

June 3, 2003

**REQUEST FOR MODIFICATION OF WATER QUALITY  
MONITORING REQUIREMENTS FOR FDEP PERMIT  
NUMBER 06, 502590709 (NON-ECP PERMIT)**

<b>Parameter</b>	<b>Requested Modification</b>	<b>Justification</b>
Physical Parameters; Nutrients	Change monitoring frequency from Biweekly When Flowing or otherwise Monthly with no flow (BWF/M), to Biweekly When Flowing. Sampling is to restart after flow events commence.	Samples collected under no-flow conditions provide little or no additional useful information about water quality entering the Everglades Protection Area
All parameters	Discontinue monitoring at S-14 (INTO) structure and G-69 (WITHIN) structure. Sampling will recommence if the structures are reopened.	Structures are closed and no flow has occurred from Oct. 1, 1998 to Apr 30, 2002
All Parameters	Monitor only Biweekly When Flowing at S332	Levee at S332 has been degraded; structure will only discharge during emergency conditions
Pesticides	Discontinue monitoring at S332	Levee at S332 has been degraded; structure will only discharge during emergency conditions
Pesticides	Discontinue monitoring for Zinc Phosphide at S190	Zinc Phosphide has not been detected at S190 since January 1999 when monitoring began.



## Backup documentation for requested minor modifications to the Non-ECP Permit monitoring requirements.

- 1. Change monitoring frequency from Biweekly When Flowing or otherwise Monthly with no flow (BWF/M), to Biweekly When Flowing. Sampling is to restart after flow events commence.***

The purpose of the non-ECP monitoring program is to assess the quality of the water flowing into, within and from the Everglades Protection Area (EPA) so that parameter loads and concentrations can be determined. When no flow is occurring, the water at the sampling points can become stagnant and display significant variations in water quality. Sampling during periods of no flow does not add information about the concentrations or loads of various parameters in the EPA and may actually present a false picture of average concentrations at the sample points.

The accompanying charts indicate the characteristics of the nutrient water quality data collected and analyzed over the last three years for each sample point covered by the Non-ECP permit. For each sample point, average, maximum and minimum concentrations are shown, accompanied by the standard deviations of the data and the number of samples analyzed during the period, broken down by flow and non-flow sampling events. These data indicate that, in general and with notable exceptions, average concentrations for flow and non-flow sampling periods are roughly similar, but the range of concentrations and the standard deviations of the data are significantly different for non-flow events for some of the parameters at some sampling locations. This may be due to stagnation of the water at the sample points during no flow periods causing changes in the nutrient content of the water. In addition, the number of non-flow sampling events is greater than the number of flow sampling events for some sample points. Use of concentration data for these sample points that are not corrected for flow conditions may therefore result in erroneous conclusions concerning nutrient transport in the EPA.

Ammonium concentration (ppm) summaries during flow (f) and non-flow (nf) from 5/1/1999 to 4/30/2000

NON ECP STRUCTURE	WQ STATION ID	Average	St. Dev.	Min	Max	Count	Flow Status
ACME1DS	ACME1DS	0.1897	0.1211	0.0200	0.3590	20	f
ACME1DS	ACME1DS	0.0414	0.0554	0.0045	0.2020	23	nf
G-123	G123	0.4701	0.1151	0.3130	0.6820	12	f
G-123	G123	0.1737	0.1547	0.0130	0.3880	20	nf
G-71	S12D	0.0315	0.0153	0.0045	0.0740	150	f
G-71	S12D	0.1021	0.0760	0.0045	0.2360	27	nf
G-94A	G94B	0.0143	0.0111	0.0045	0.0370	7	f
G-94A	G94B	0.0403	0.1044	0.0045	0.4550	18	nf
G-94B	G94B	0.0143	0.0111	0.0045	0.0370	7	f
G-94B	G94B	0.0403	0.1044	0.0045	0.4550	18	nf
G-94C	G94B	0.0143	0.0111	0.0045	0.0370	7	f
G-94C	G94B	0.0403	0.1044	0.0045	0.4550	18	nf
G-94D	G94D	0.0899	0.0964	0.0045	0.3640	21	f
G-94D	G94D	0.0393	0.0540	0.0045	0.1820	22	nf
NSID1	NSIDSP01	0.0200		0.0200	0.0200	1	f
NSID1	NSIDSP01	0.0447	0.0427	0.0200	0.0940	3	nf
NSID1 (S38B)	S38B	0.0254	0.0262	0.0045	0.0550	5	f
NSID1 (S38B)	S38B	0.0231	0.0094	0.0130	0.0410	9	nf
S-10E	S10E	0.1275	0.2048	0.0045	0.7890	36	nf
S-140	S140	0.0825	0.0429	0.0045	0.1920	32	f
S-140	S140	0.0233	0.0252	0.0045	0.0830	17	nf
S-141	S34	0.0482	0.0476	0.0045	0.2440	32	f
S-141	S34	0.2183	0.2012	0.0045	0.6630	37	nf
S-142	S142	0.0737	0.0764	0.0150	0.2660	19	f
S-142	S142	0.2345	0.1732	0.0120	0.5340	32	nf
S-143	S11A	0.0351	0.0453	0.0045	0.1450	8	f
S-143	S11A	0.0257	0.0293	0.0045	0.1640	34	nf
S-144	S144	0.0198	0.0122	0.0090	0.0510	20	f
S-144	S144	0.0528	0.0655	0.0110	0.2080	14	nf
S-145	S145	0.0153	0.0076	0.0045	0.0360	33	f
S-145	S145	0.0410	0.0514	0.0045	0.1770	16	nf
S-146	S146	0.0082	0.0051	0.0045	0.0210	14	f
S-146	S146	0.0302	0.0351	0.0045	0.1280	19	nf
S-151	S151	0.0898	0.0704	0.0045	0.2880	38	f
S-151	S151	0.1274	0.0806	0.0330	0.2460	12	nf
S-173 *	S331-173	0.2991	0.1094	0.0100	0.5470	91	f
S-173 *	S331-173	0.3226	0.0939	0.0100	0.5370	59	nf
S-174 *	S176	0.2512	0.0987	0.0790	0.4830	31	f
S-174 *	S176	0.2318	0.0775	0.0370	0.3900	43	nf
S-175	S175	0.1536	0.0512	0.0350	0.2560	24	f
S-175	S175	0.1343	0.0647	0.0270	0.2490	39	nf
S-177 *	S177	0.1488	0.0770	0.0045	0.3340	54	f
S-177 *	S177	0.0527	0.0469	0.0045	0.1350	8	nf
S-178 *	S178	0.0280	0.0113	0.0200	0.0360	2	f
S-178 *	S178	0.0278	0.0225	0.0045	0.1050	34	nf

## DRAFT

## DRAFT

## DRAFT

NON ECP STRUCTURE	WQ STATION ID	Average	St. Dev.	Min	Max	Count	Flow Status
S-18C	S18C	0.0816	0.0547	0.0045	0.2050	54	f
S-18C	S18C	0.0229	0.0274	0.0045	0.0730	7	nf
S-190	S190	0.0413	0.0394	0.0045	0.1460	19	f
S-190	S190	0.0095	0.0100	0.0045	0.0370	19	nf
S-197	S197	0.0930	0.0328	0.0540	0.1300	5	f
S-197	S197	0.0308	0.0314	0.0045	0.1060	12	nf
S-31	S31	0.0930	0.0657	0.0045	0.2400	19	f
S-31	S31	0.1147	0.0727	0.0045	0.2930	55	nf
S-331 *	S331-173	0.2991	0.1094	0.0100	0.5470	91	f
S-331 *	S331-173	0.3226	0.0939	0.0100	0.5370	59	nf
S-332	S332	0.1667	0.0807	0.0045	0.3240	39	f
S-332	S332	0.1608	0.0672	0.0420	0.3050	33	nf
S-332D	S332D	0.2394	0.0597	0.1290	0.3400	14	f
S-332D	S332D	0.2220	0.1335	0.0380	0.4750	10	nf
S-333	S333	0.0495	0.0405	0.0045	0.2110	46	f
S-333	S333	0.0388	0.0196	0.0045	0.0660	9	nf
S-334	S334	0.0494	0.0309	0.0150	0.1020	9	f
S-334	S334	0.2063	0.2304	0.0045	0.9090	28	nf
S-337	S31	0.0930	0.0657	0.0045	0.2400	19	f
S-337	S31	0.1147	0.0727	0.0045	0.2930	55	nf
S-339	C123SR84	0.0329	0.0491	0.0045	0.3750	62	f
S-339	C123SR84	0.0424	0.0745	0.0045	0.3750	26	nf
S-34	S34	0.0482	0.0476	0.0045	0.2440	32	f
S-34	S34	0.2183	0.2012	0.0045	0.6630	37	nf
S-340	C123SR84	0.0329	0.0491	0.0045	0.3750	62	f
S-340	C123SR84	0.0424	0.0745	0.0045	0.3750	26	nf
S-343A	US41-25	0.0304	0.0401	0.0045	0.1900	36	f
S-343A	US41-25	0.0939	0.0626	0.0240	0.2930	72	nf
S-343B	US41-25	0.0304	0.0401	0.0045	0.1900	36	f
S-343B	US41-25	0.0939	0.0626	0.0240	0.2930	72	nf
S-344	S344	0.0088	0.0039	0.0045	0.0120	3	f
S-344	S344	0.0390	0.0393	0.0045	0.1230	9	nf
S-346	S12D	0.0315	0.0153	0.0045	0.0740	150	f
S-346	S12D	0.1021	0.0760	0.0045	0.2360	27	nf
S-347	S12D	0.0315	0.0153	0.0045	0.0740	150	f
S-347	S12D	0.1021	0.0760	0.0045	0.2360	27	nf
S-38	S38	0.0151	0.0236	0.0045	0.1390	32	f
S-38	S38	0.0612	0.0886	0.0045	0.3310	17	nf
S-39	S39	0.0338	0.0498	0.0045	0.2120	36	f
S-39	S39	0.0311	0.0329	0.0045	0.0940	13	nf
S-9	S9	0.3049	0.0796	0.1440	0.5170	118	f
S-9	S9	0.3828	0.1035	0.1730	0.6550	45	nf

## Nitrate-Nitrite concentration (ppm) summaries during flow (f) and non-flow (nf) from 5/1/1999 to 4/30/2002

NON ECP STRUCTURE	WQ STATION ID	Average	St. Dev.	Min	Max	Count	Flow Status
ACMEIDS	ACMEIDS	0.065	0.083	0.006	0.38	20	f
ACMEIDS	ACMEIDS	0.078	0.200	0.002	0.818	23	nf
G-123	G123	0.012	0.009	0.002	0.028	12	f
G-123	G123	0.112	0.347	0.002	1.57	20	nf
G-71	S12D	0.042	0.050	0.002	0.247	150	f
G-71	S12D	0.038	0.027	0.002	0.088	27	nf
G-94A	G94B	0.146	0.376	0.002	0.998	7	f
G-94A	G94B	0.025	0.048	0.002	0.18	18	nf
G-94B	G94B	0.146	0.376	0.002	0.998	7	f
G-94B	G94B	0.025	0.048	0.002	0.18	18	nf
G-94C	G94B	0.146	0.376	0.002	0.998	7	f
G-94C	G94B	0.025	0.048	0.002	0.18	18	nf
G-94D	G94D	0.037	0.034	0.002	0.123	21	f
G-94D	G94D	0.118	0.275	0.002	0.864	22	nf
NSID1 (S38B)	S38B	0.025	0.025	0.004	0.053	5	f
NSID1 (S38B)	S38B	0.007	0.002	0.005	0.009	8	nf
S-10E	S10E	0.219	0.382	0.002	1.643	36	nf
S-140	S140	0.034	0.023	0.002	0.101	33	f
S-140	S140	0.030	0.047	0.002	0.147	17	nf
S-141	S34	0.099	0.285	0.002	1.54	31	f
S-141	S34	0.096	0.253	0.002	1.54	37	nf
S-142	S142	0.042	0.048	0.002	0.189	19	f
S-142	S142	0.100	0.241	0.004	1.389	32	nf
S-143	S11A	0.315	0.827	0.002	2.36	8	f
S-143	S11A	0.095	0.341	0.002	1.939	34	nf
S-144	S144	0.095	0.351	0.002	1.585	20	f
S-144	S144	0.075	0.142	0.007	0.537	13	nf
S-145	S145	0.039	0.112	0.002	0.586	33	f
S-145	S145	0.094	0.291	0.002	1.145	15	nf
S-146	S146	0.012	0.022	0.002	0.087	14	f
S-146	S146	0.055	0.104	0.002	0.422	18	nf
S-151	S151	0.107	0.177	0.007	1.029	38	f
S-151	S151	0.071	0.054	0.021	0.188	11	nf
S-173 *	S331-173	0.024	0.027	0.002	0.177	87	f
S-173 *	S331-173	0.023	0.025	0.002	0.177	57	nf
S-174 *	S176	0.045	0.058	0.007	0.305	29	f
S-174 *	S176	0.049	0.050	0.002	0.261	43	nf
S-175	S175	0.044	0.032	0.012	0.151	22	f
S-175	S175	0.063	0.040	0.007	0.183	39	nf
S-177 *	S177	0.051	0.050	0.004	0.283	53	f
S-177 *	S177	0.028	0.028	0.004	0.078	8	nf
S-178 *	S178	0.632	0.735	0.112	1.151	2	f
S-178 *	S178	0.022	0.063	0.002	0.365	33	nf
S-18C	S18C	0.047	0.032	0.002	0.148	53	f
S-18C	S18C	0.053	0.061	0.002	0.15	7	nf

DRAFT

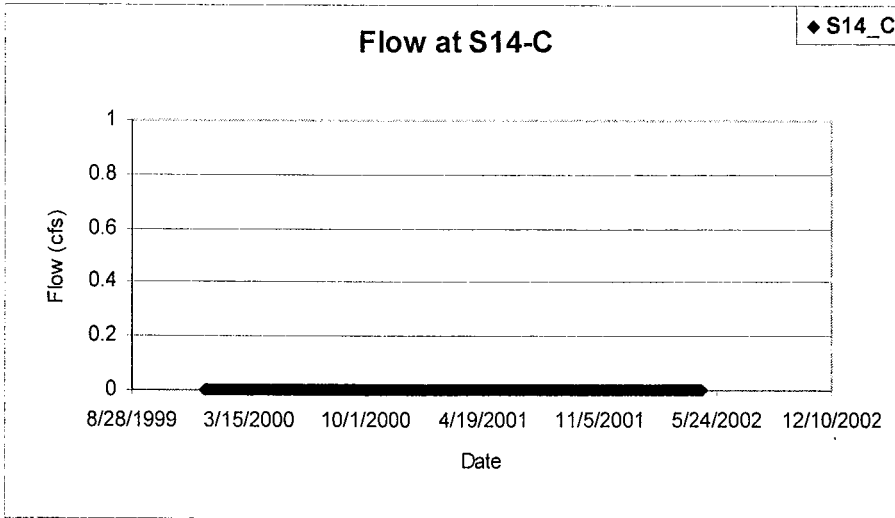
DRAFT

DRAFT

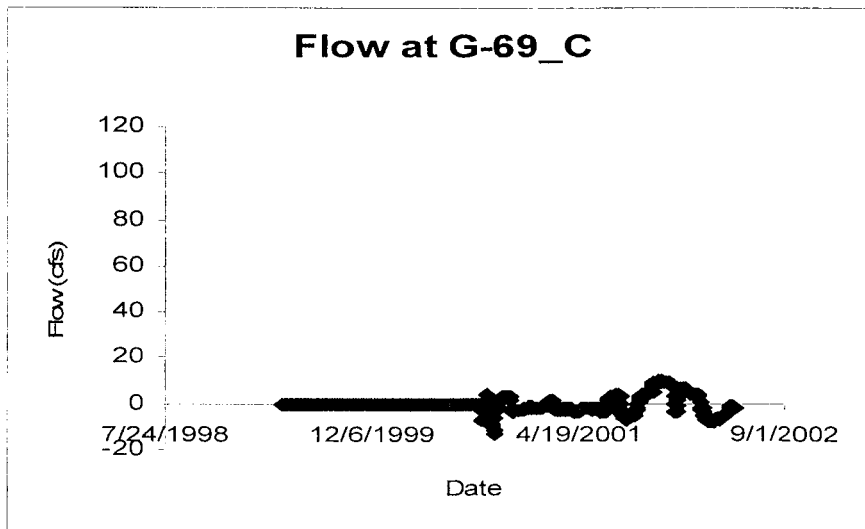
NON_ECP_STRUCTURE	WQ_STATION_ID	Average	St. Dev.	Min	Max	Count	Flow Status
S-190	S190	0.020	0.023	0.002	0.095	19	f
S-190	S190	0.006	0.005	0.002	0.021	19	nf
S-197	S197	0.091	0.056	0.027	0.144	5	f
S-197	S197	0.038	0.029	0.002	0.082	12	nf
S-31	S31	0.057	0.080	0.005	0.279	18	f
S-31	S31	0.033	0.058	0.002	0.279	54	nf
S-331 *	S331-173	0.024	0.027	0.002	0.177	87	f
S-331 *	S331-173	0.023	0.025	0.002	0.177	57	nf
S-332	S332	0.040	0.023	0.002	0.087	37	f
S-332	S332	0.061	0.040	0.023	0.195	33	nf
S-332D	S332D	0.040	0.042	0.004	0.141	14	f
S-332D	S332D	0.053	0.033	0.013	0.105	10	nf
S-333	S333	0.047	0.041	0.009	0.241	44	f
S-333	S333	0.060	0.032	0.002	0.114	9	nf
S-334	S334	0.030	0.017	0.018	0.068	9	f
S-334	S334	0.033	0.030	0.002	0.122	28	nf
S-337	S31	0.057	0.080	0.005	0.279	18	f
S-337	S31	0.033	0.058	0.002	0.279	54	nf
S-339	C123SR84	0.116	0.245	0.002	1.24	62	f
S-339	C123SR84	0.029	0.040	0.002	0.15	26	nf
S-34	S34	0.099	0.285	0.002	1.54	31	f
S-34	S34	0.096	0.253	0.002	1.54	37	nf
S-340	C123SR84	0.116	0.245	0.002	1.24	62	f
S-340	C123SR84	0.029	0.040	0.002	0.15	26	nf
S-343A	US41-25	0.014	0.019	0.002	0.081	36	f
S-343A	US41-25	0.036	0.019	0.007	0.107	72	nf
S-343B	US41-25	0.014	0.019	0.002	0.081	36	f
S-343B	US41-25	0.036	0.019	0.007	0.107	72	nf
S-344	S344	0.004	0.003	0.002	0.008	3	f
S-344	S344	0.009	0.008	0.002	0.027	9	nf
S-346	S12D	0.042	0.050	0.002	0.247	150	f
S-346	S12D	0.038	0.027	0.002	0.088	27	nf
S-347	S12D	0.042	0.050	0.002	0.247	150	f
S-347	S12D	0.038	0.027	0.002	0.088	27	nf
S-38	S38	0.020	0.069	0.002	0.397	32	f
S-38	S38	0.025	0.033	0.002	0.099	17	nf
S-39	S39	0.087	0.176	0.002	0.734	36	f
S-39	S39	0.113	0.265	0.002	0.875	13	nf
S-9	S9	0.100	0.054	0.01	0.24	117	f
S-9	S9	0.054	0.037	0.002	0.14	44	nf

**2. Discontinue monitoring all parameters at S-14 (INTO) structure and G-69 (WITHIN) structure. Sampling will recommence if the structures are reopened.**

Both of these structures are currently closed and are not being operated. The attached chart indicates that there is no measurable flow through S-14.



The chart below indicates very small flows through the G-69 C structure after Sept. 1, 2000. These flows are considered to be artifacts of a possibly incorrectly calibrated flow measurement system. The Operations Department of the District has confirmed that this structure is closed and has not been operated during the period of record. Additional field observations have indicated that there may be low quantities of flow through the structure due to leakage through the closed gates or a gate that has been partially opened by outside parties.





### **3. *Monitor all parameters at S332 Biweekly only When Flowing.***

The levee North of S332 has been degraded. Water is free to flow around and seep under the structure under normal operating conditions. The structure will only be operated under emergency conditions when additional capacity is required for flood control due to extreme weather events. Should the structure be operated, regular monitoring will commence when operations start, and will continue biweekly as long as there is flow through the structure.

### **4. *Discontinue all pesticide monitoring at S332.***

Pesticide monitoring will be discontinued at the structure because the levee is degraded and the structure is no longer being operated.

### **5. *Discontinue monitoring for Zinc Phosphide at S190.***

For the entire period of record in the SFWMD water quality database, Zinc Phosphide has never been detected at S190 for as long as it has been monitored dating from July 1987.

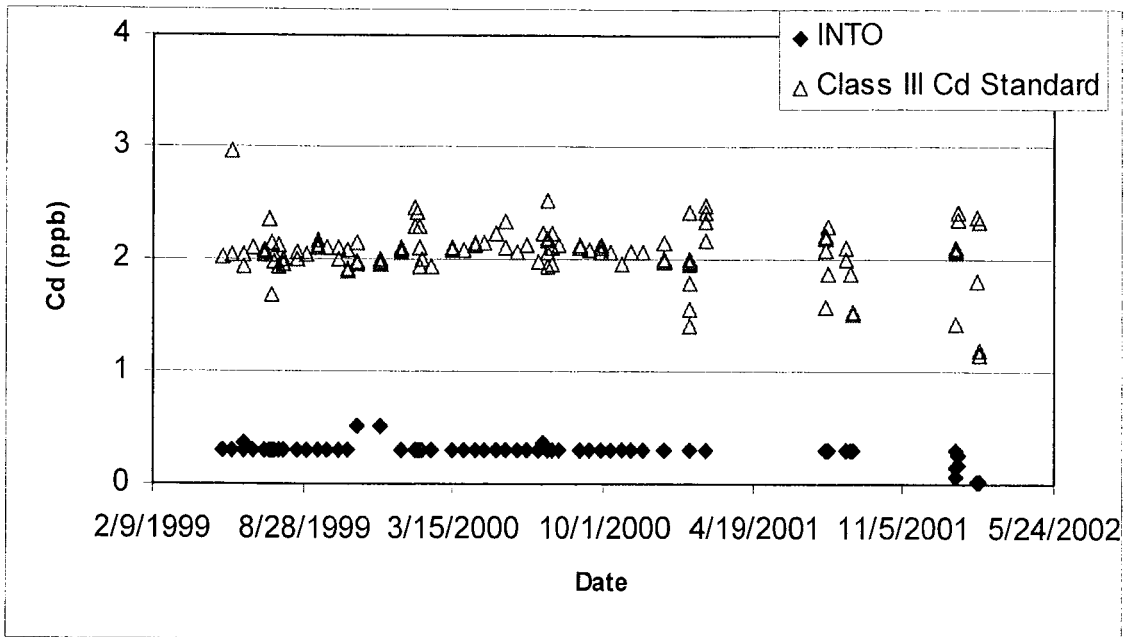
## **Future Considerations**

### ***Eliminate monitoring for trace metals from all INTO stations***

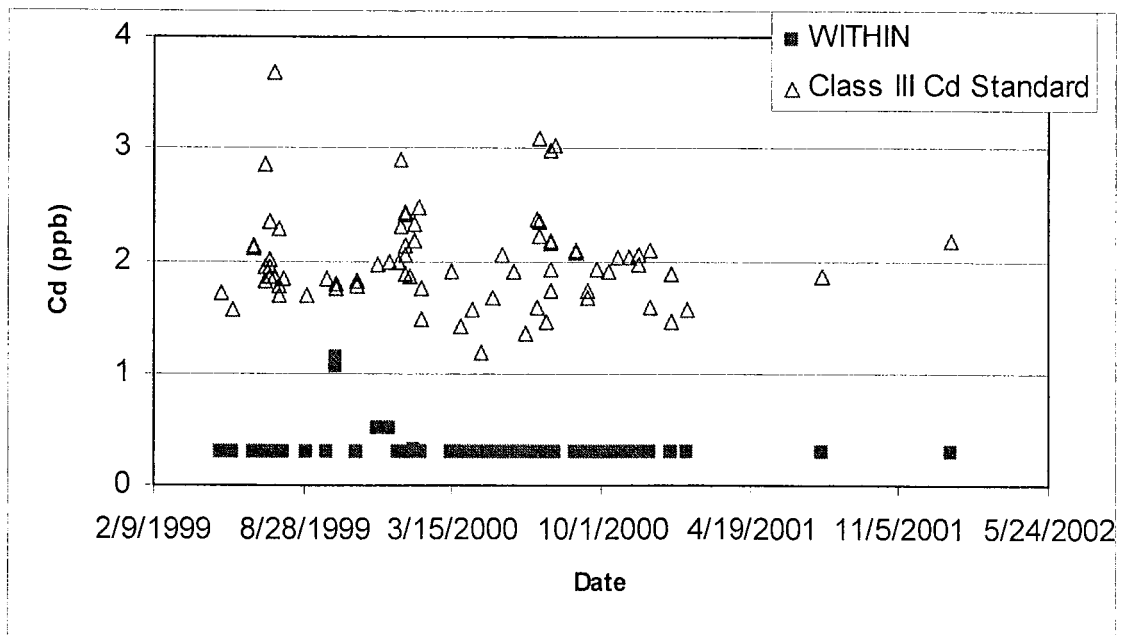
Monitoring has previously been eliminated for all WITHIN and FROM structures in the previous minor modification to the Non-ECP Permit. For all analyses charted below, laboratory results have been plotted to show the comparison with Class III water quality standards for the metal in question. The values for the standard vary because the standards are tied to the hardness concentration which varies widely in the analyzed samples. For all analyses below the detection limit, the value shown on the charts reflects 100% of the detection limit, giving the most conservative interpretation of the data. The charts were compiled so that the types of structures are grouped together; in other words, all INTO structures are shown on one plot, all C-111 structures are shown on another, etc. Even though monitoring is continuing under the conditions of the permit only for INTO structures, all available values for all Non-ECP structures are shown as background data.

PLEASE NOTE: mercury monitoring is not a part of the Non-ECP Permit so any reduction of monitoring for the permit will not affect any mercury monitoring programs.

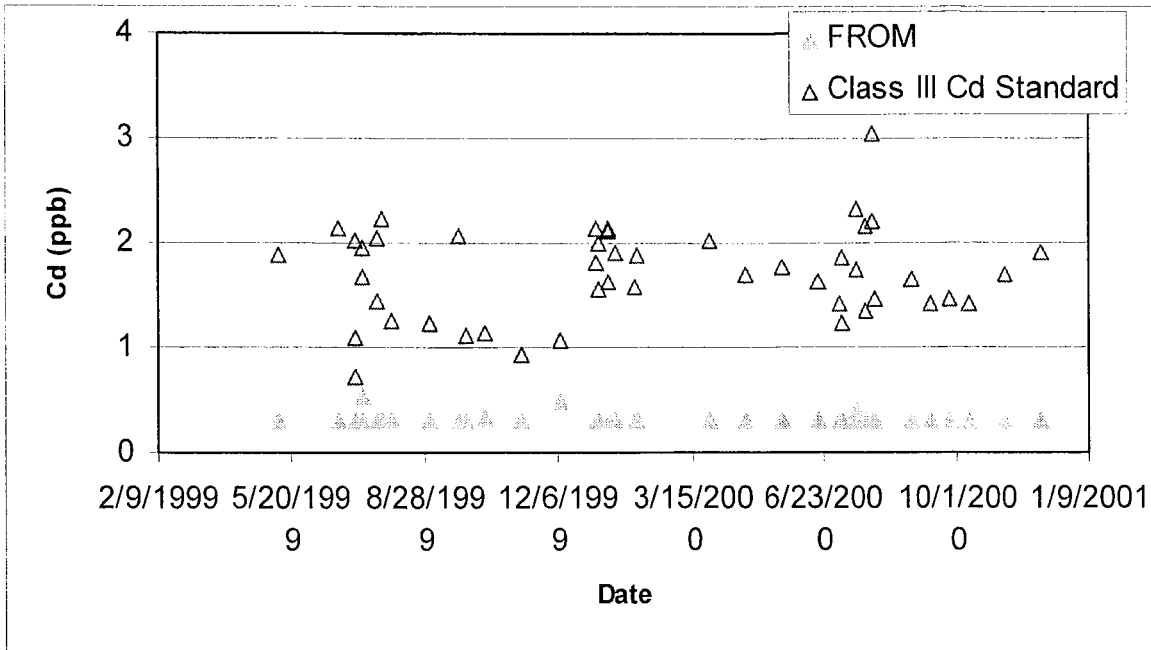
Analyses for cadmium over the last three years indicate that there were no excursions above the Class III standard.



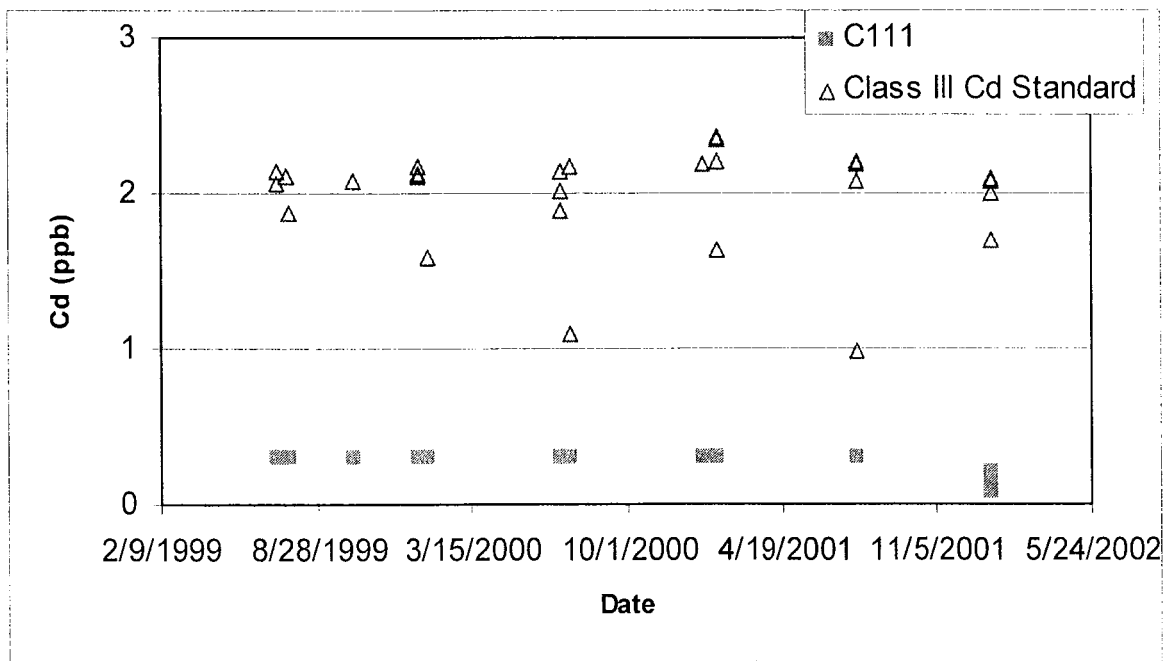
Cadmium: INTO Structures



Cadmium: WITHIN Structures

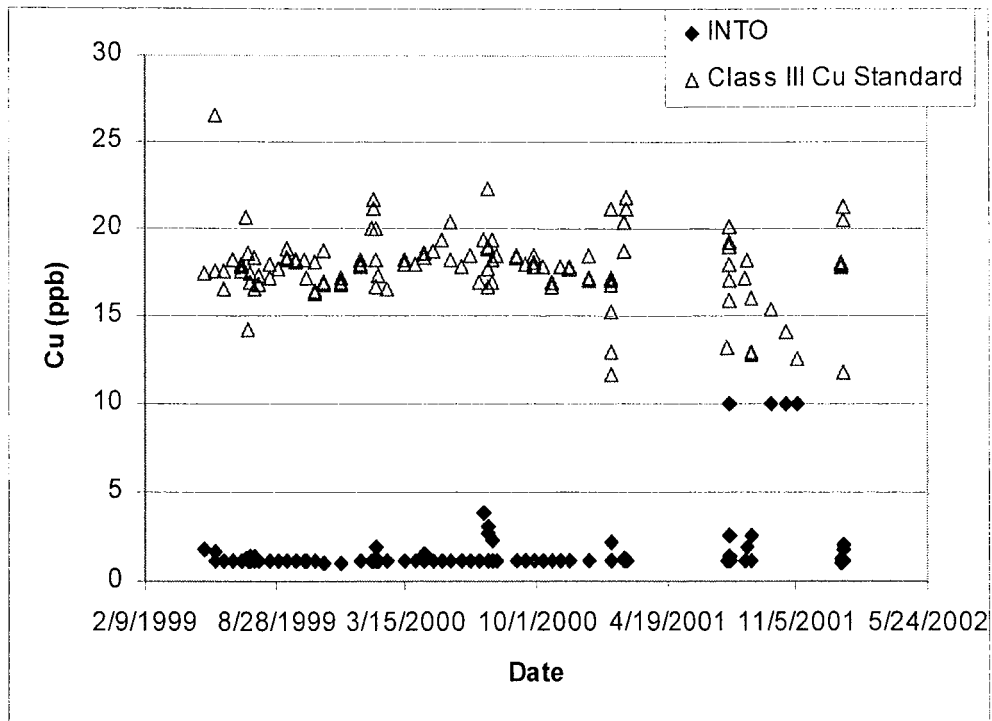


Cadmium: FROM Structures

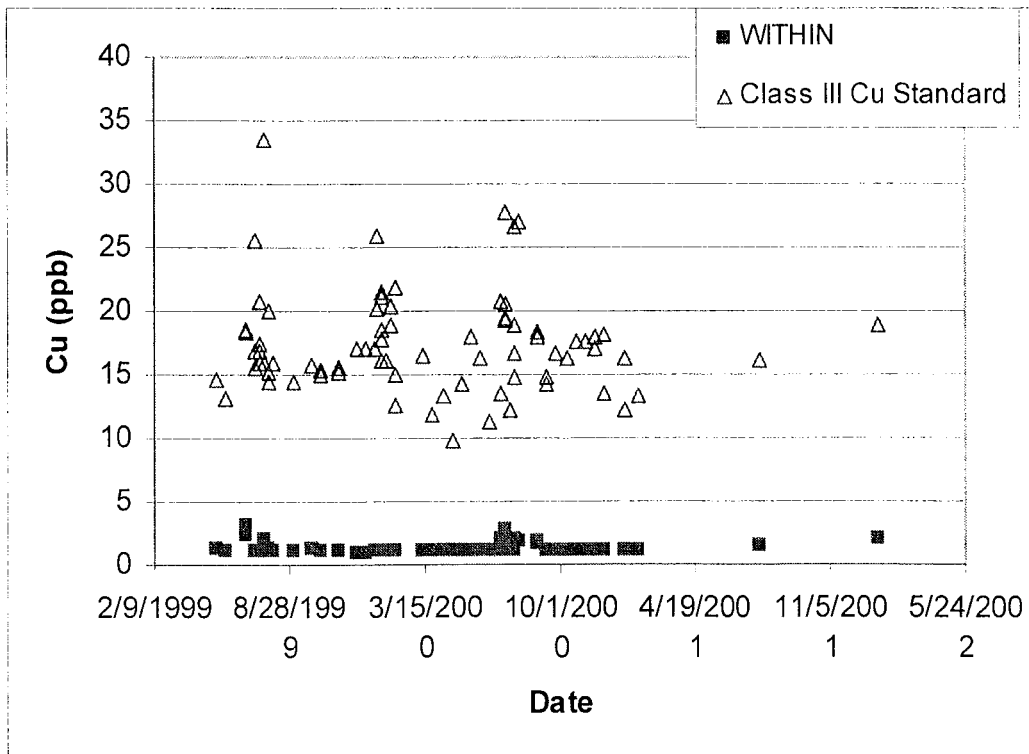


Cadmium: C-111

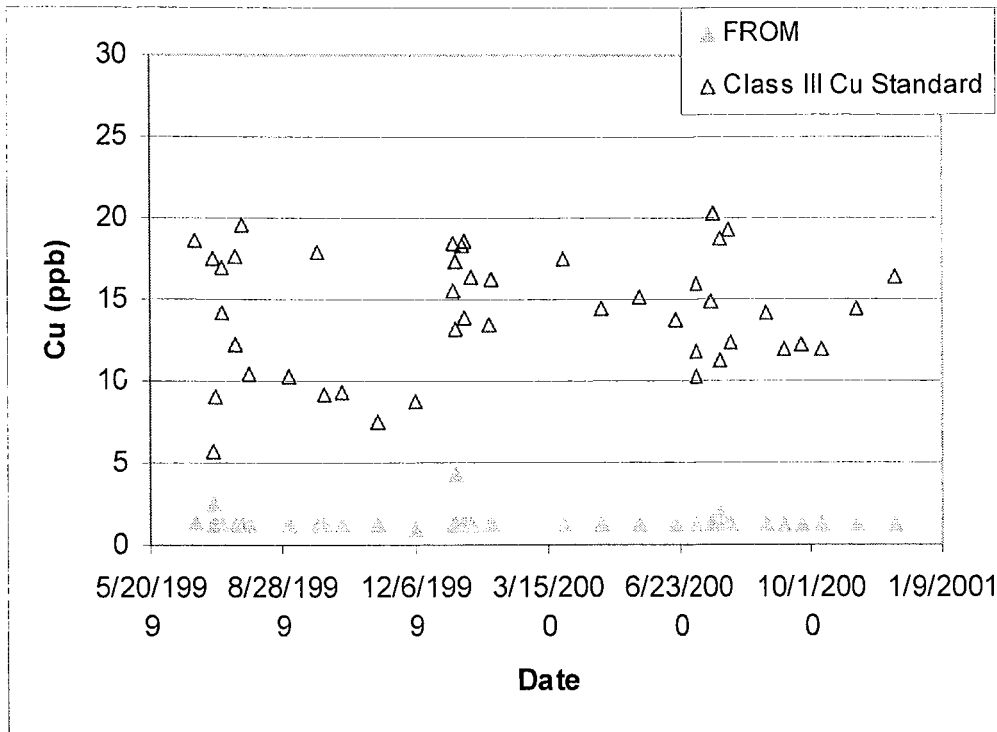
Analyses for copper over the last three years indicate that there were no excursions above the Class III standard.



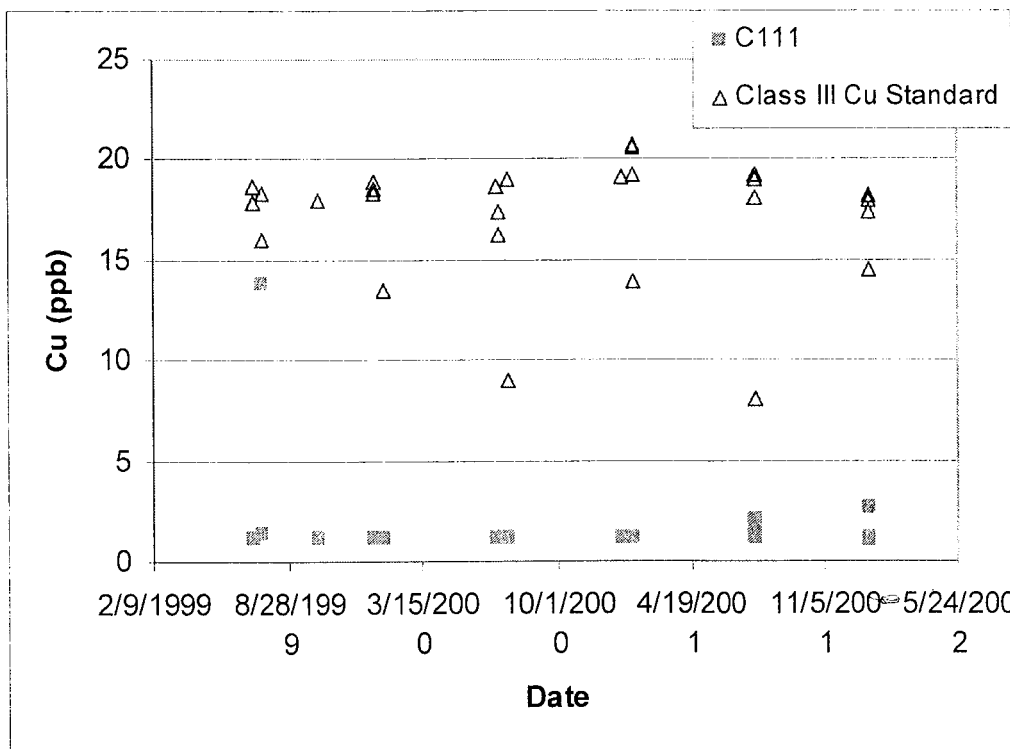
Copper: INTO Structures



Copper: WITHIN Structures

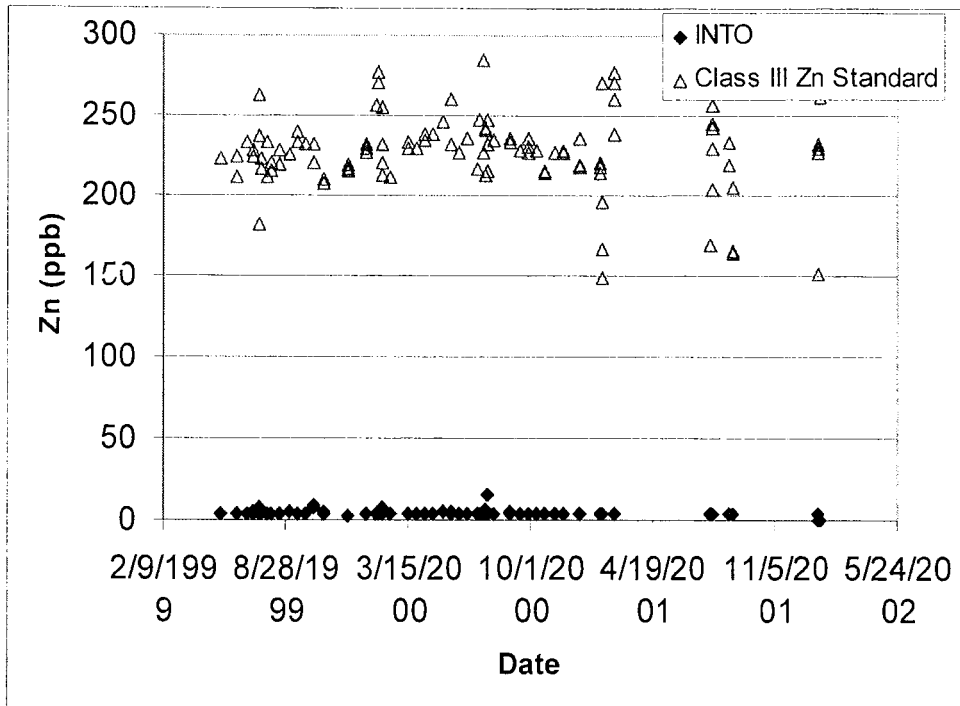


Copper: FROM Structures

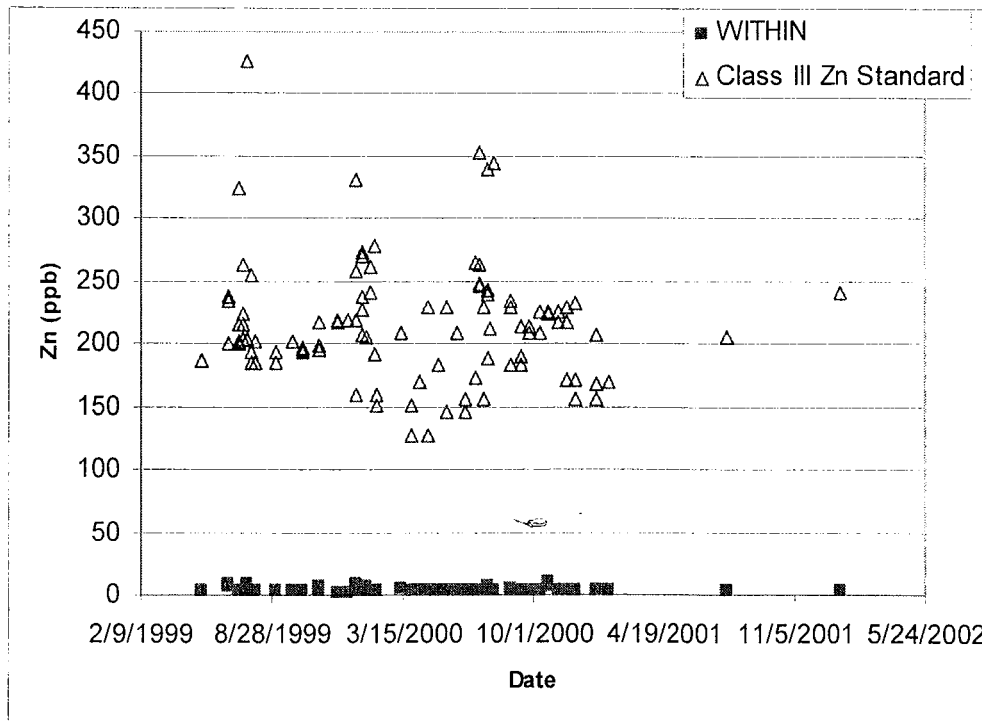


Copper: C-111 Structures

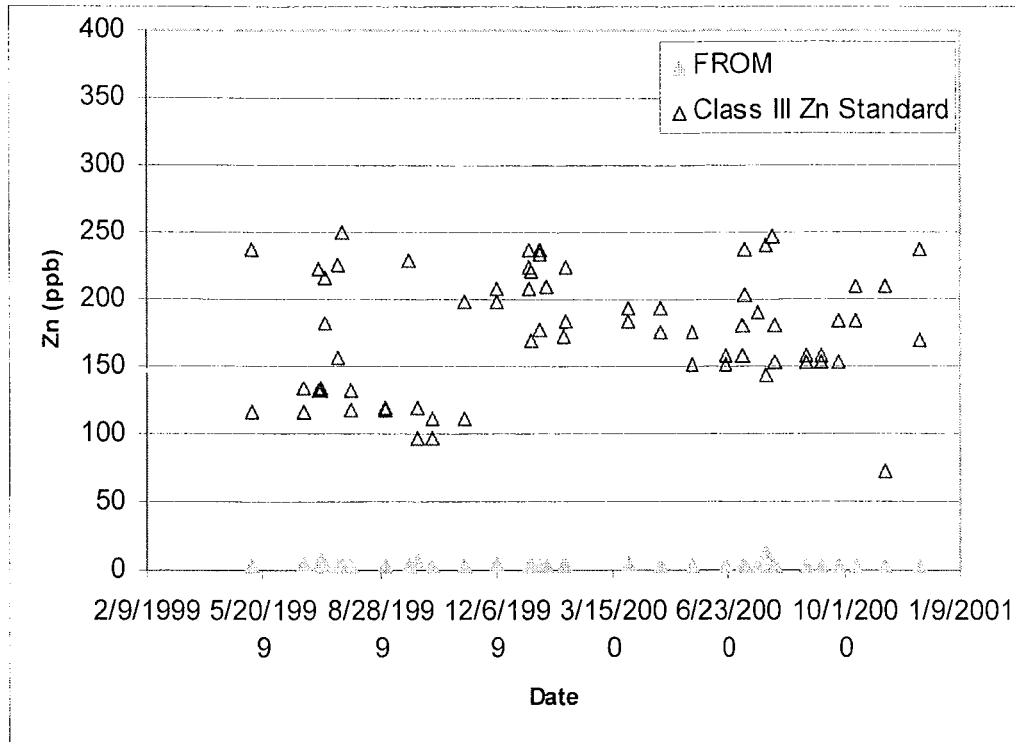
Analyses for zinc over the last three years indicate that there were no excursions above the Class III standard.



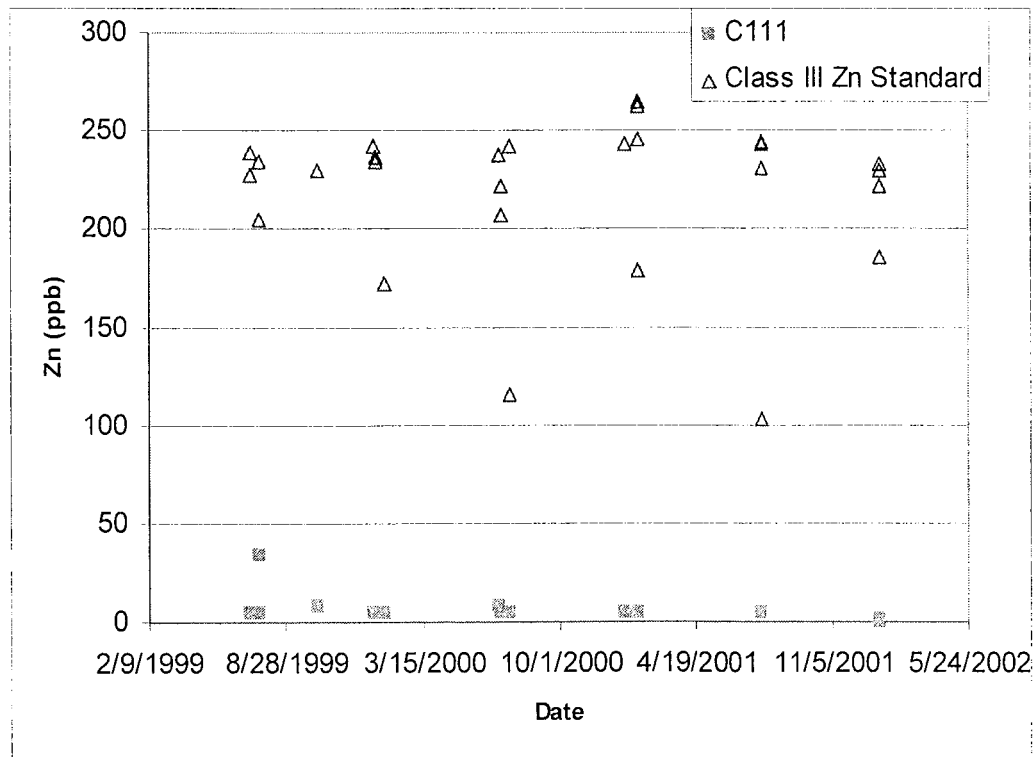
Zinc: INTO Structures



Zinc: WITHIN Structures



Zinc: FROM Structures



Zinc: C - 111 Structures

