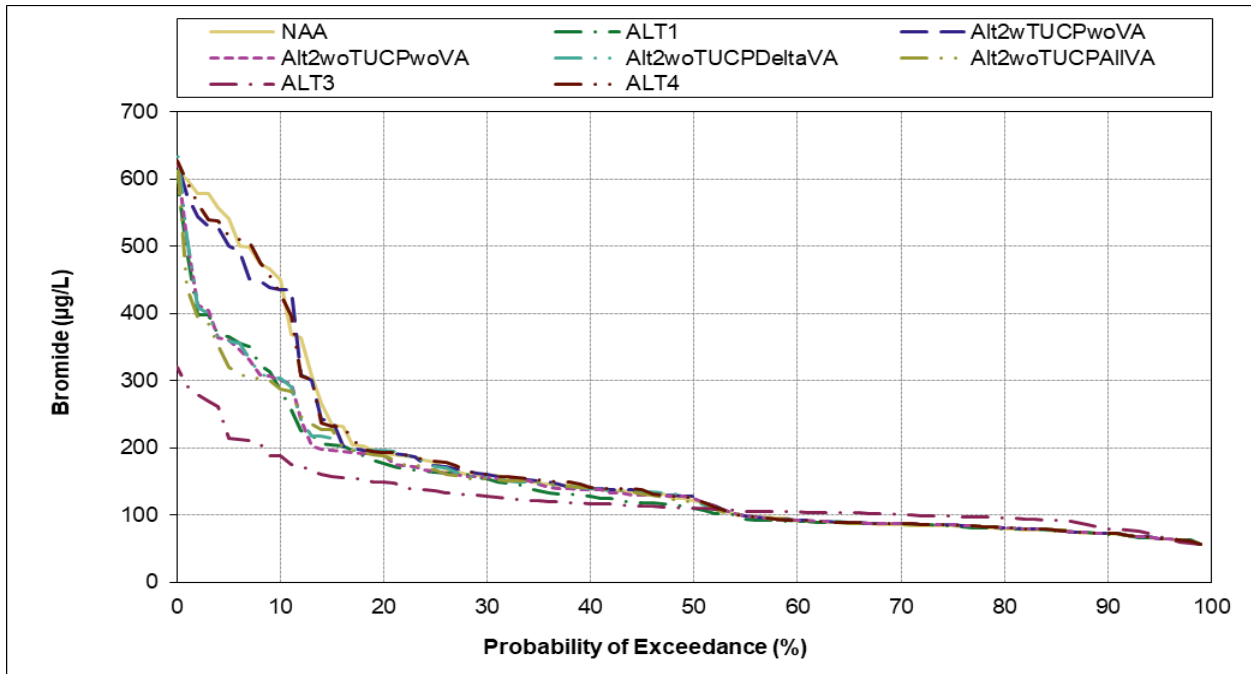
Figure G.3-5-3. Contra Costa Water District Pumping Plant #1, Above Normal Year Monthly Average Bromide (in micrograms per liter)

Figure G.3-5-4. Contra Costa Water District Pumping Plant #1, Below Normal Year Monthly Average Bromide (in micrograms per liter)
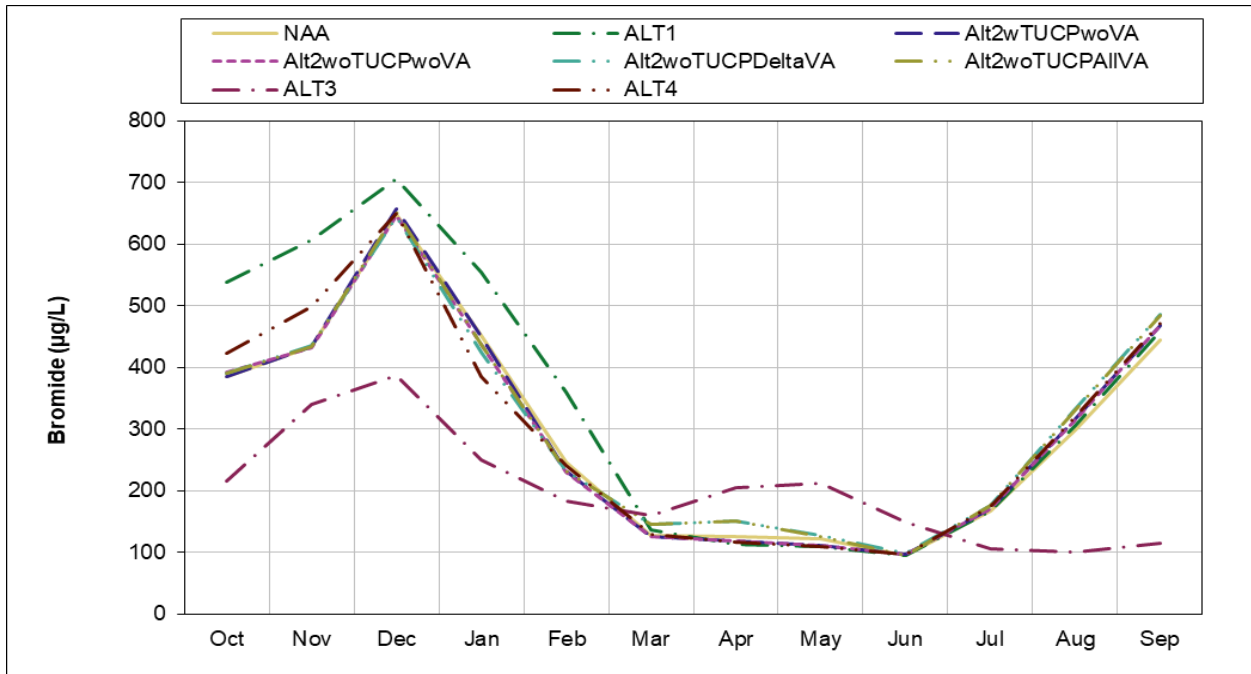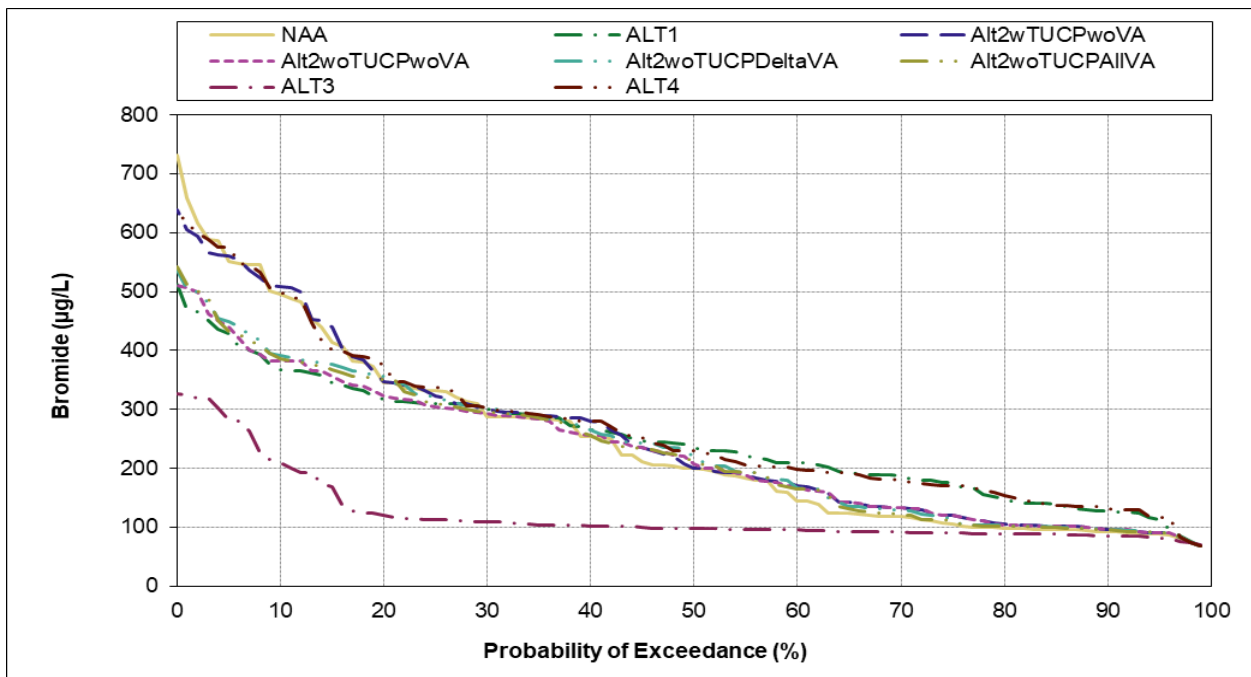
Figure G.3-5-5. Contra Costa Water District Pumping Plant #1, Dry Year Monthly Average Bromide (in micrograms per liter)
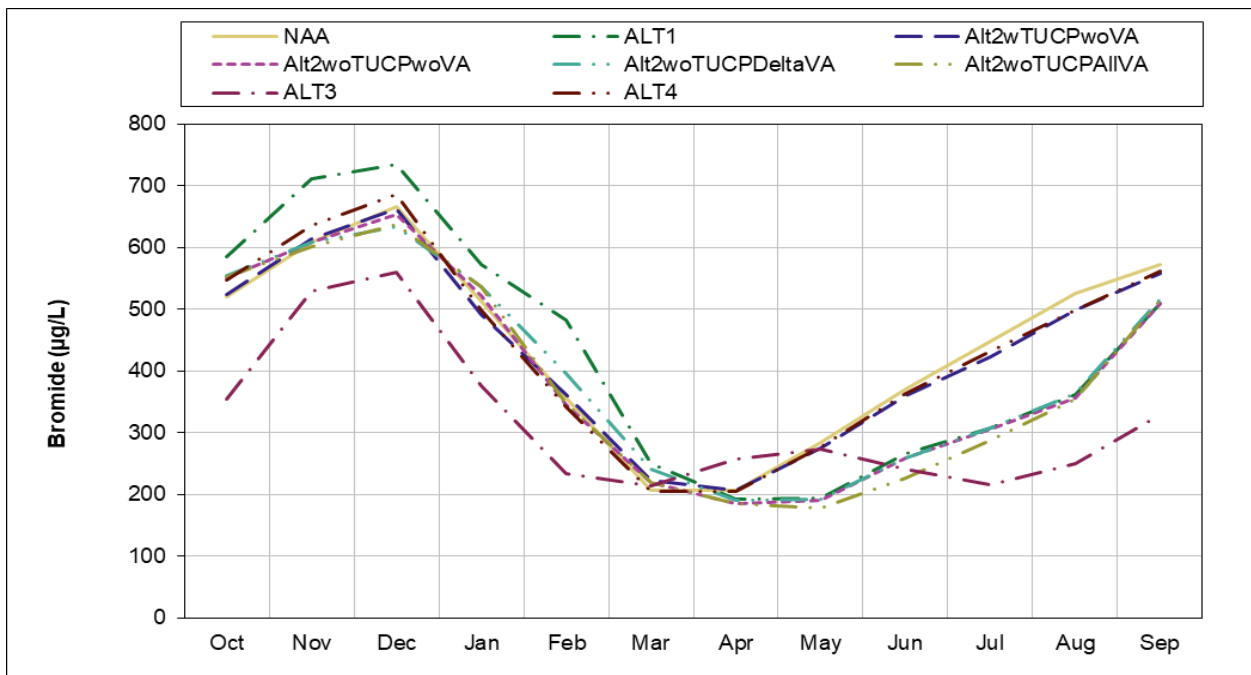
Figure G.3-5-6. Contra Costa Water District Pumping Plant #1, Critical Year Monthly Average Bromide (in micrograms per liter)
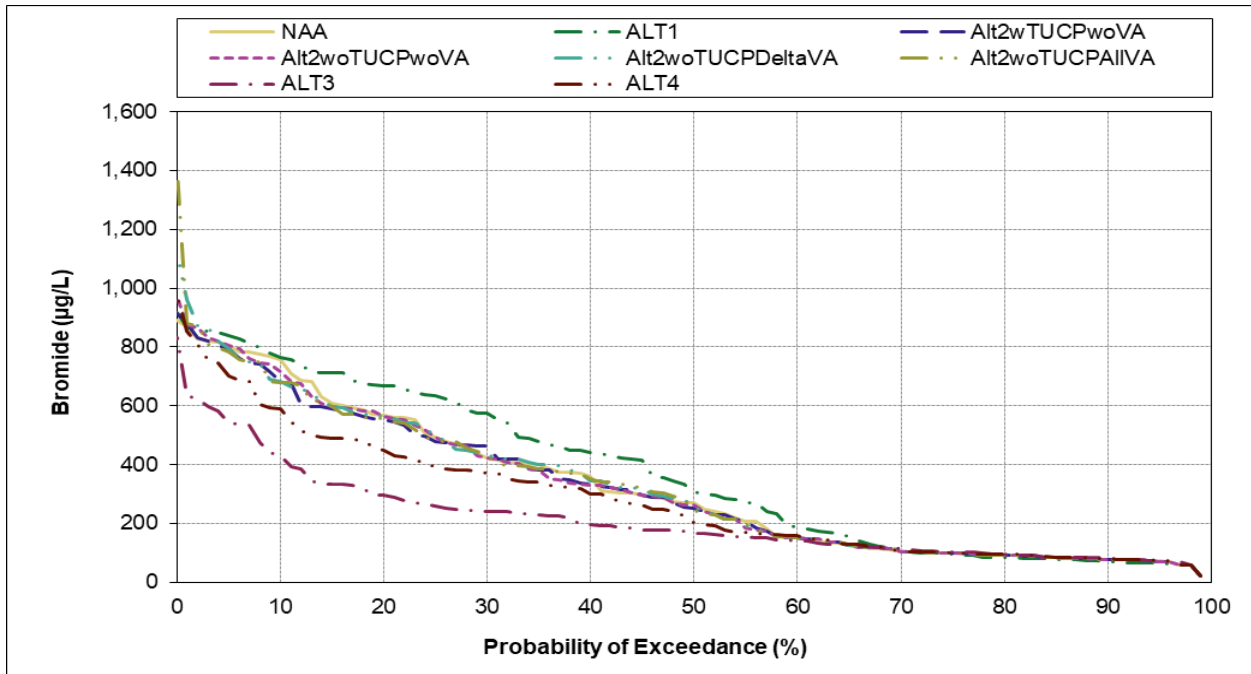
Figure G.3-5-7. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), January
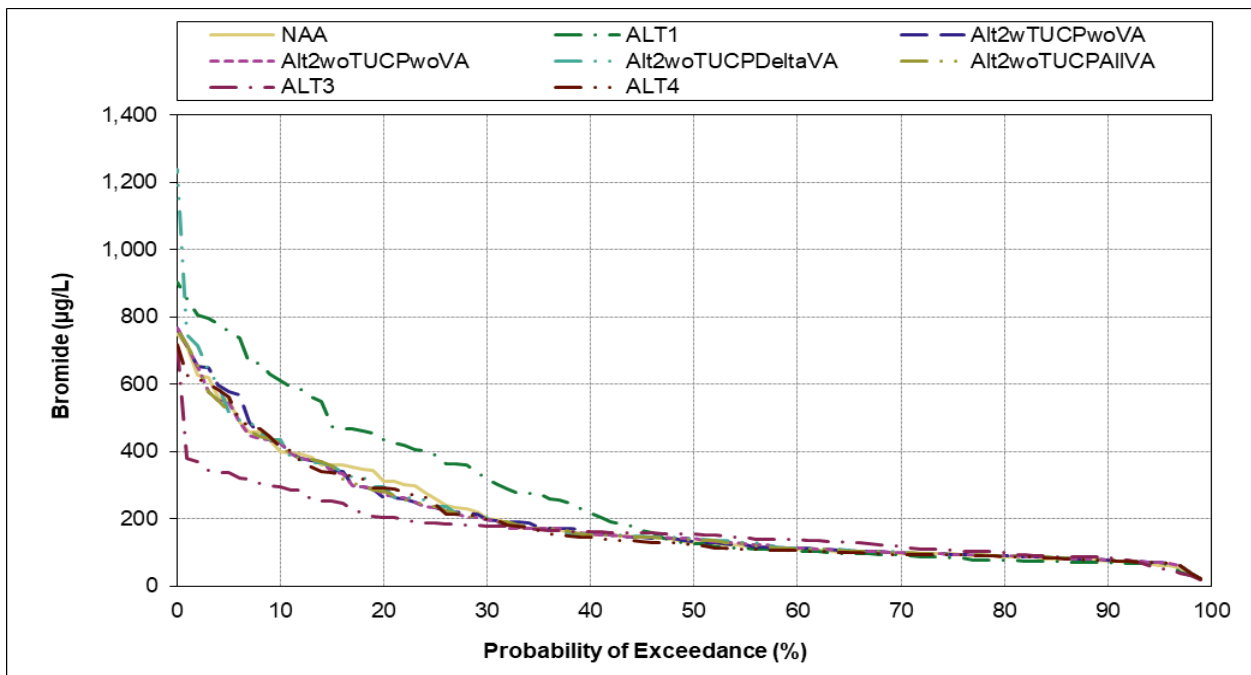
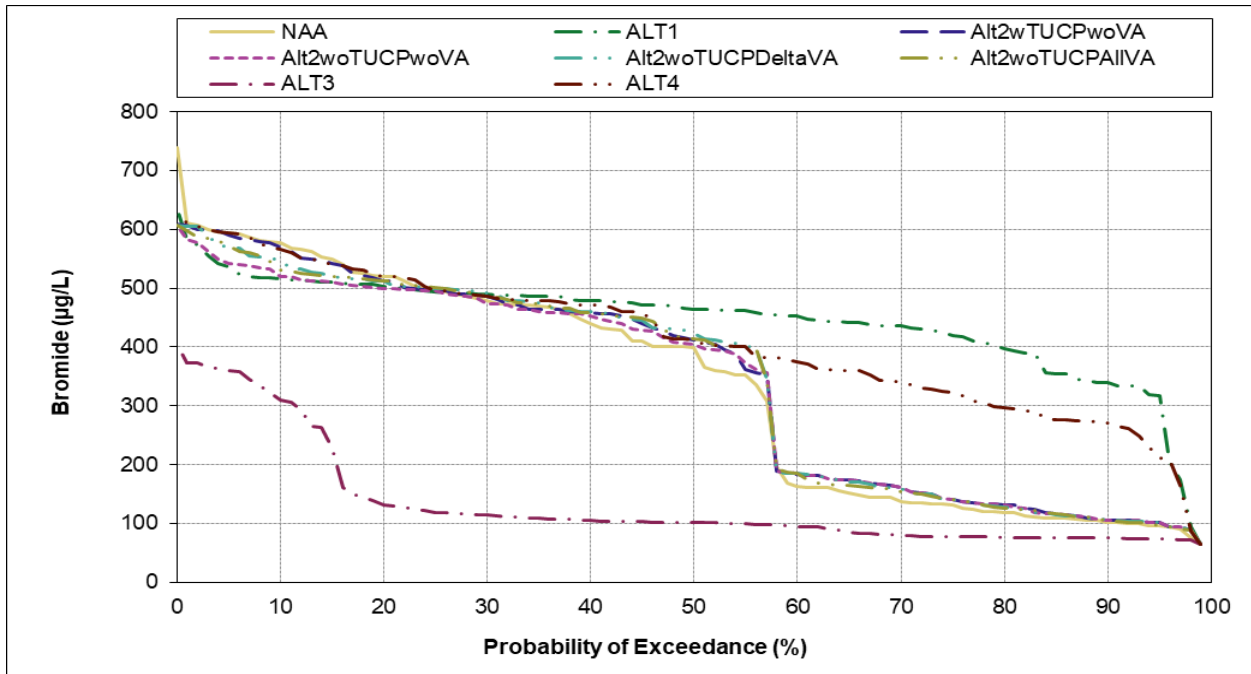Figure G.3-5-8. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), February
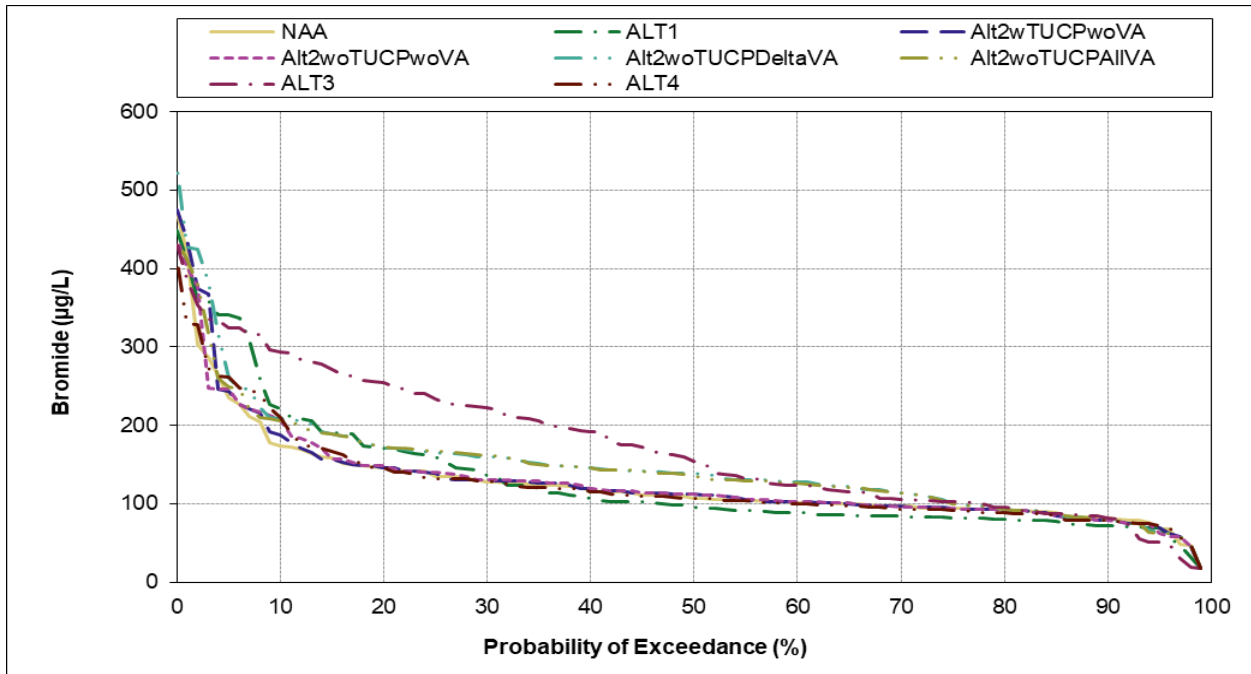
Figure G.3-5-9. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), March
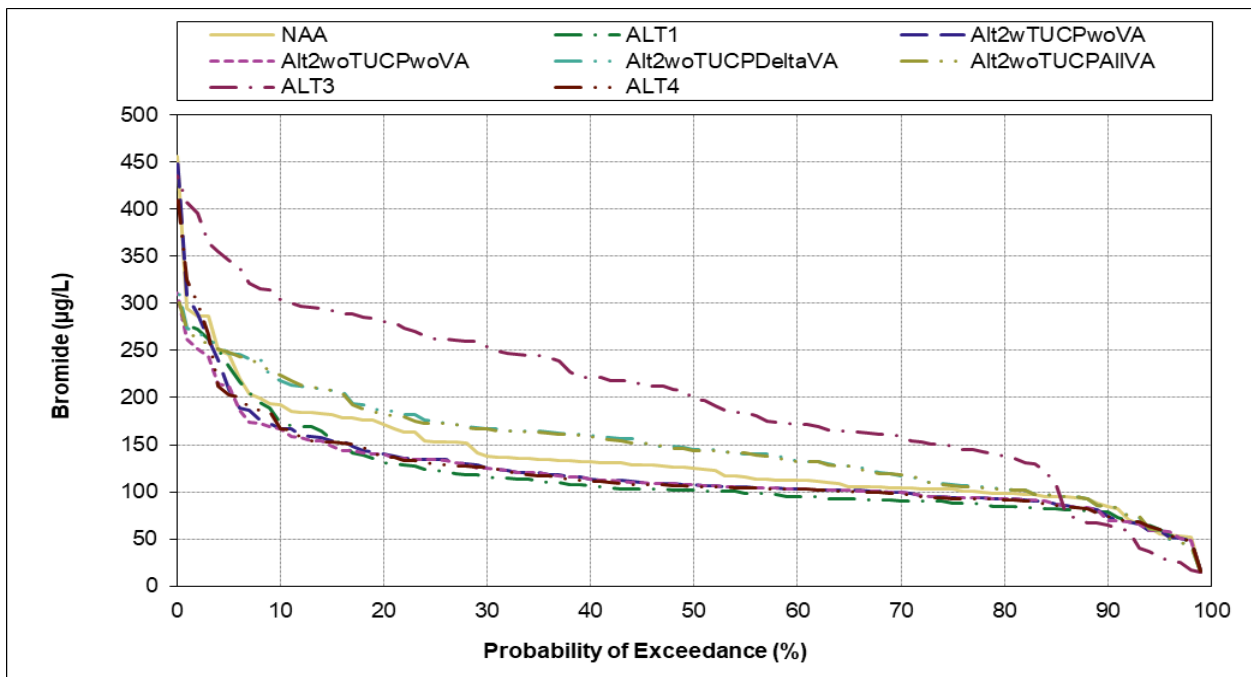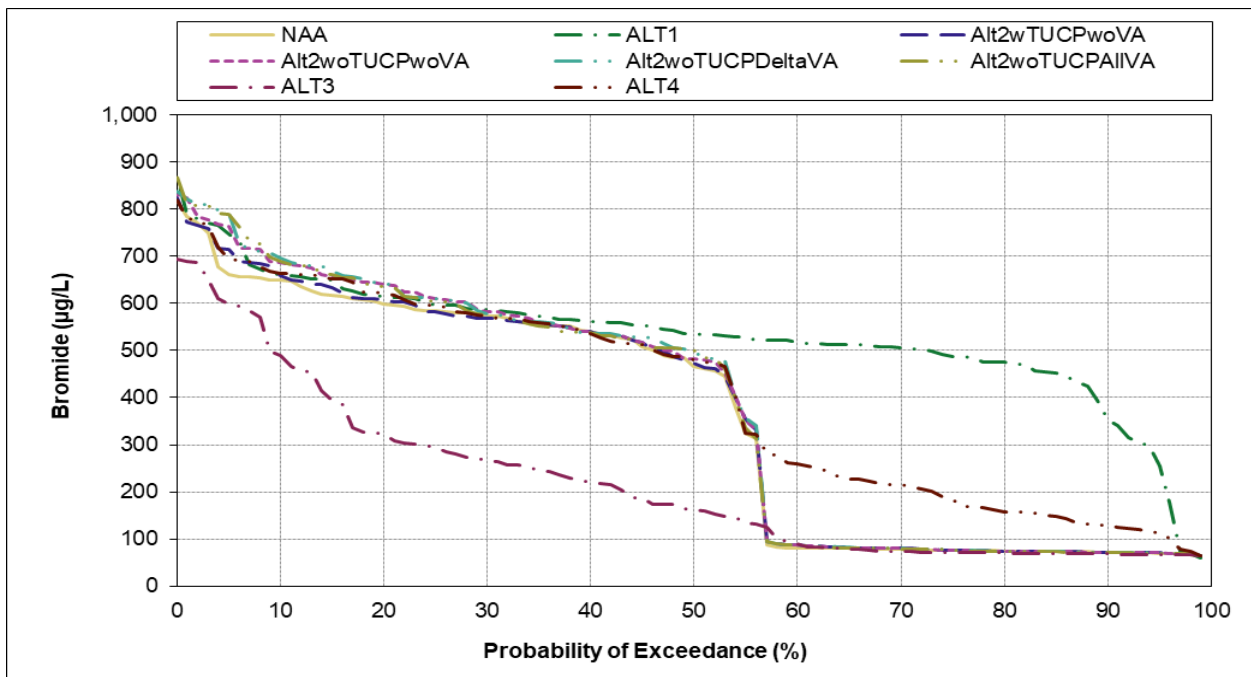

Figure G.3-5-10. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), April
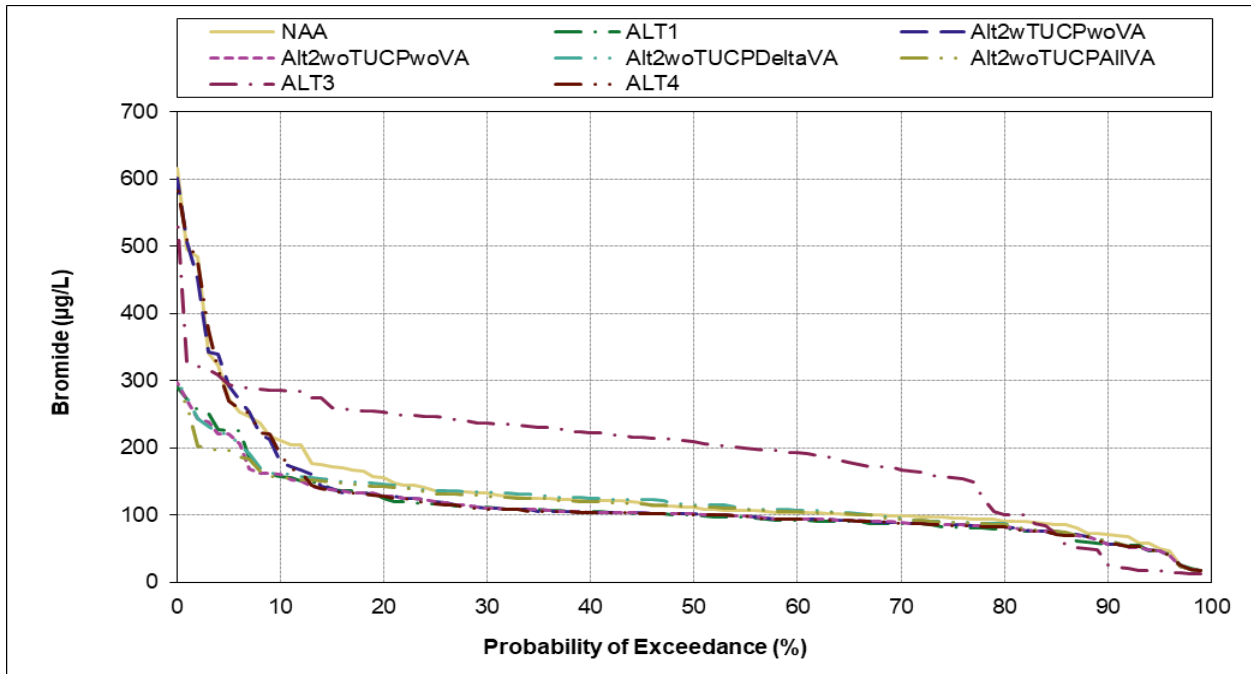
Figure G.3-5-11. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), May
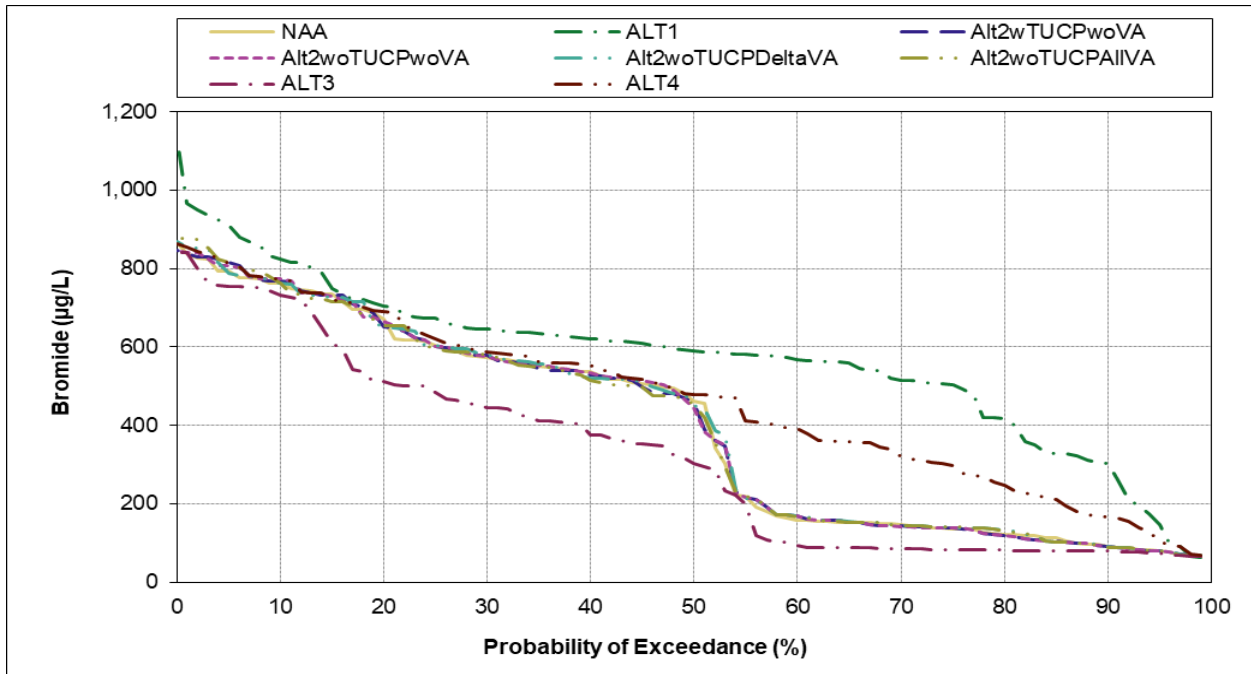

Figure G.3-5-12. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), June

Figure G.3-5-13. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), July

Figure G.3-5-14. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), August

Figure G.3-5-15. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), September

Figure G.3-5-16. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), October

Figure G.3-5-17. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), November
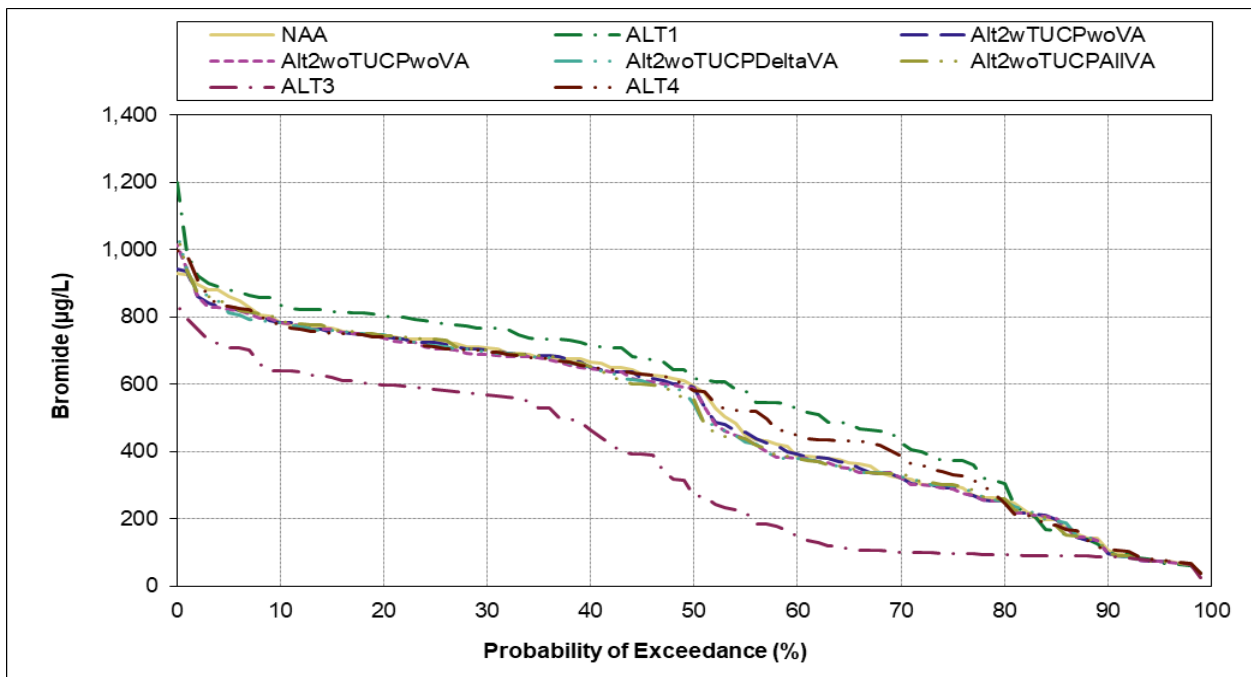

Figure G.3-5-18. Contra Costa Water District Pumping Plant #1, Monthly Average Bromide (in micrograms per liter), December

G.3.5   References

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