SUBAPPENDIX G

LOW PASS FILTERED SALINITY TIME SERIES PLOTS

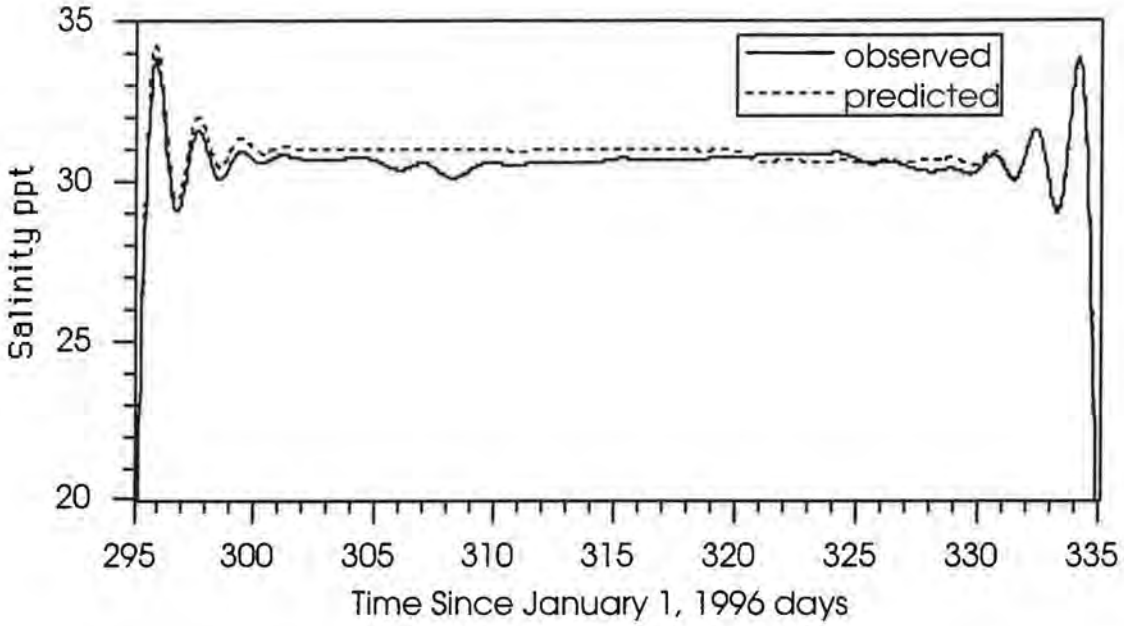


Figure G-1. Low Pass Filtered Salinity at Station S-Bottom-1

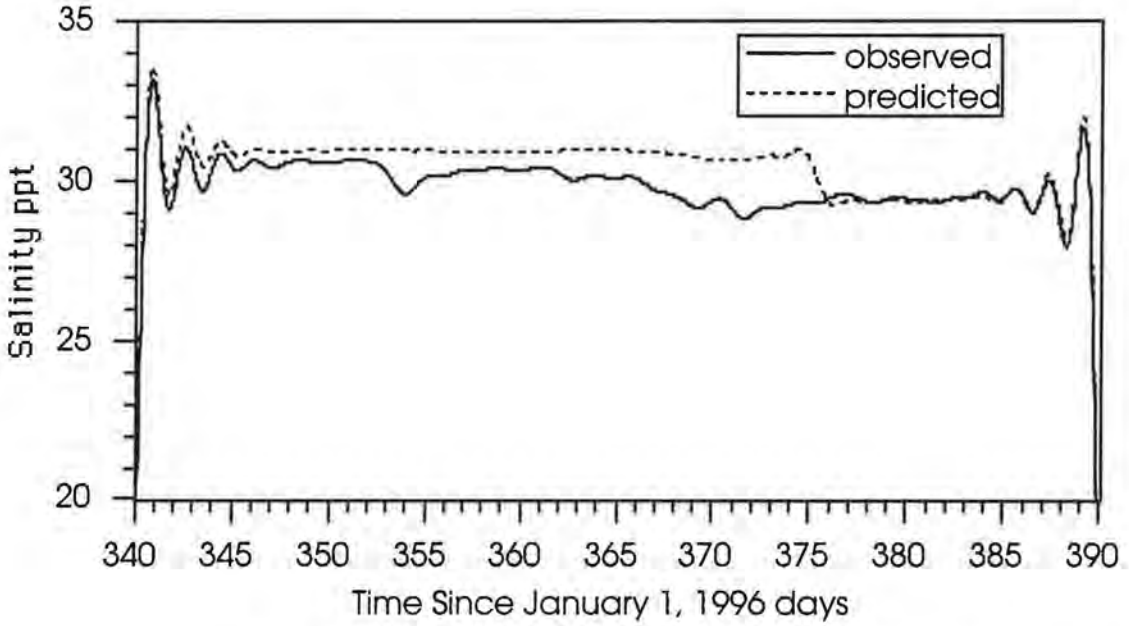


Figure G-2. Low Pass Filtered Salinity at Station S-Bottom-2

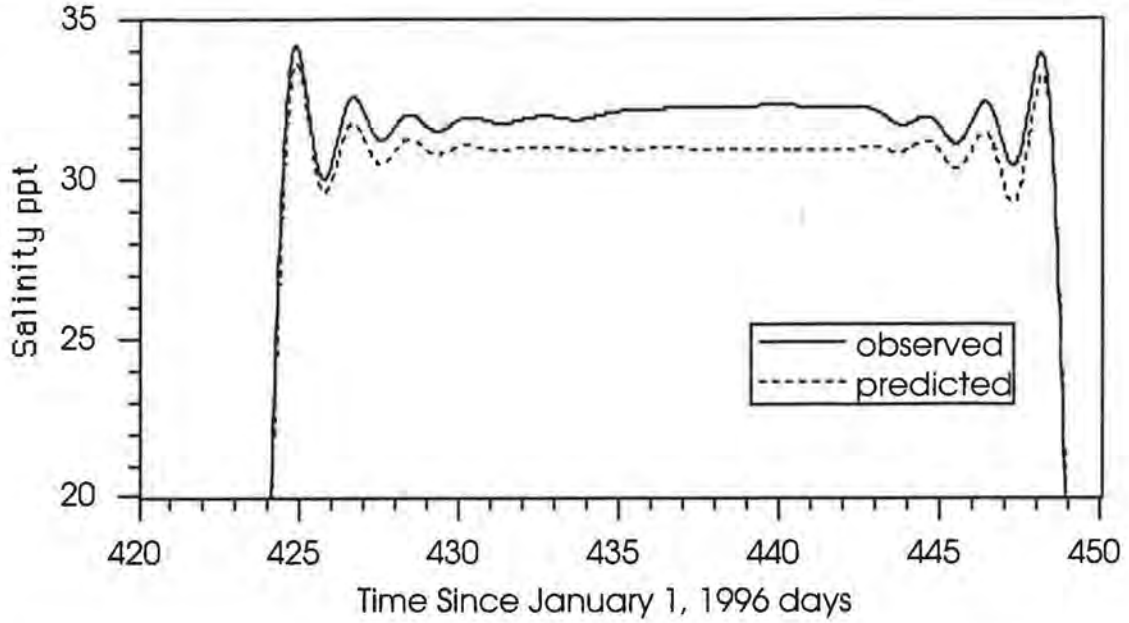


Figure G-3. Low Pass Filtered Salinity at Station S-Bottom-3

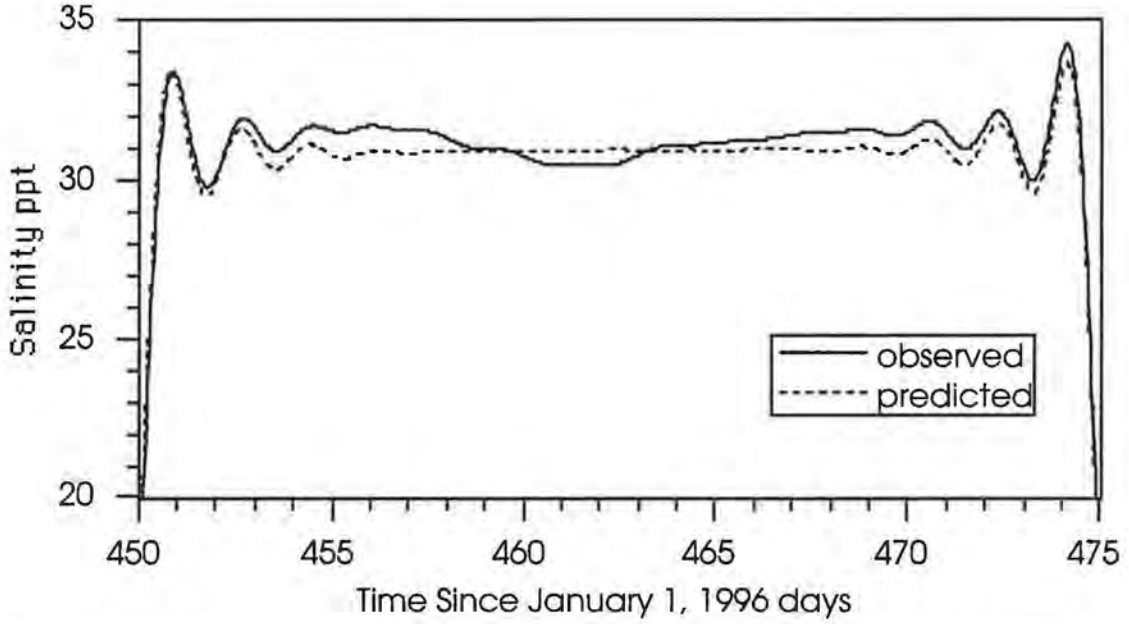


Figure G-4. Low Pass Filtered Salinity at Station S-Bottom-4

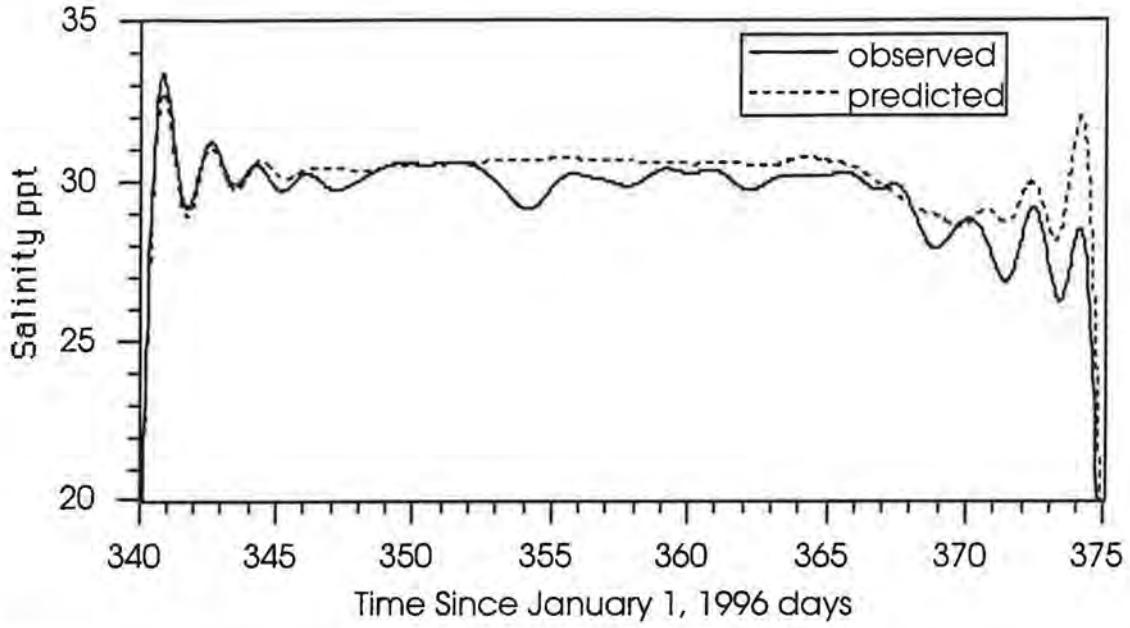


Figure G-5. Low Pass Filtered Salinity at Station S-Middle-1

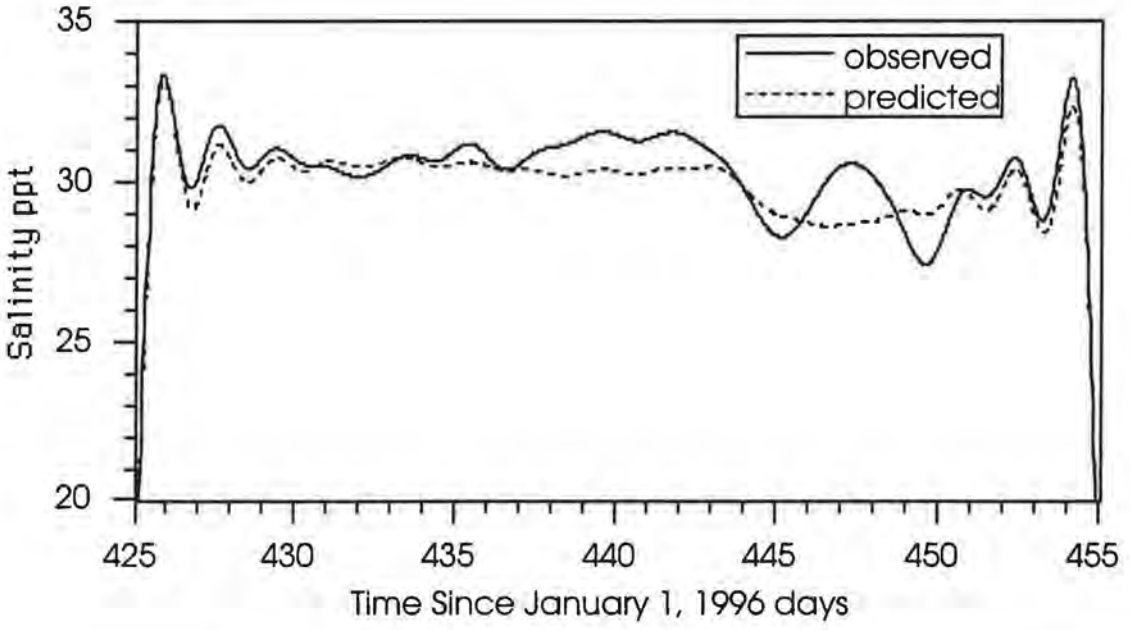


Figure G-6. Low Pass Filtered Salinity at Station S-Middle-2

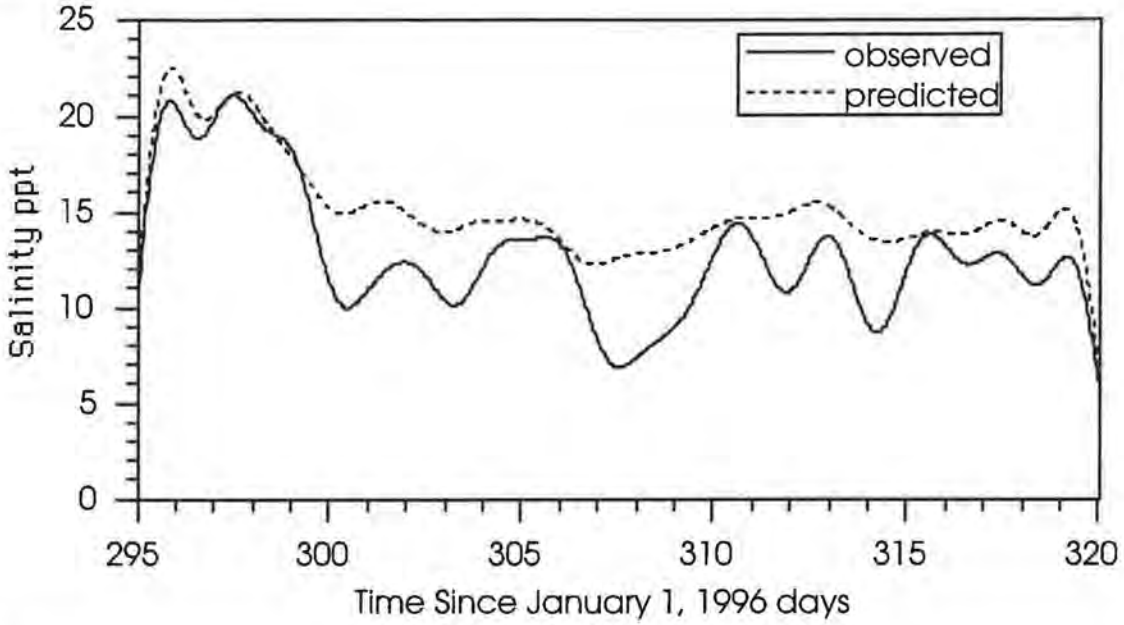


Figure G-7. Low Pass Filtered Salinity at Station S-Surface-1

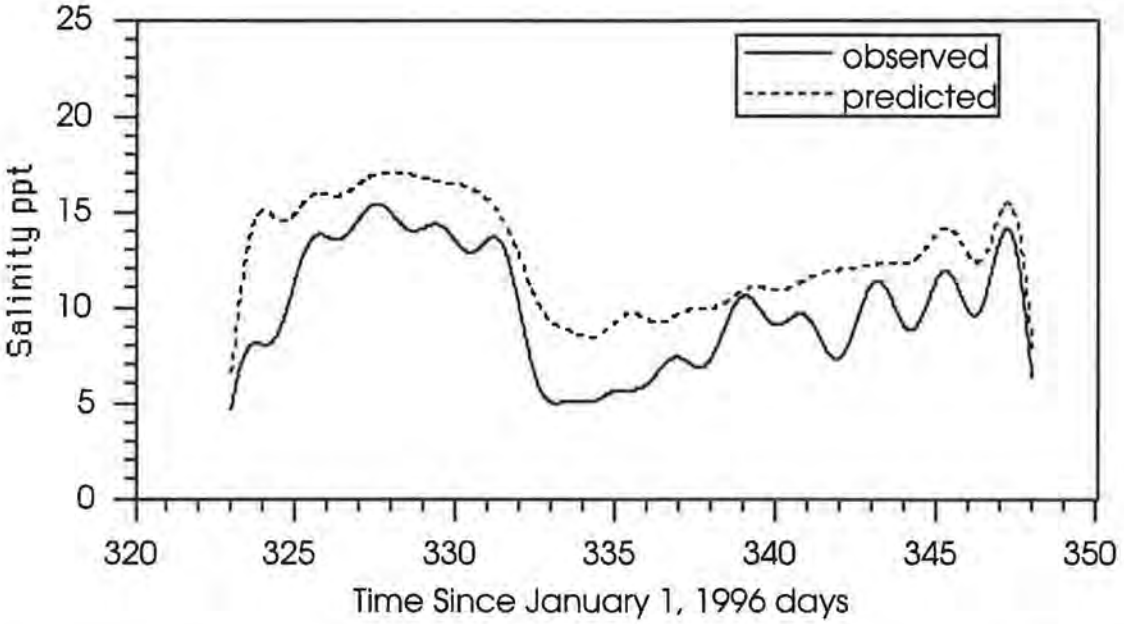


Figure G-8. Low Pass Filtered Salinity at Station S-Surface-2

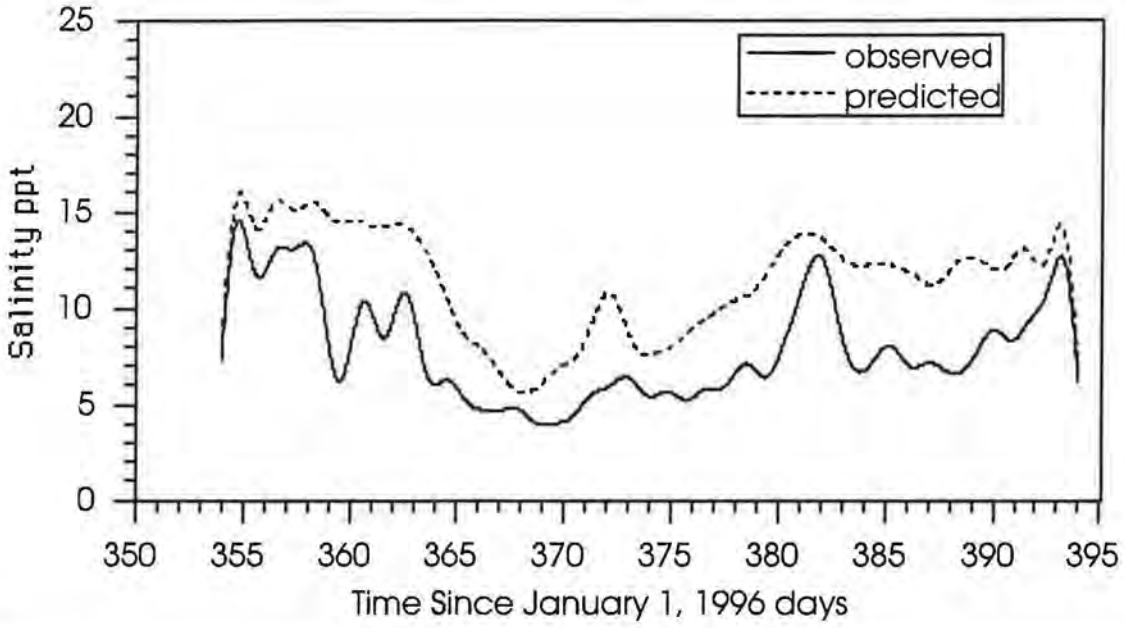


Figure G-9. Low Pass Filtered Salinity at Station S-Surface-3

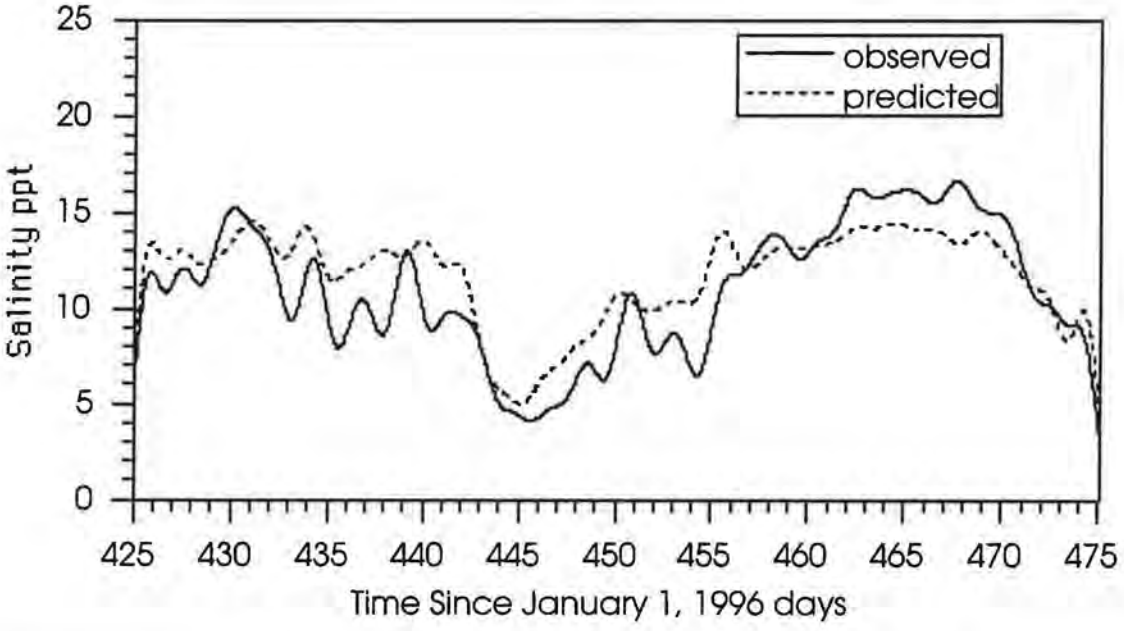


Figure G-10. Low Pass Filtered Salinity at Station S-Surface-4

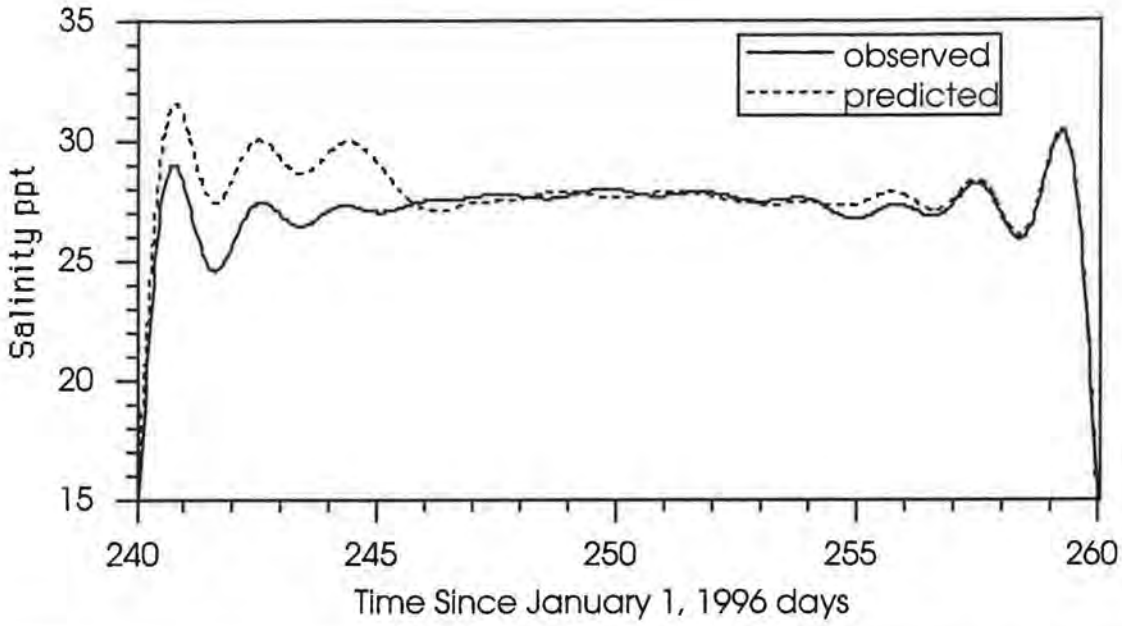


Figure G-11. Low Pass Filtered Salinity at Station B-Bottom-1

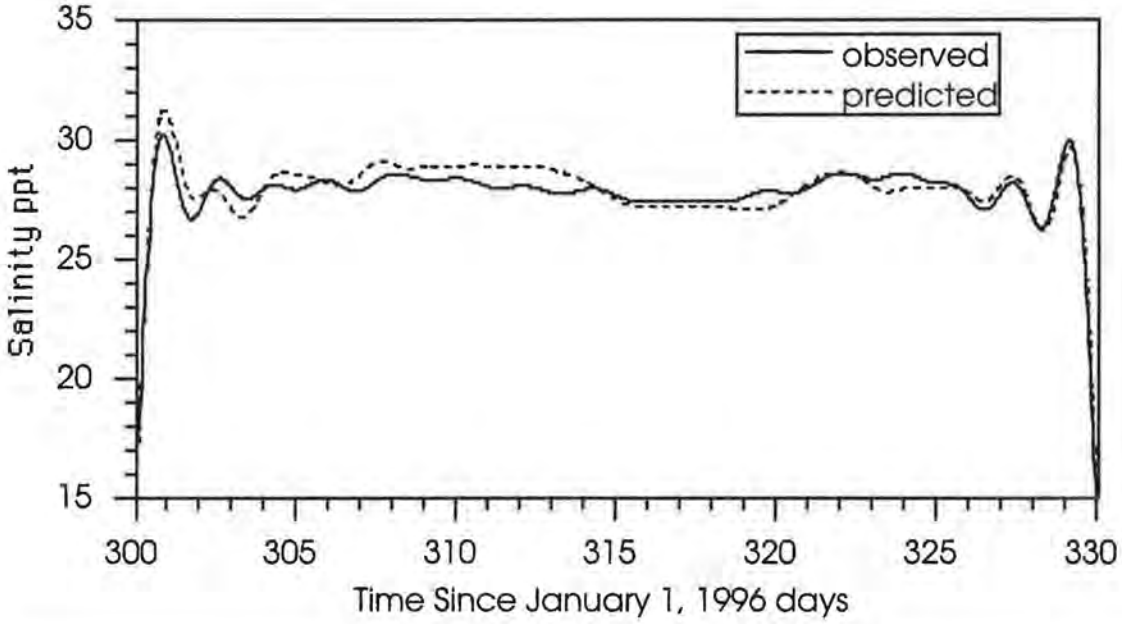


Figure G-12. Low Pass Filtered Salinity at Station B-Bottom-2

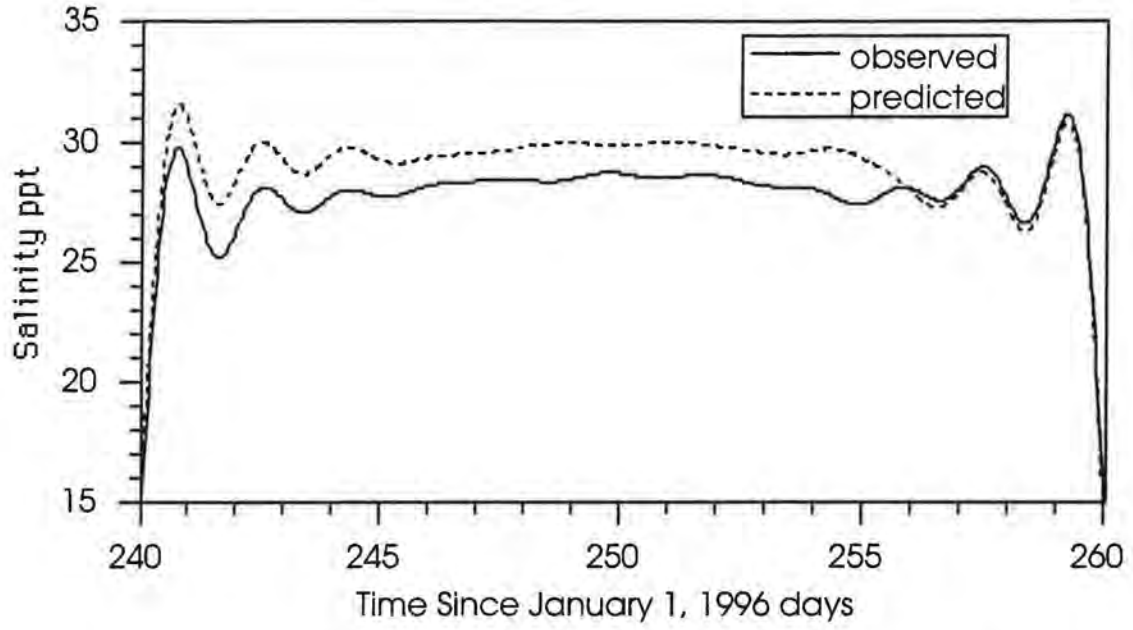


Figure G-13. Low Pass Filtered Salinity at Station B-Middle-1

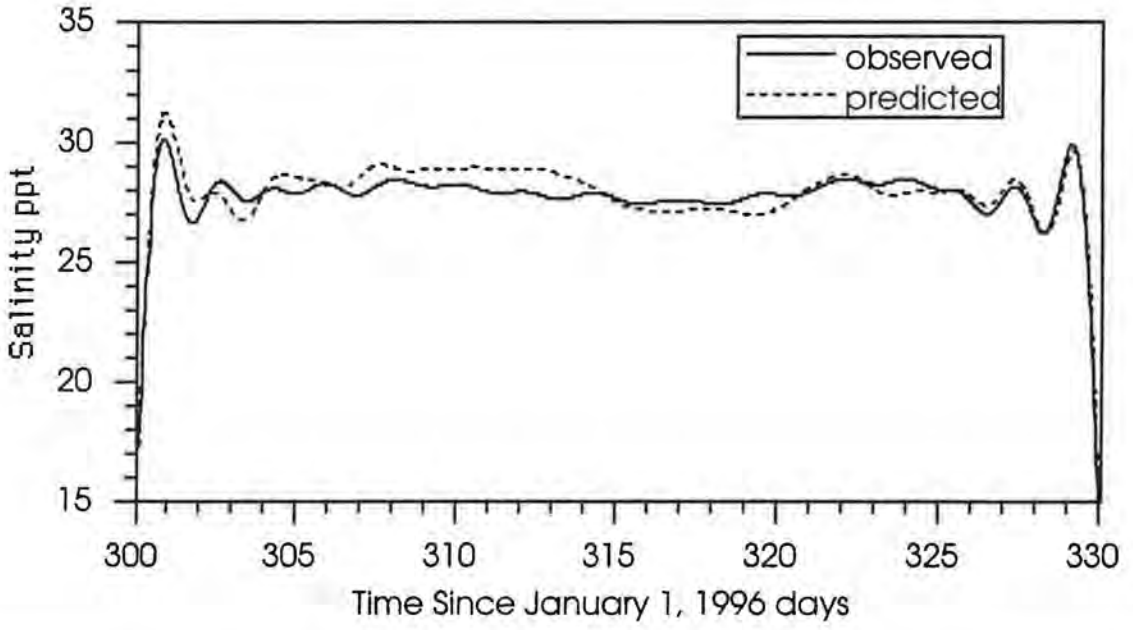


Figure G-14. Low Pass Filtered Salinity at Station B-Middle-2

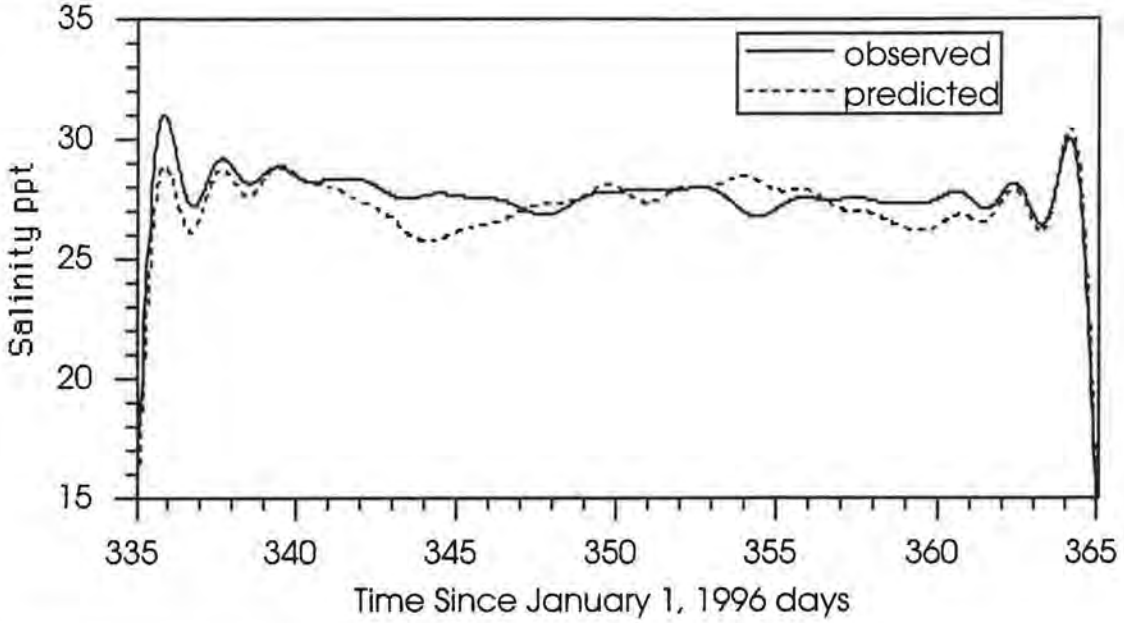


Figure G-15. Low Pass Filtered Salinity at Station B-Middle-3

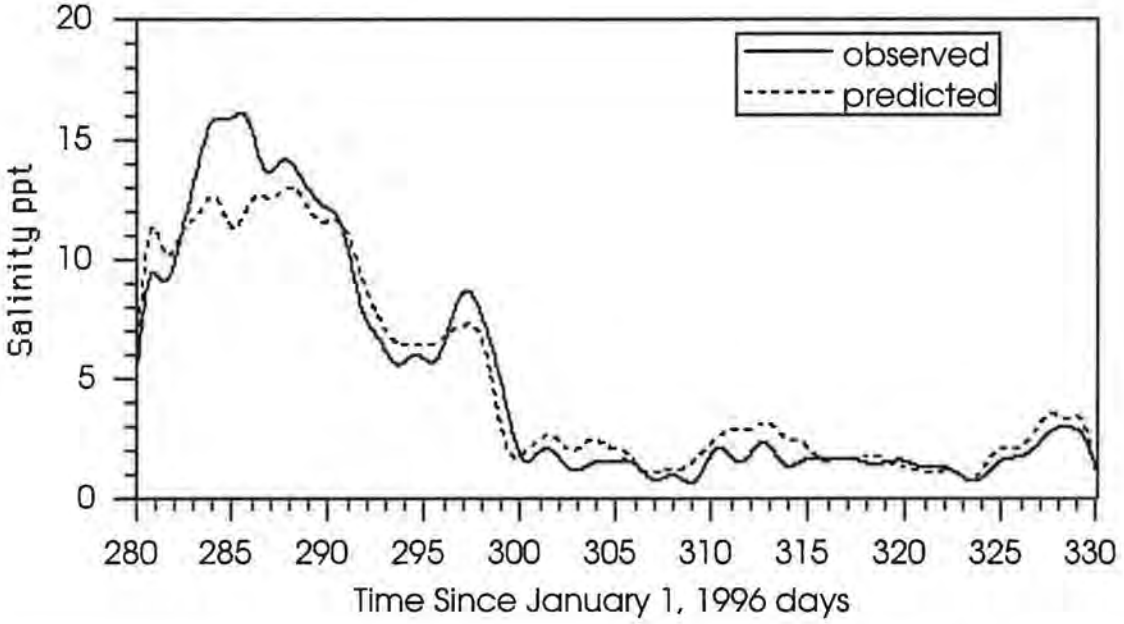


Figure G-16. Low Pass Filtered Salinity at Station B-Surface-1

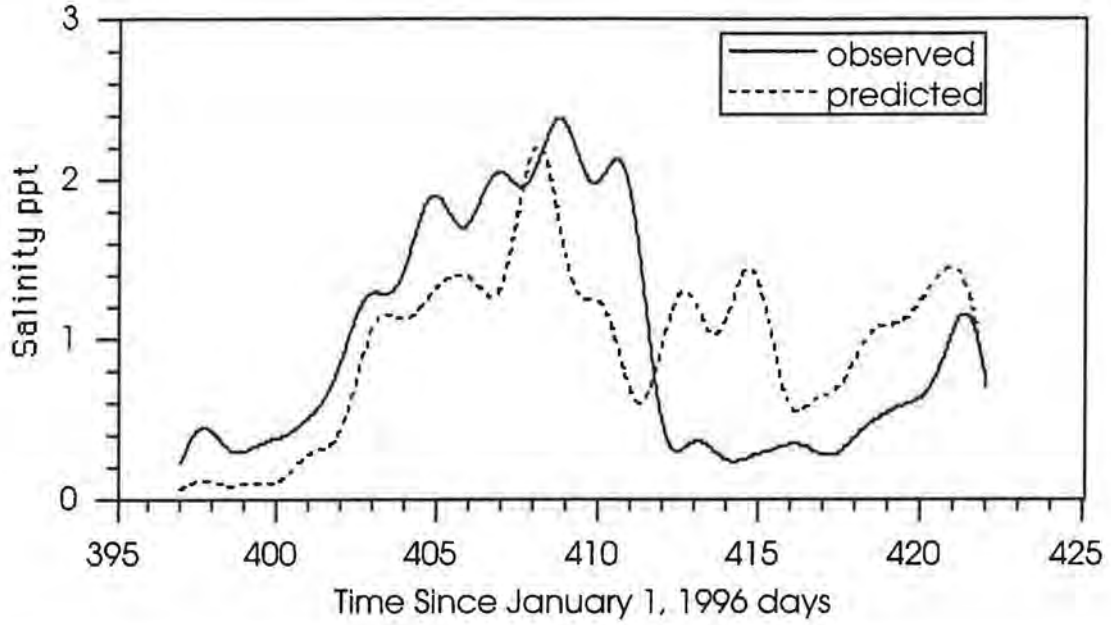


Figure G-17. Low Pass Filtered Salinity at Station B-Surface-2

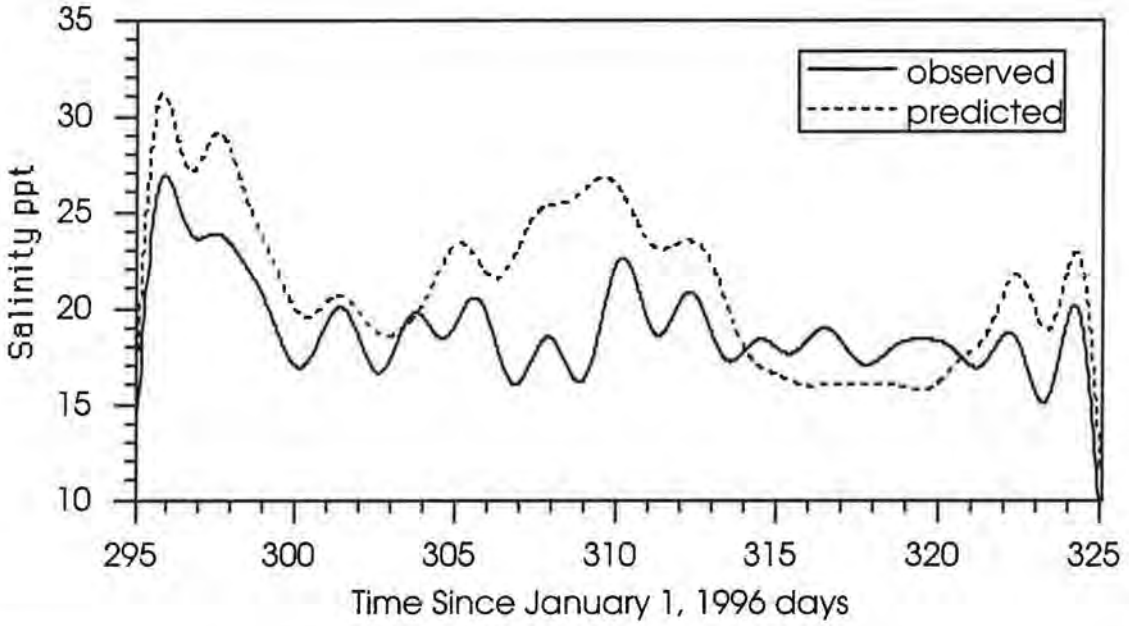


Figure G-18. Low Pass Filtered Salinity at Station D-Bottom-1

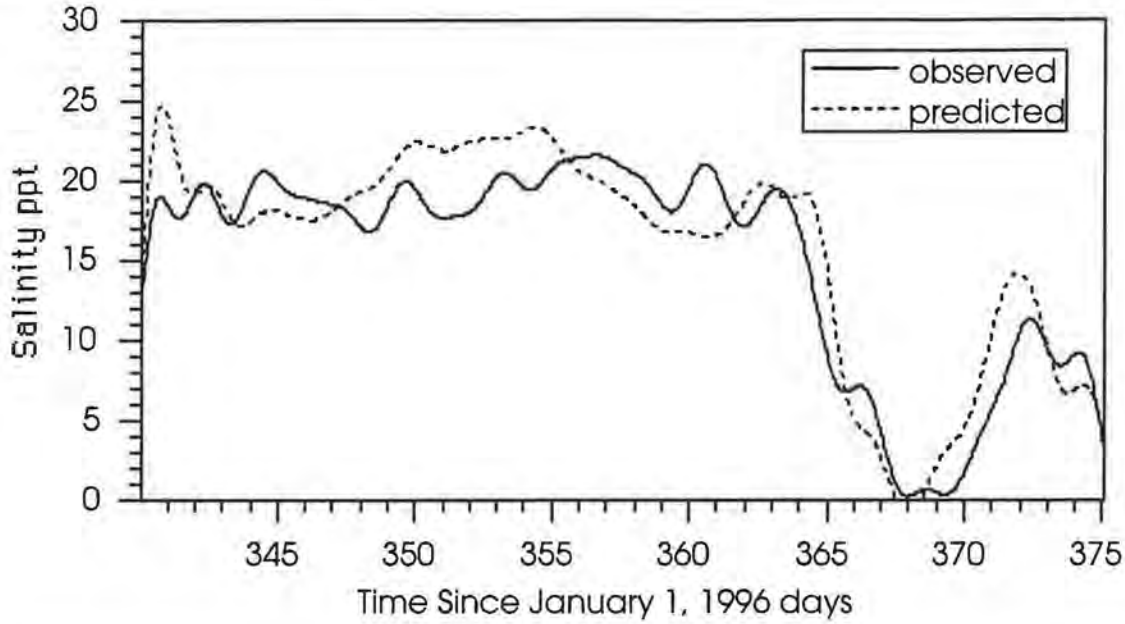


Figure G-19. Low Pass Filtered Salinity at Station D-Bottom-2

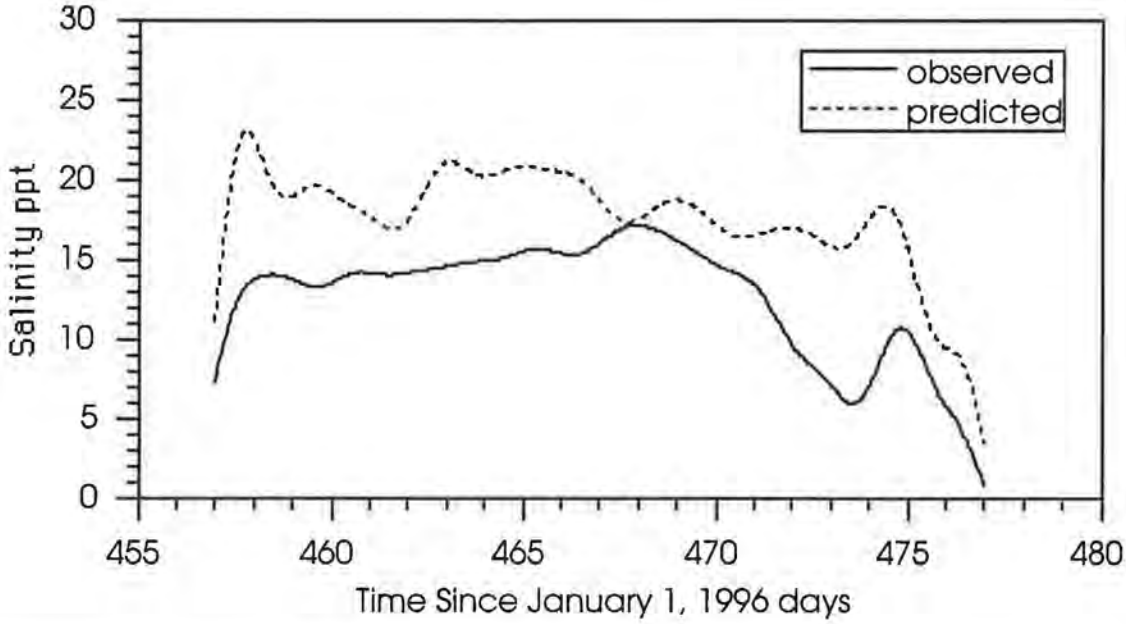


Figure G-20. Low Pass Filtered Salinity at Station D-Bottom-3

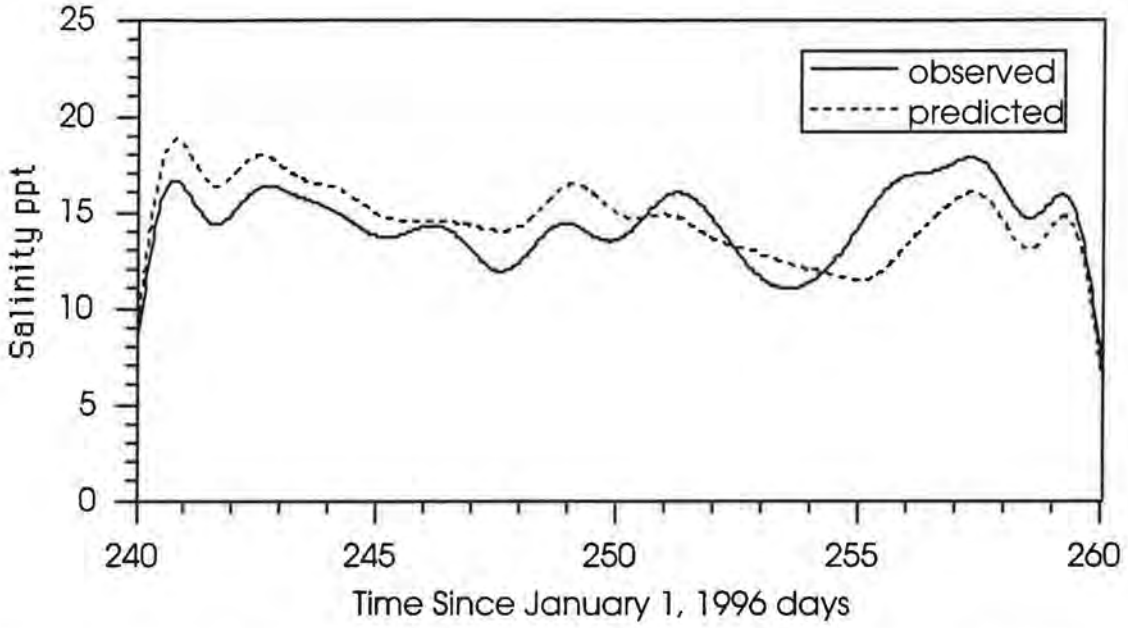


Figure G-21. Low Pass Filtered Salinity at Station D-Surface-1

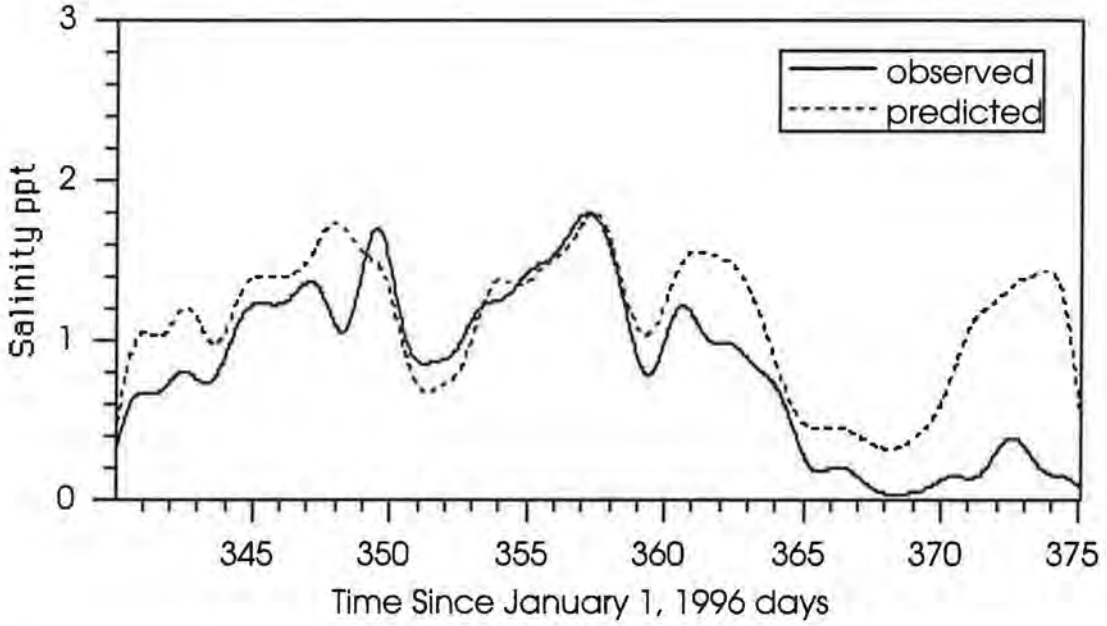


Figure G-22. Low Pass Filtered Salinity at Station D-Surface-2

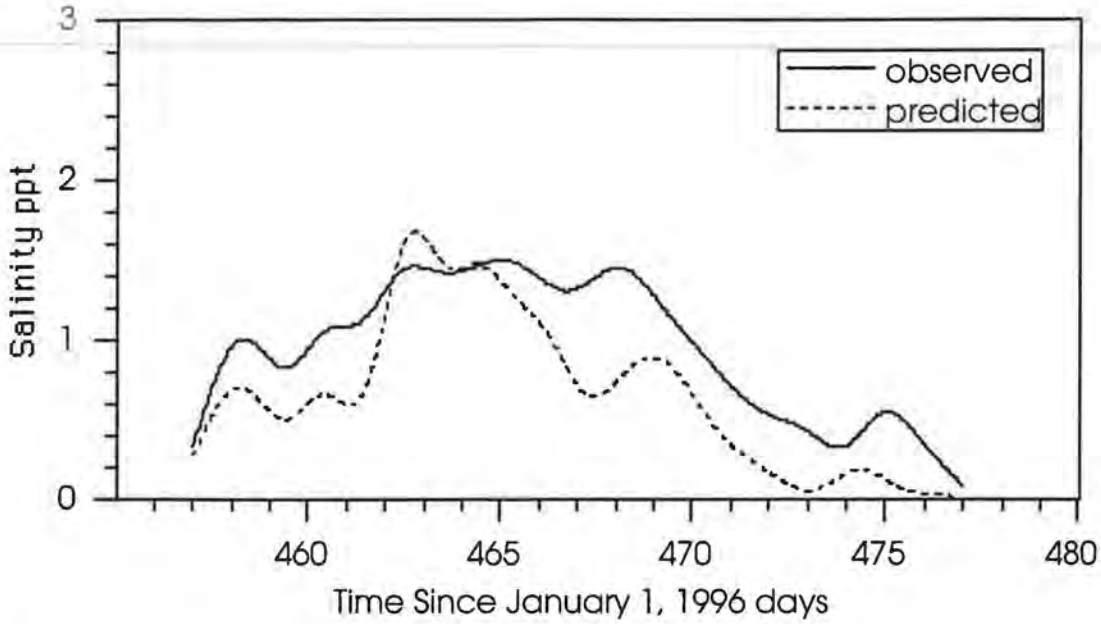


Figure G-23. Low Pass Filtered Salinity at Station D-Surface-3

SUBAPPENDIX H

SALINITY SPECTRAL DENSITY TIME SERIES PLOTS

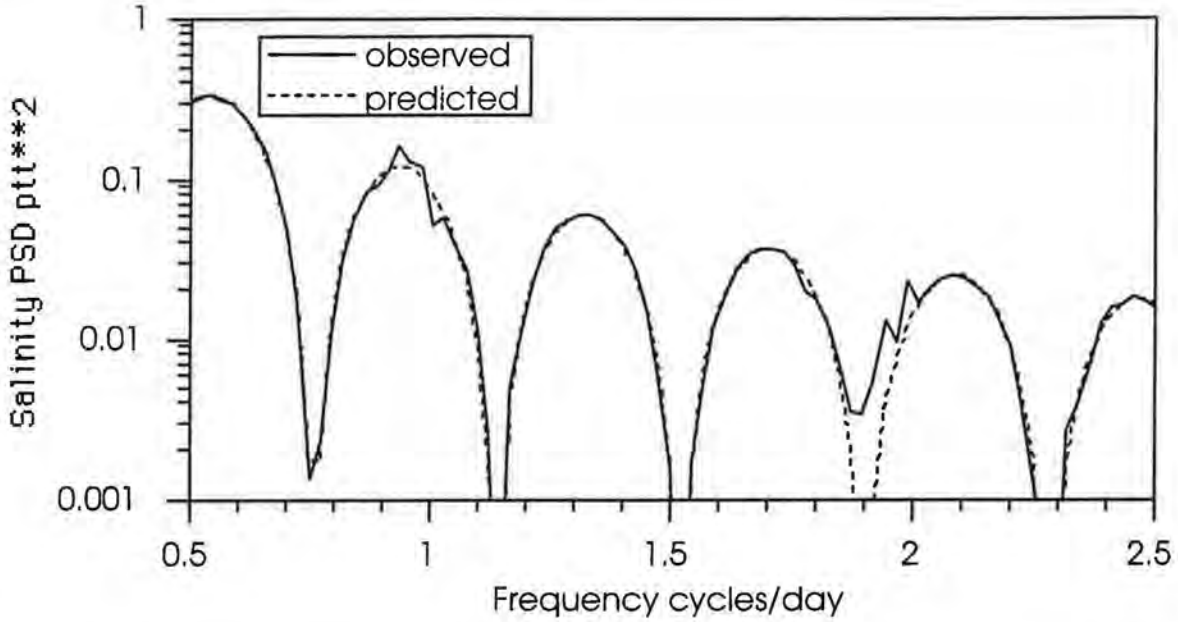


Figure H-1. Salinity PSD at Station S-Bottom-1

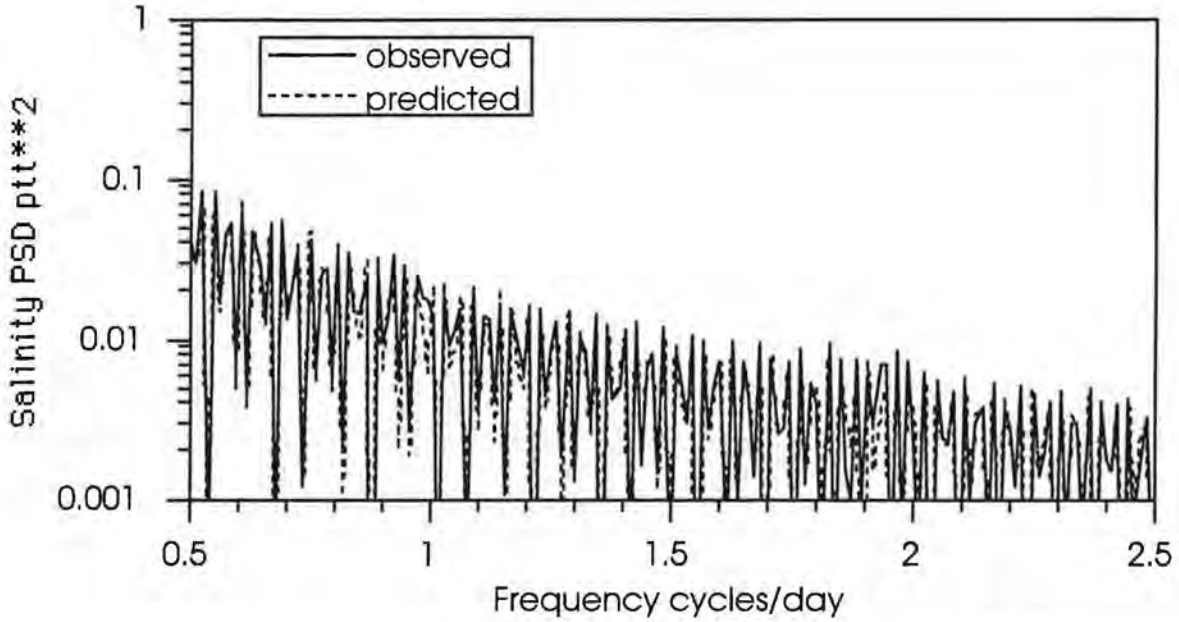


Figure H-2. Salinity PSD at Station S-Bottom-2

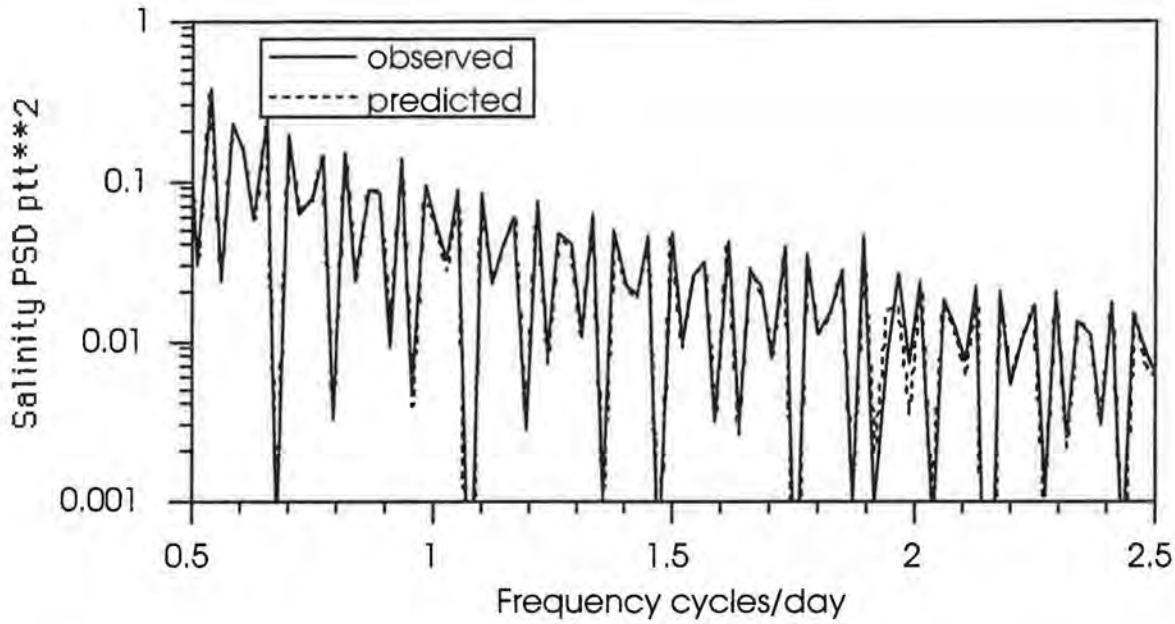


Figure H-3. Salinity PSD at Station S-Bottom-3

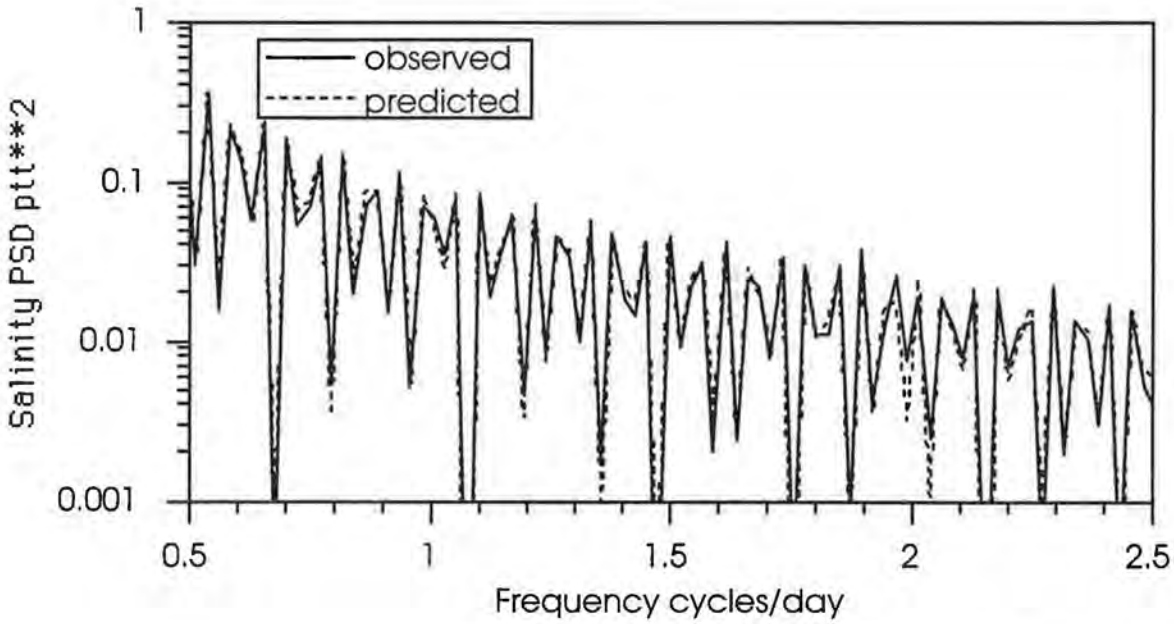


Figure H-4. Salinity PSD at Station S-Bottom-4

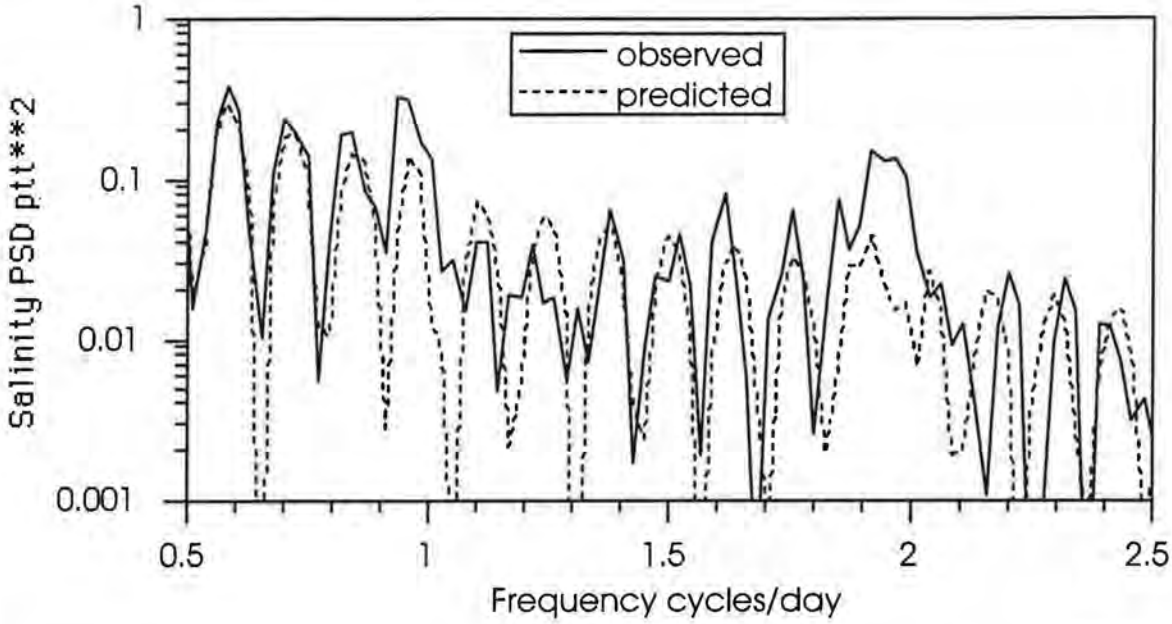


Figure H-5. Salinity PSD at Station S-Middle-1

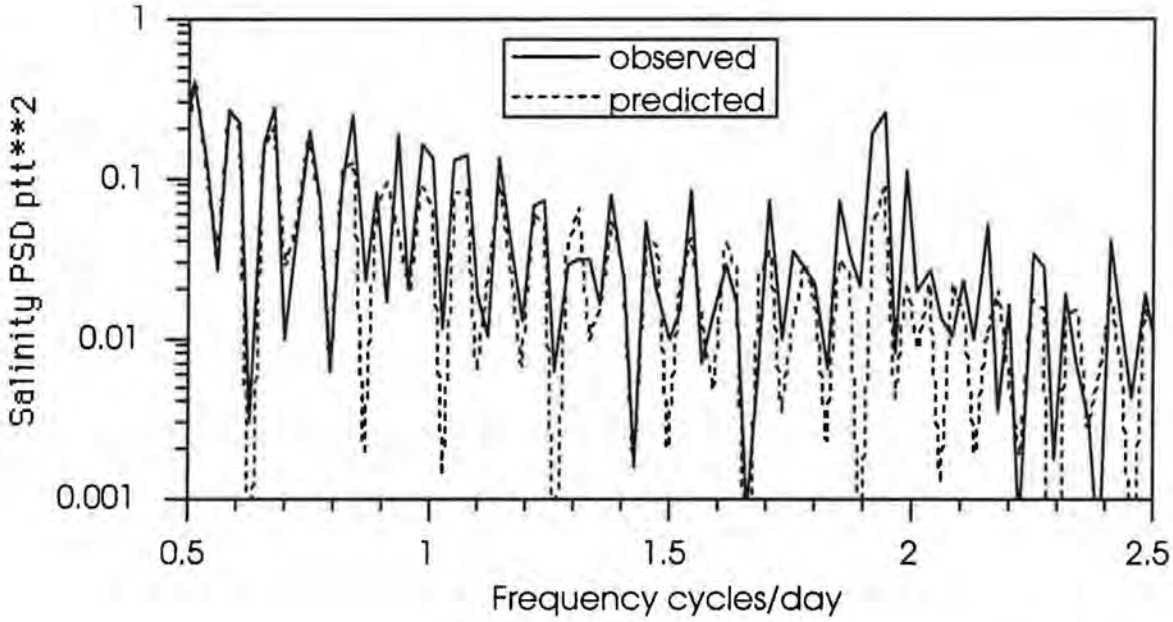


Figure H-6. Salinity PSD at Station S-Middle-2

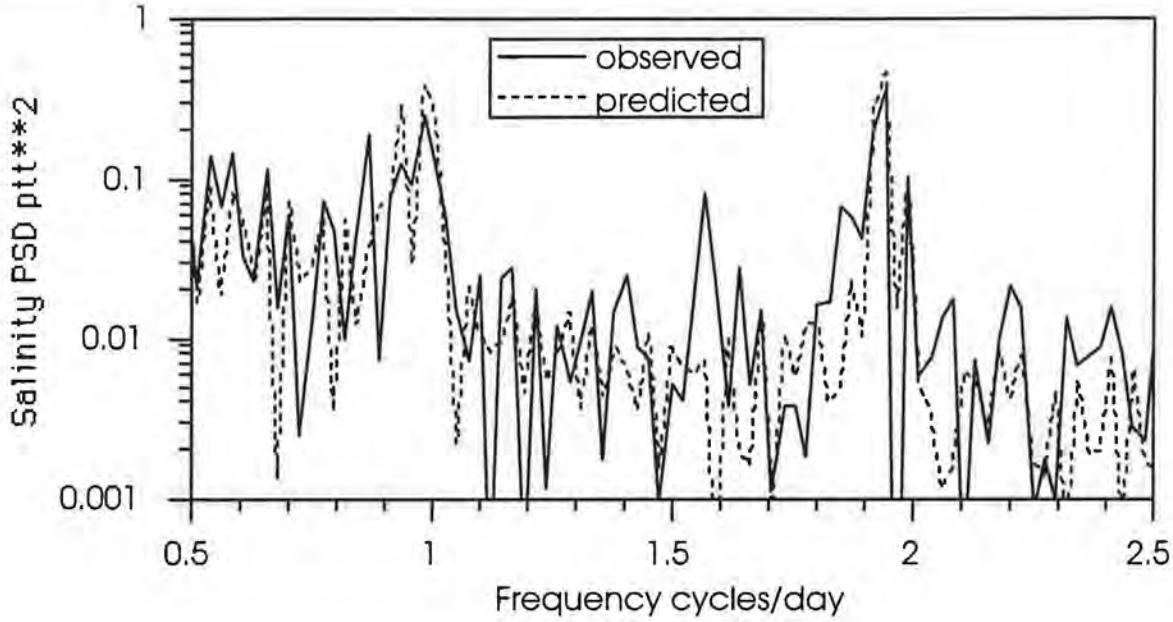


Figure H-7. Salinity PSD at Station S-Surface-1

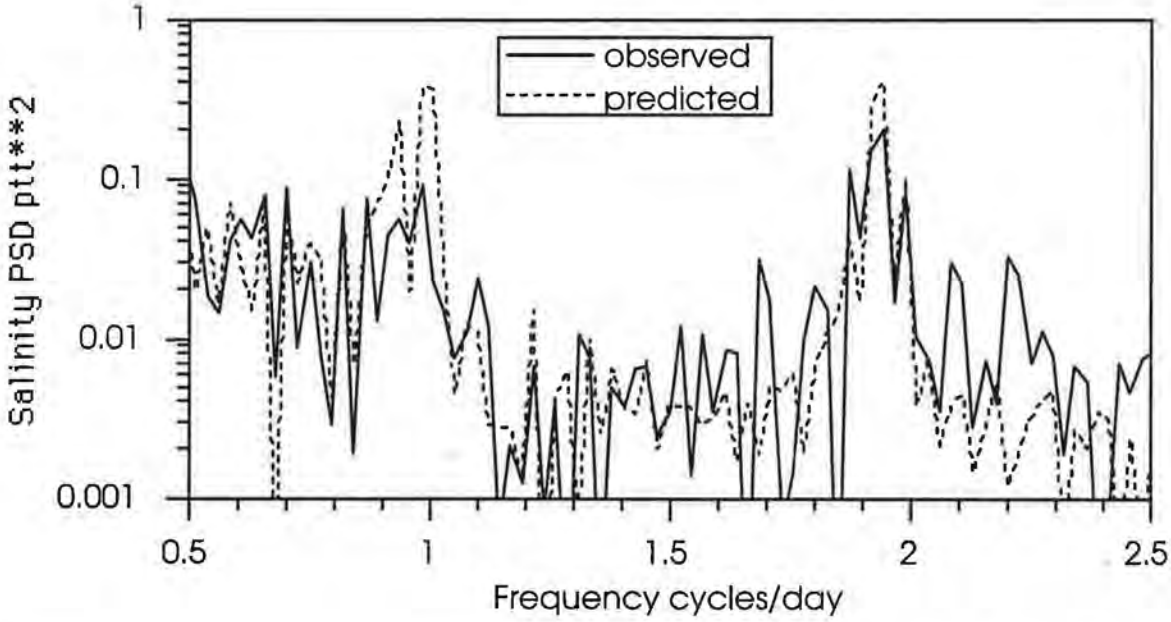


Figure H-8. Salinity PSD at Station S-Surface-2

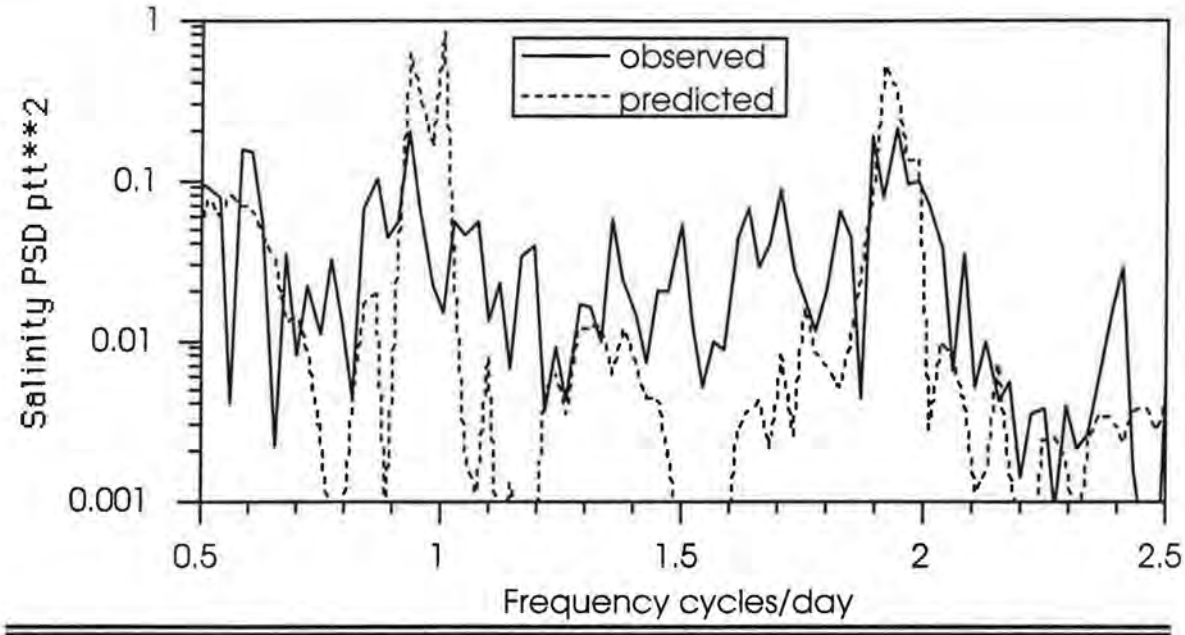


Figure H-9. Salinity PSD at Station S-Surface-3

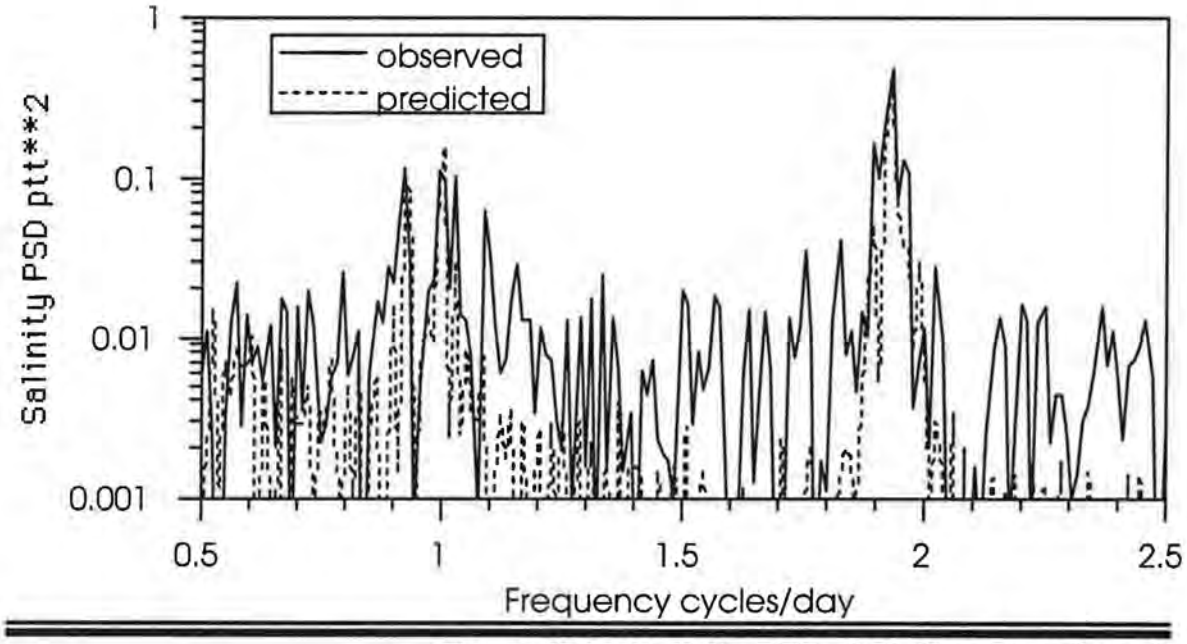


Figure H-10. Salinity PSD at Station S-Surface-4

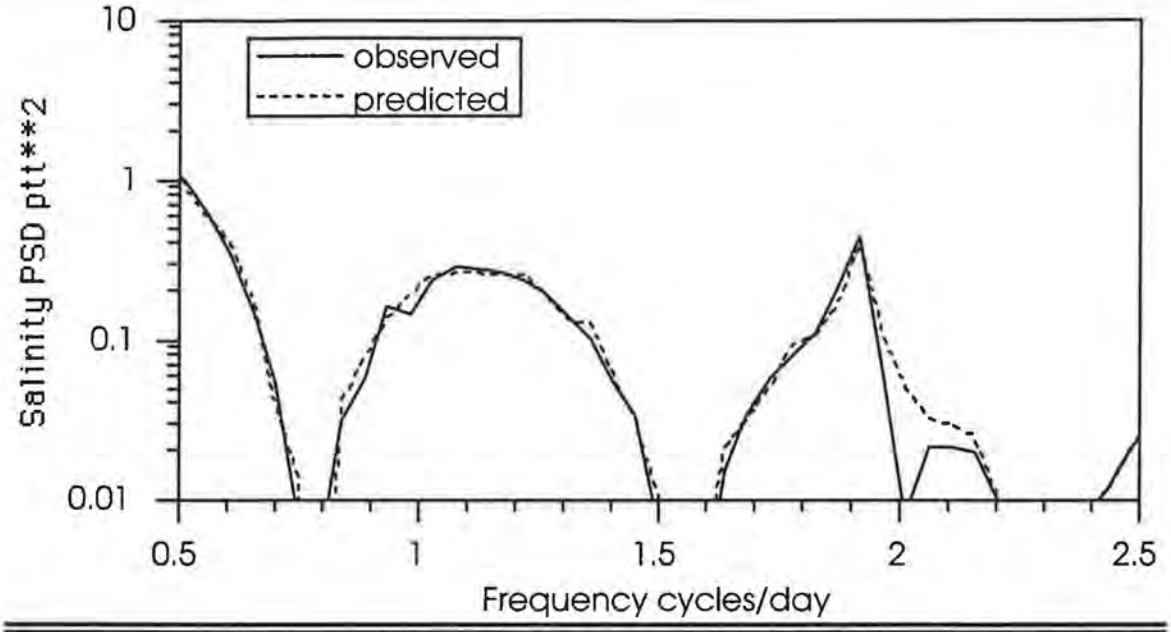


Figure H-11. Salinity PSD at Station B-Bottom-1

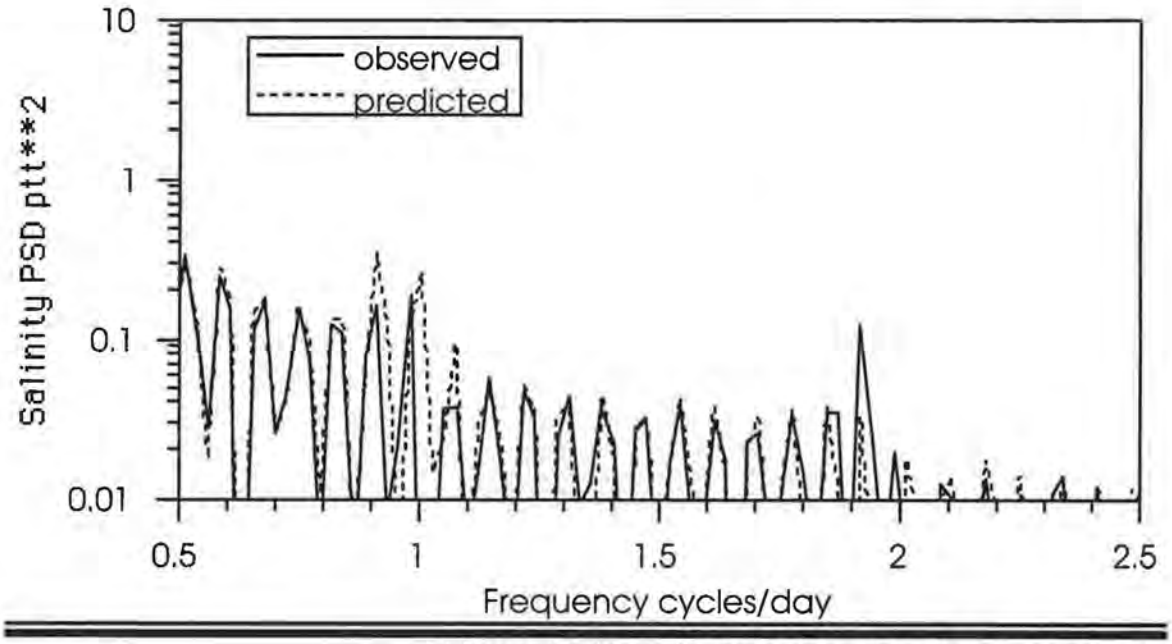


Figure H-12. Salinity PSD at Station B-Bottom-2

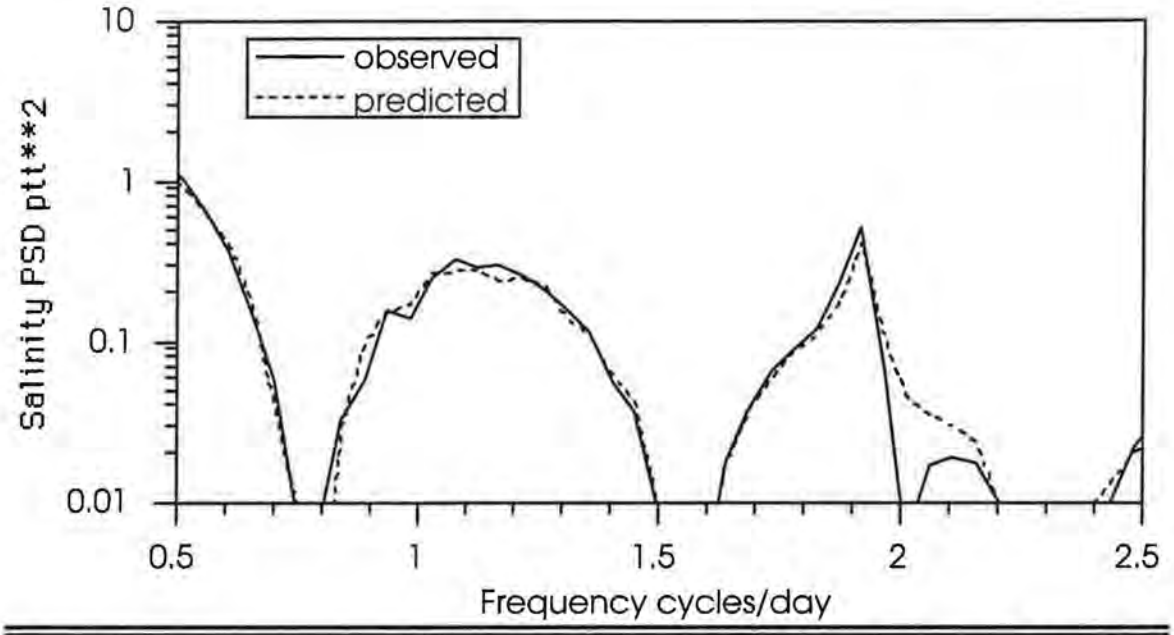


Figure H-13. Salinity PSD at Station B-Middle-1

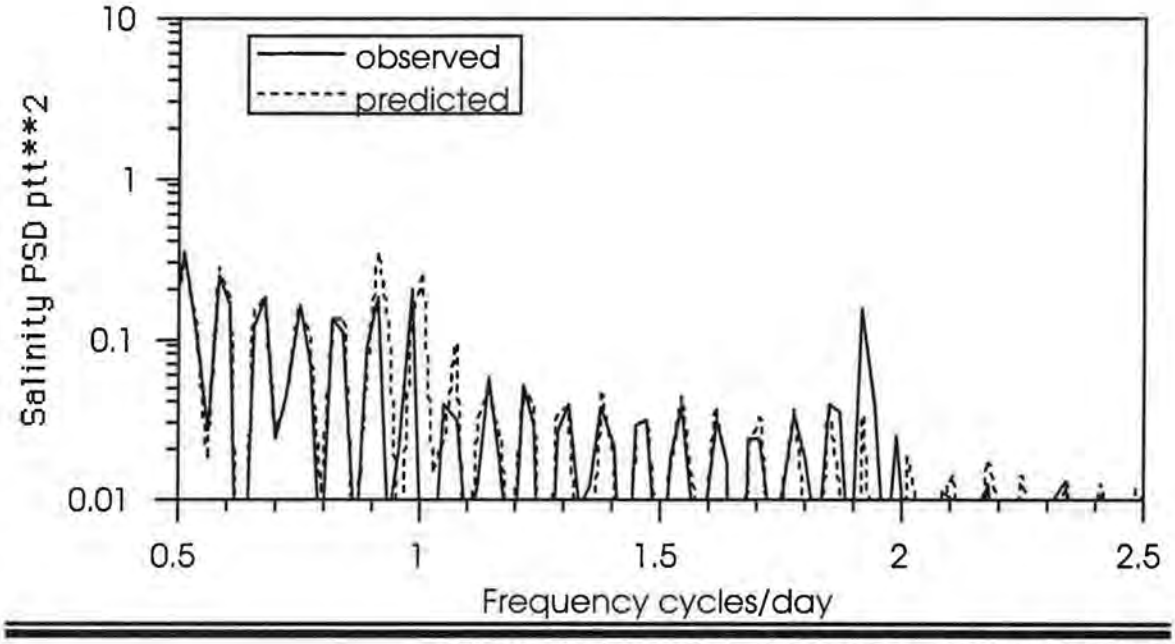


Figure H-14. Salinity PSD at Station B-Middle-2

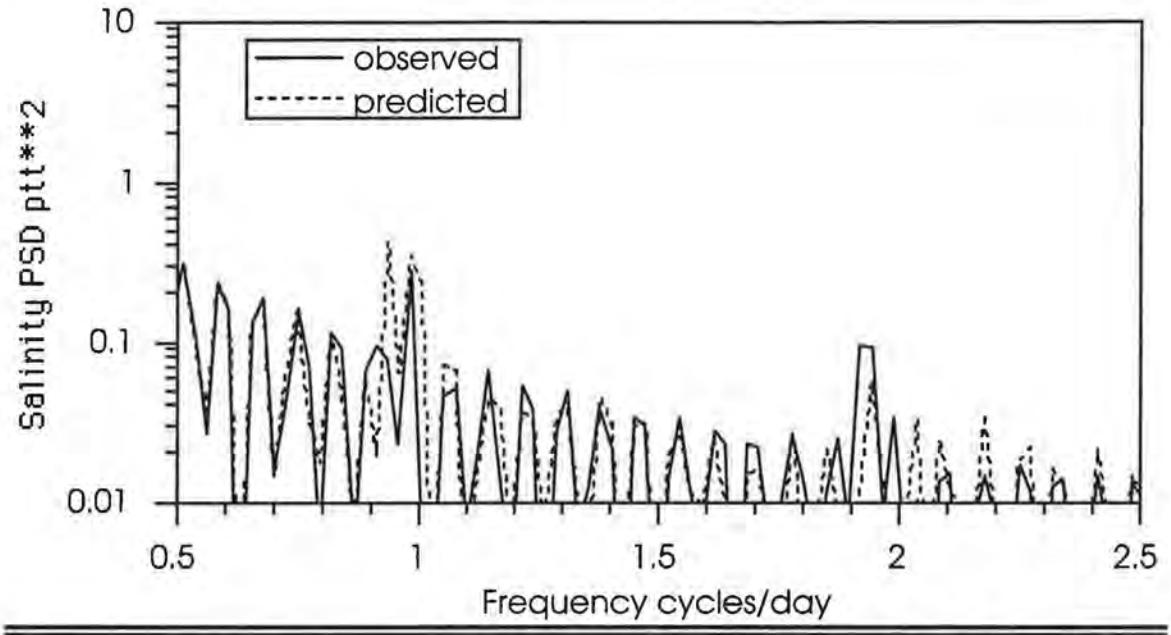


Figure H-15. Salinity PSD at Station B-Middle-3

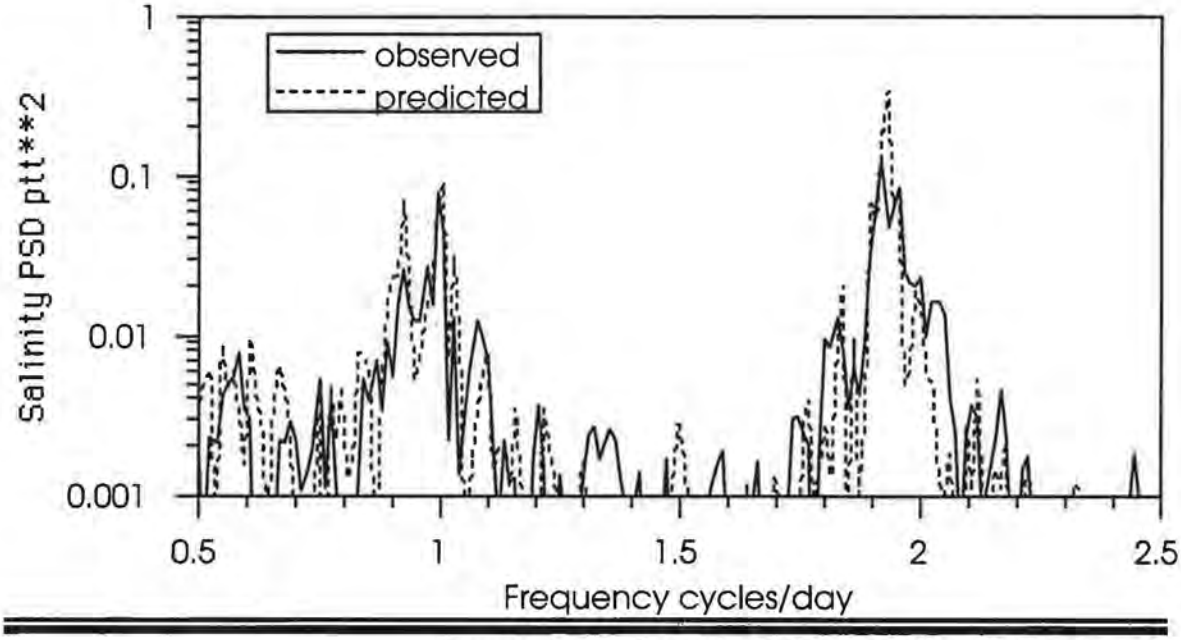


Figure H-16. Salinity PSD at Station B-Surface-1

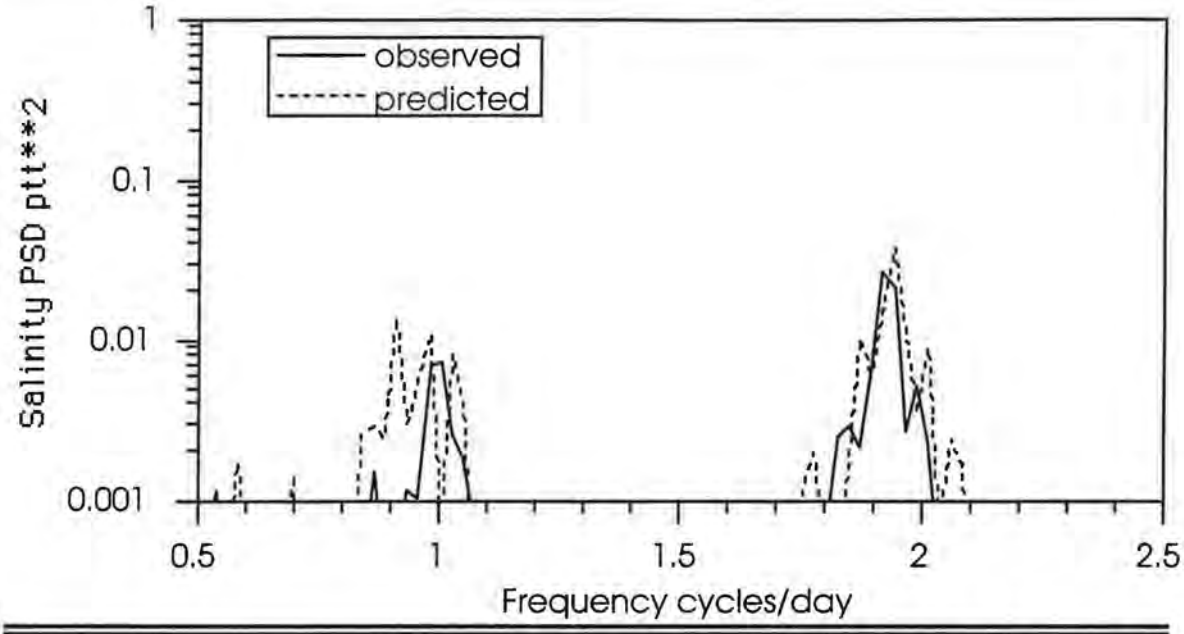


Figure H-17. Salinity PSD at Station B-Surface-2

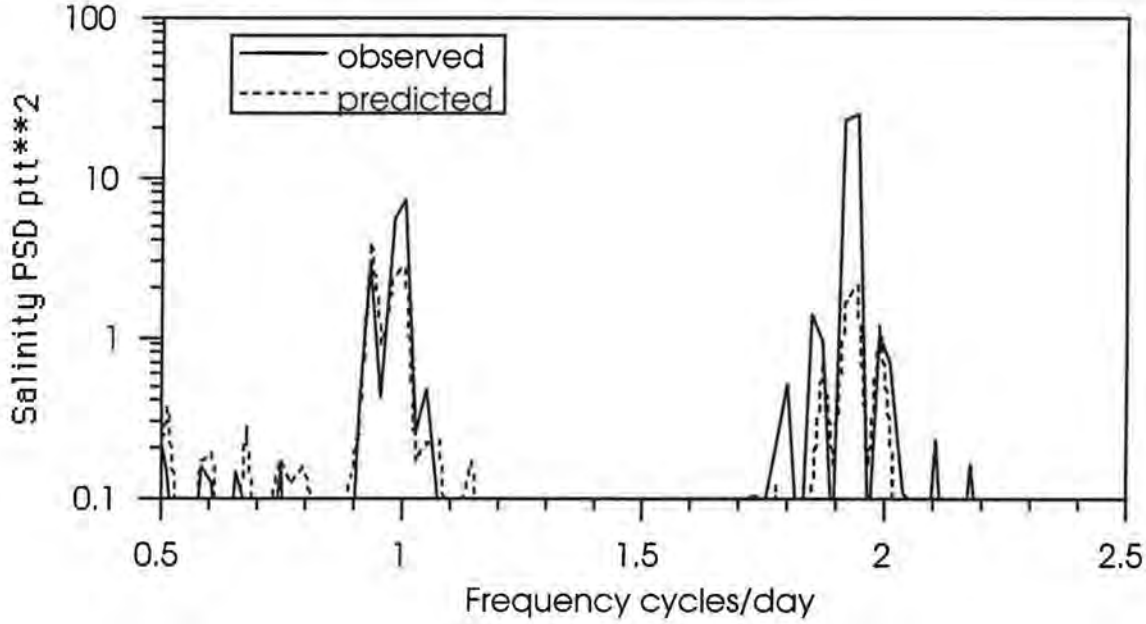


Figure H-18. Salinity PSD at Station D-Bottom-1

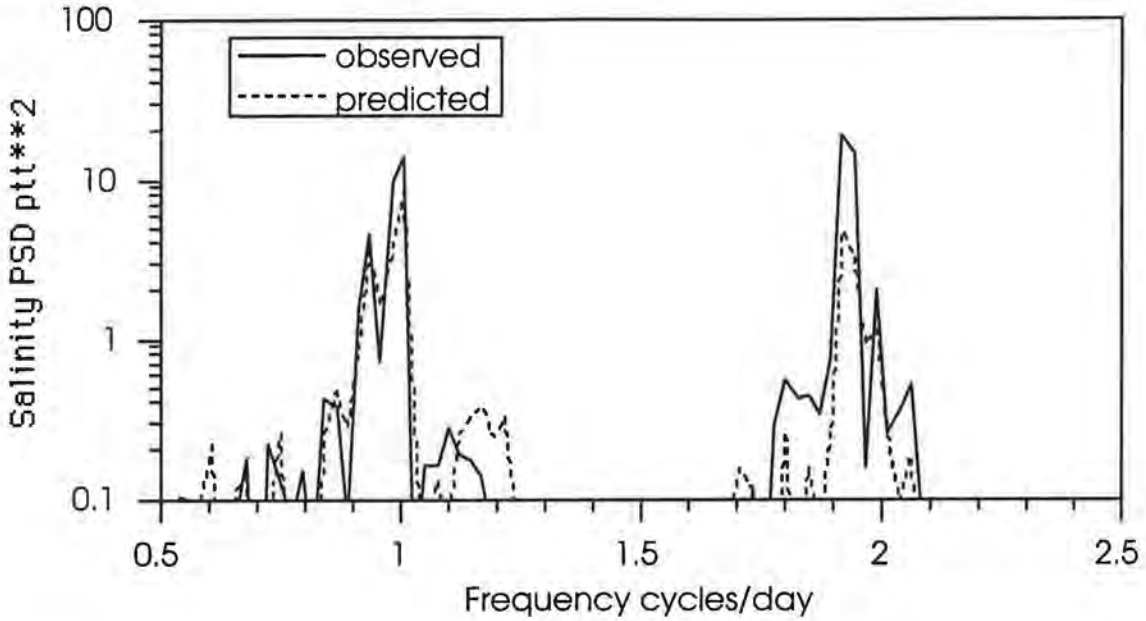


Figure H-19. Salinity PSD at Station D-Bottom-2

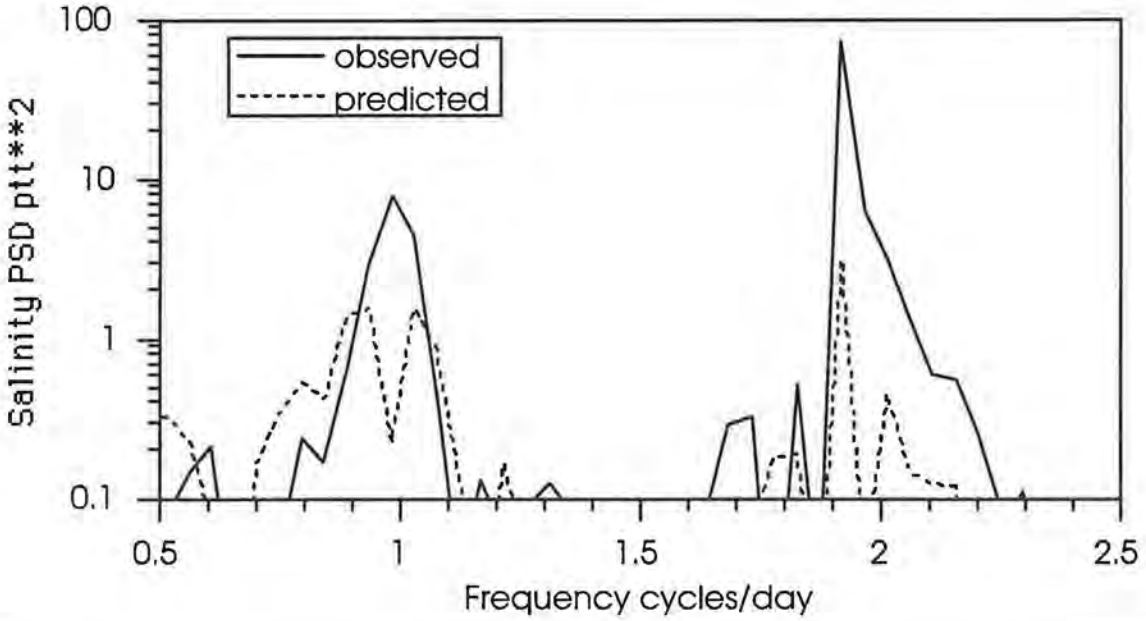


Figure H-20. Salinity PSD at Station D-Bottom-3

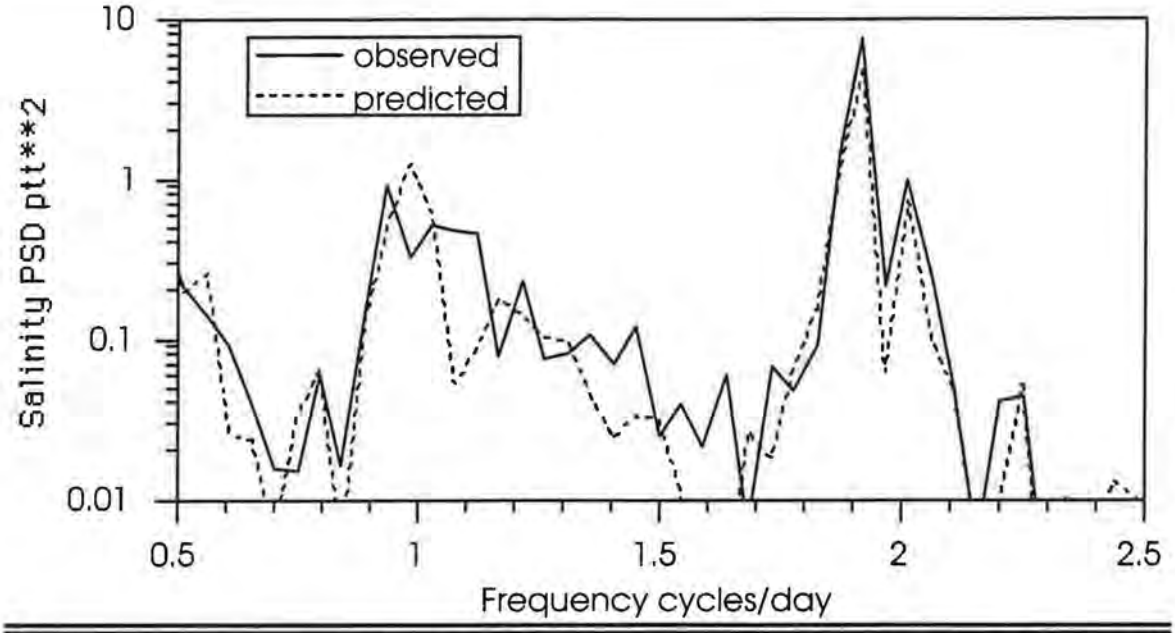


Figure H-21. Salinity PSD at Station D-Surface-1

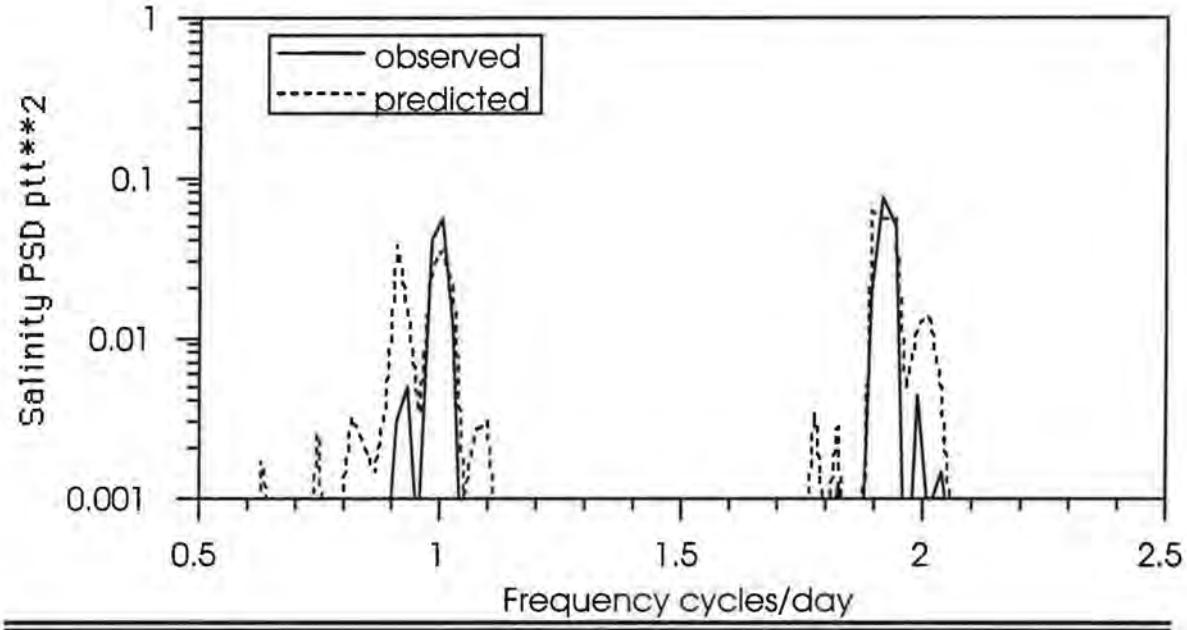


Figure H-22. Salinity PSD at Station D-Surface-2

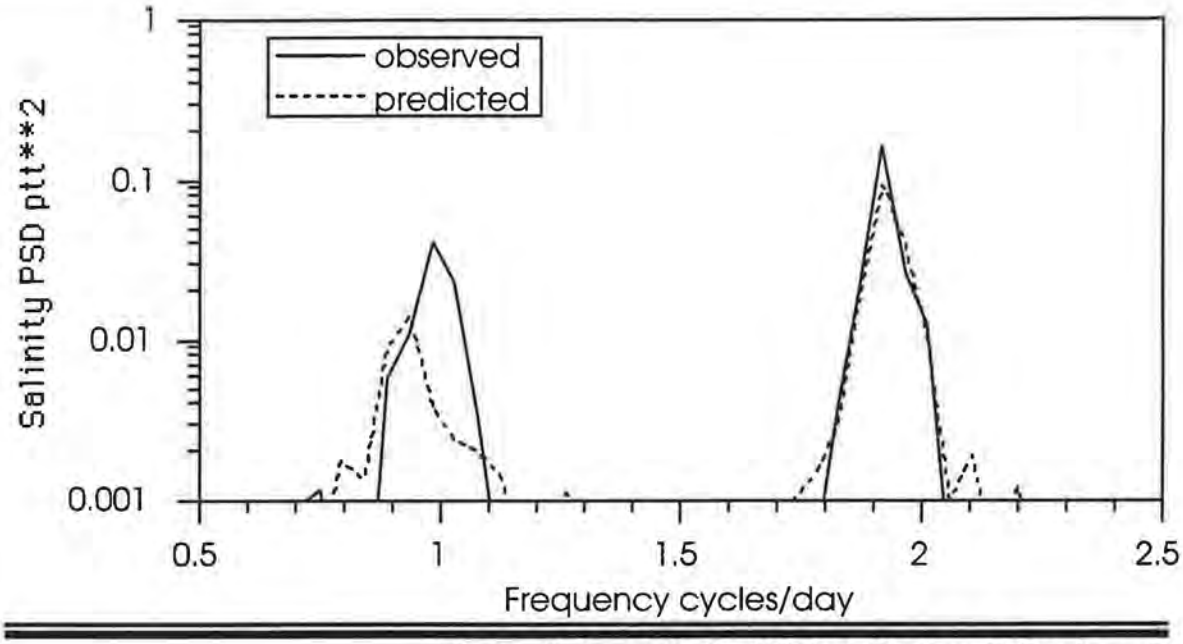


Figure H-23. Salinity PSD at Station D-Surface-3

SUBAPPENDIX I

METALS CALIBRATION CURVES

INTRODUCTION

This subappendix presents the calibration curves for six metals, arsenic, cadmium, copper, lead, nickel, and zinc. The curves display predicted chemical concentrations in the water against observed chemical concentrations in the water over time. Field station abbreviations used in each calibration curve are defined in Table I-1. The location is identified by the chart title, the field station name, and indicates whether it was a surface or depth sample. A point represents observed chemical concentrations. Predicted chemical concentrations are represented by a line. Above each figure are three numbers. The numbers are the three statistical calibration measures. The first number is the slope, the second the coefficient of determination, and the third the relative error of the mean (REM). The REMs are also summarized in Tables I-2 through I-7.

Table I-1. Field station abbreviations

Field Station	East Bank	Center Channel	West Bank
Norfolk	East Nfk		West Nfk
Brandon	Brn_e	Brn_c	Brn_w
S/W Michigan	Swm_e	Swm_c	Swm_w
Chelan		Che_c	
Hanford	Hnf_e		Hnf_w
Connecticut	Con_e (bay)	Con_c (bay)	Con_w (bay)
Denny Way (near the CSO)		Dwo	
Denny Way (over the sediment cap)		Dwc	
Duwamish Head (between the Duwamish Head and Smith Cove)		Dhd	

Table I-2. REM Calibration Parameter for Arsenic

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	-0.03		-0.05			
S/W Michigan	0.04	0.03	0.05	-0.13	0.03	-0.04
Brandon	0.03	0.10	0.06	-0.01	-0.02	-0.05
Hanford	0.30		0.31	-0.03		-0.02
Chelan		0.08			-0.07	
Connecticut	0.07	0.11	0.34	-0.02	0.003	-0.0003
Dhd (Bay)		-0.03			-0.04	
Dwc (Denny)		0.04			-0.03	
Dwo (Denny)		-0.0001				

Table I-3. REM Calibration Parameter for Cadmium

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	-0.20		0.00			
S/W Michigan	-0.59	-0.52	-1.00	-0.21	-0.19	-0.25
Brandon	-0.31	-0.21	-0.73	-0.13	-0.13	-0.21
Hanford	0.21		0.23	-0.04		-0.05
Chelan		-0.12			-0.05	
Connecticut	0.06	0.09	0.29	0.02	-0.009	-0.03
Dhd (Bay)		-0.02			0.01	
Dwc (Denny)		-0.05			-0.04	
Dwo (Denny)		-0.02				

Table I-4. REM Calibration Parameter for Copper

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	-0.03		-0.11			
S/W Michigan	0.25	0.25	0.08	0.09	-0.06	-0.09
Brandon	0.29	0.24	0.09	-0.19	-0.21	-0.08
Hanford	-0.07		-0.15	-0.07		-0.08
Chelan		0.03			0.07	
Connecticut	-0.06	0.27	-0.03	-0.18	-0.071	-0.0204
Dhd (Bay)		0.32			-0.02	
Dwc (Denny)		0.13			0.27	
Dwo (Denny)		0.29				

Table I-5. REM Calibration Parameter for Lead

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	-0.05		-0.21			
S/W Michigan	0.12	0.25	-0.05	0.06	-0.09	-0.28
Brandon	-0.12	0.18	-0.16	-0.19	-0.26	0.003
Hanford	-0.15		0.36	-0.12		-0.03
Chelan		-0.28			0.31	
Connecticut	-0.94	-0.18	-0.55	0.03	-0.45	0.26
Dhd (Bay)		0.39			-0.12	
Dwc (Denny)		-0.09			0.51	
Dwo (Denny)		0.52				

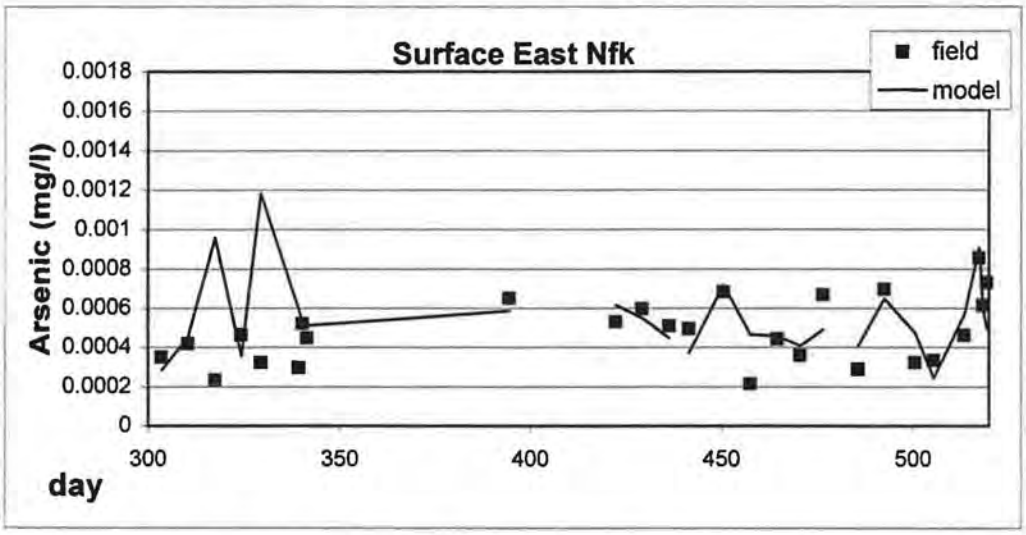
Table I-6. REM Calibration Parameter for Nickel

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	0.09		0.08			
S/W Michigan	0.05	0.10	0.14	0.21	0.21	0.20
Brandon	-0.11	-0.07	-0.07	-0.005	-0.04	0.04
Hanford	-0.30		-0.22	0.03		0.04
Chelan		-0.38			-0.12	
Connecticut	-0.12	-0.09	-0.25	-0.002	-0.007	0.003
Dhd (Bay)		-0.02			-0.05	
Dwc (Denny)		-0.18			-0.01	
Dwo (Denny)		-0.07				

Table I-7. REM Calibration Parameter for Zinc

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	0.03		-0.02			
S/W Michigan	0.0003	0.17	-0.07	0.11	-0.06	-0.12
Brandon	0.20	0.19	-0.09	-0.072	-0.15	0.03
Hanford	0.00		-0.13	0.03		0.09
Chelan		-0.04			0.32	
Connecticut	-0.04	0.23	-0.02	-0.04	-0.04	0.14
Dhd (Bay)		0.51			0.14	
Dwc (Denny)		0.28			0.29	
Dwo (Denny)		0.53				

0.196113 0.025301 -0.03053 0.000481



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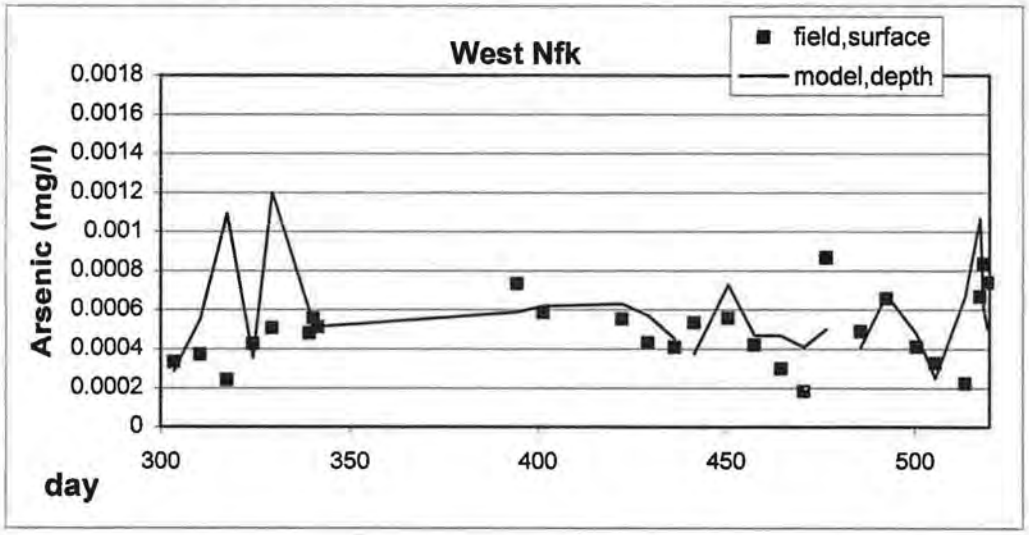

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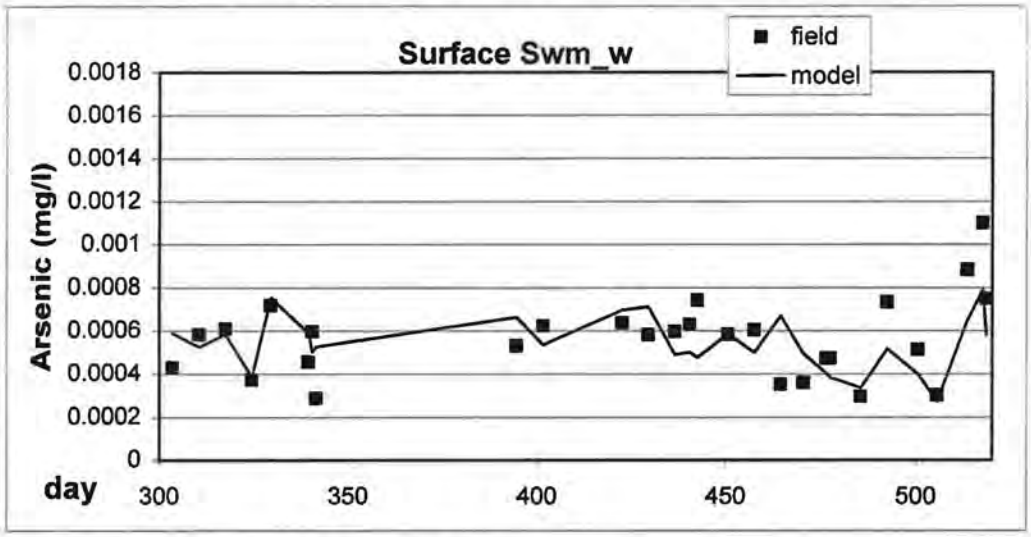

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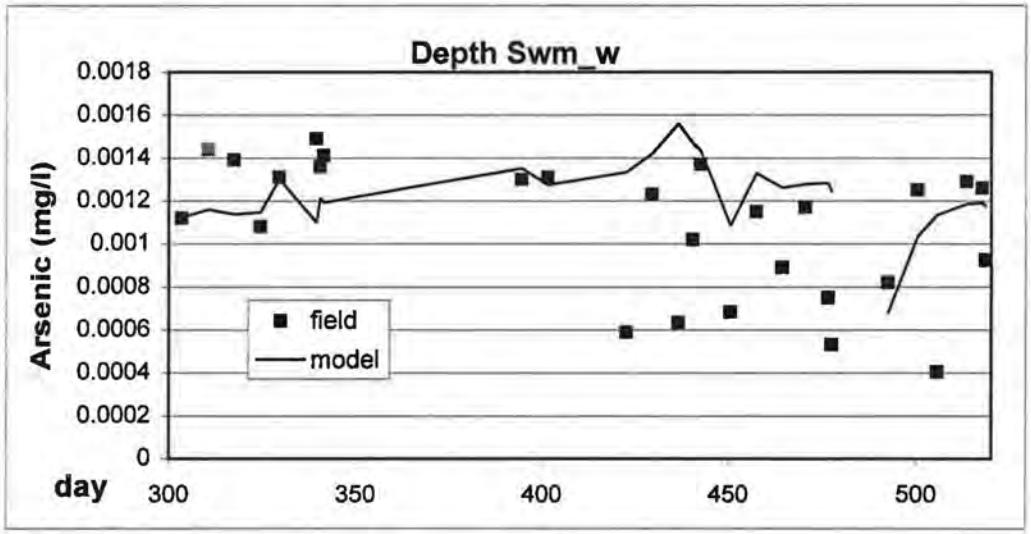

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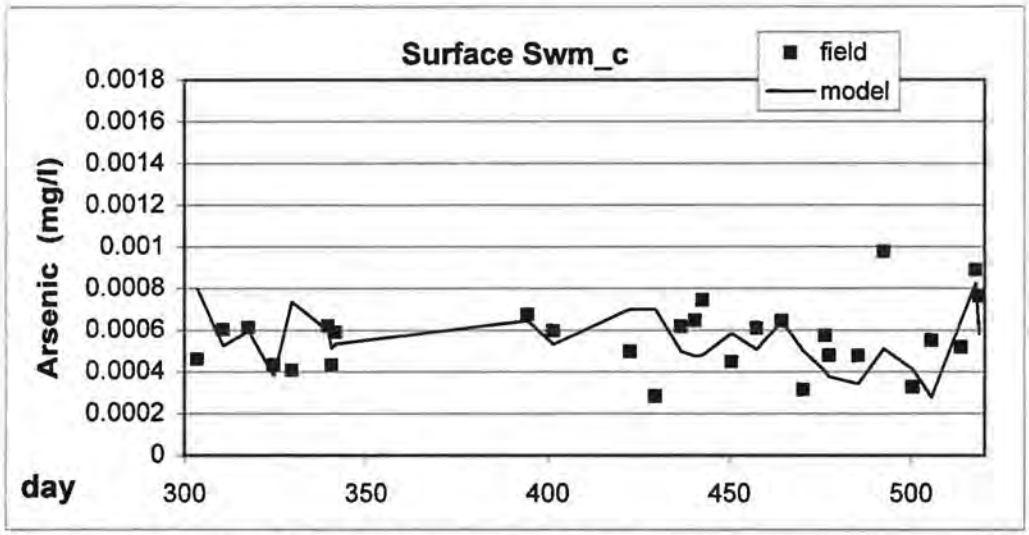

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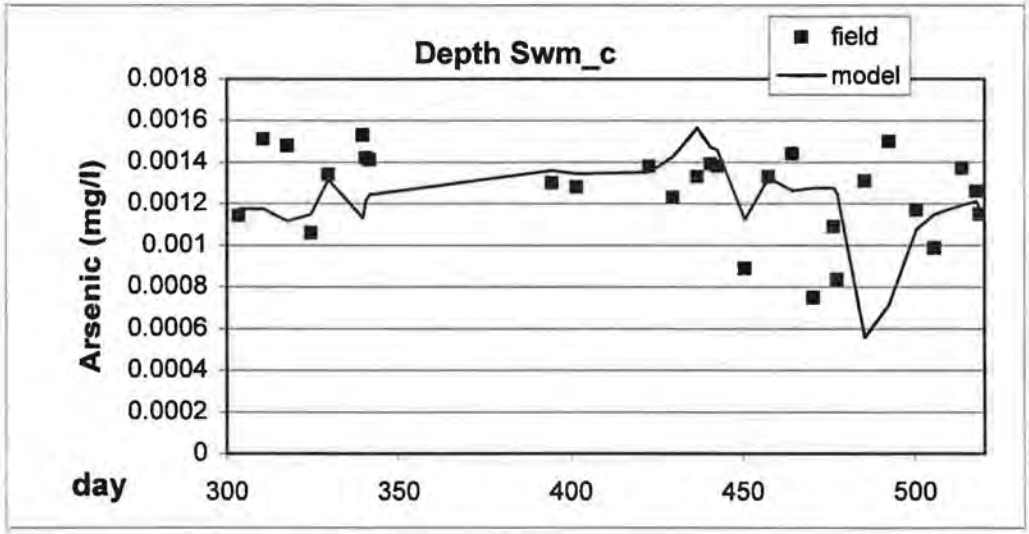

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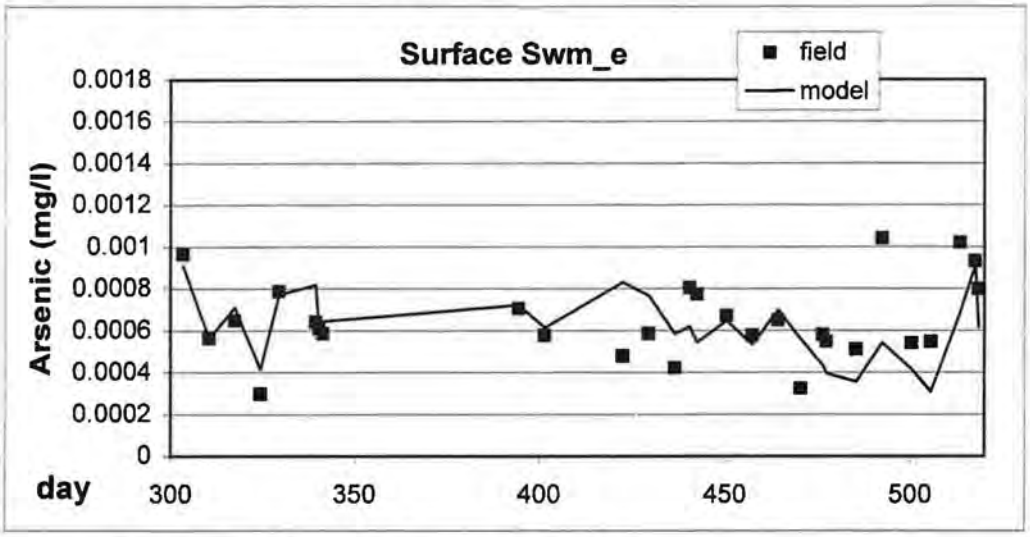

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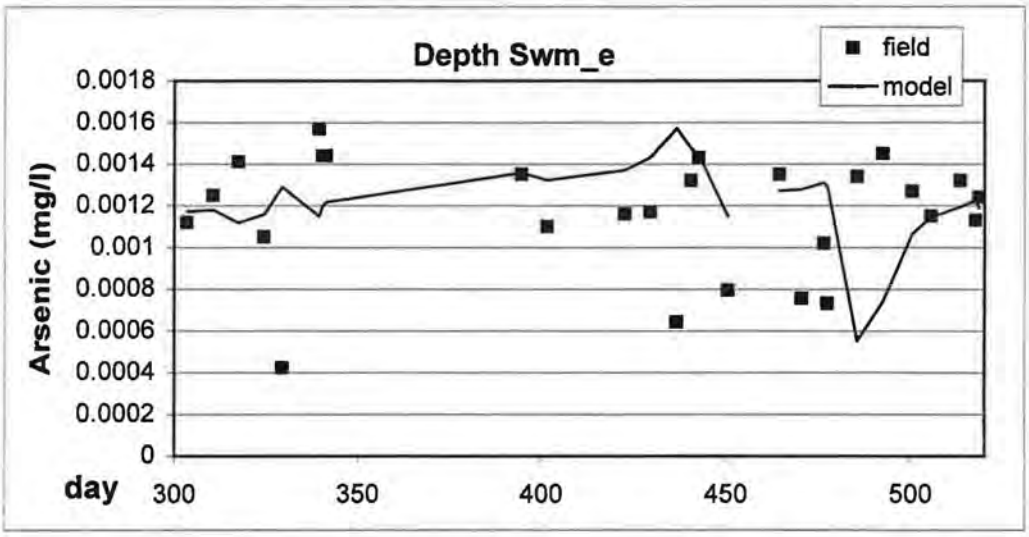

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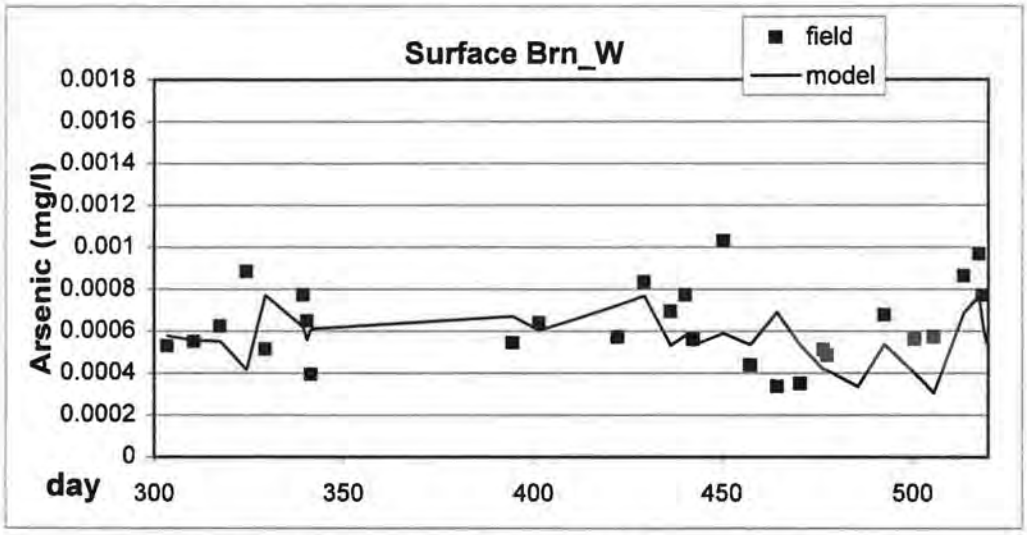

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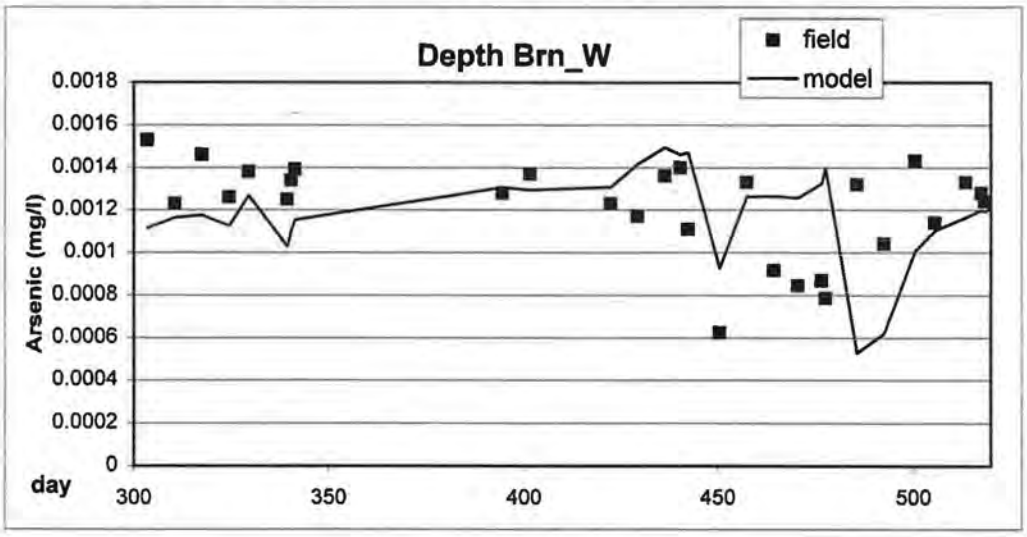

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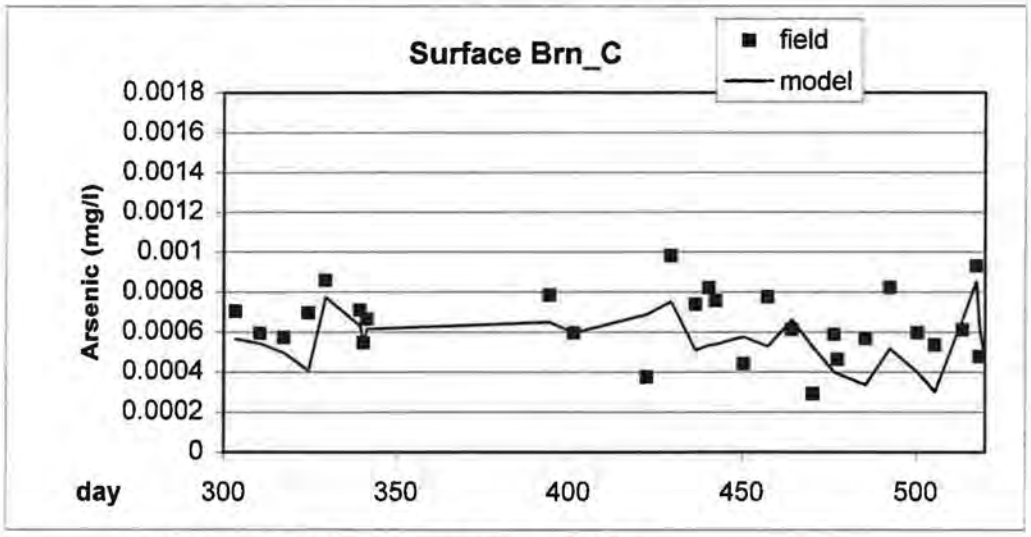

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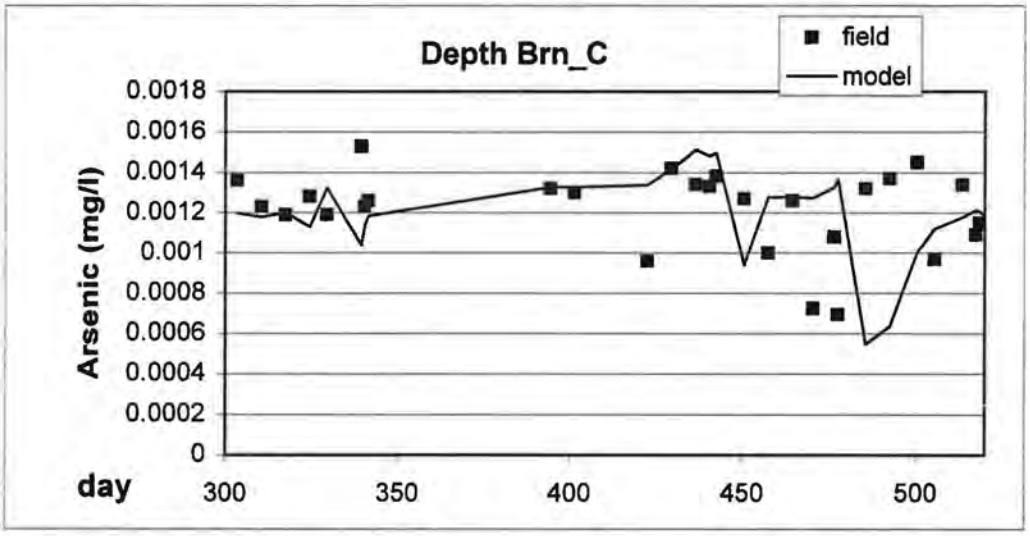

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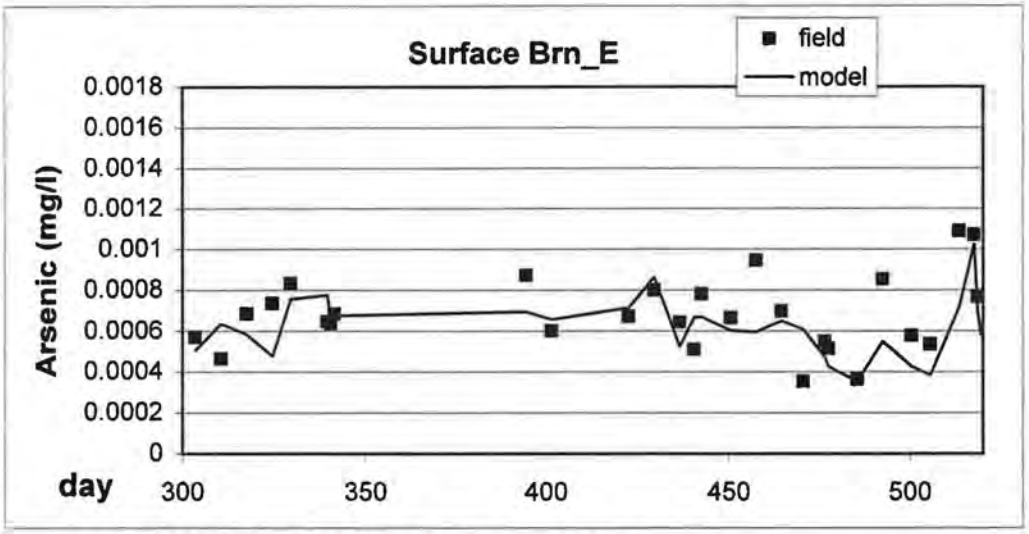

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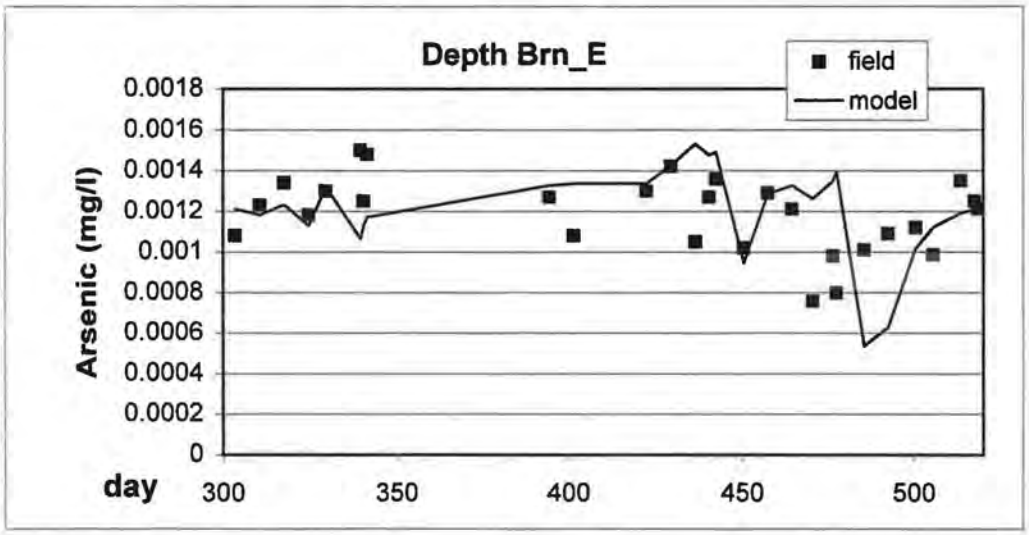

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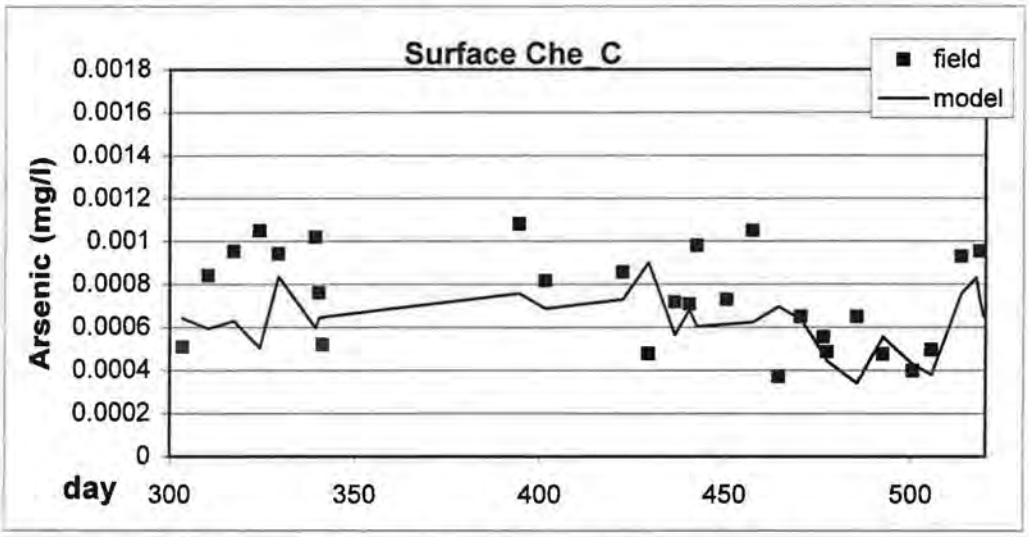

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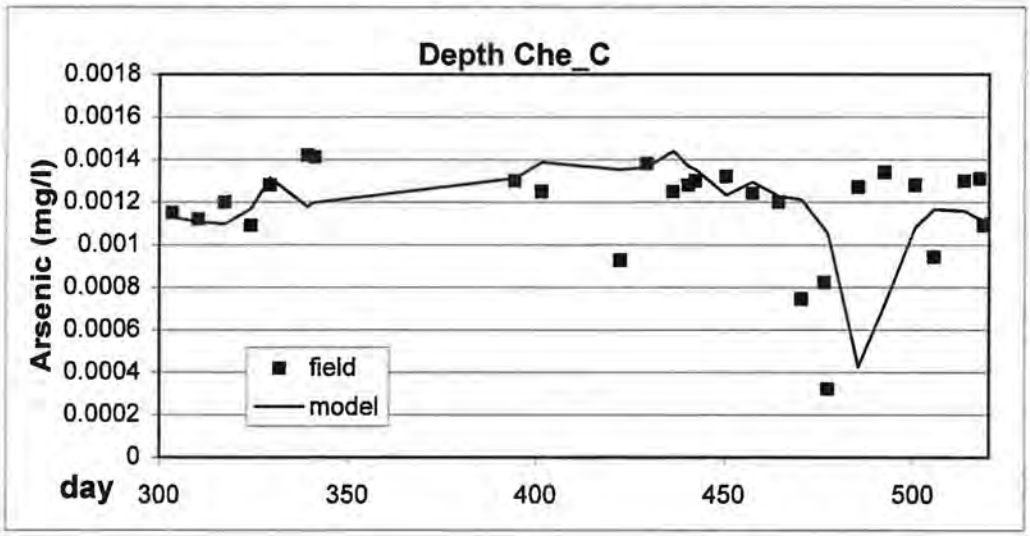

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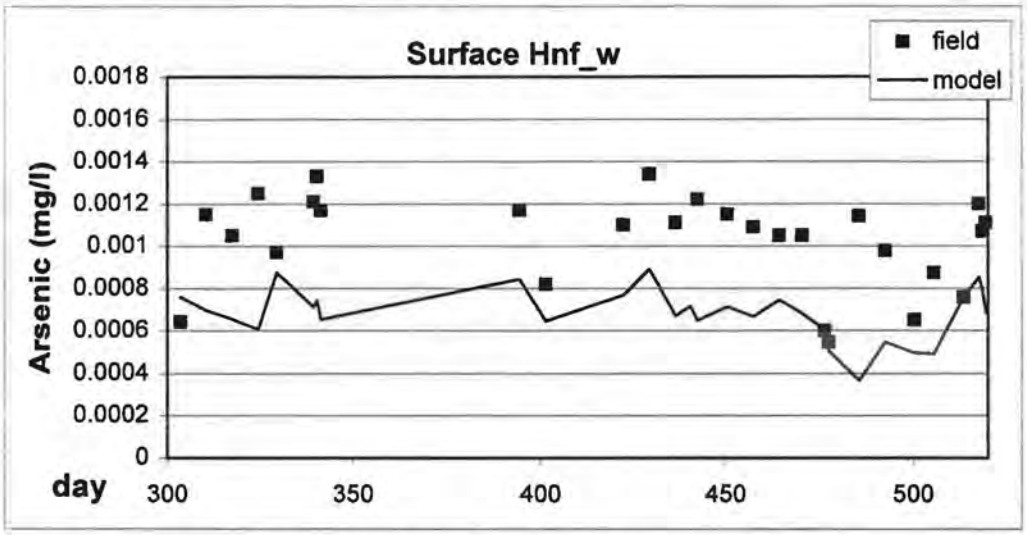

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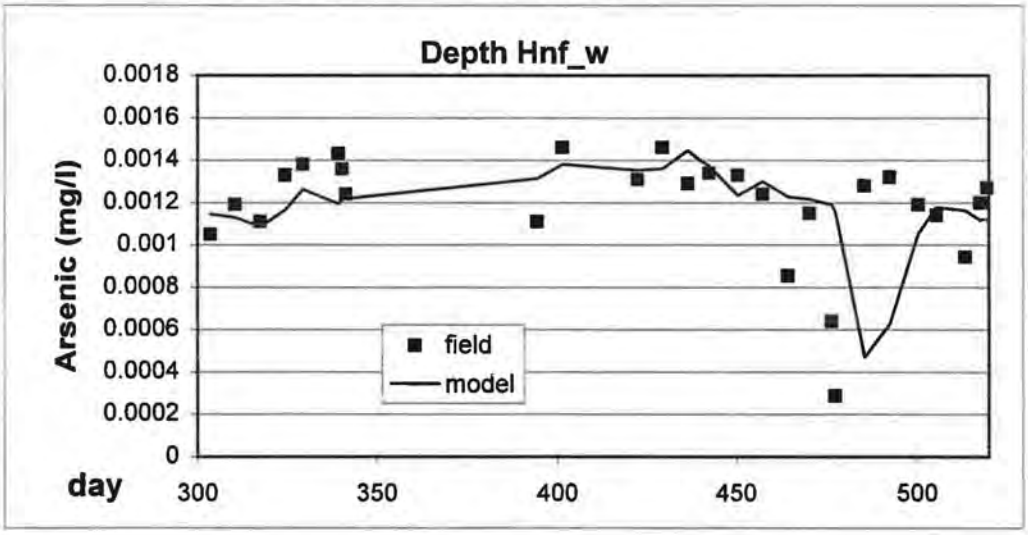

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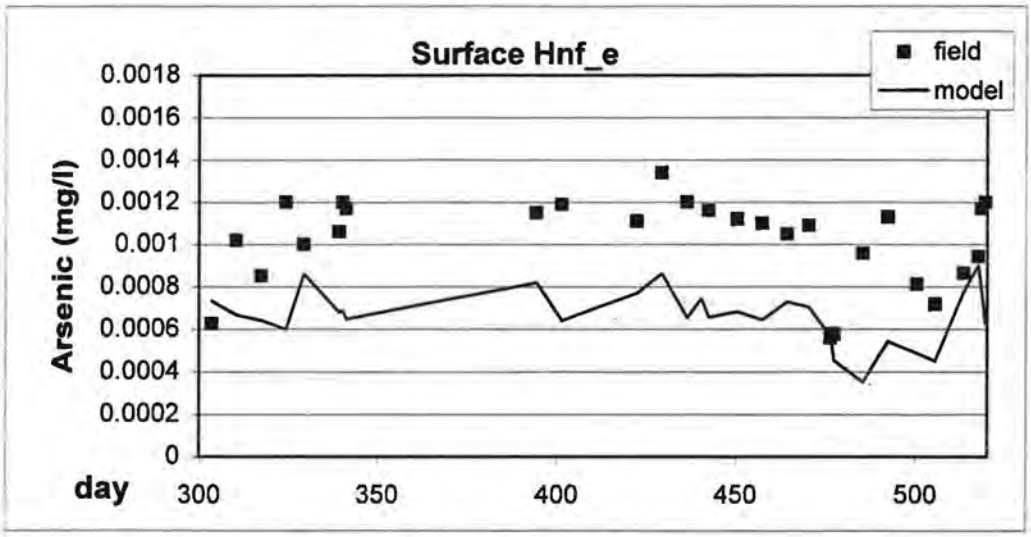

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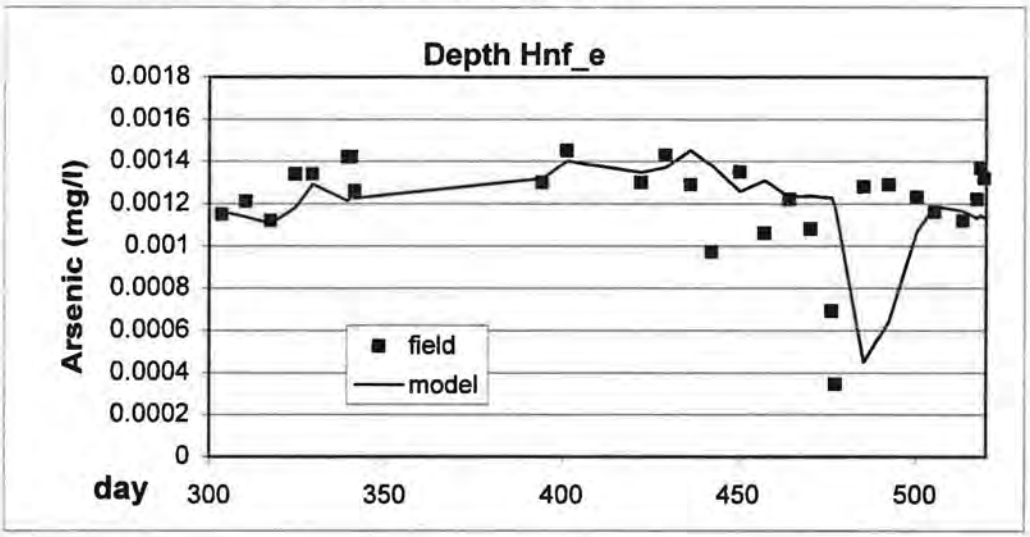

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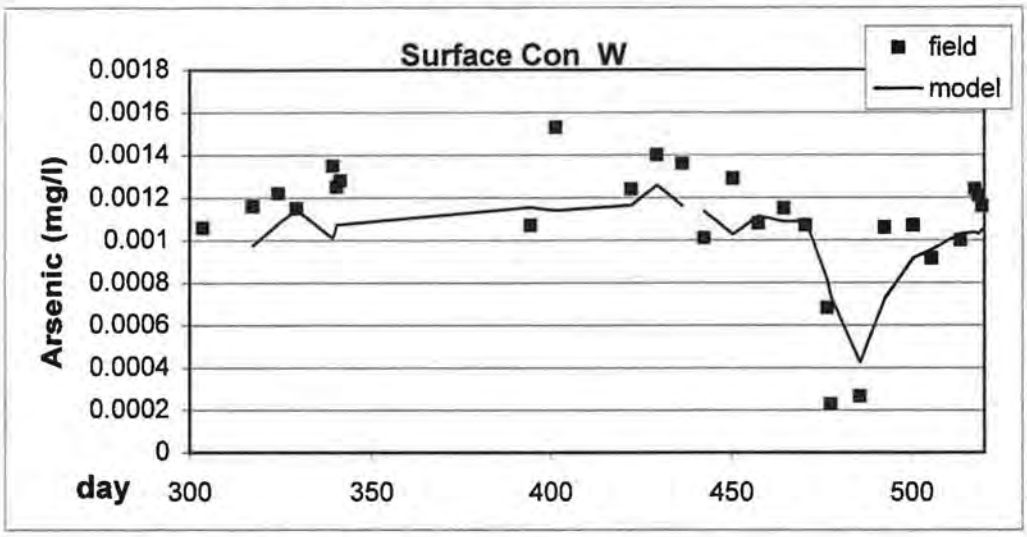

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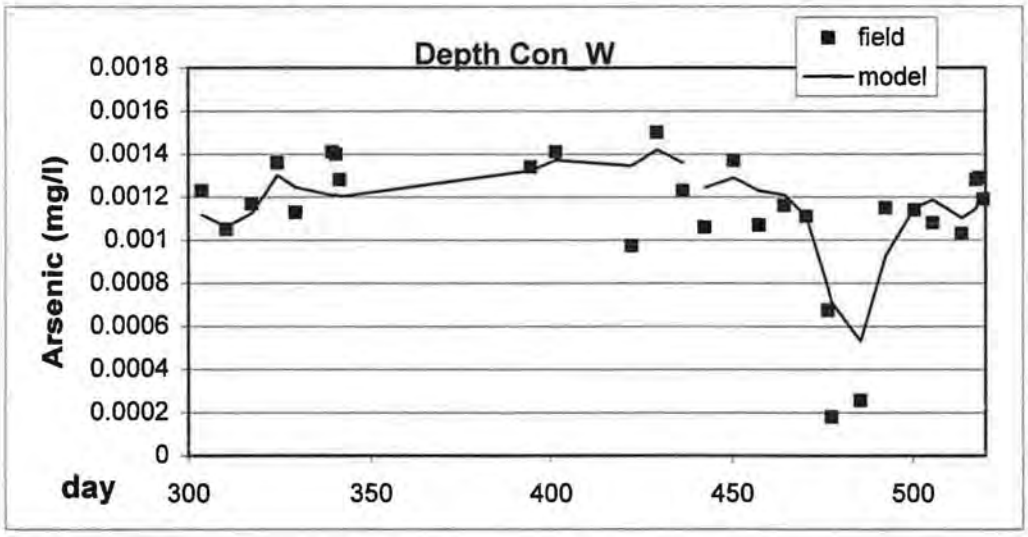

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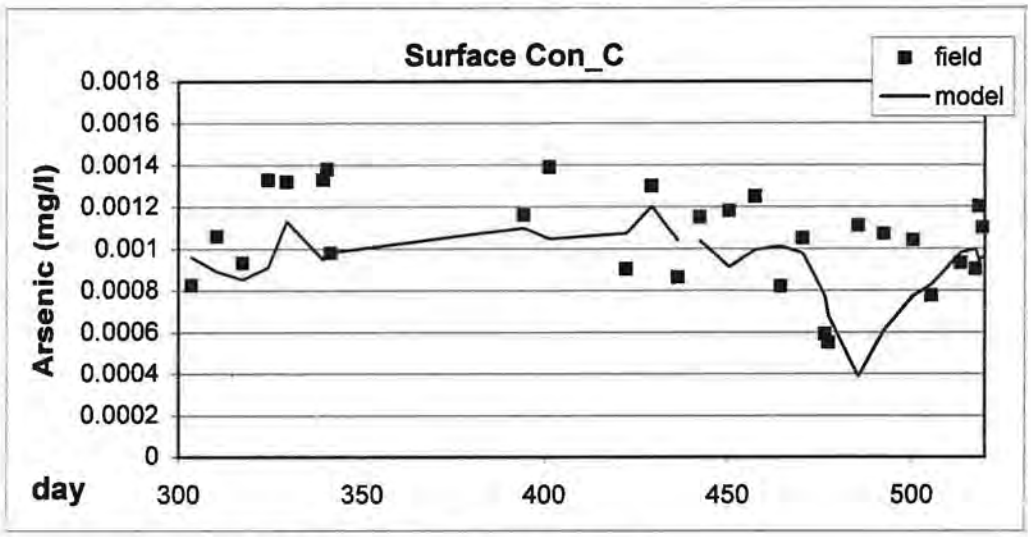

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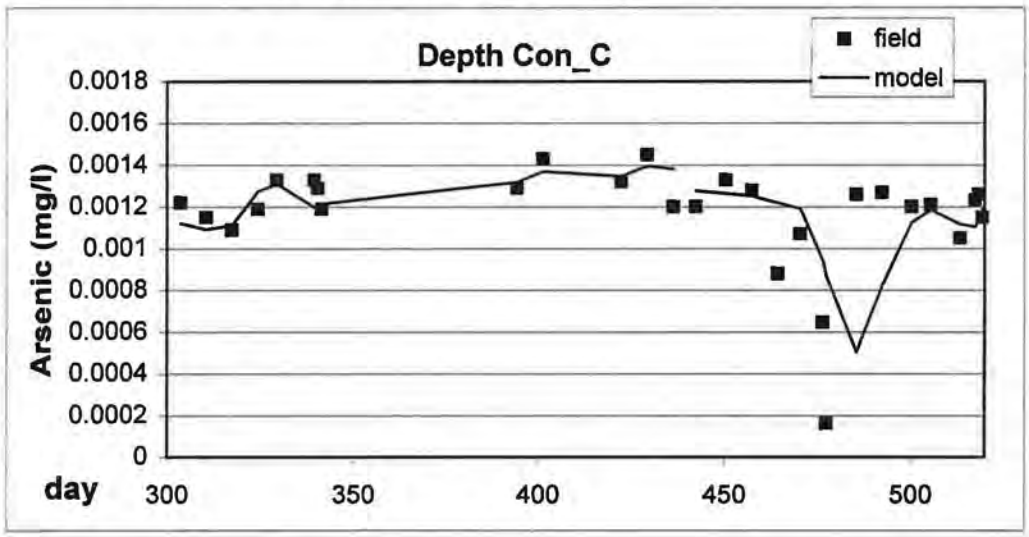

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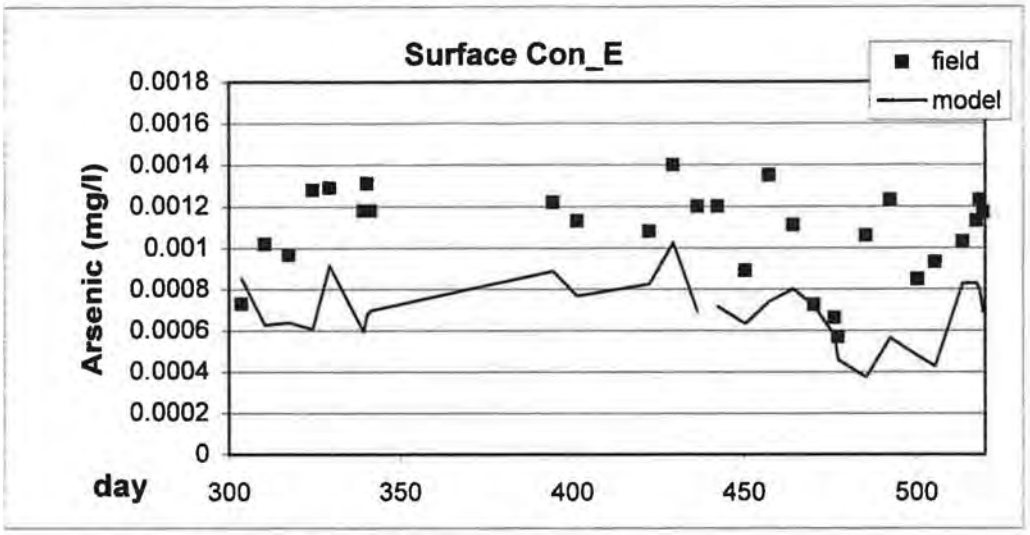

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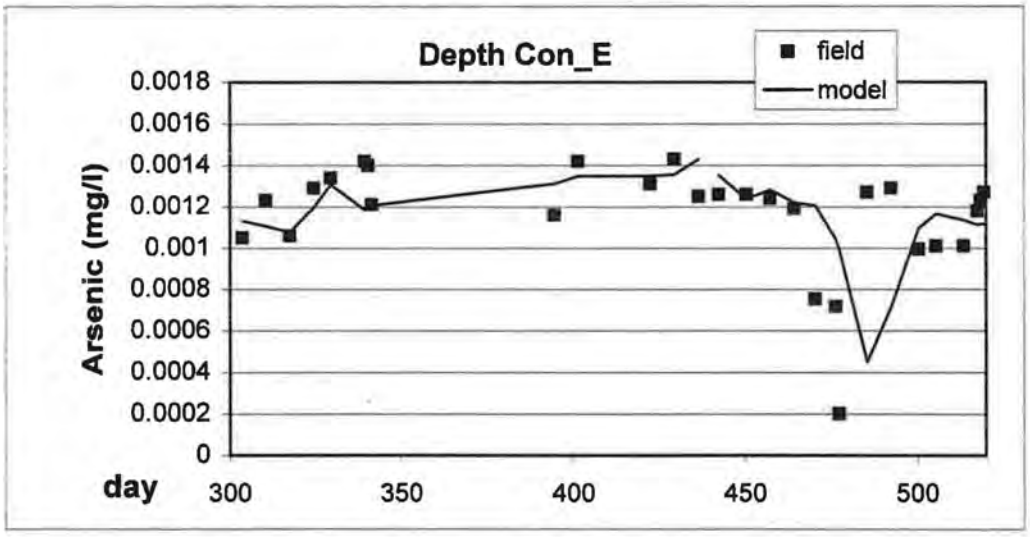

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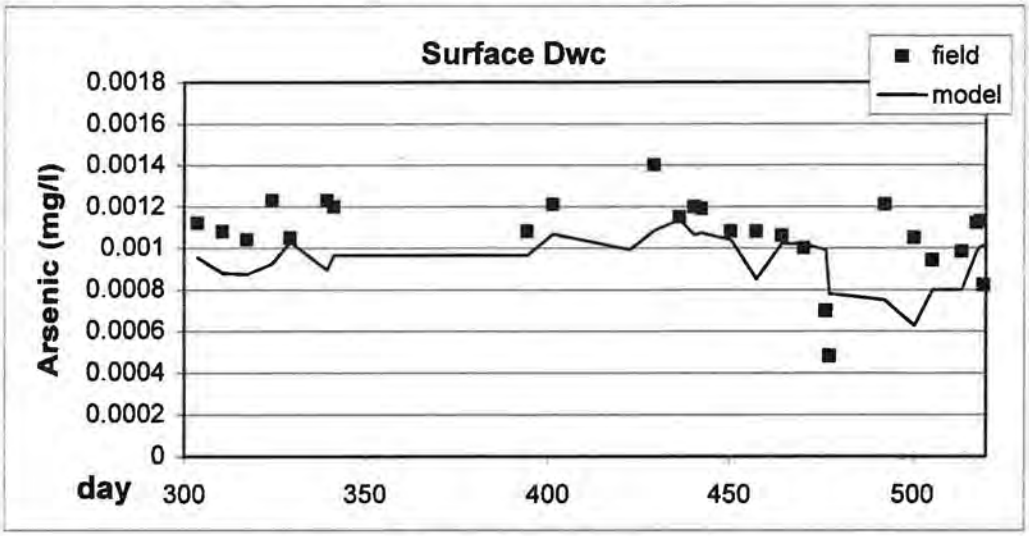

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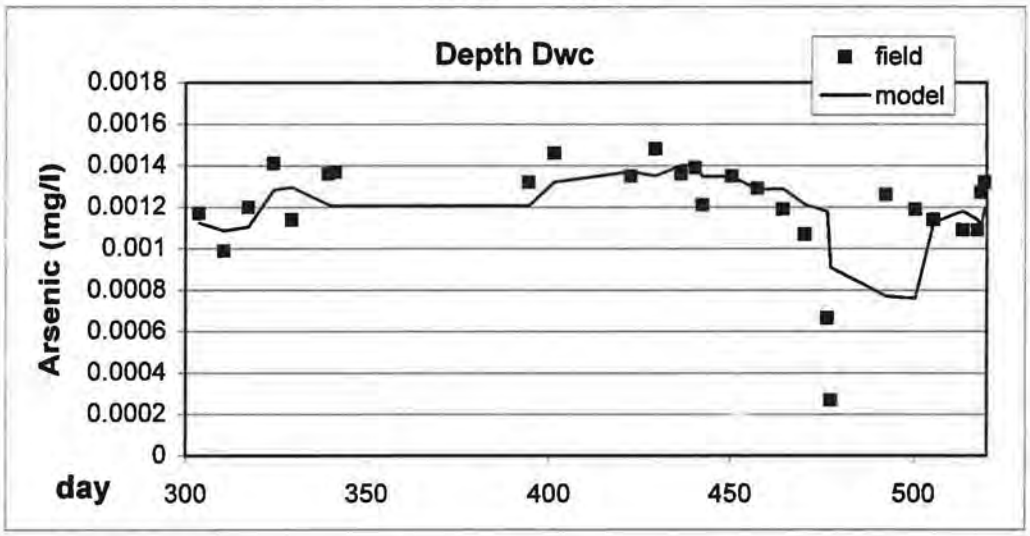

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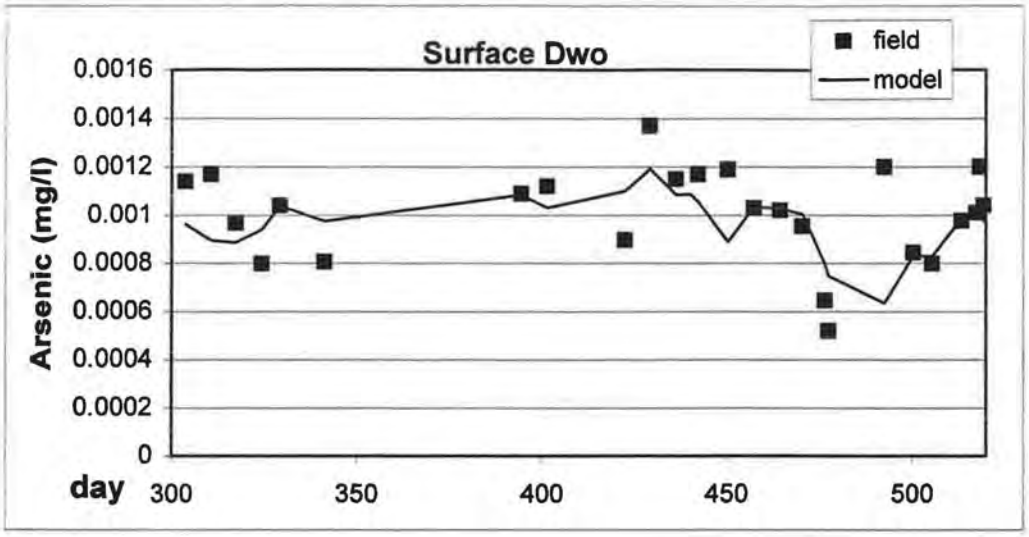

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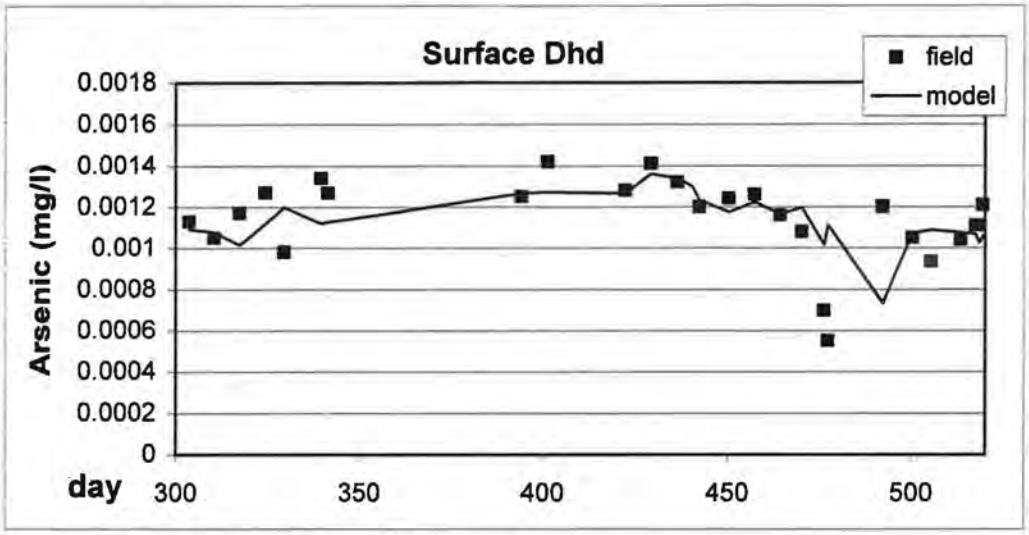

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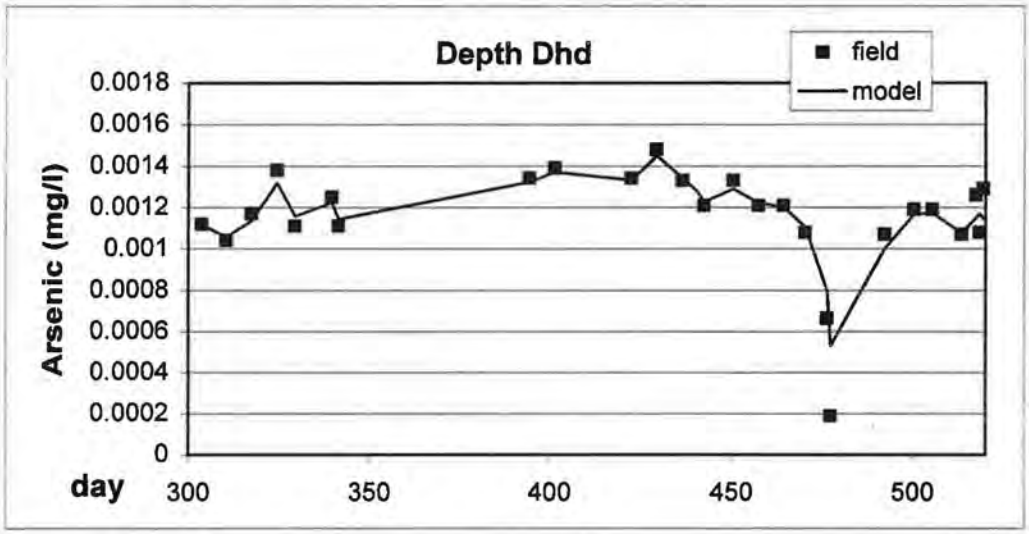

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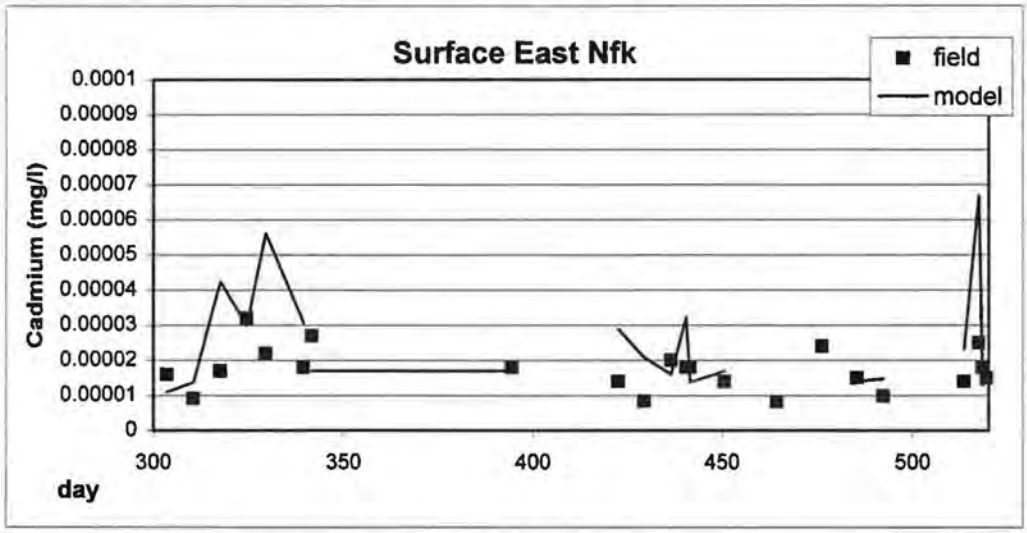

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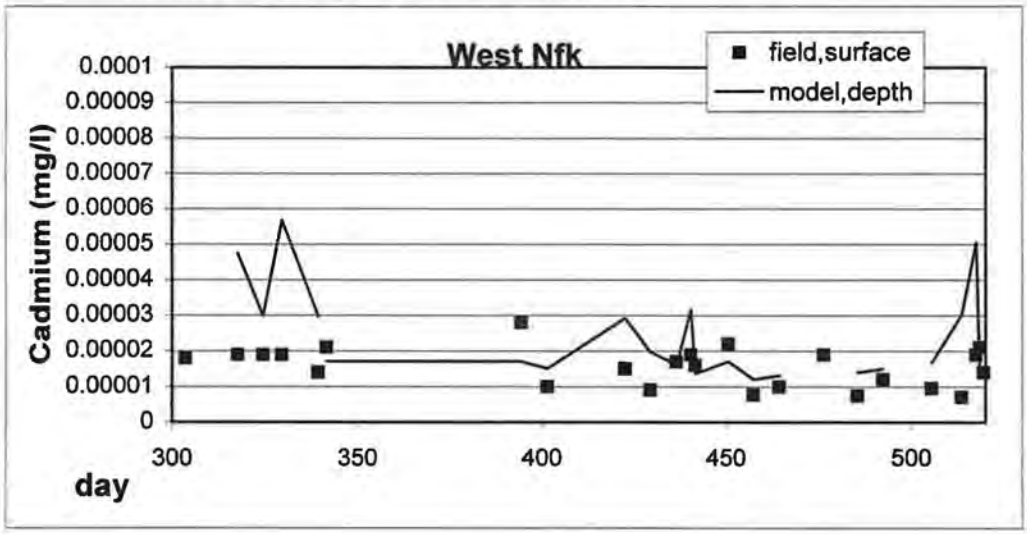

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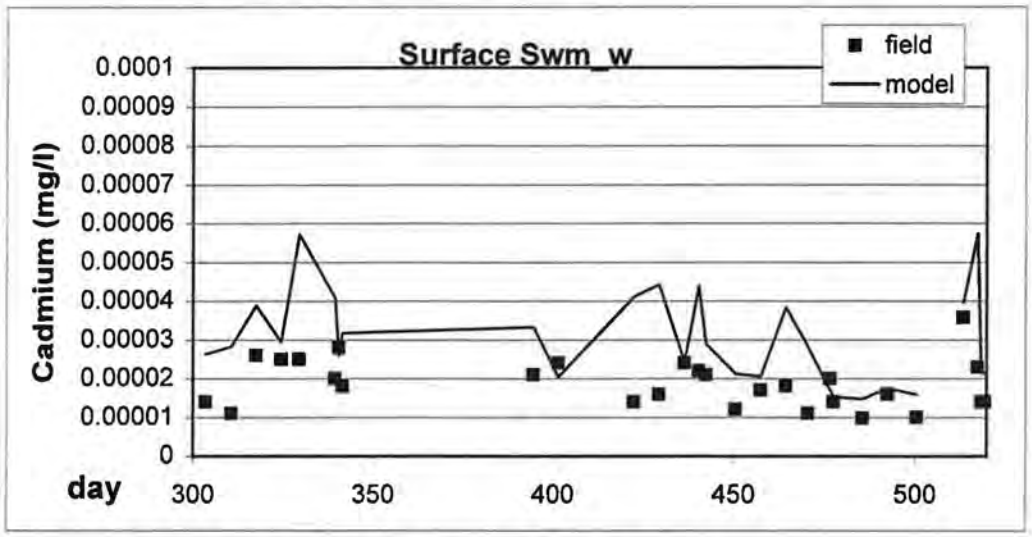

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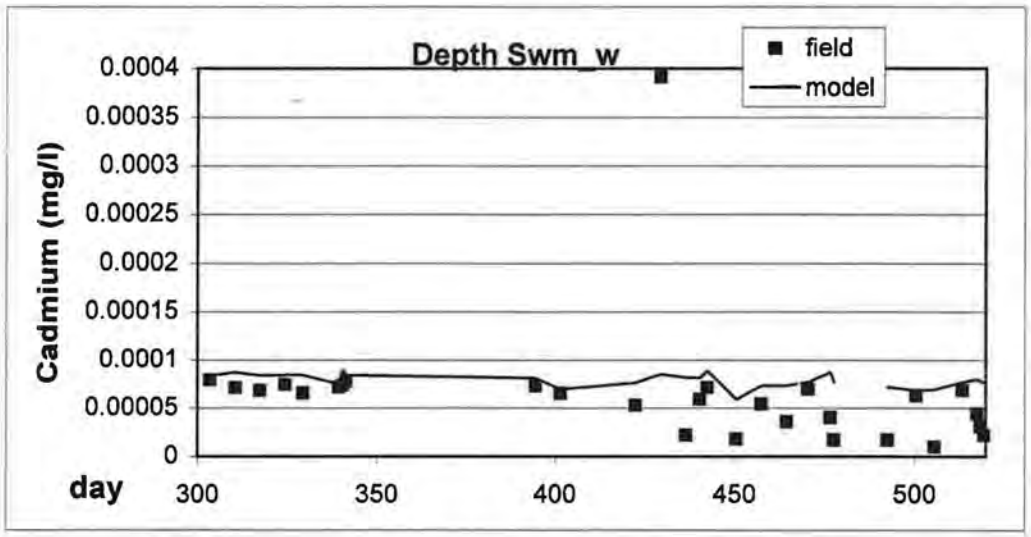

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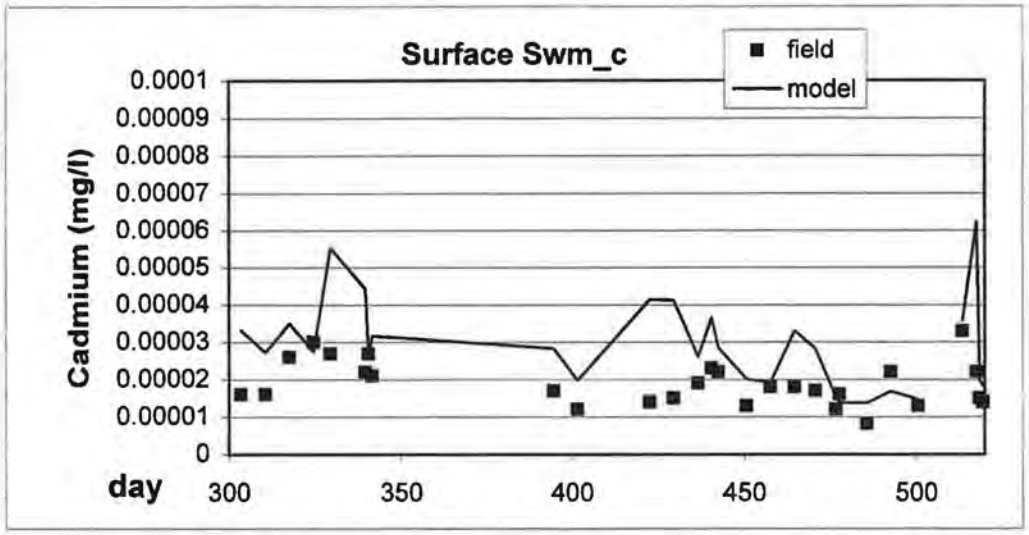

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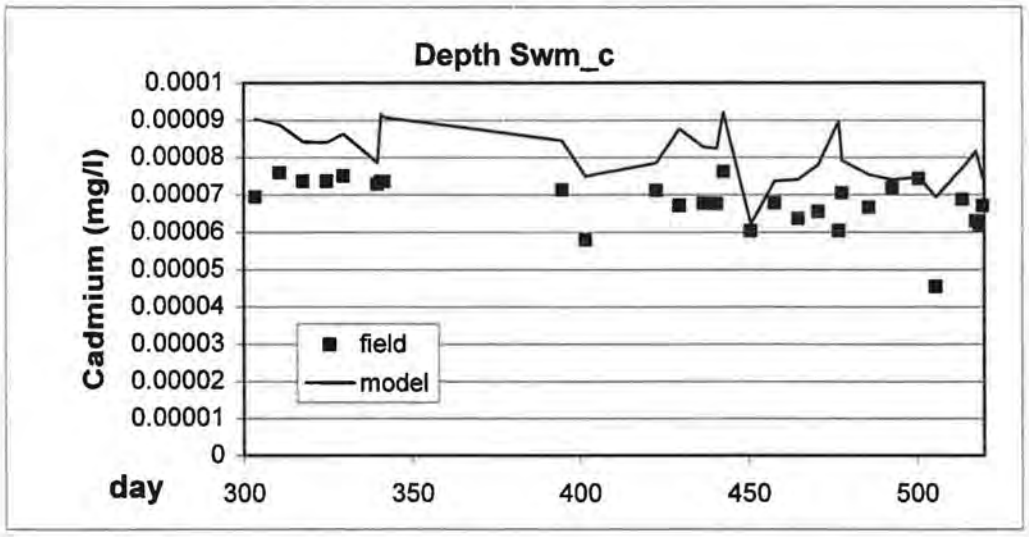

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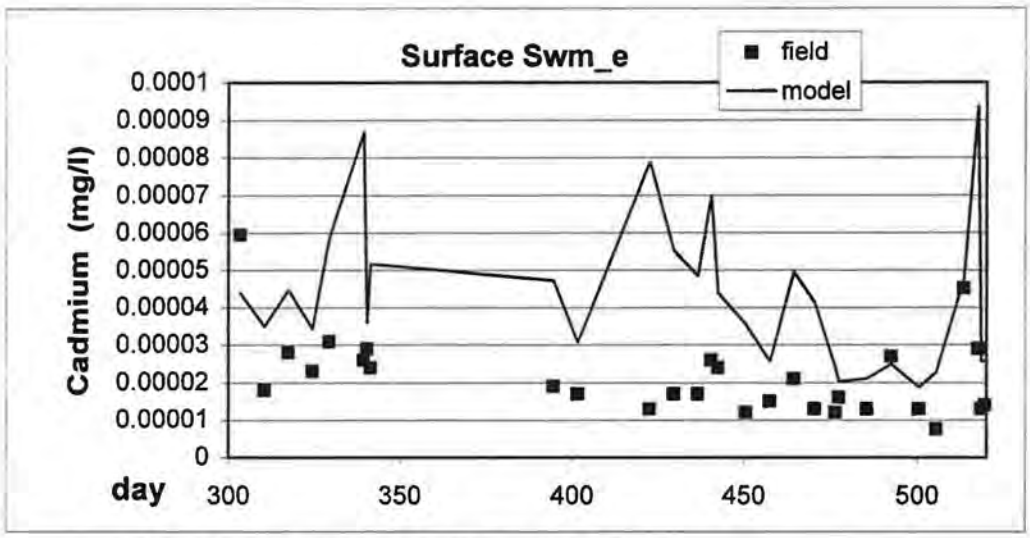

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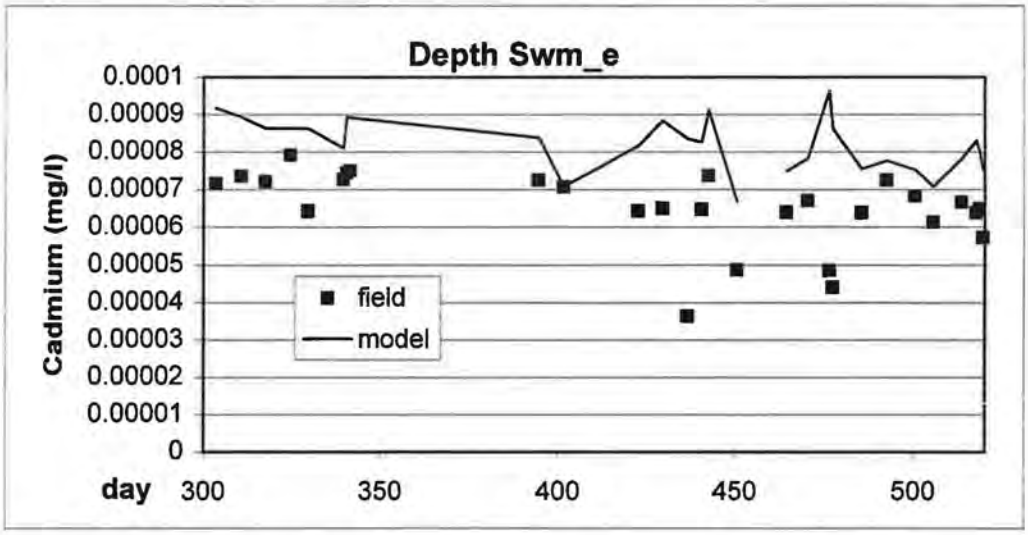

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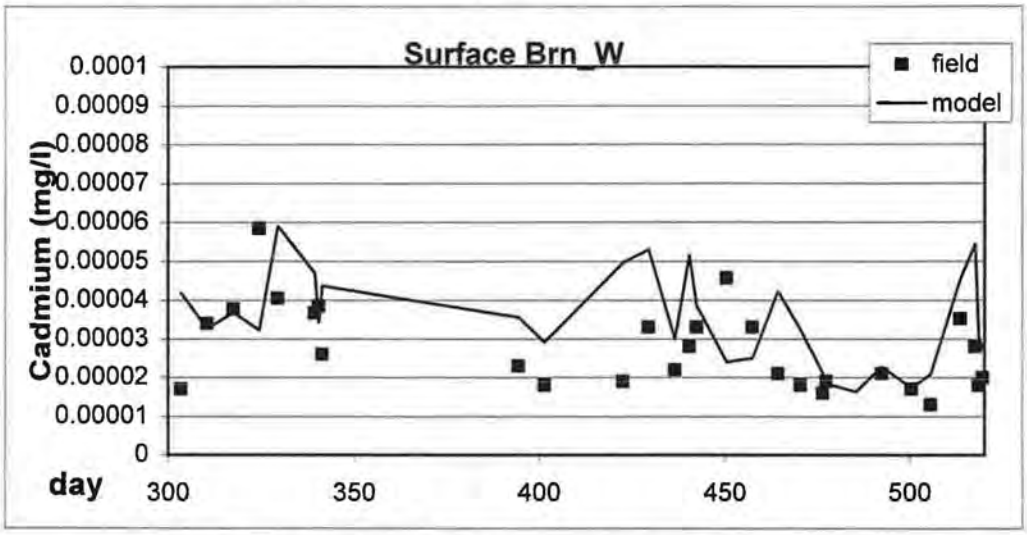

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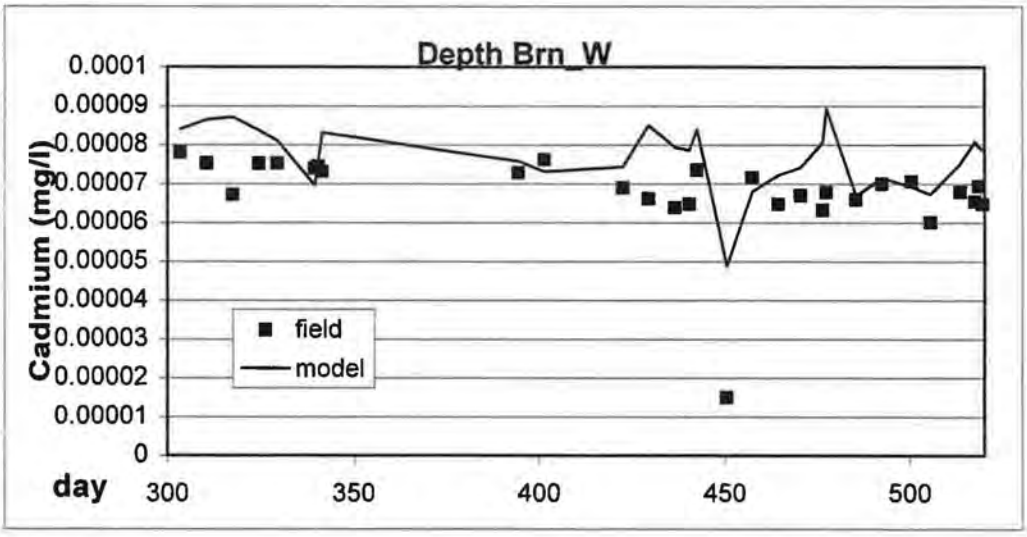

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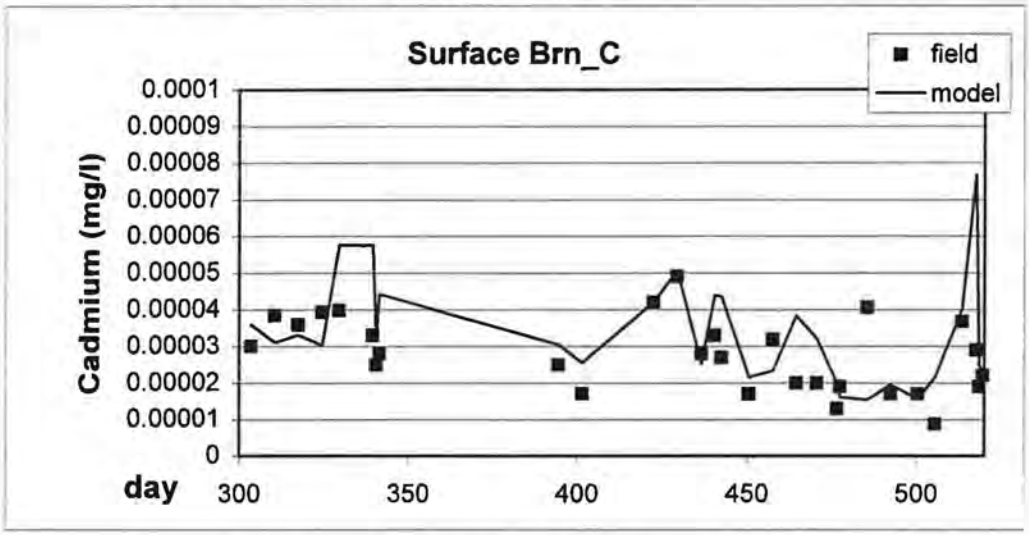

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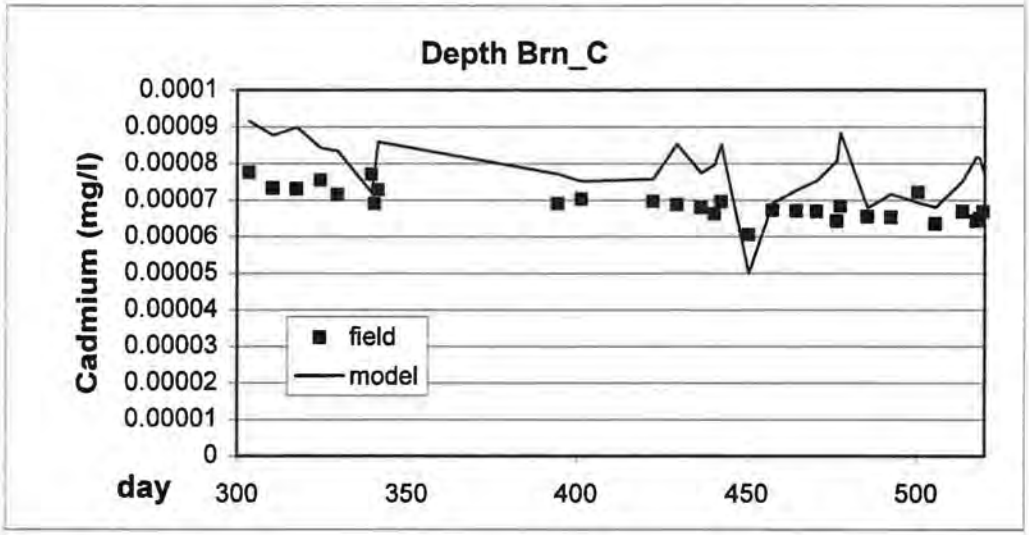

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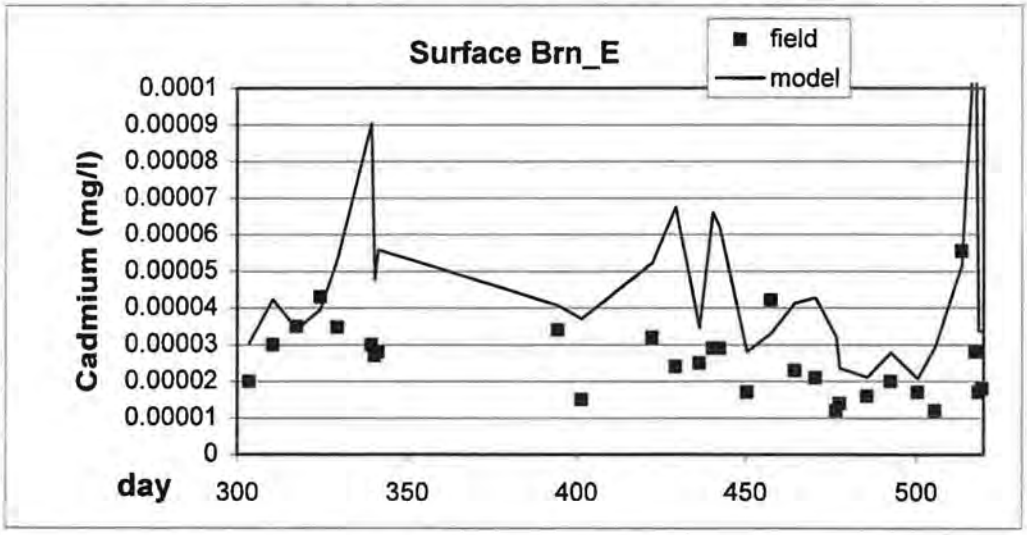

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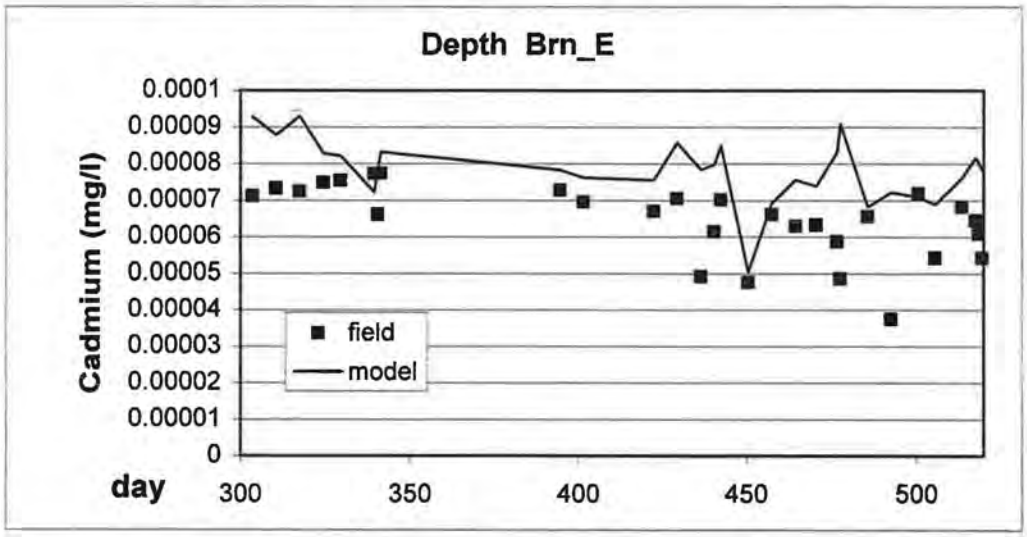

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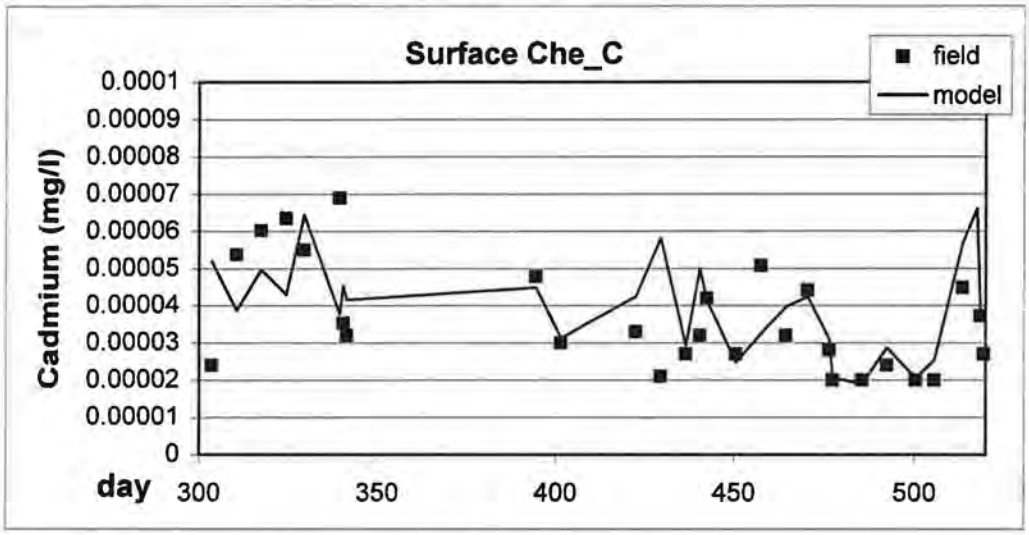

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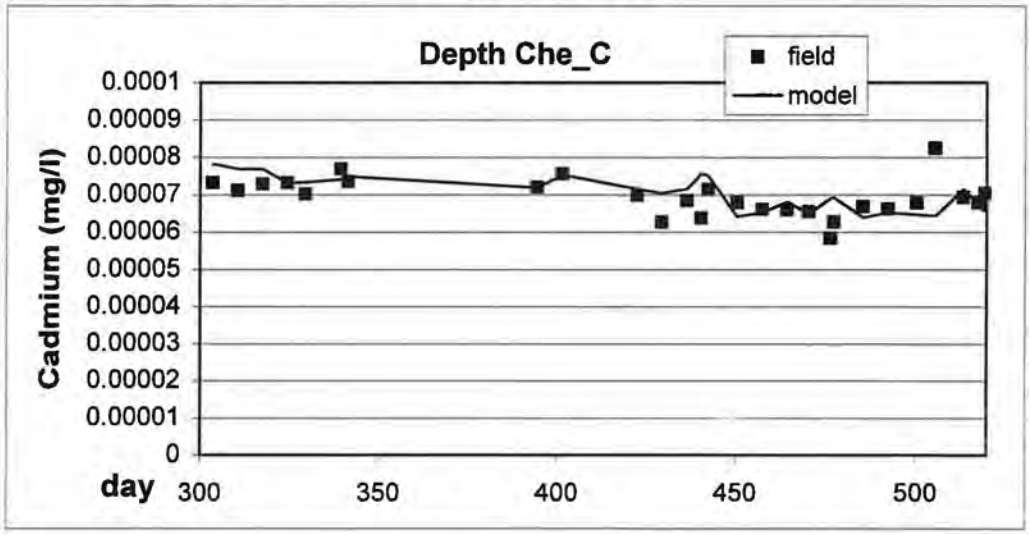

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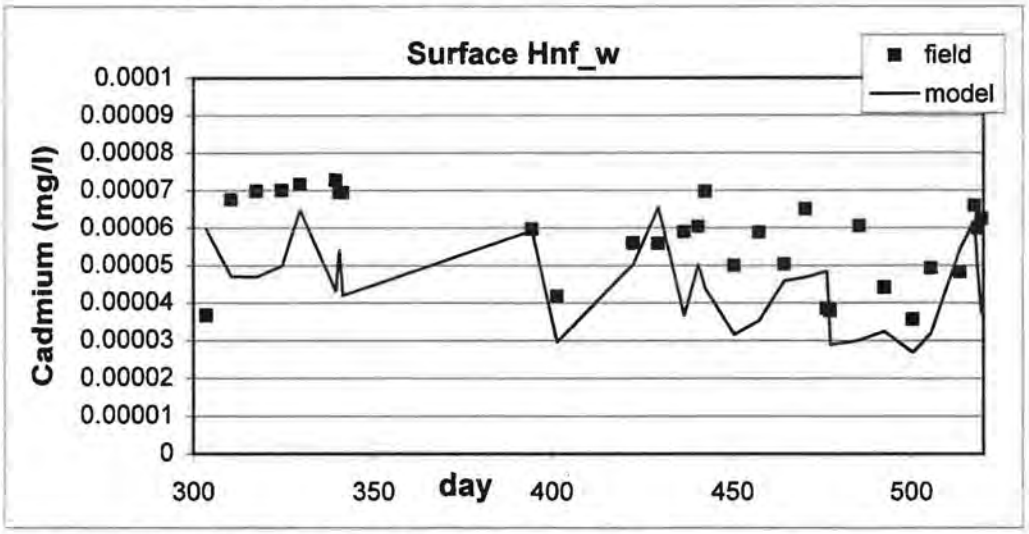

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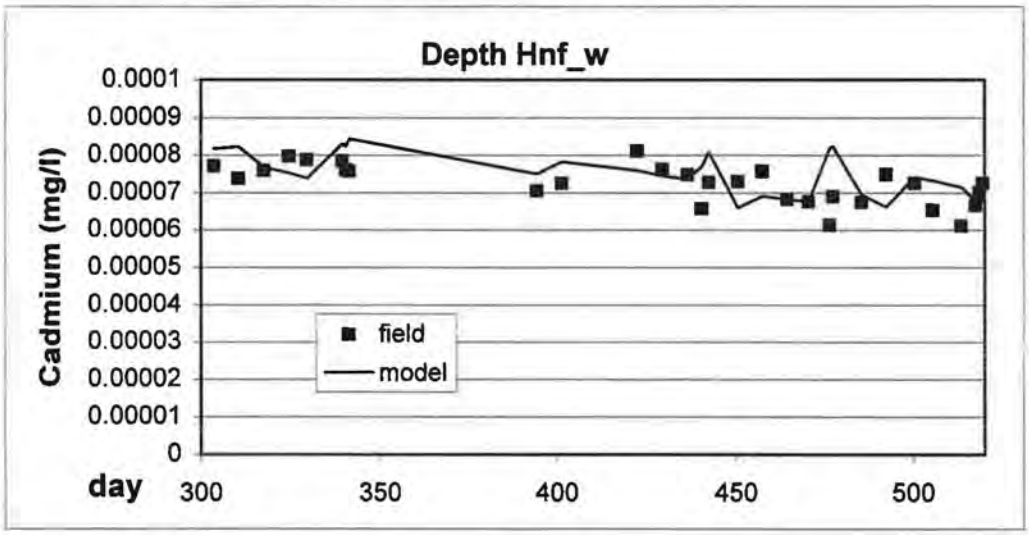

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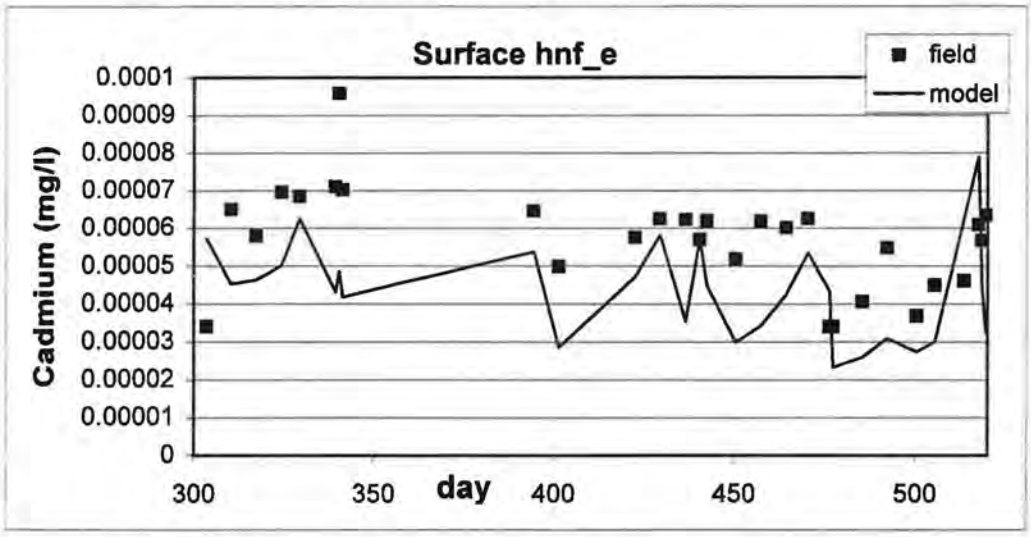

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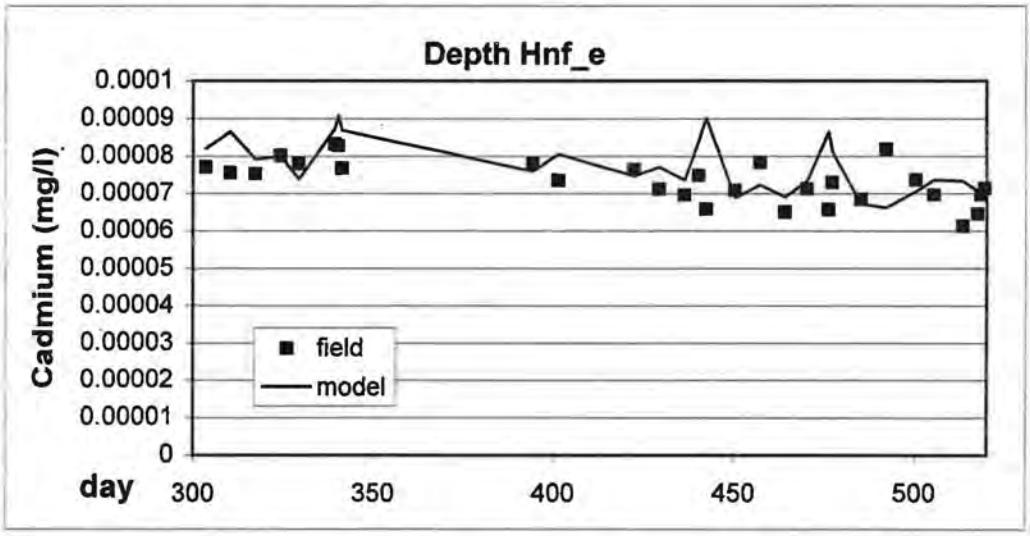

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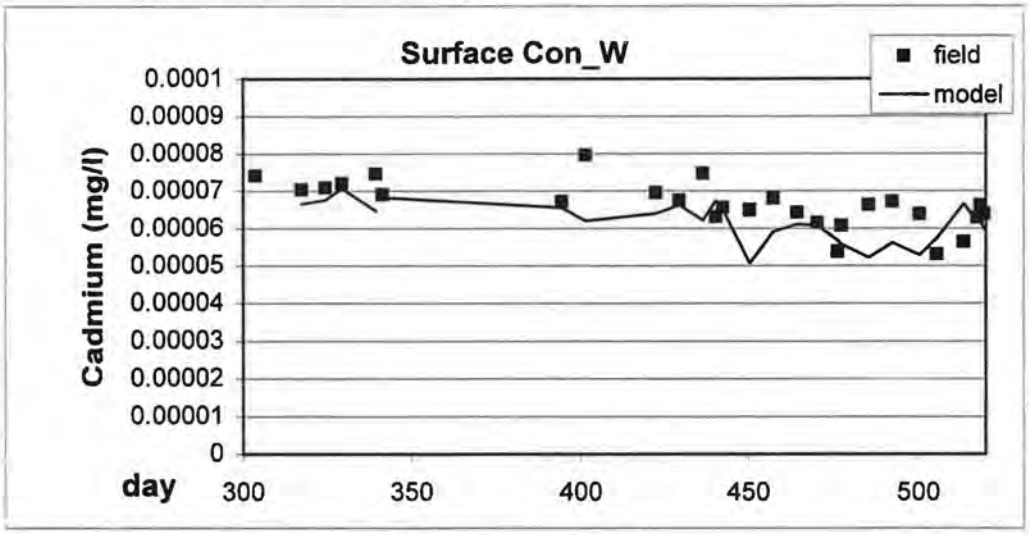

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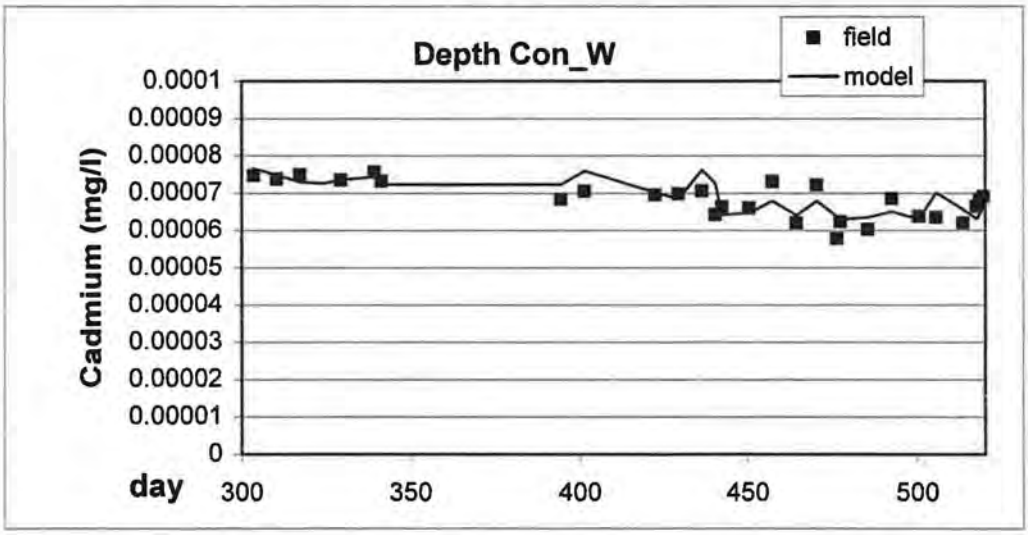

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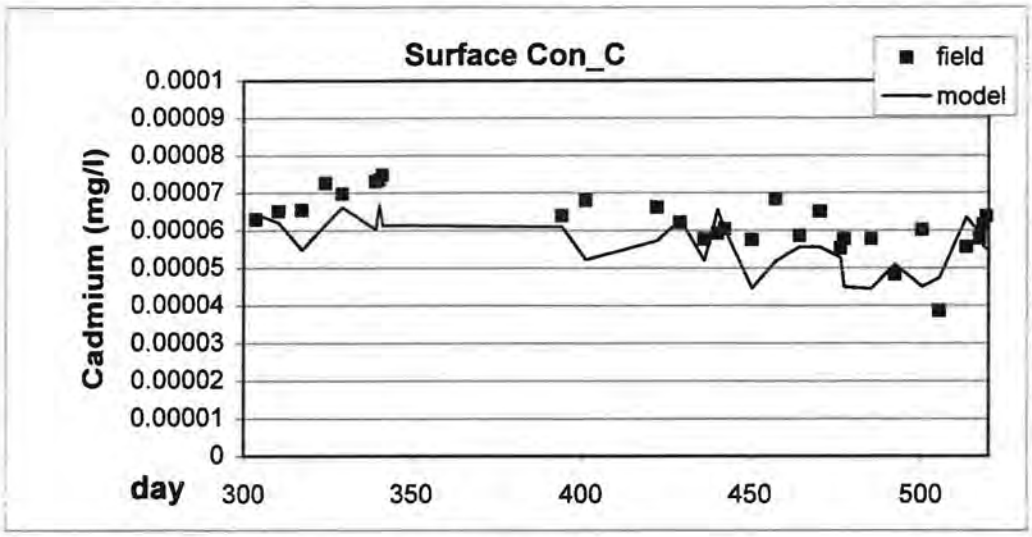

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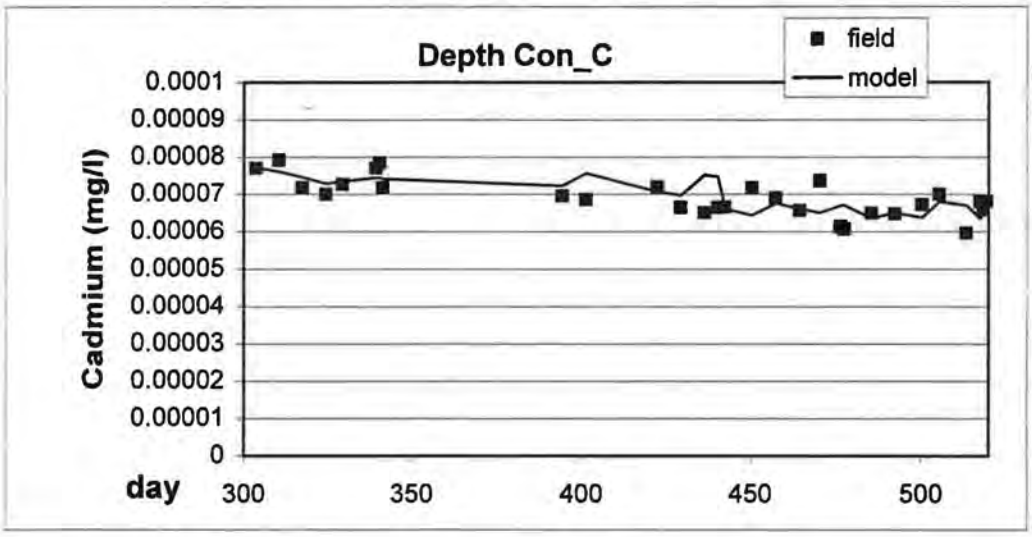

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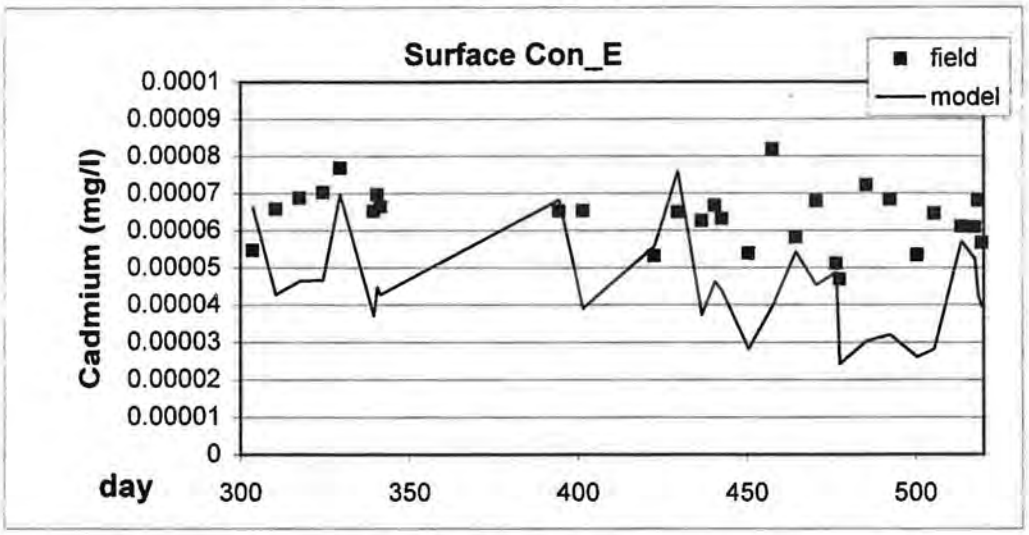

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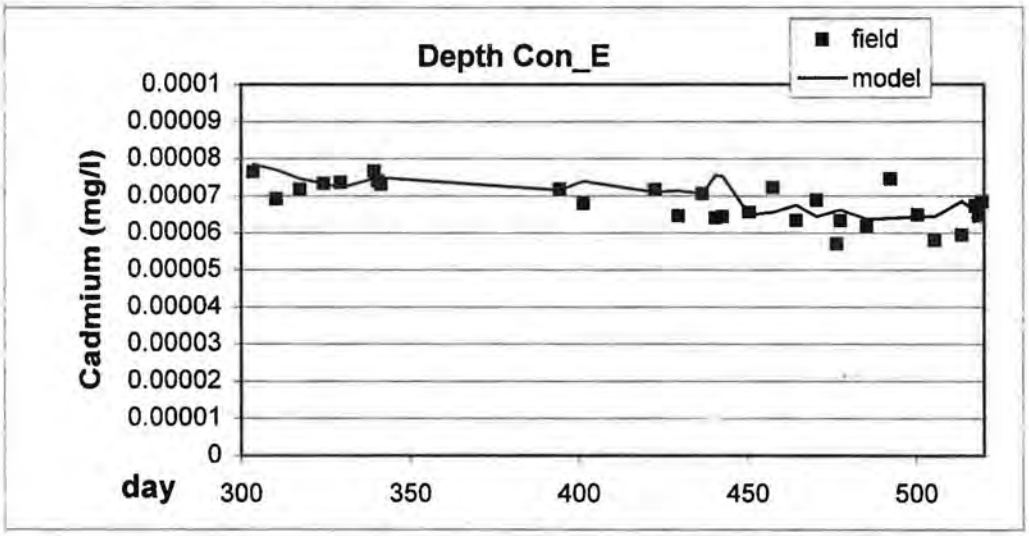

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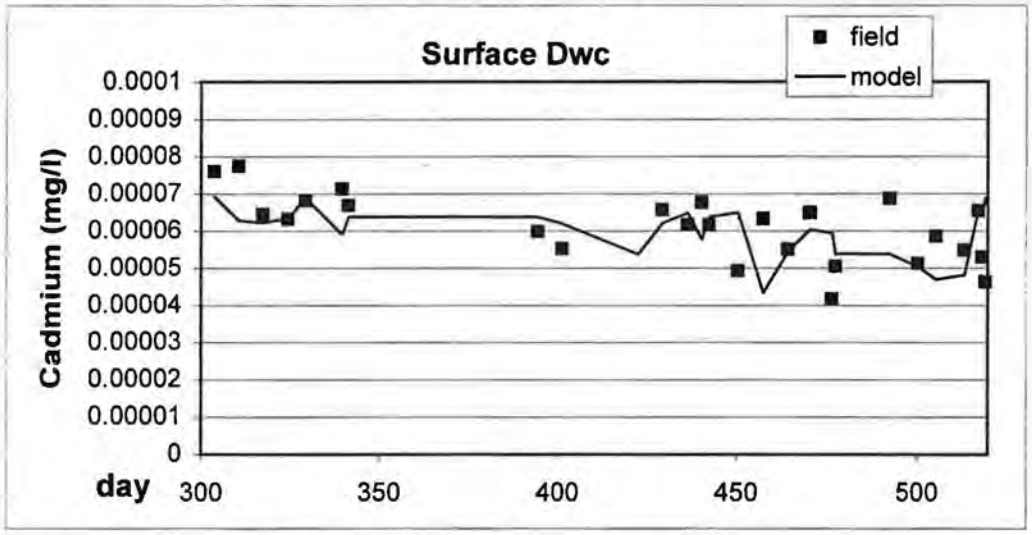

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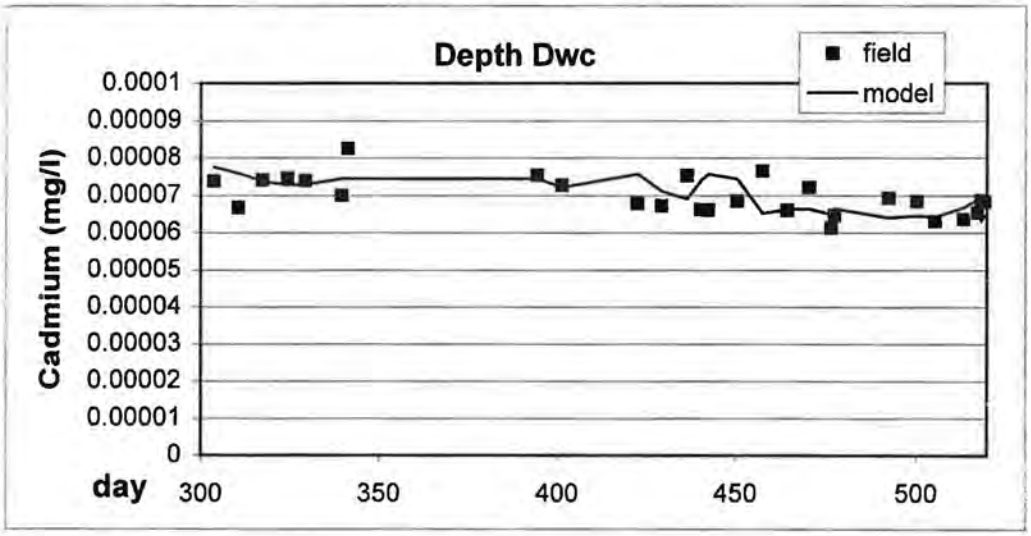

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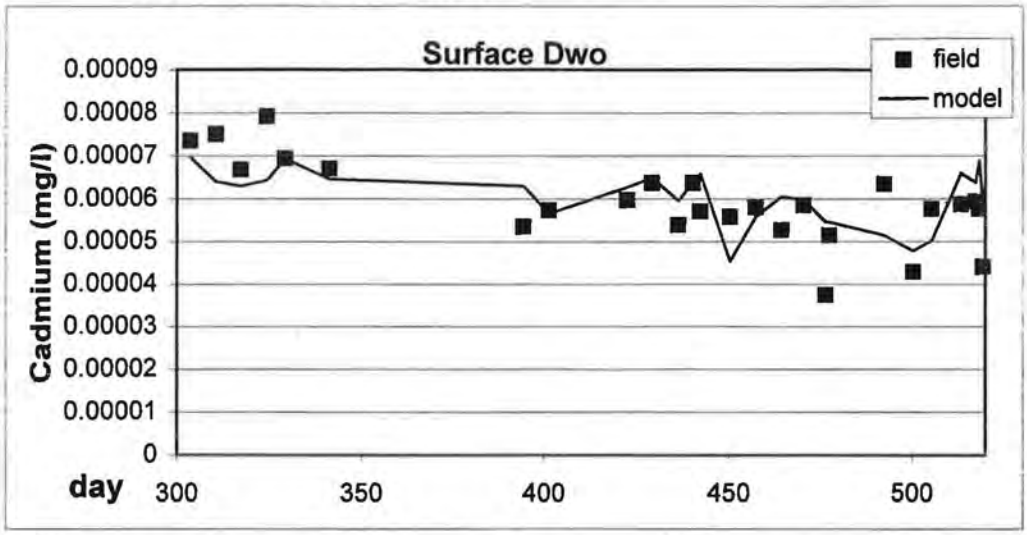

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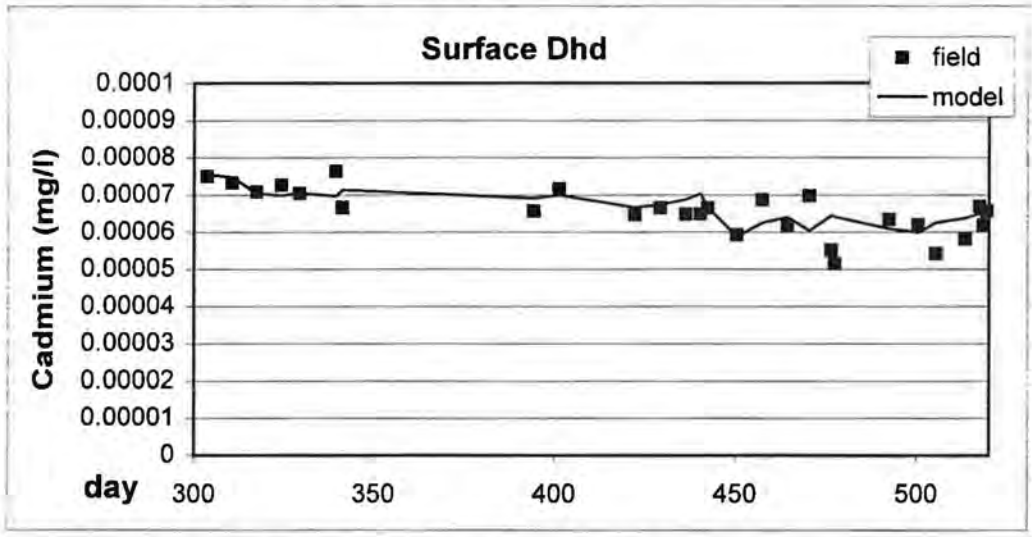

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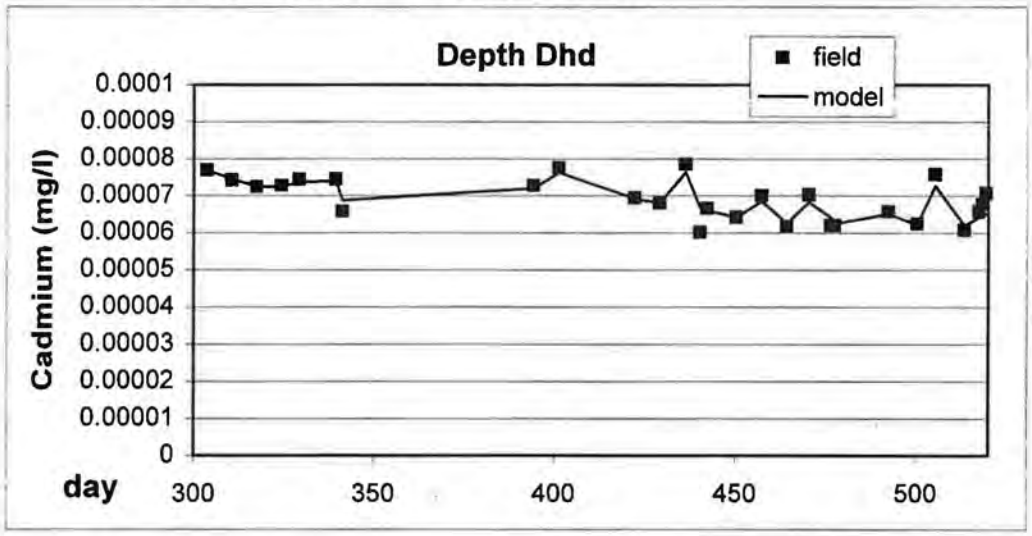

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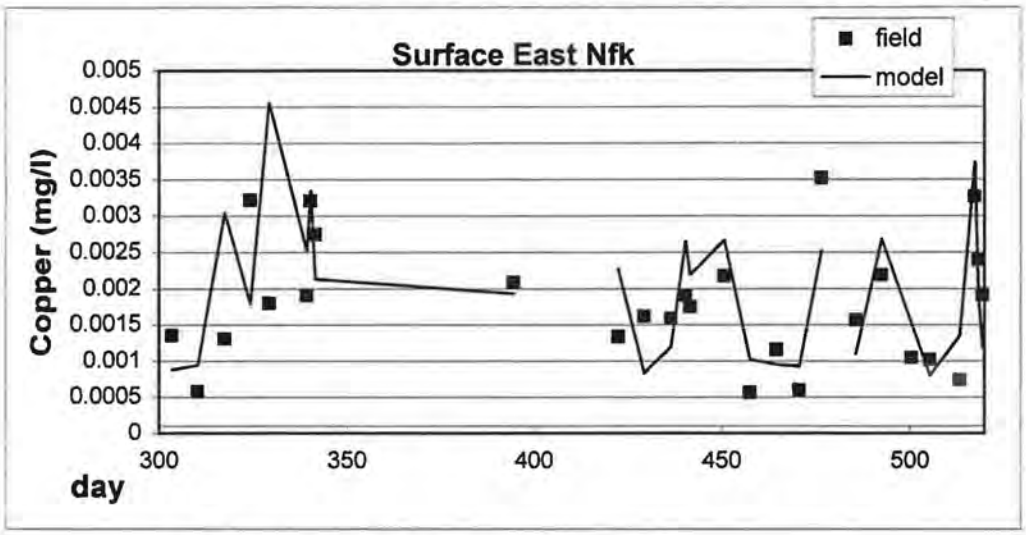

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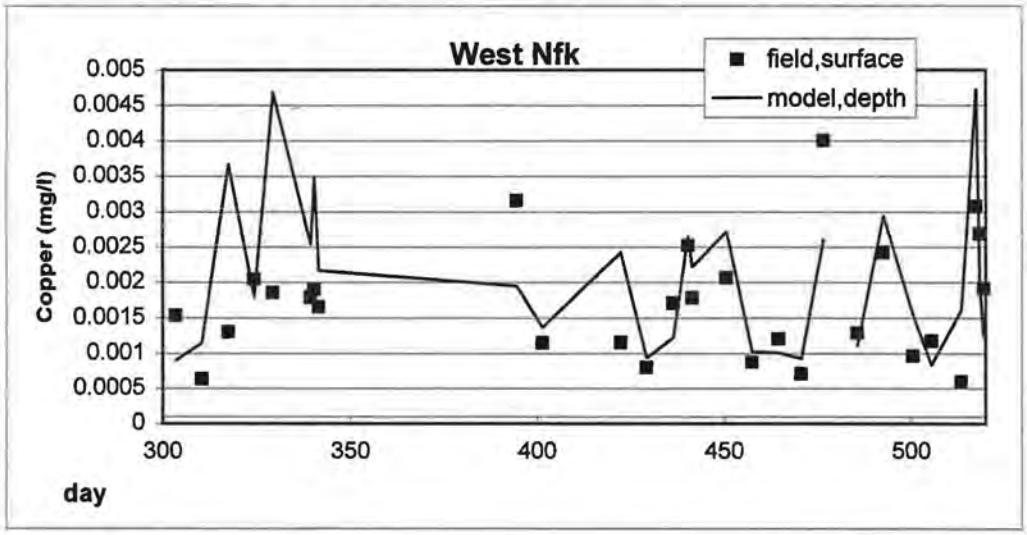

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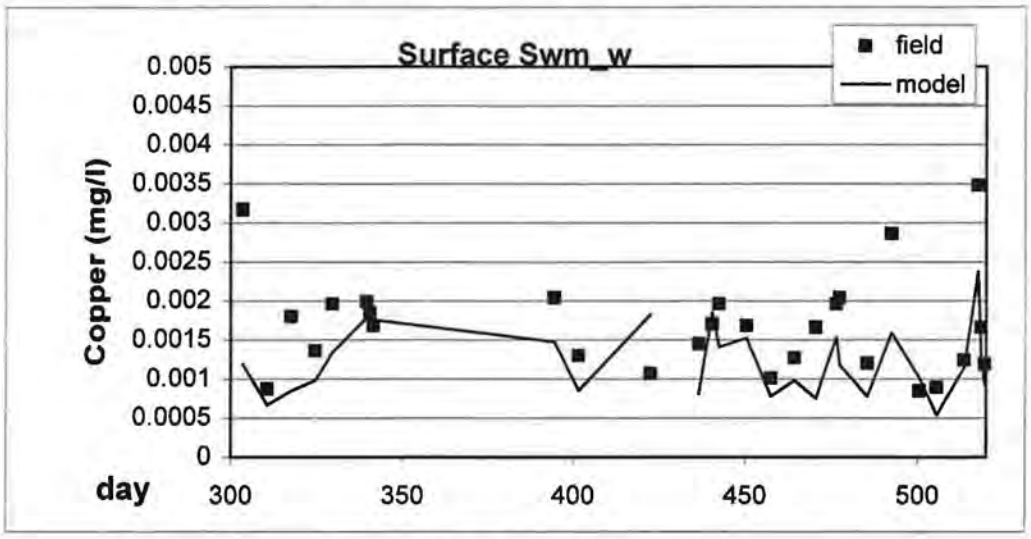

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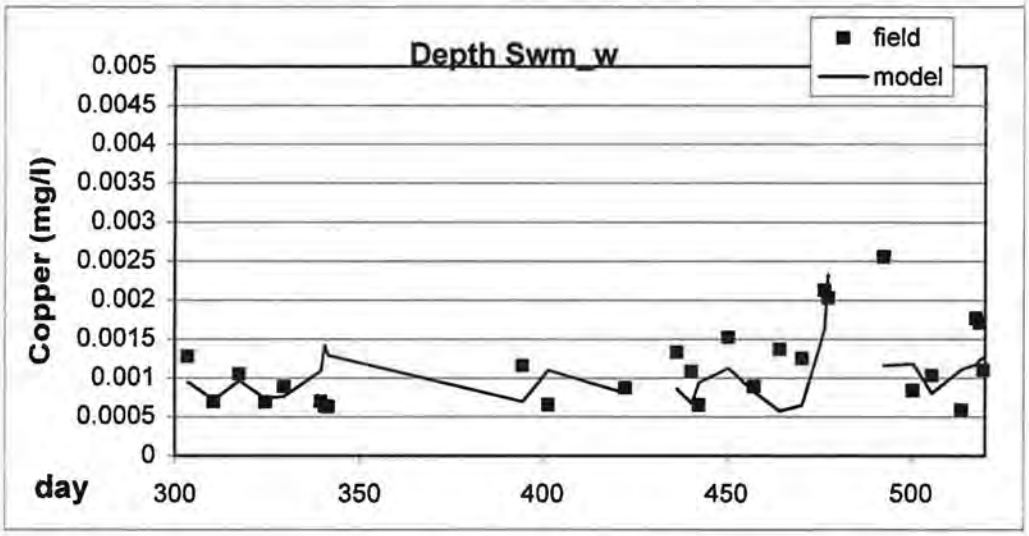

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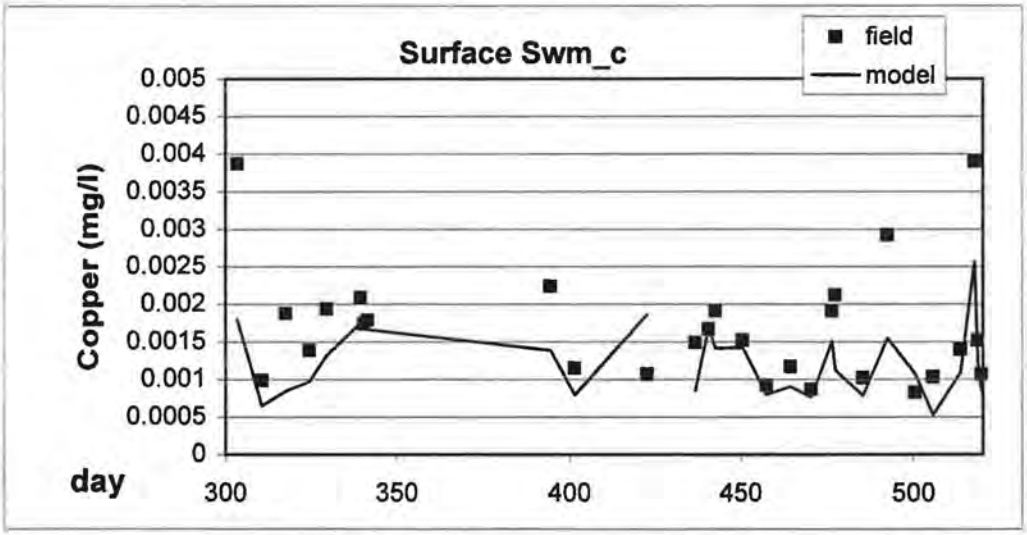

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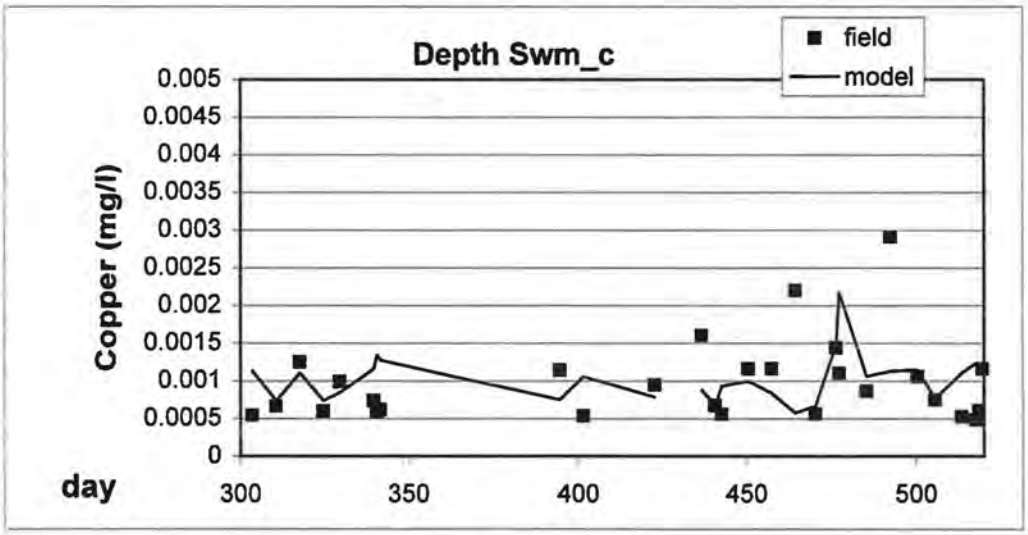

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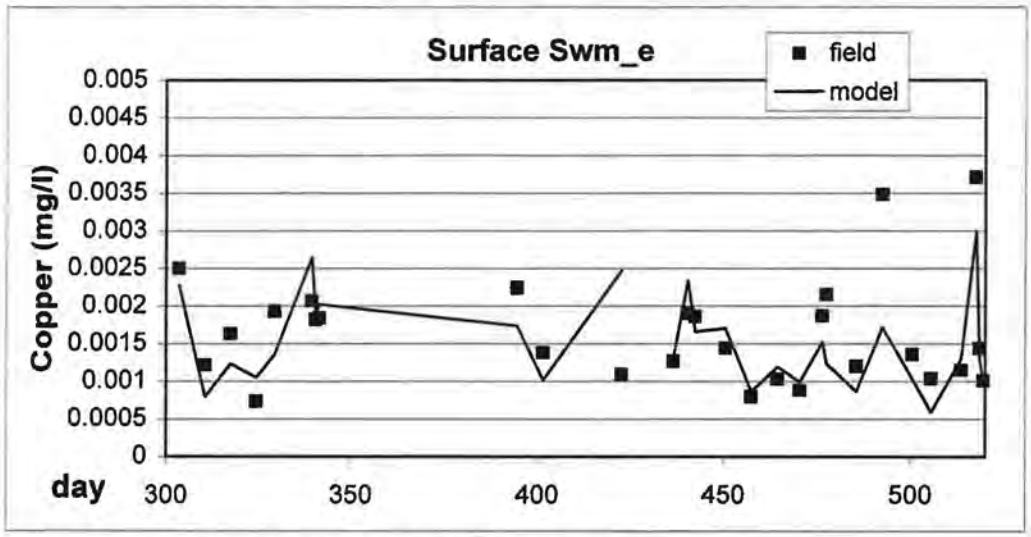

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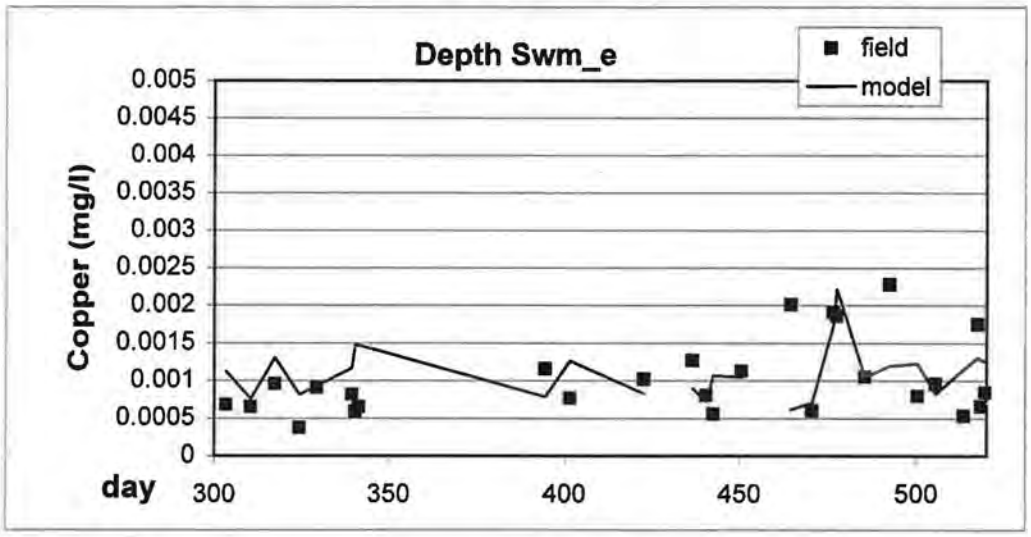

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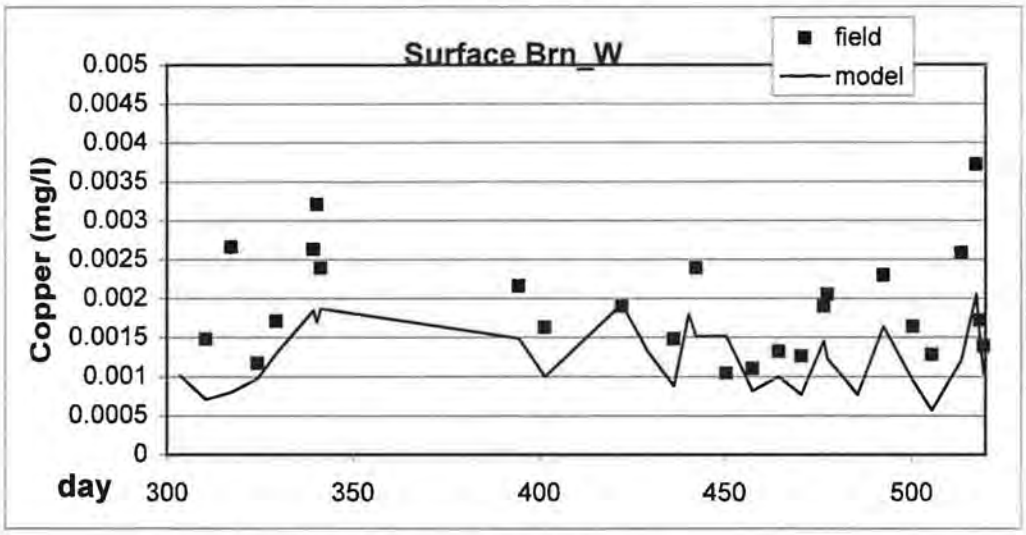

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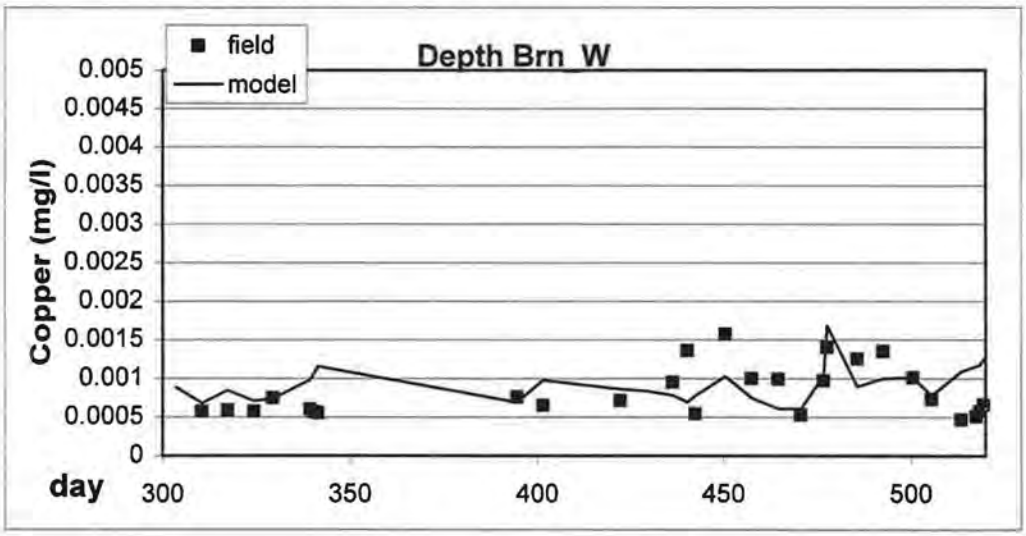

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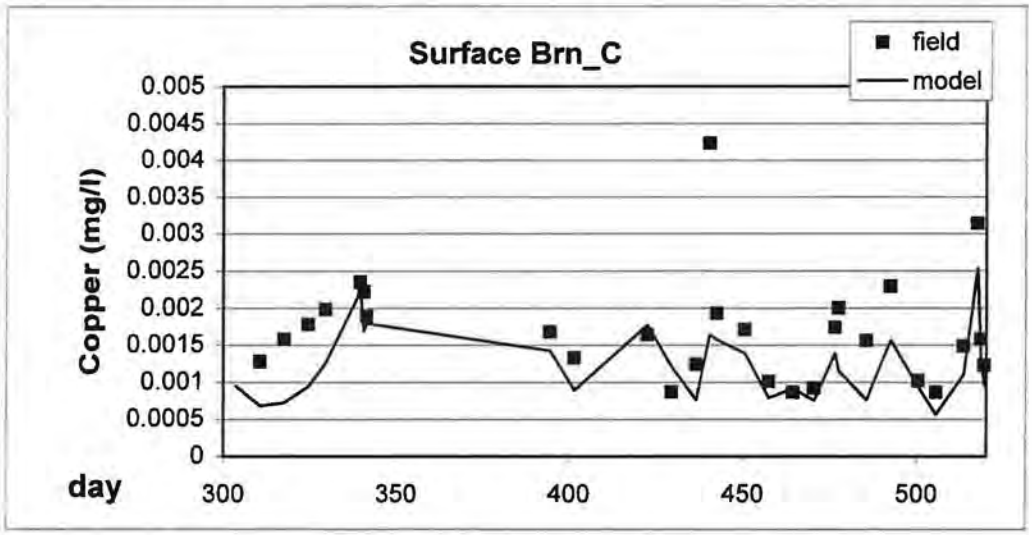

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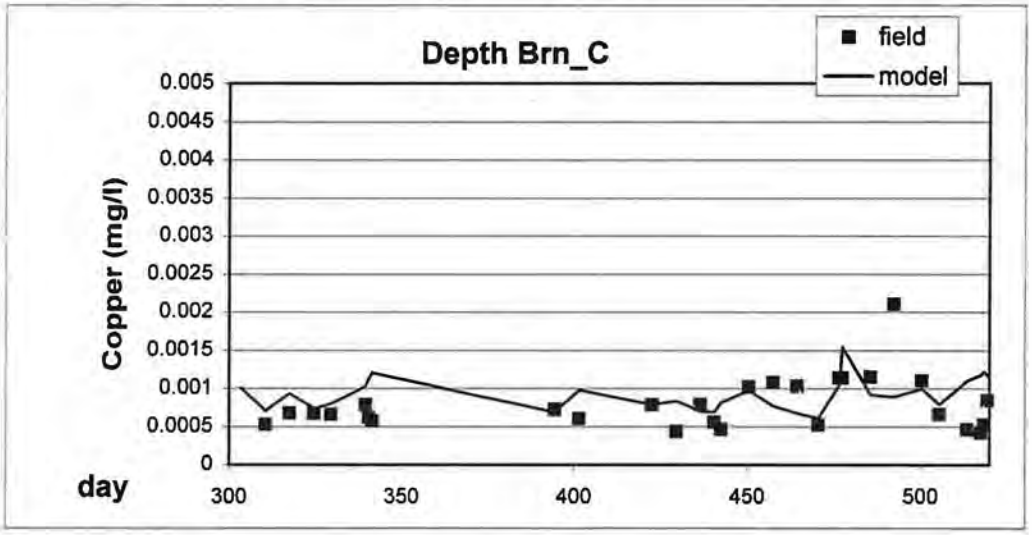

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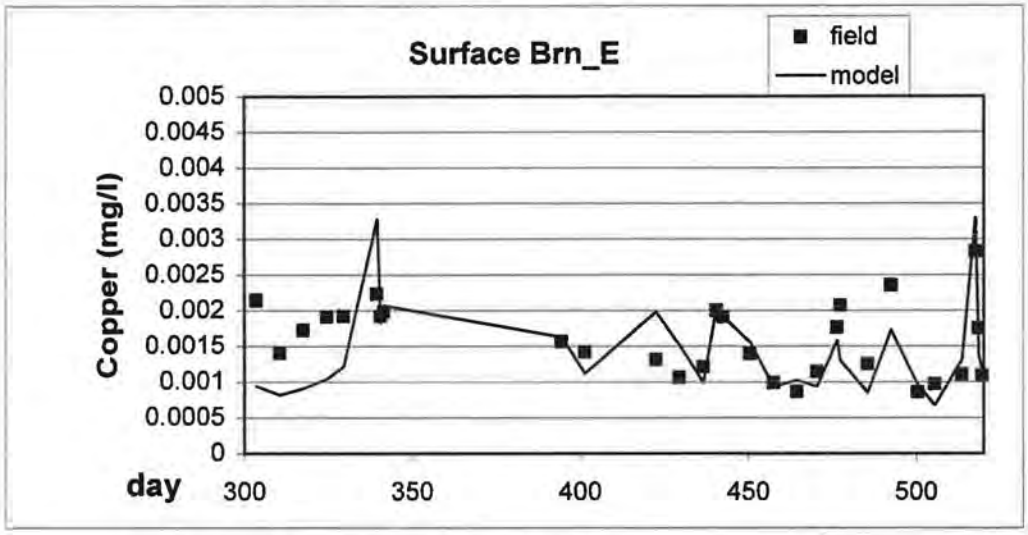

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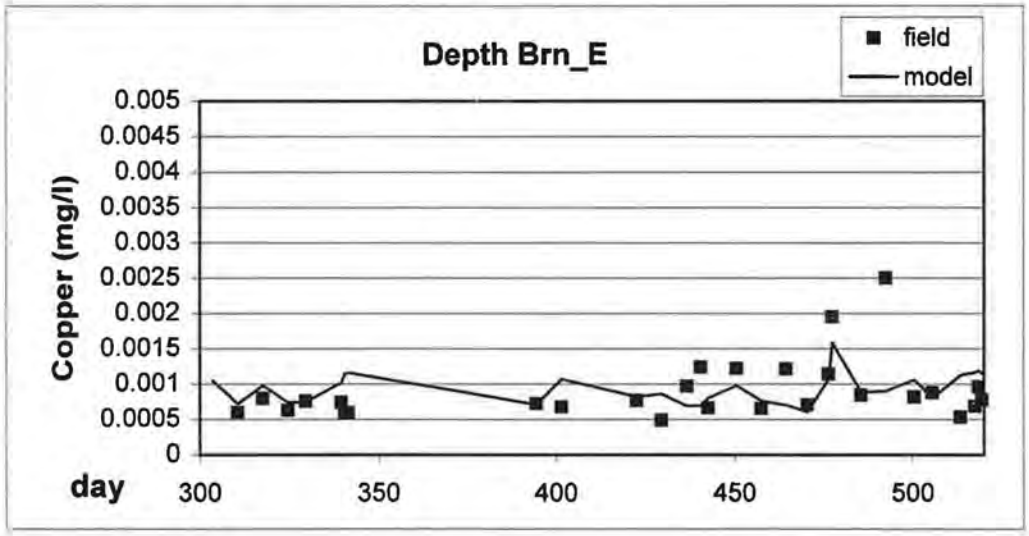

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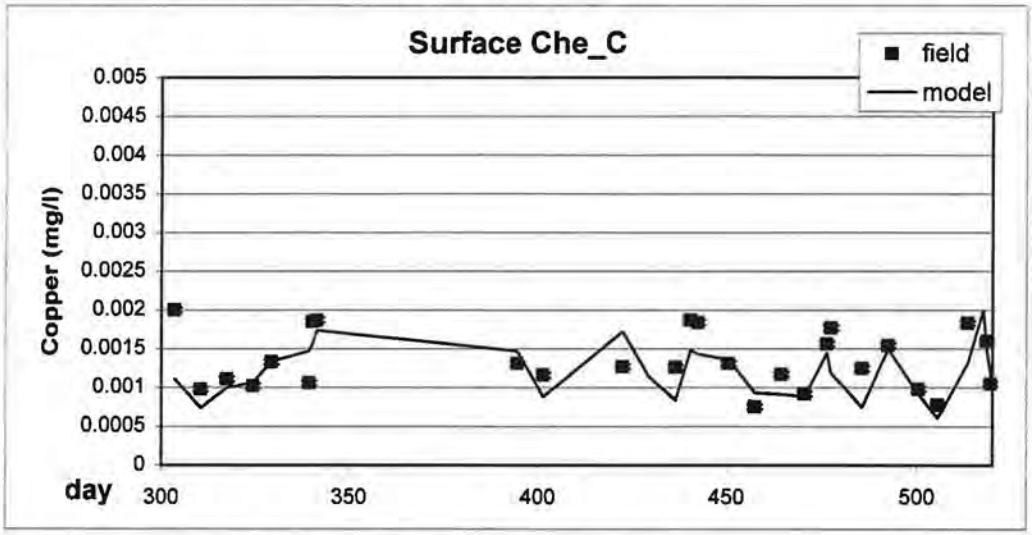

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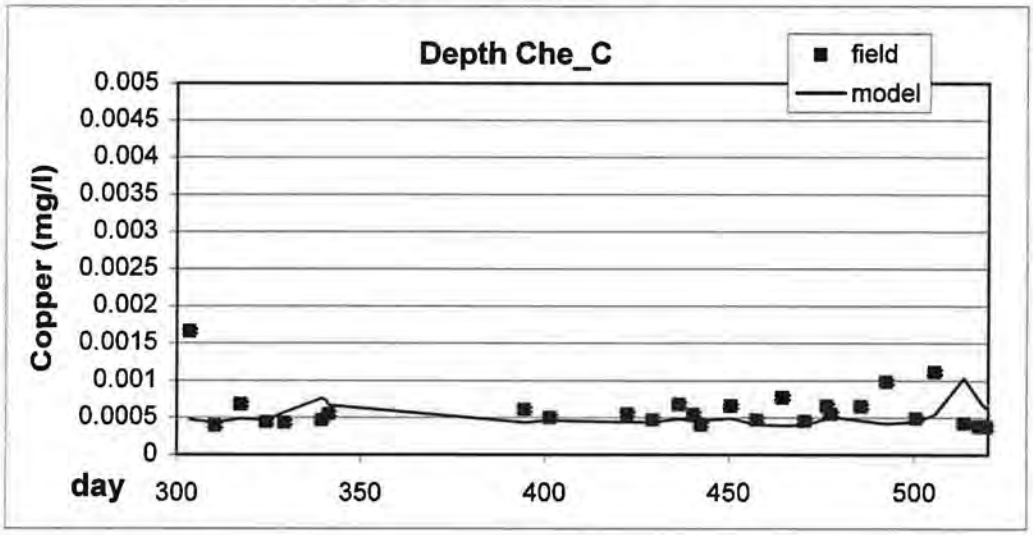

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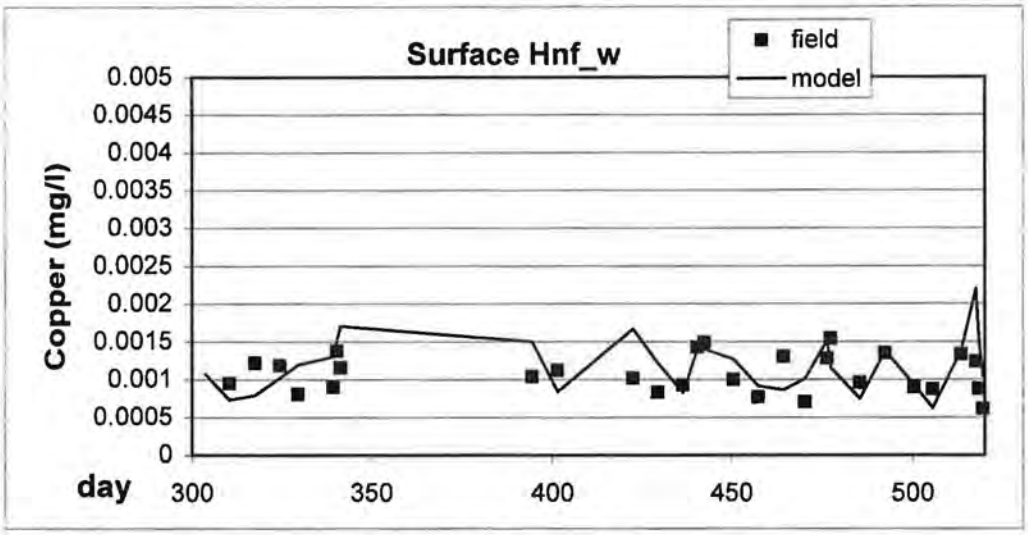

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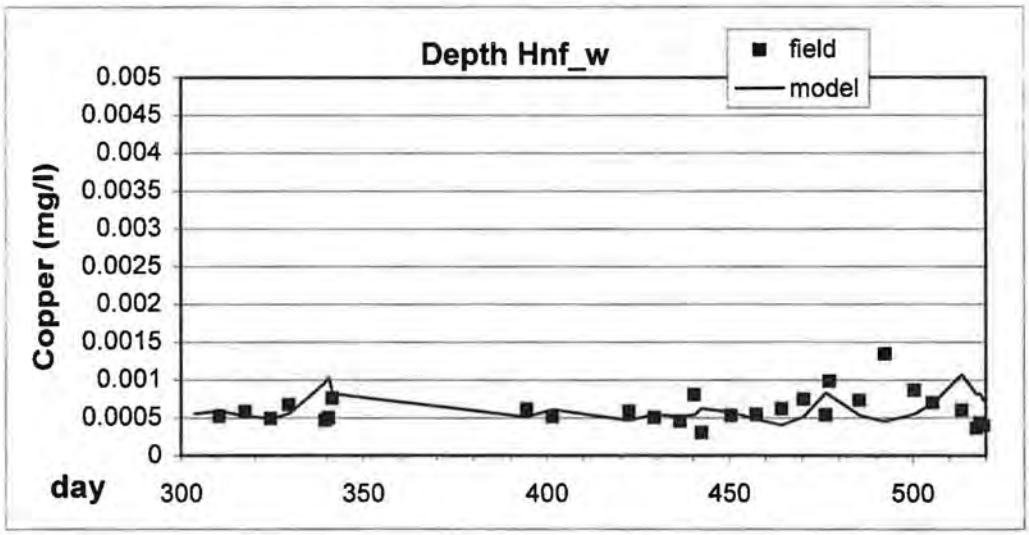

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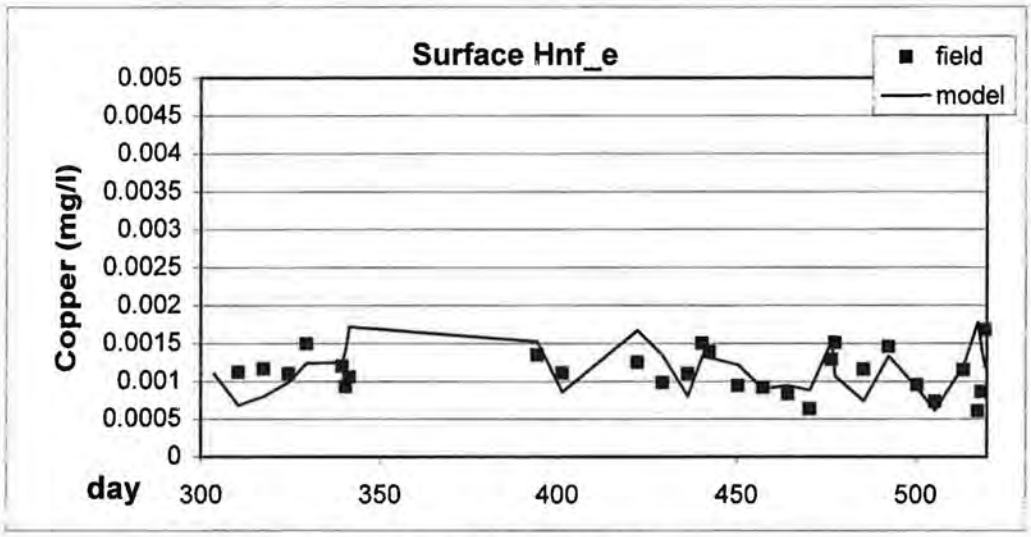

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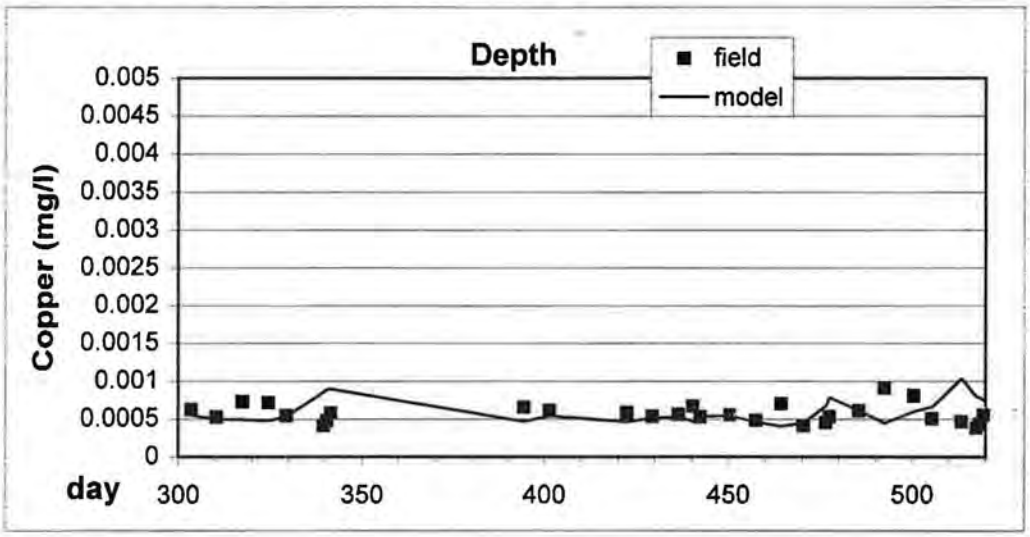

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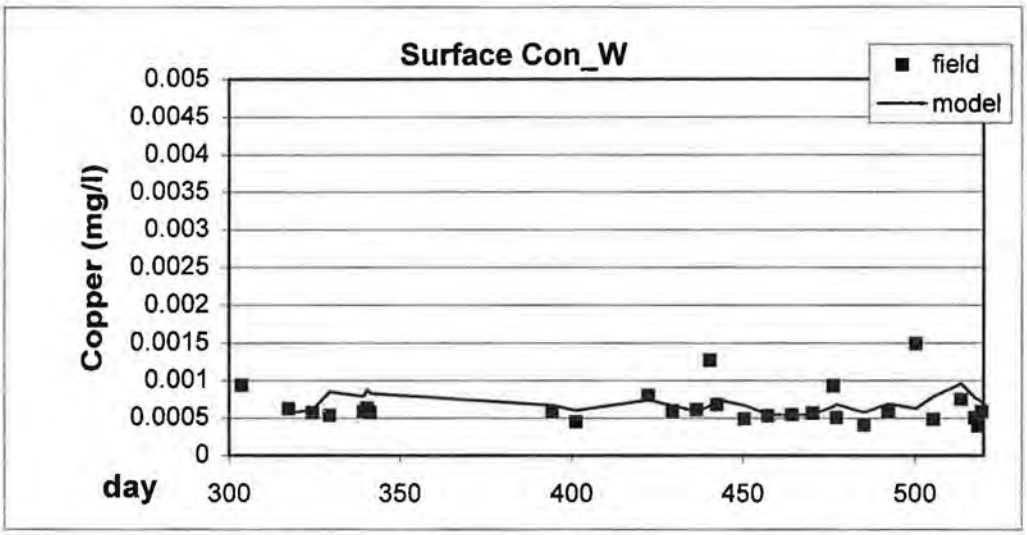

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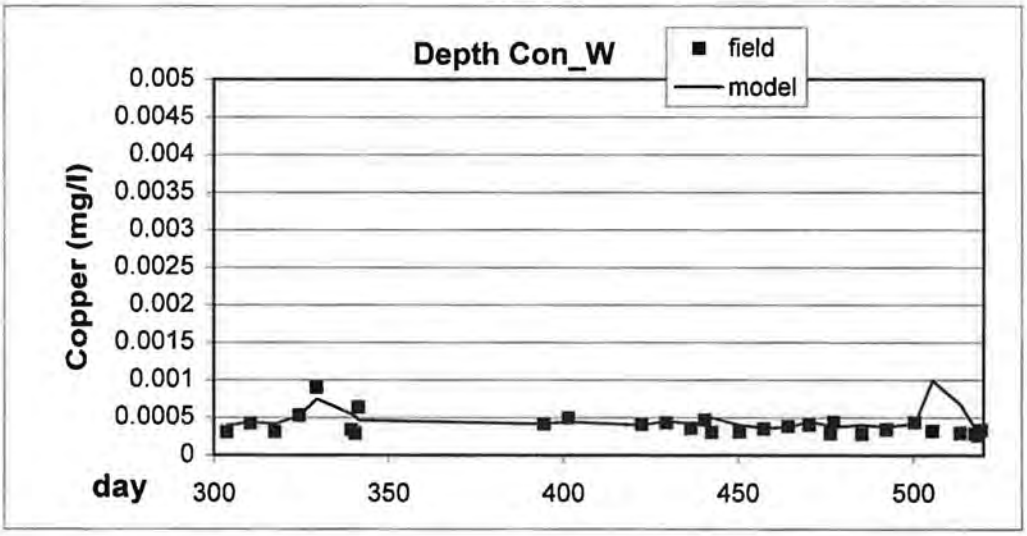

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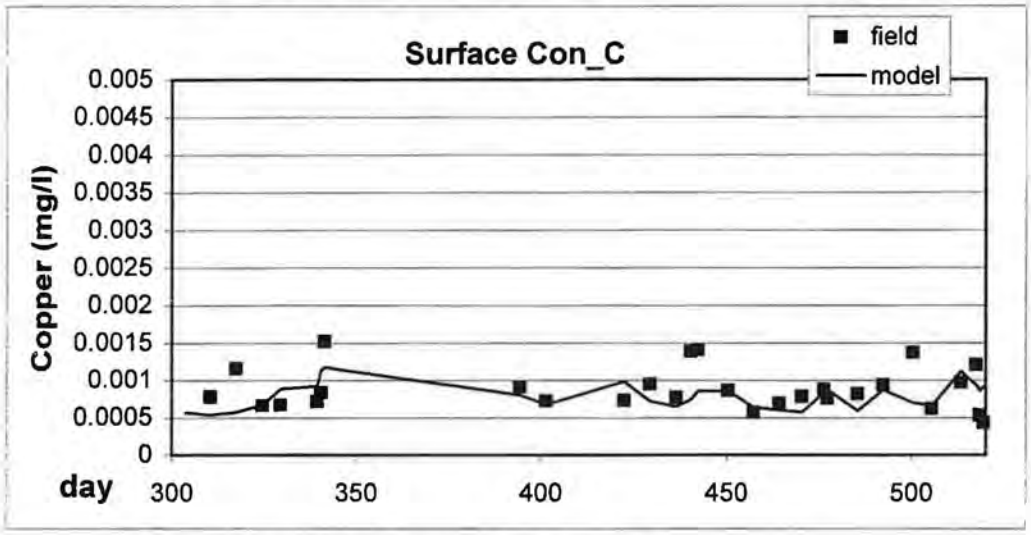

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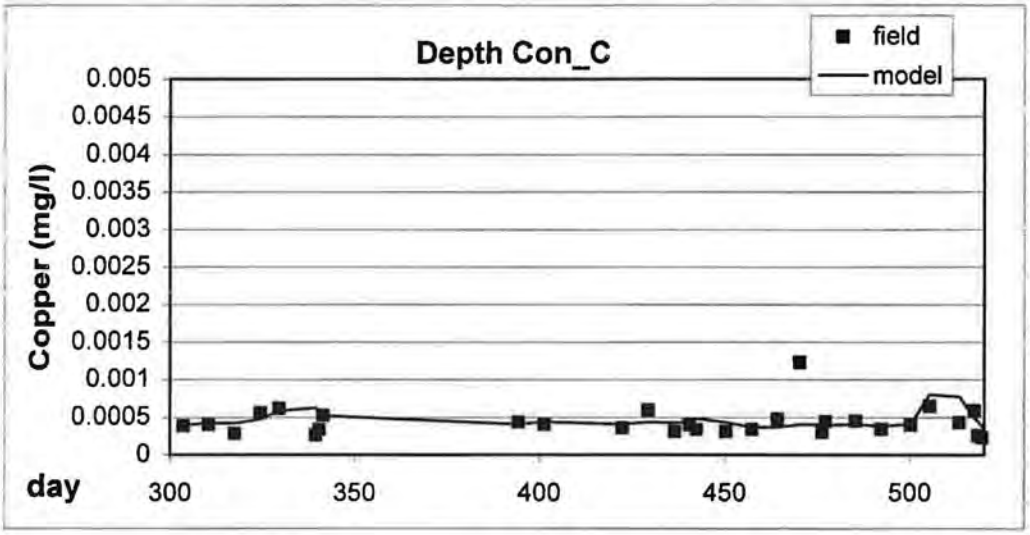

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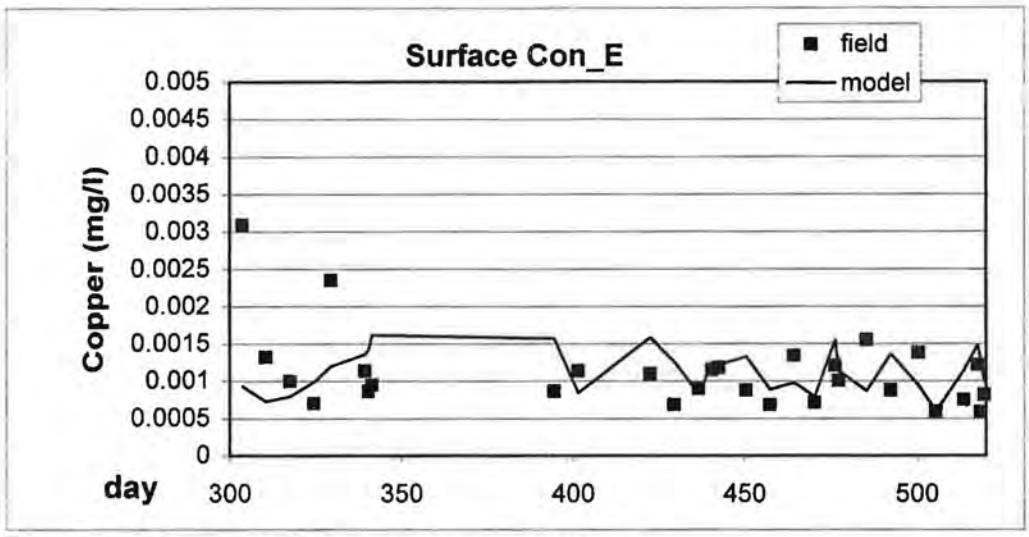

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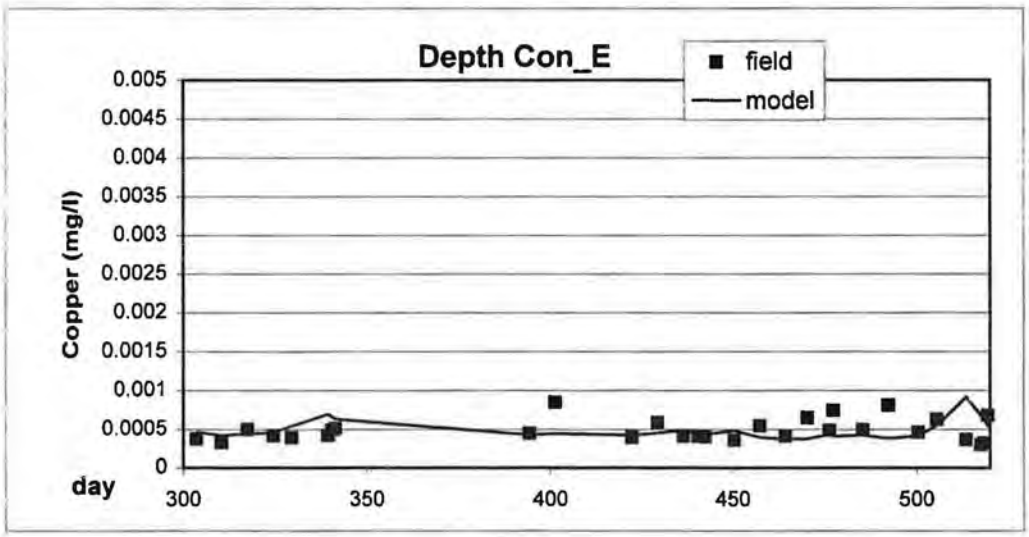

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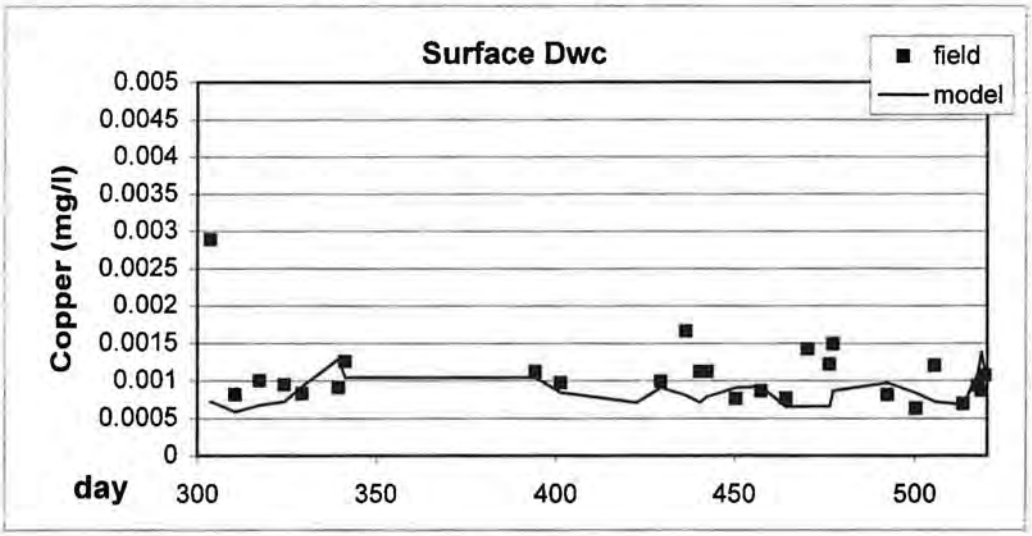

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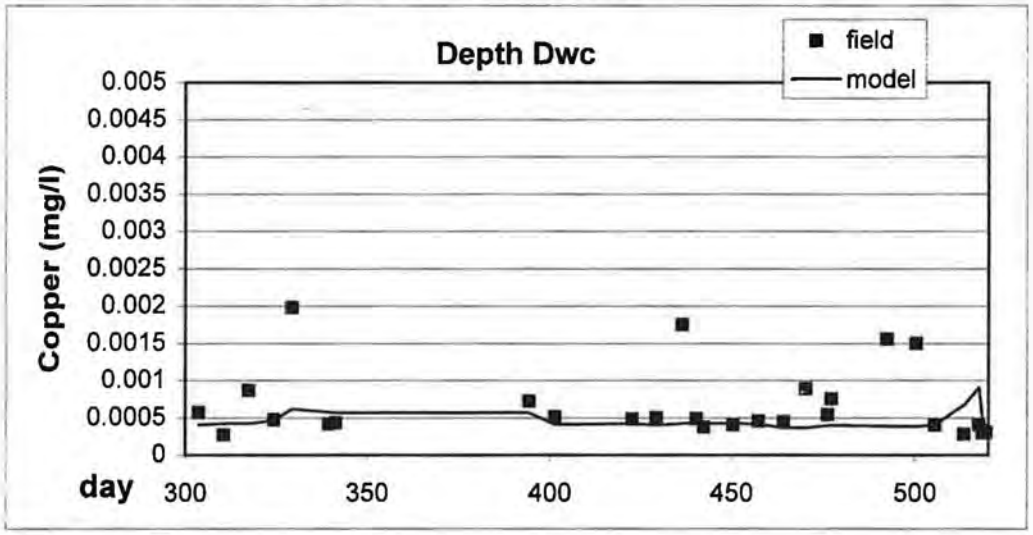

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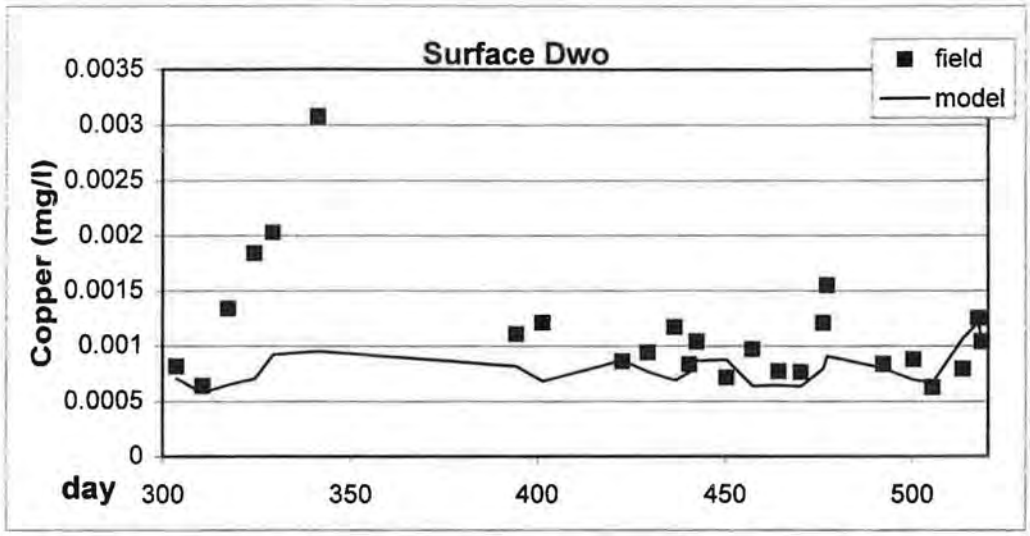

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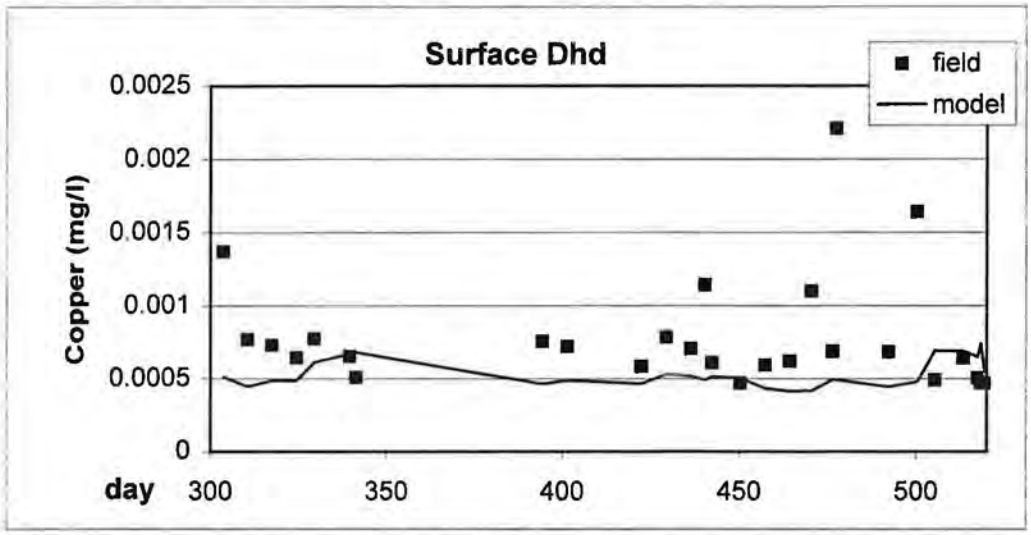

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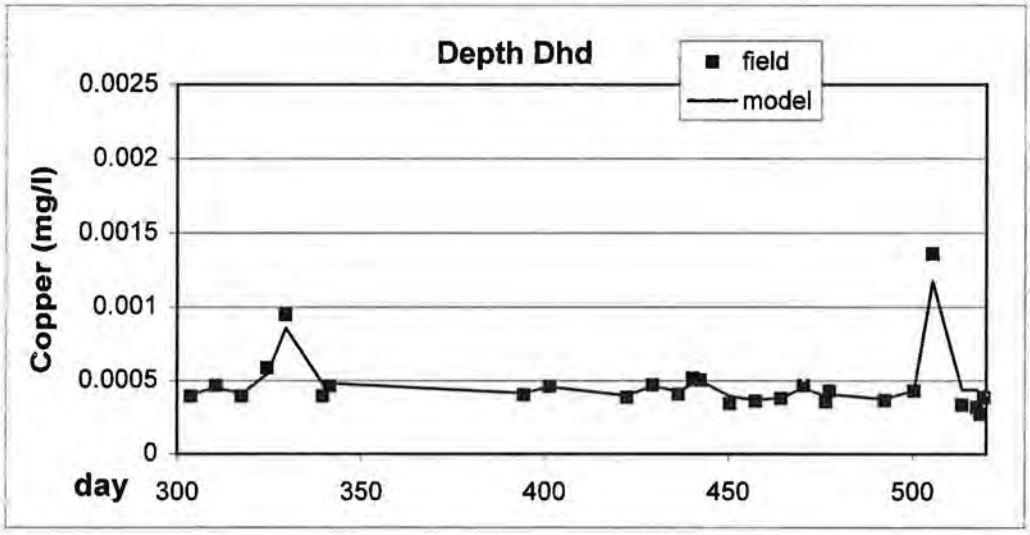

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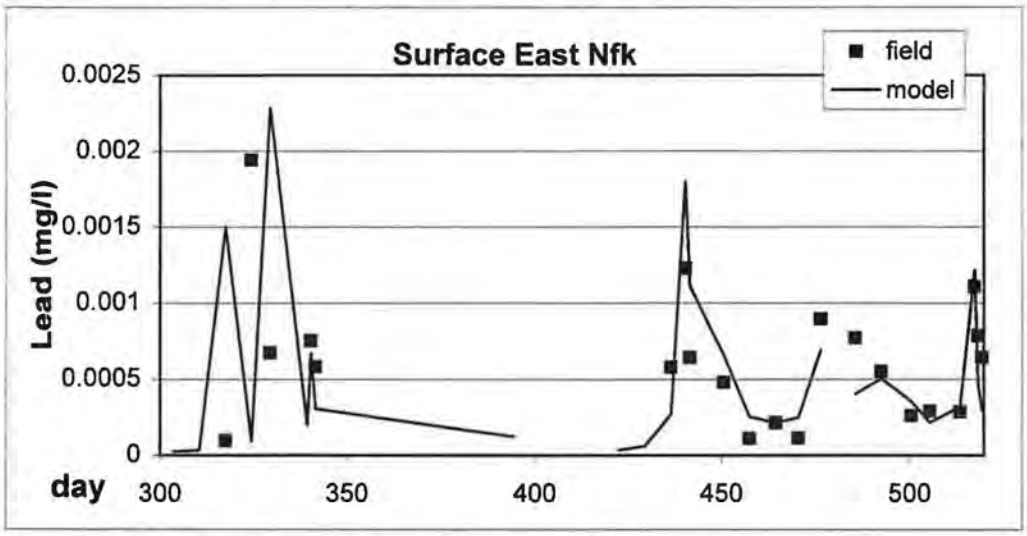

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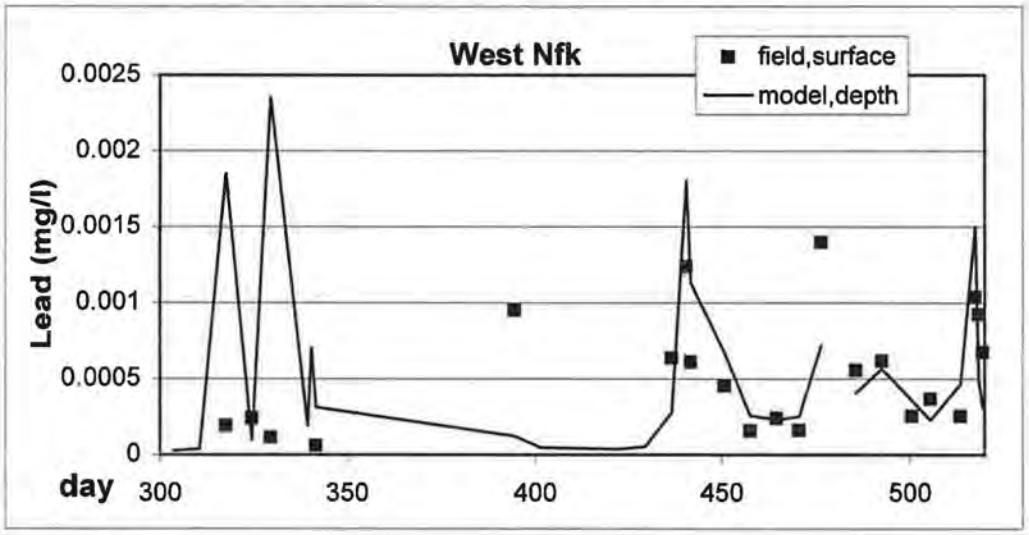

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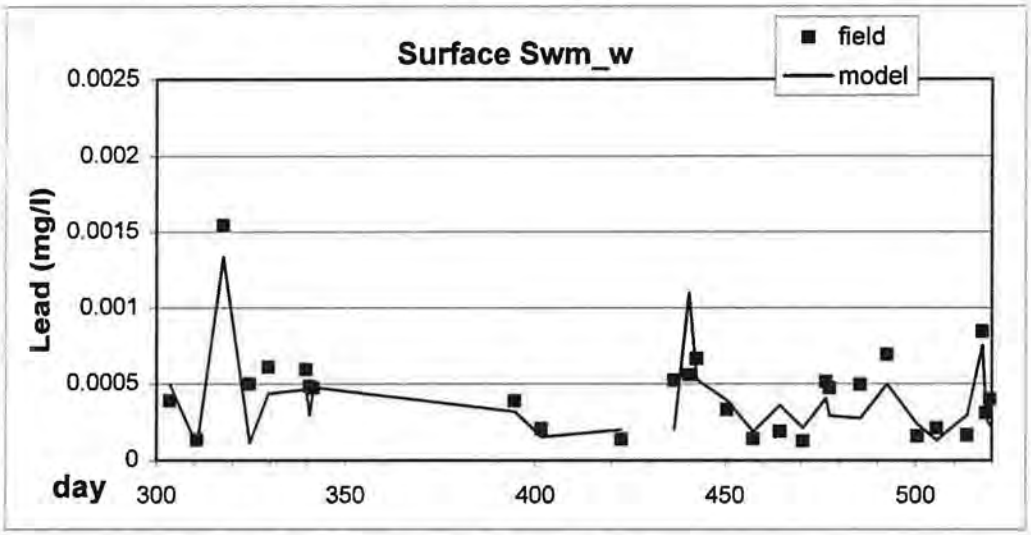

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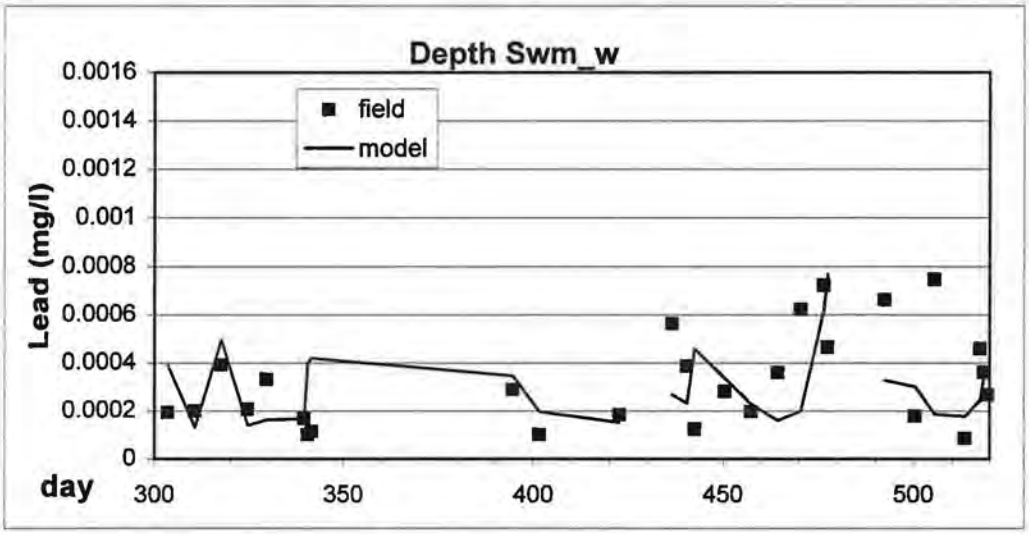

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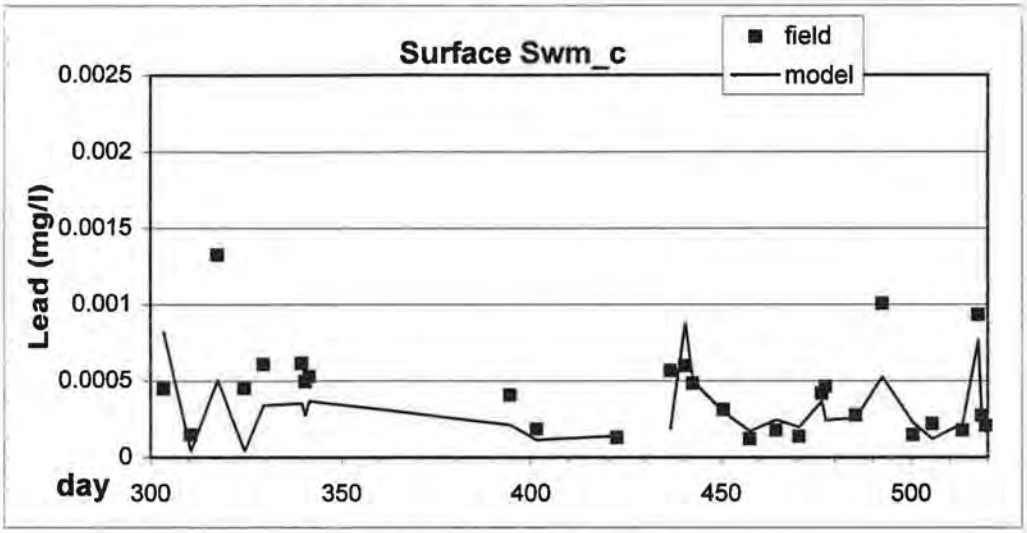

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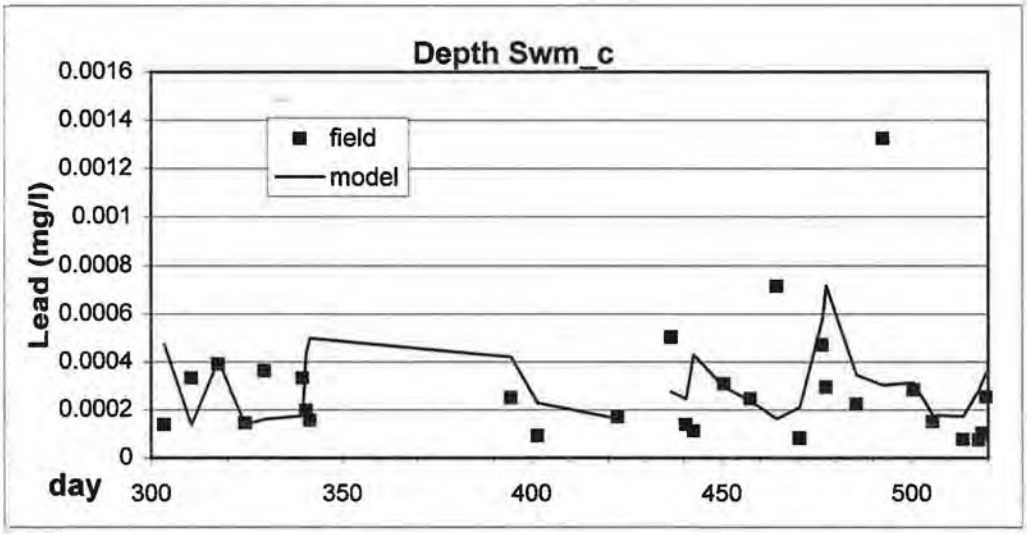

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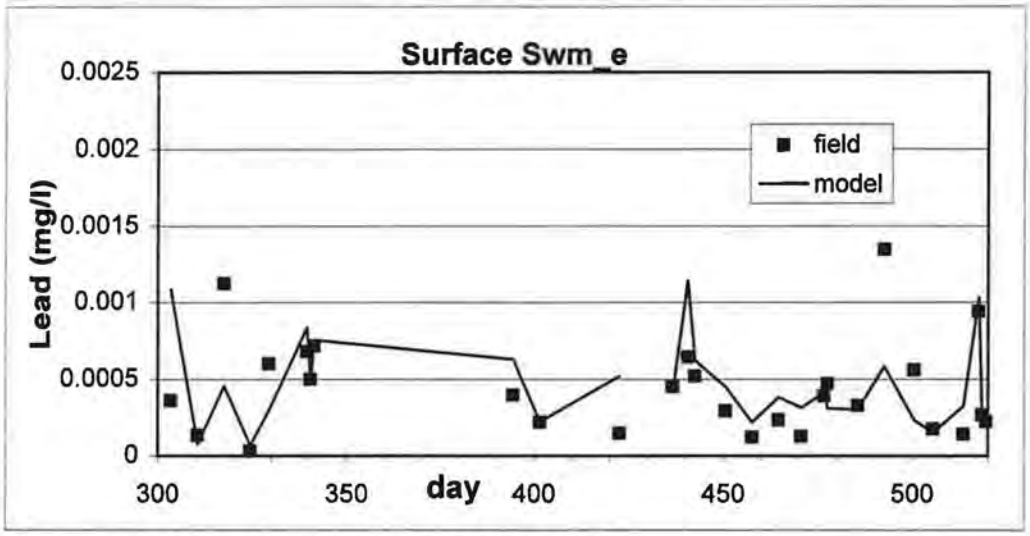

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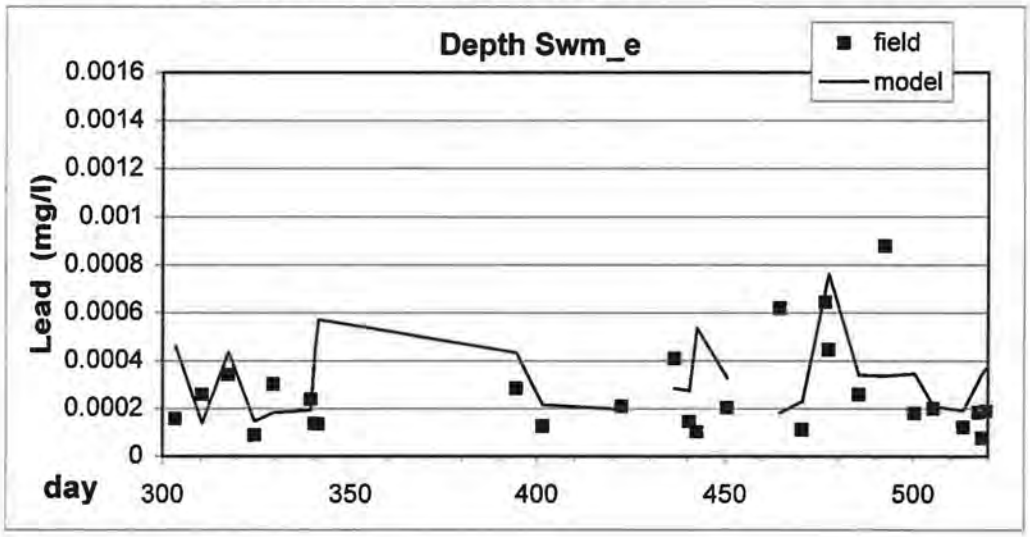

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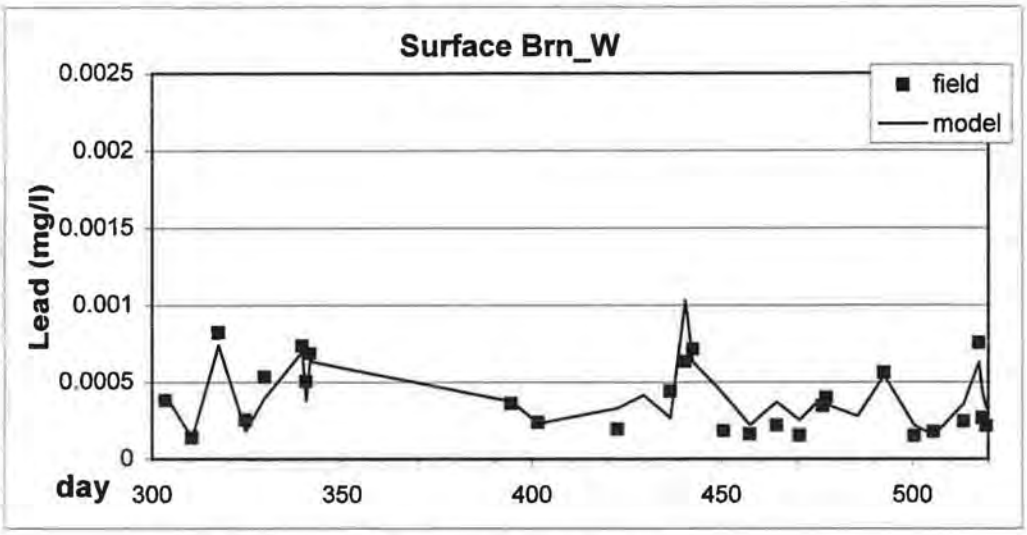

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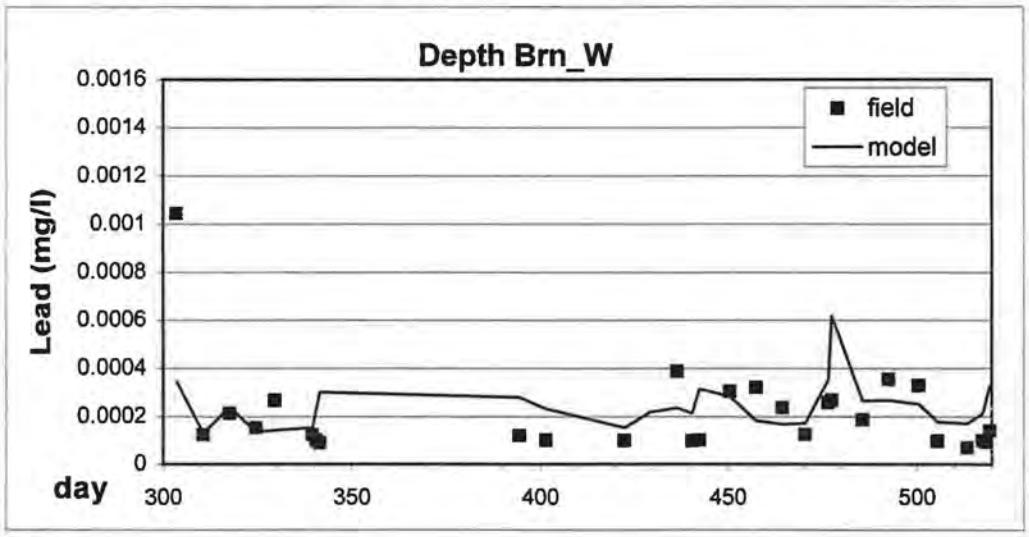

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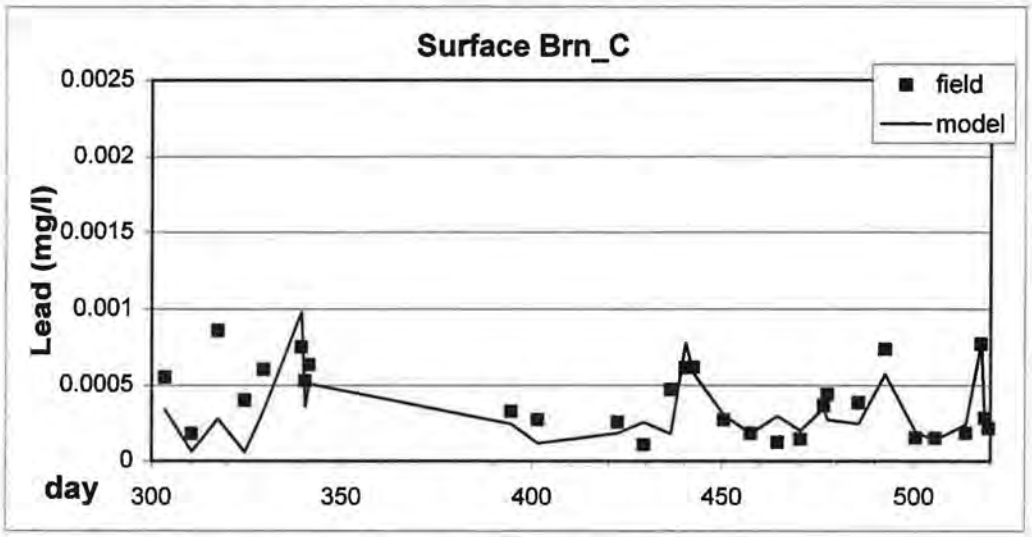

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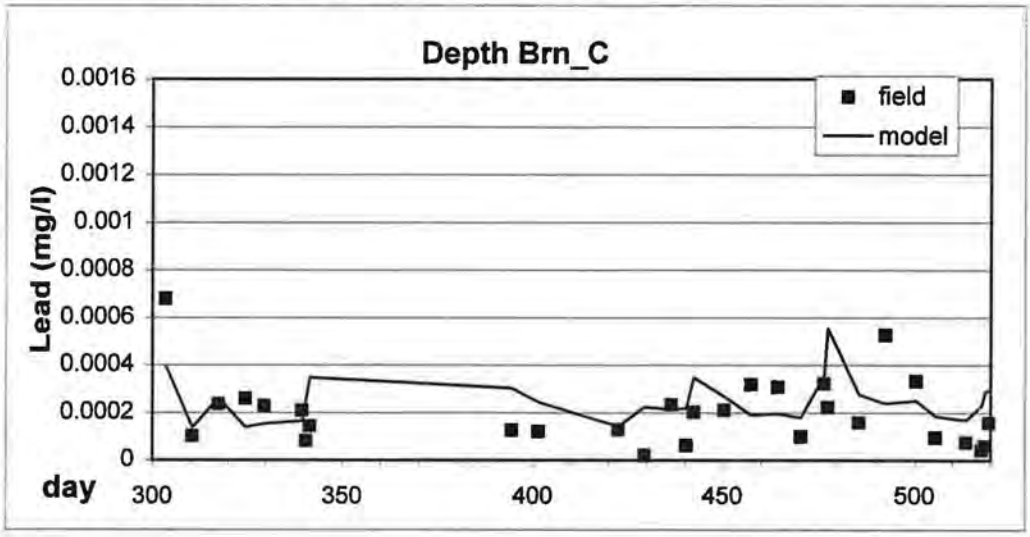

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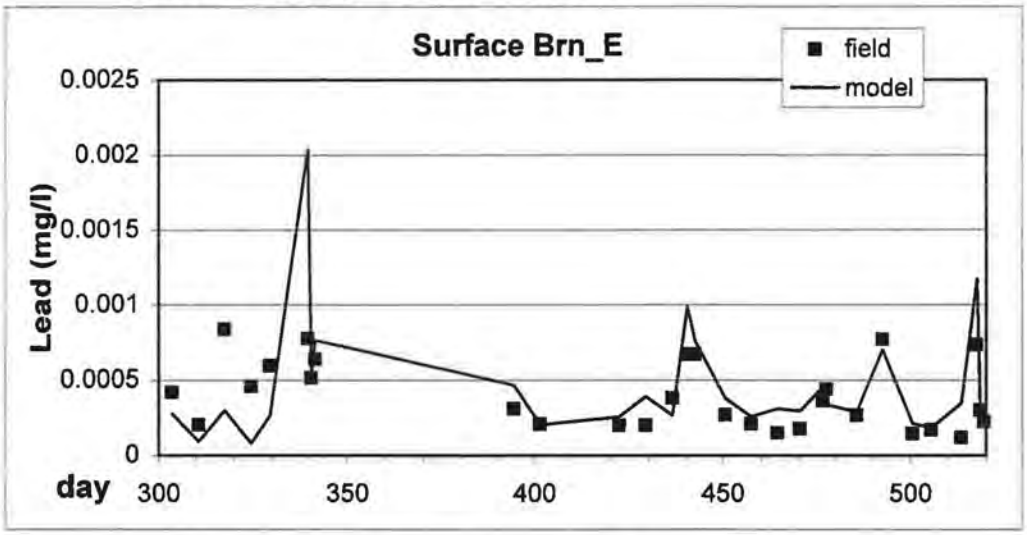

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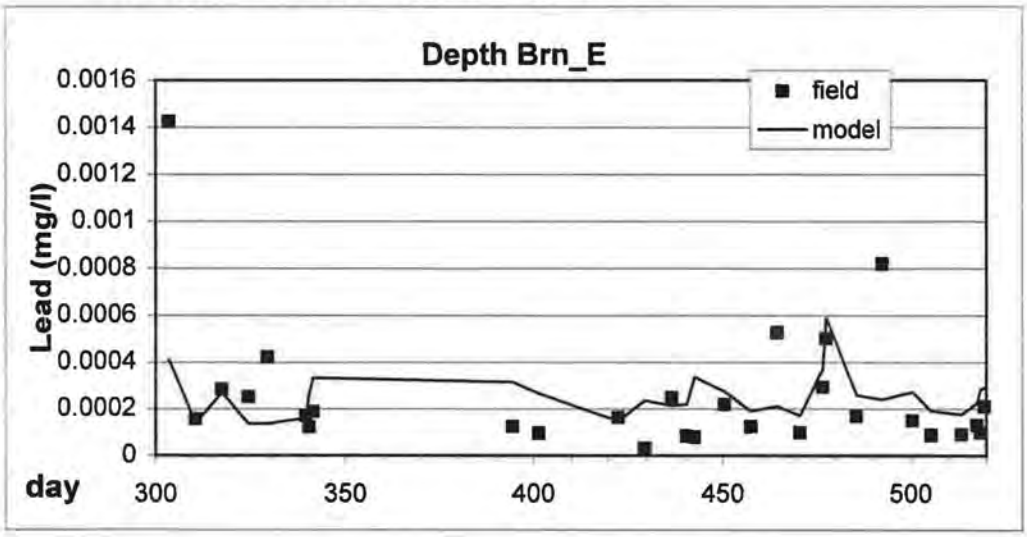

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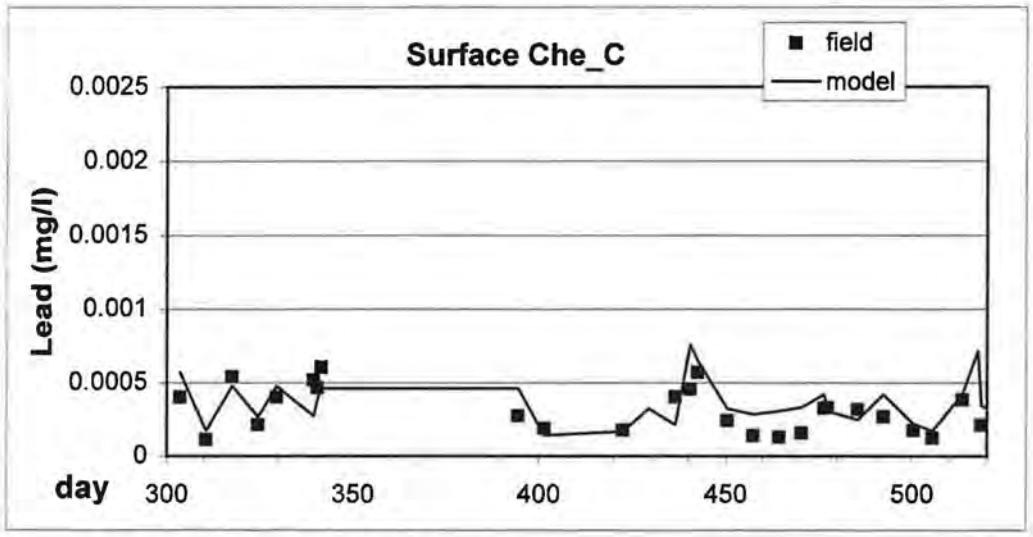

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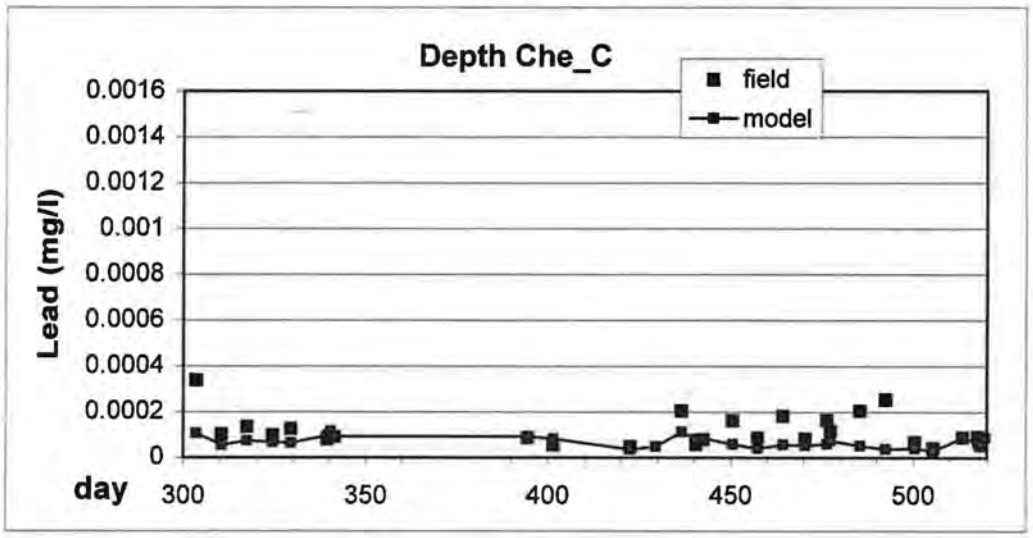

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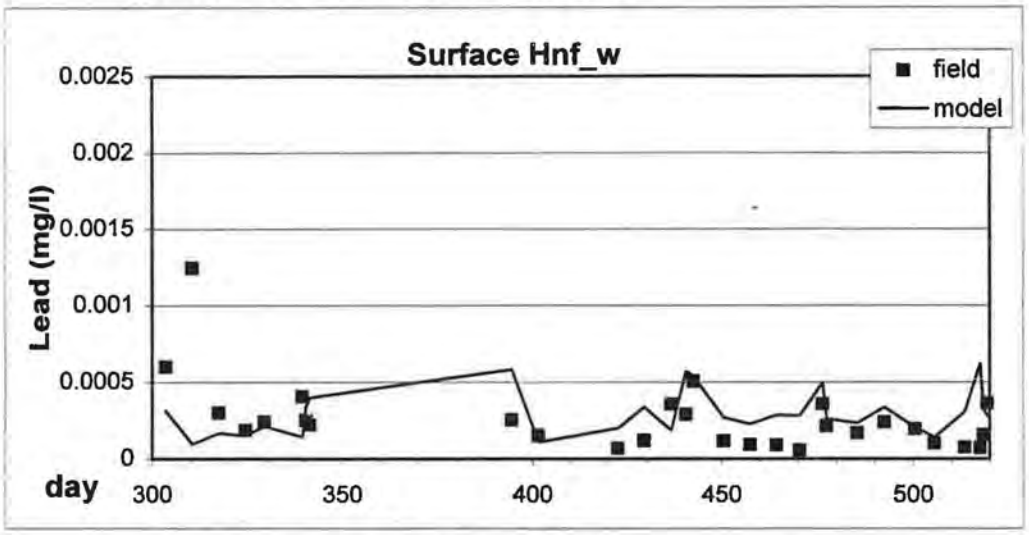

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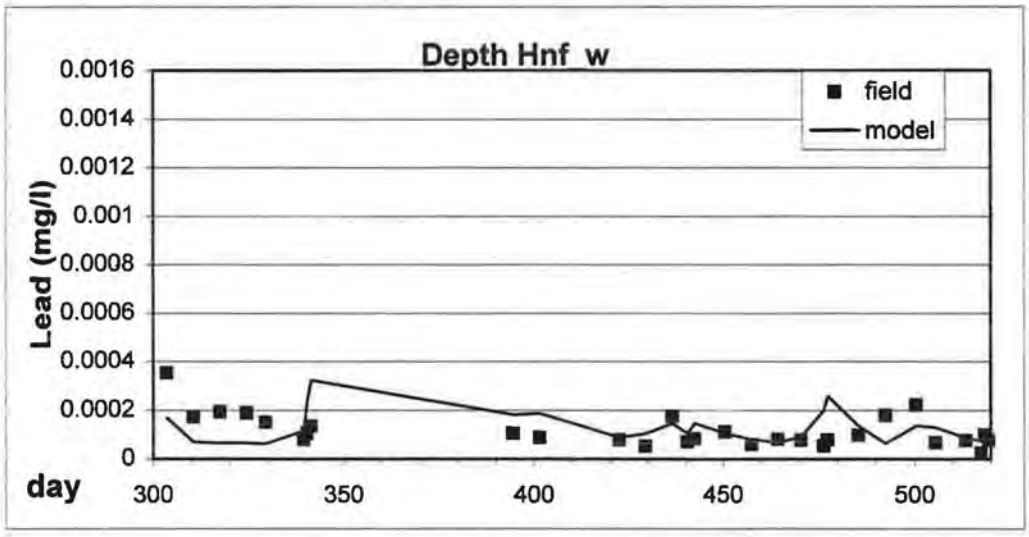

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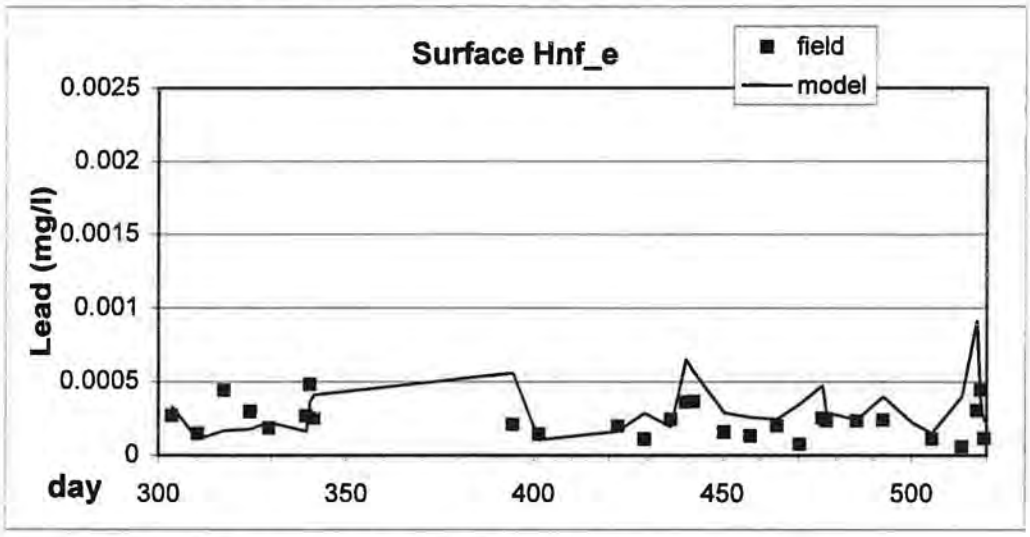

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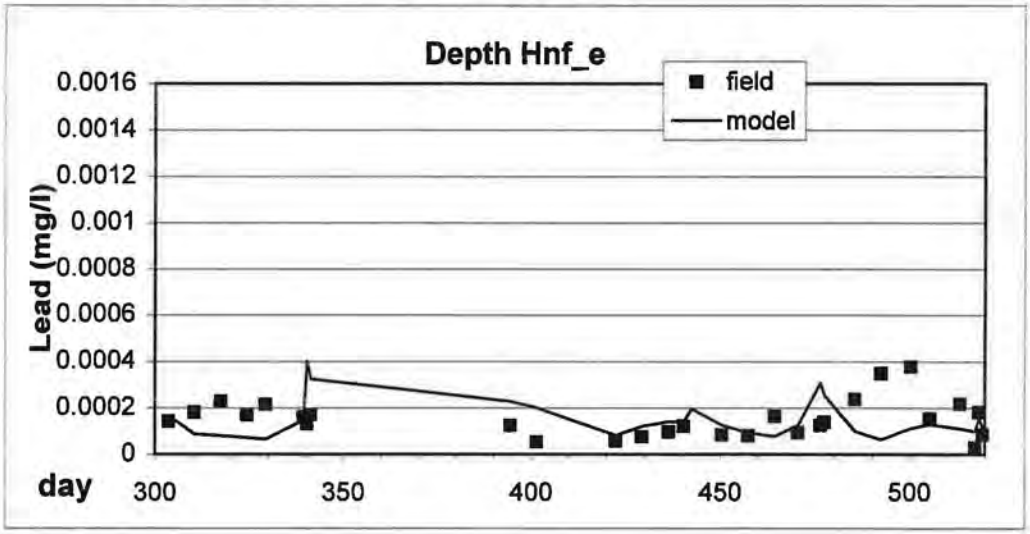

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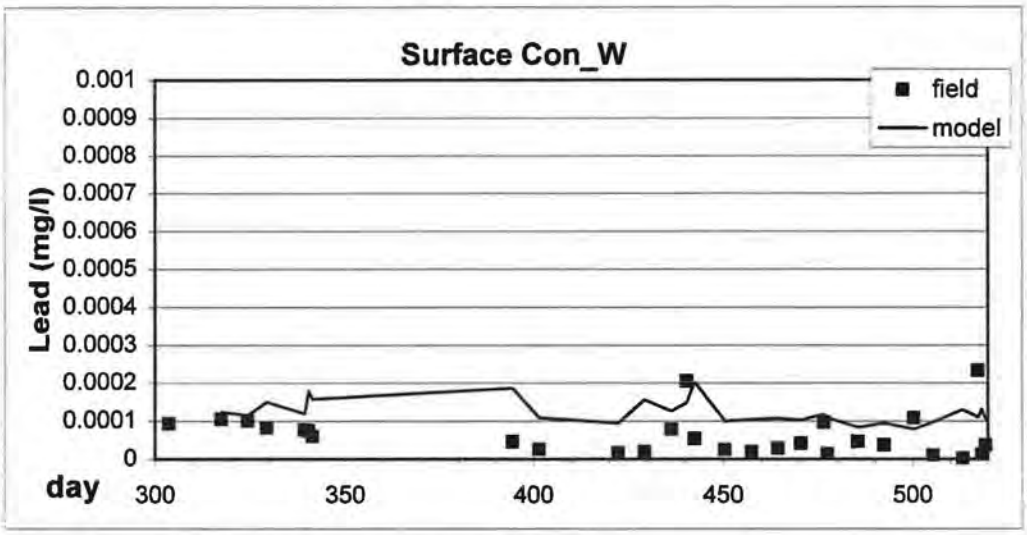

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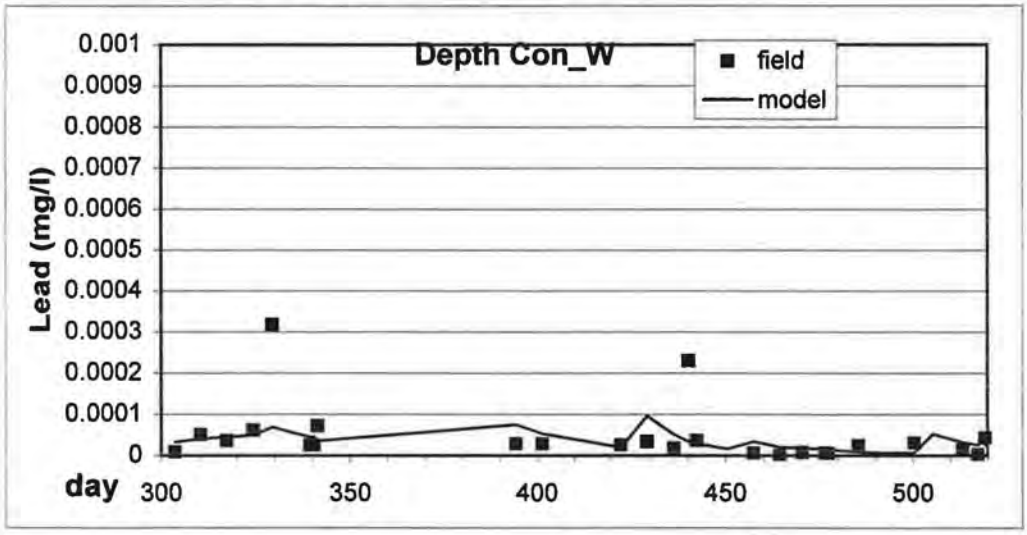

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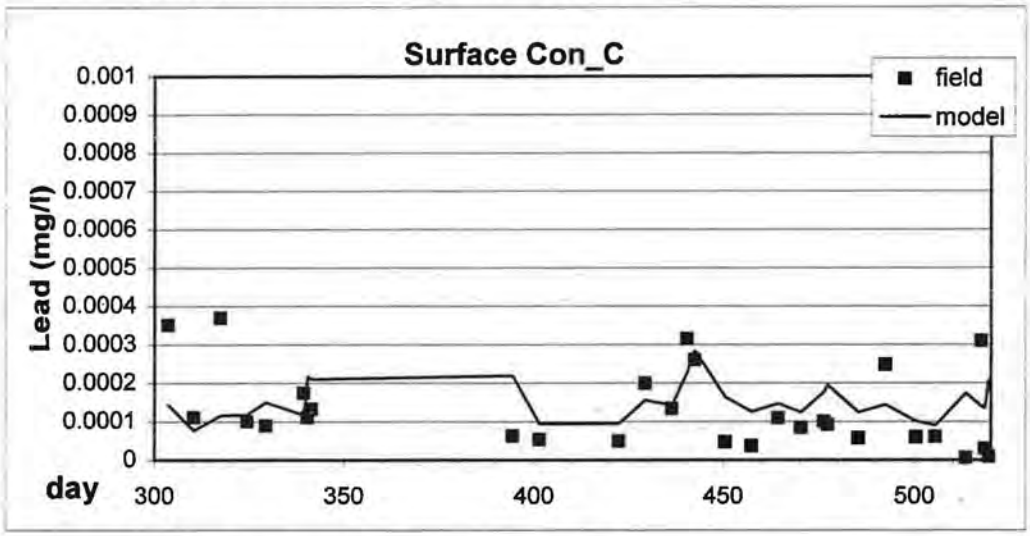

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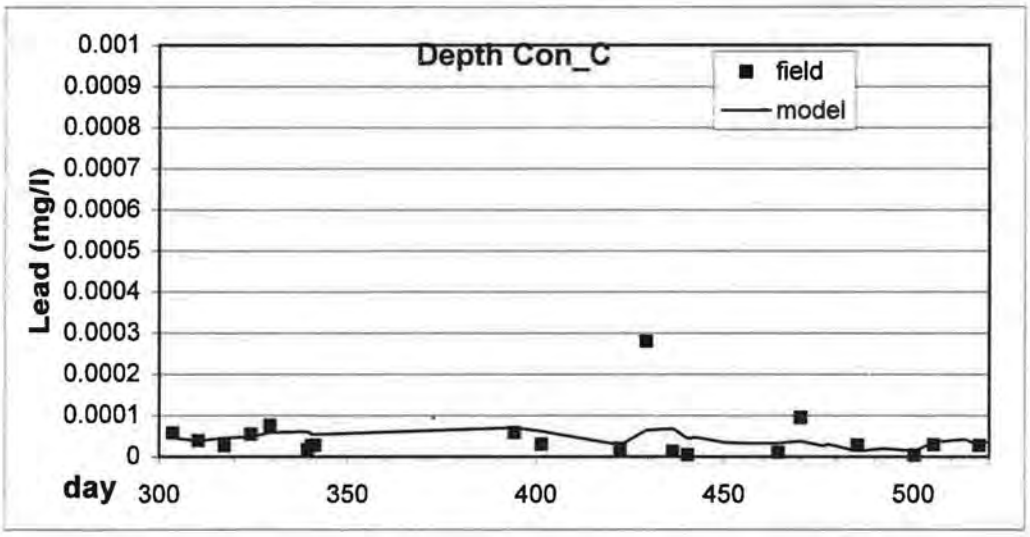

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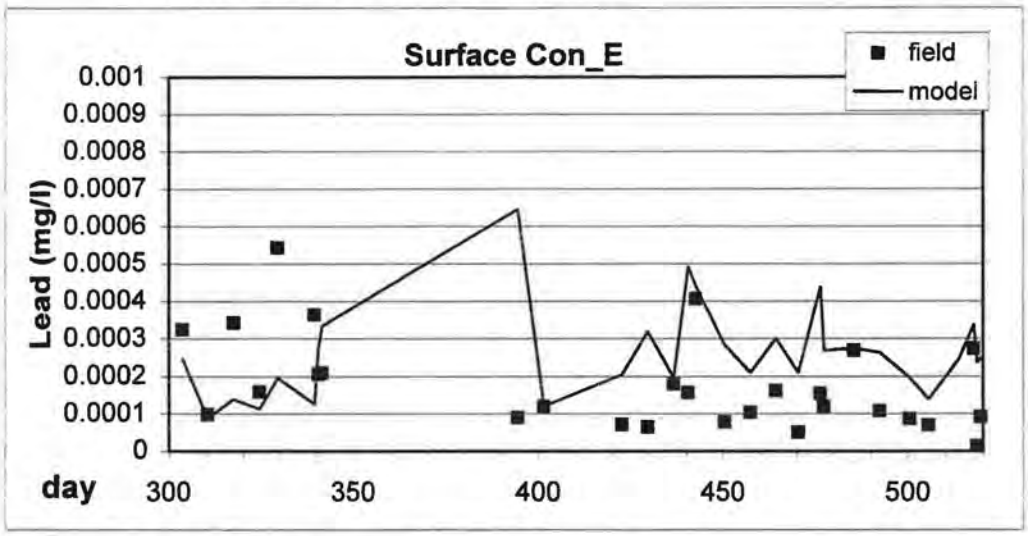

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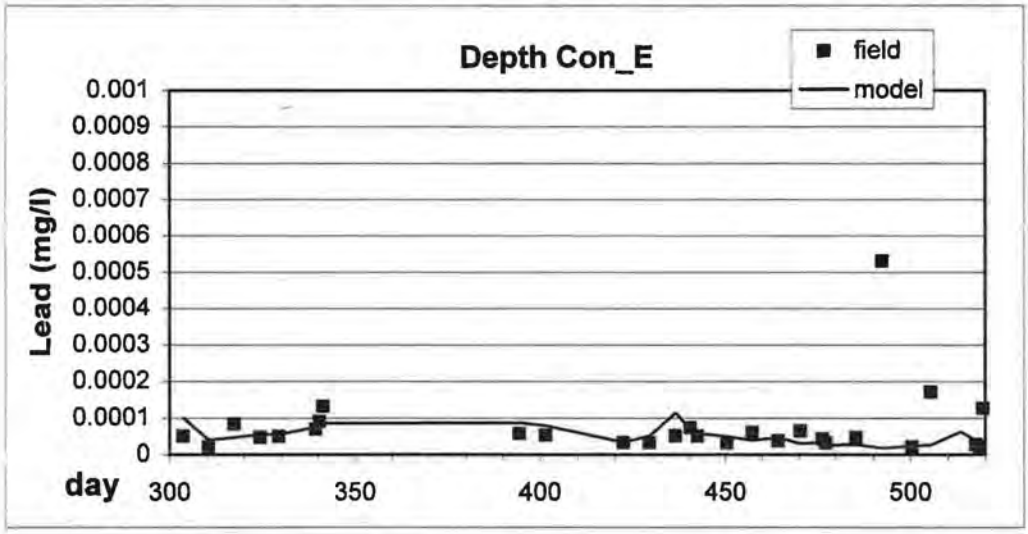

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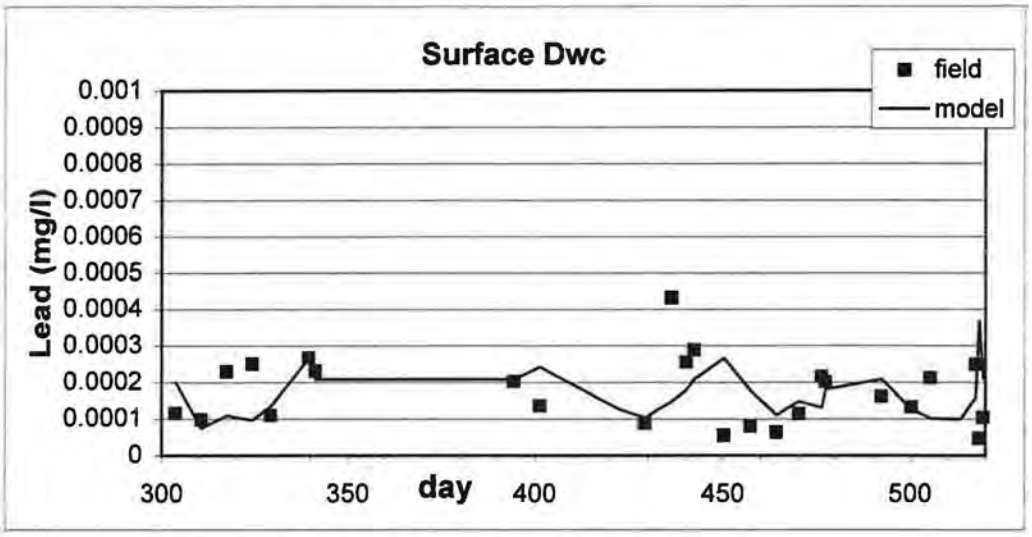

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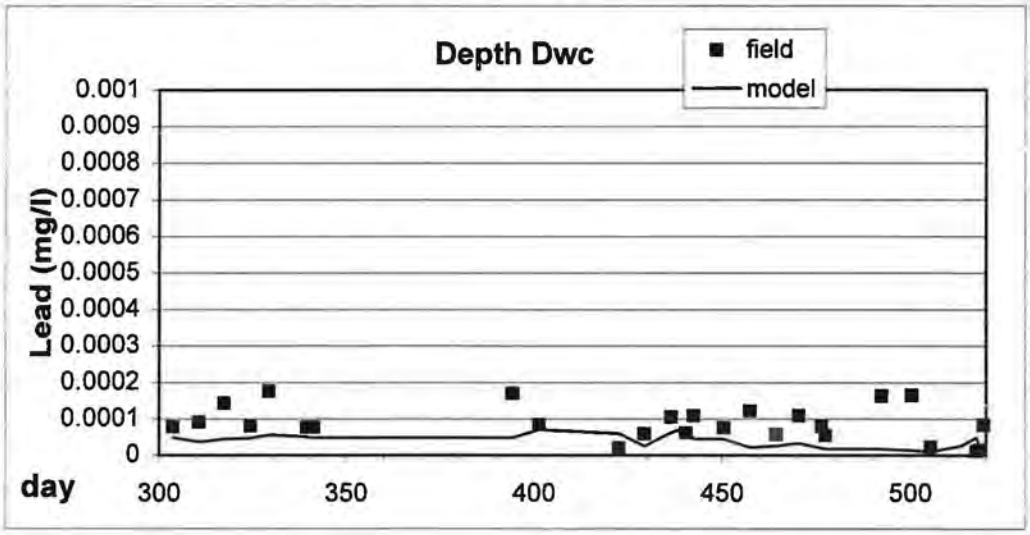

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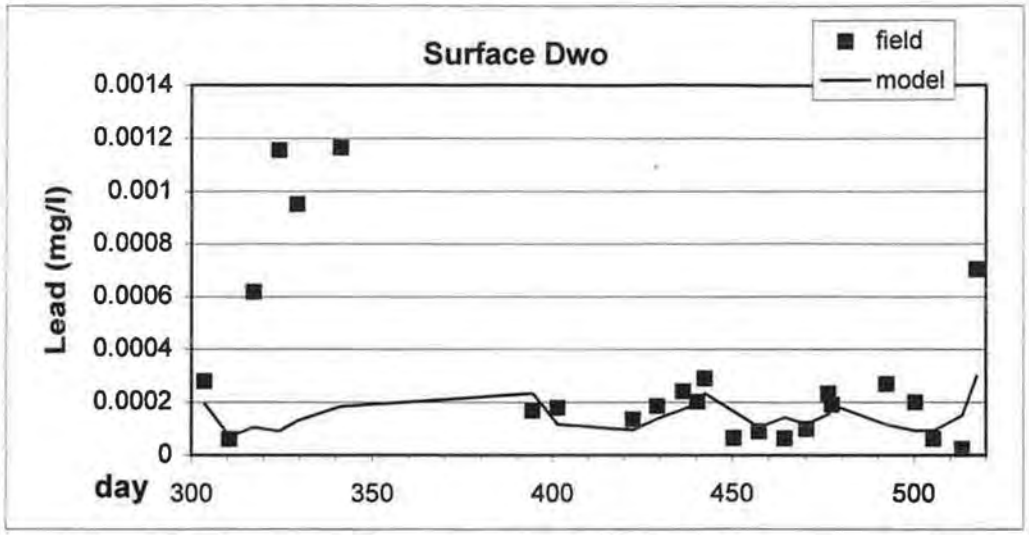

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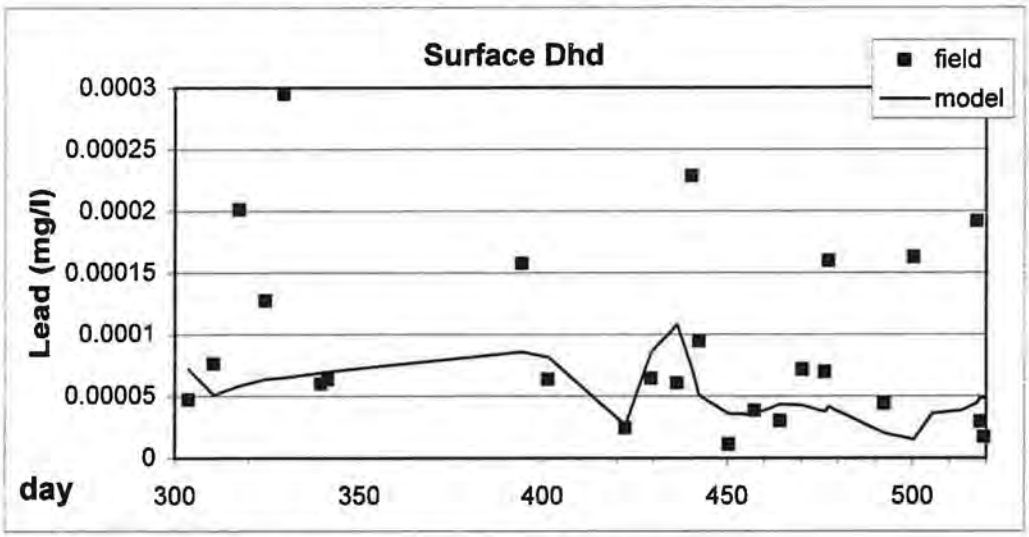

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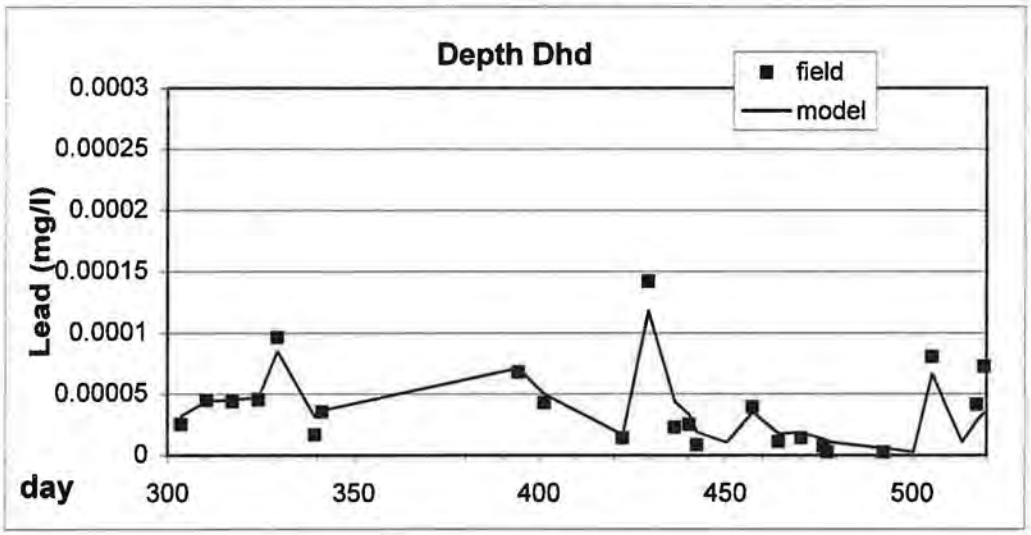

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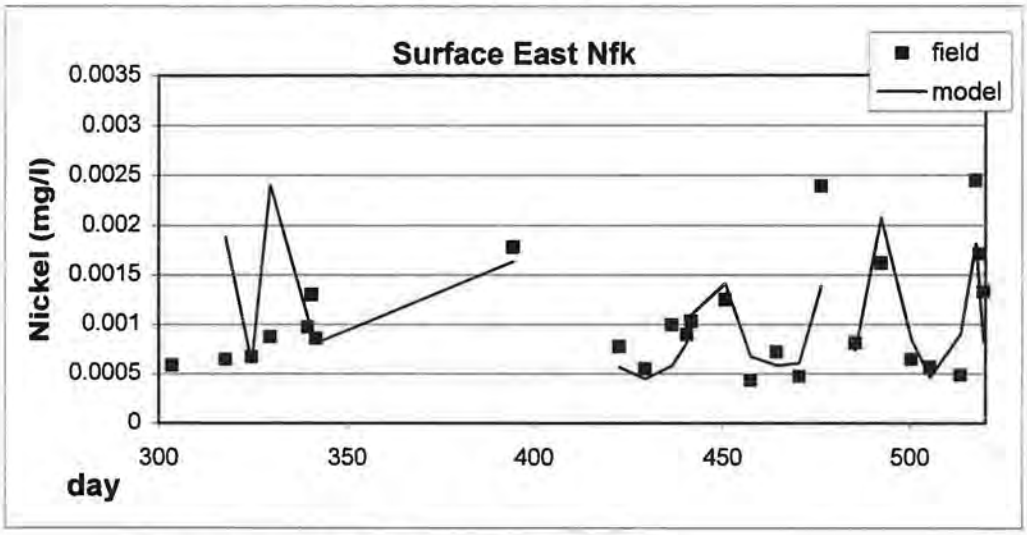

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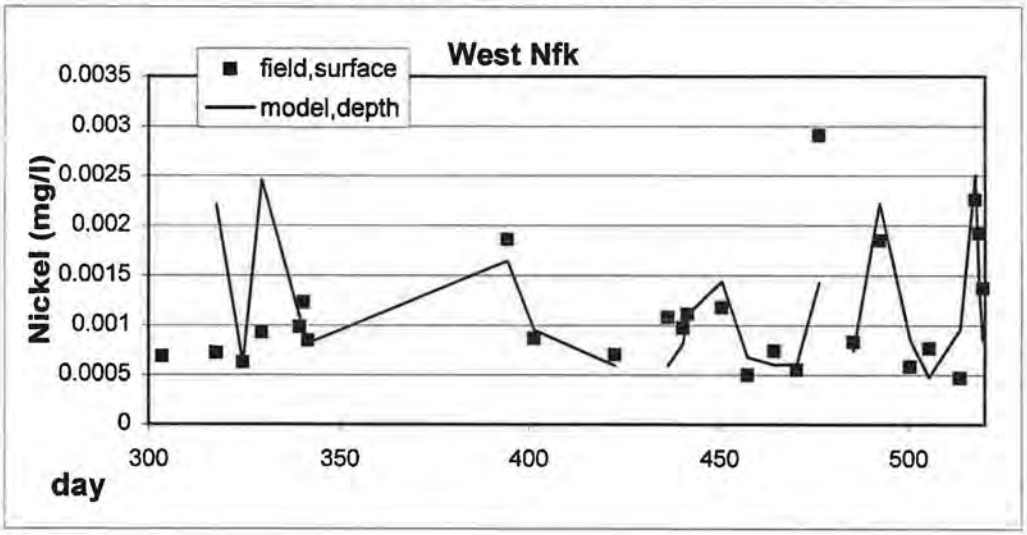

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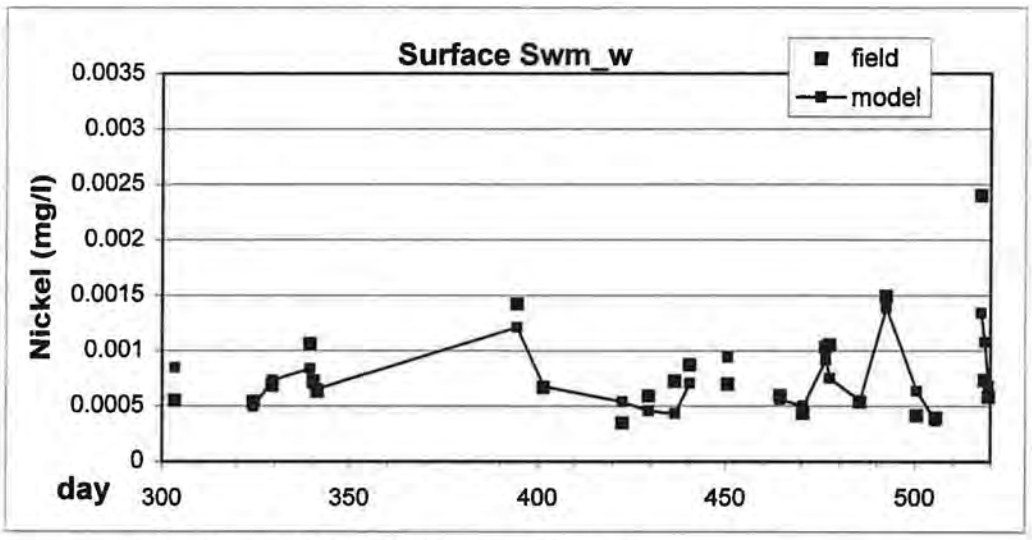

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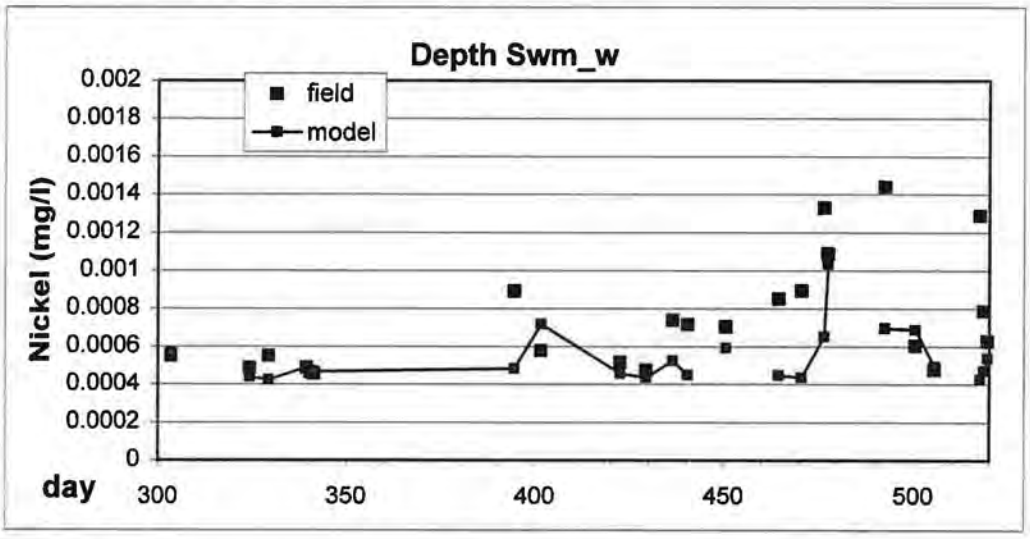

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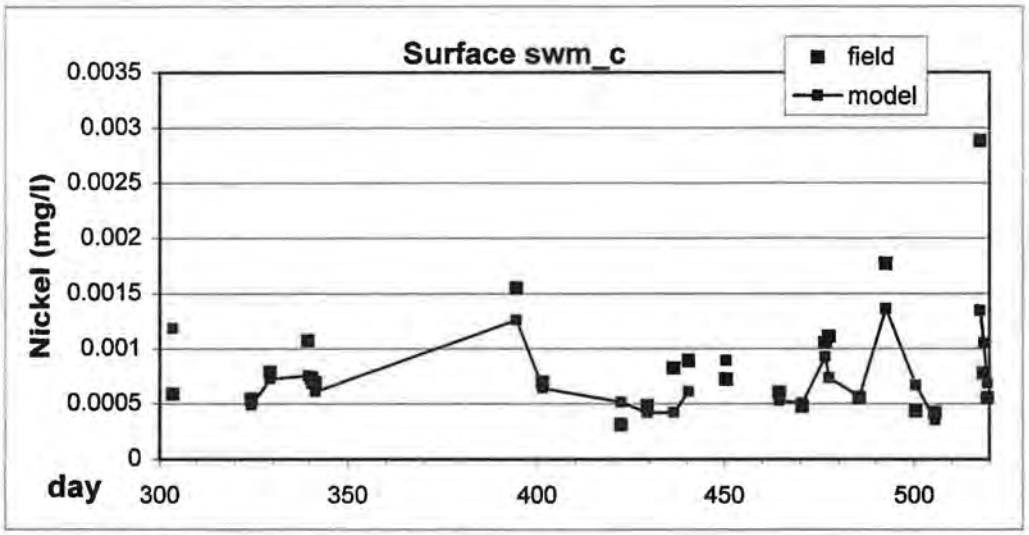

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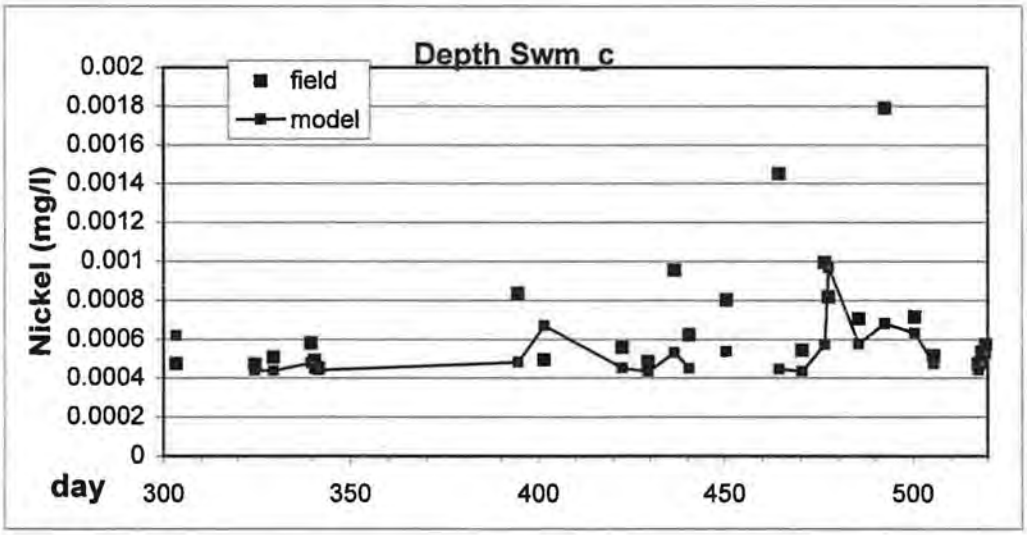

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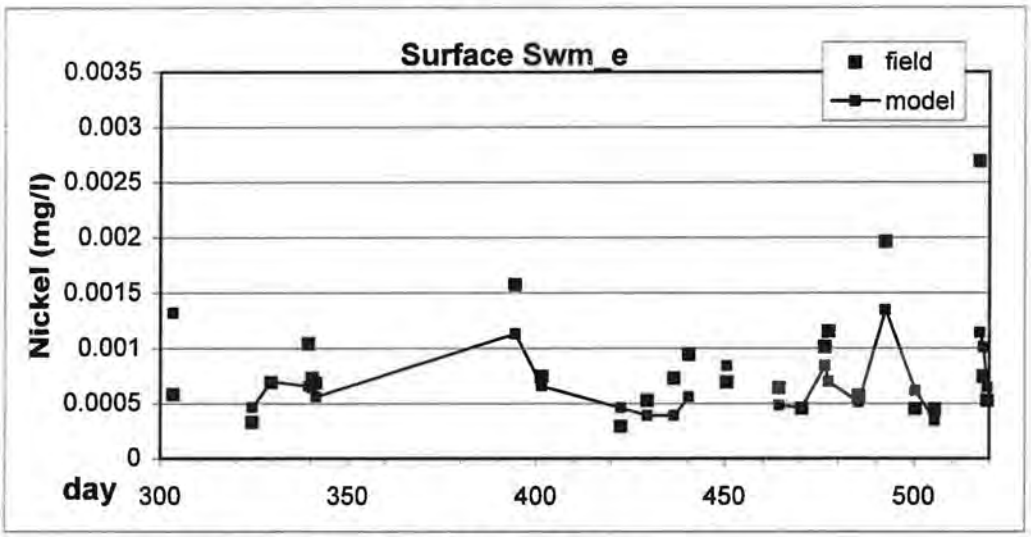

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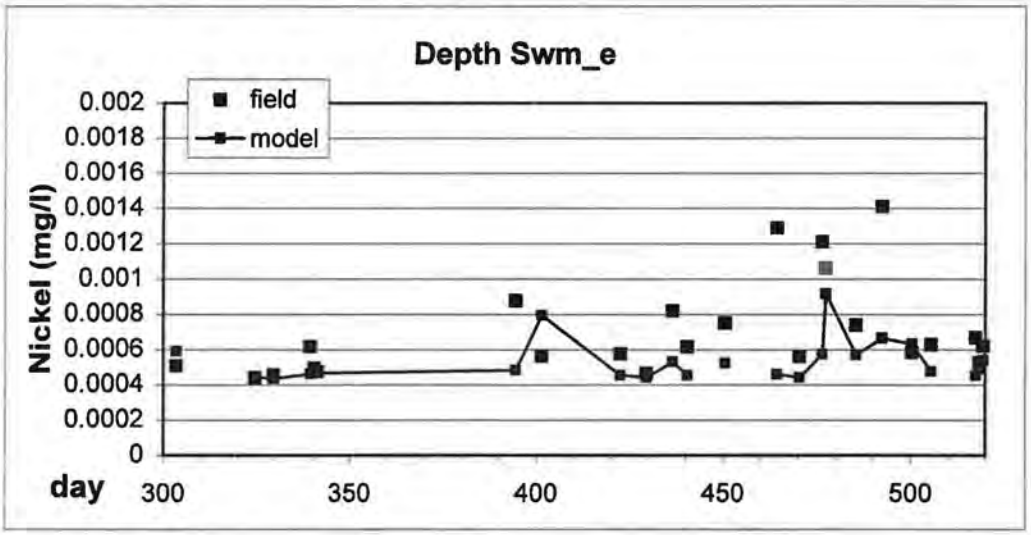

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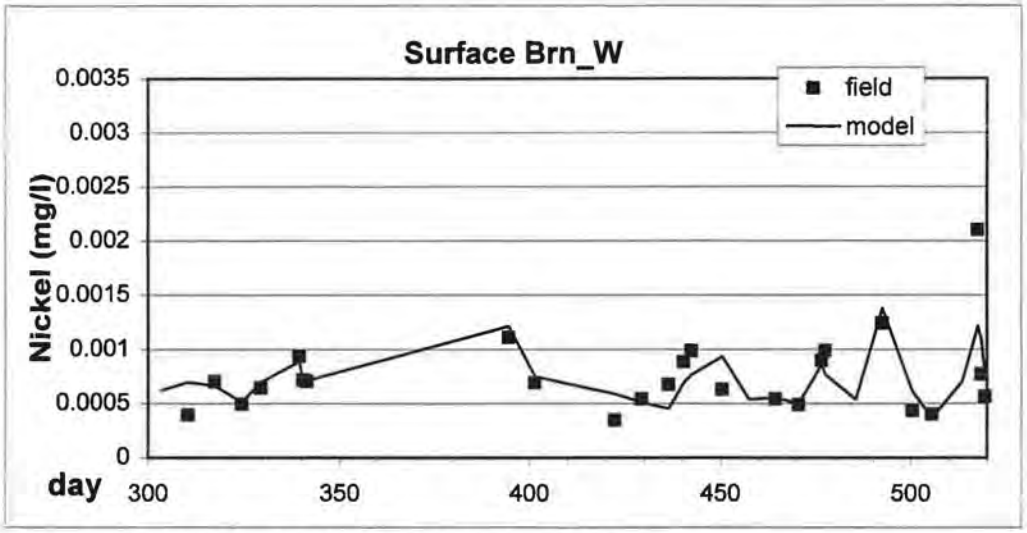

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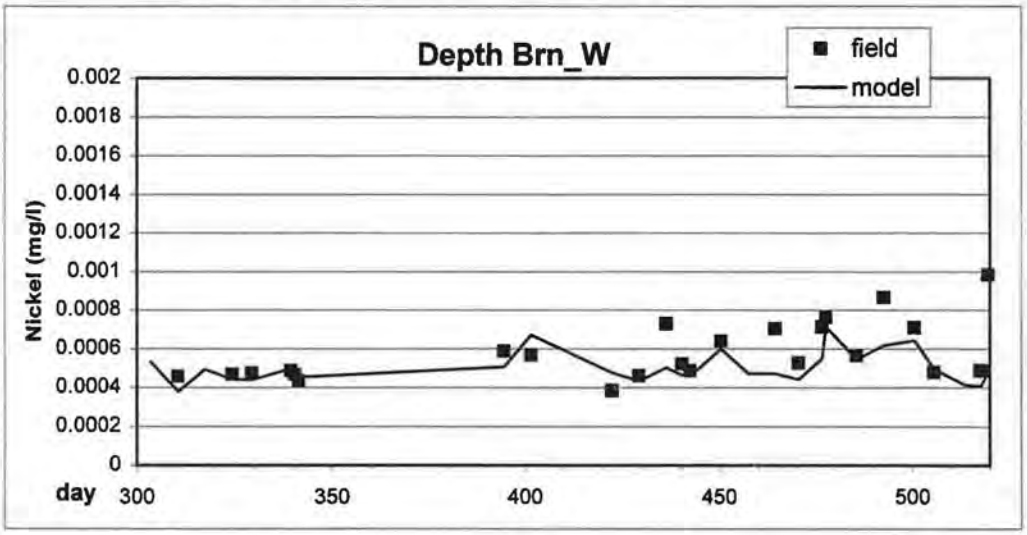

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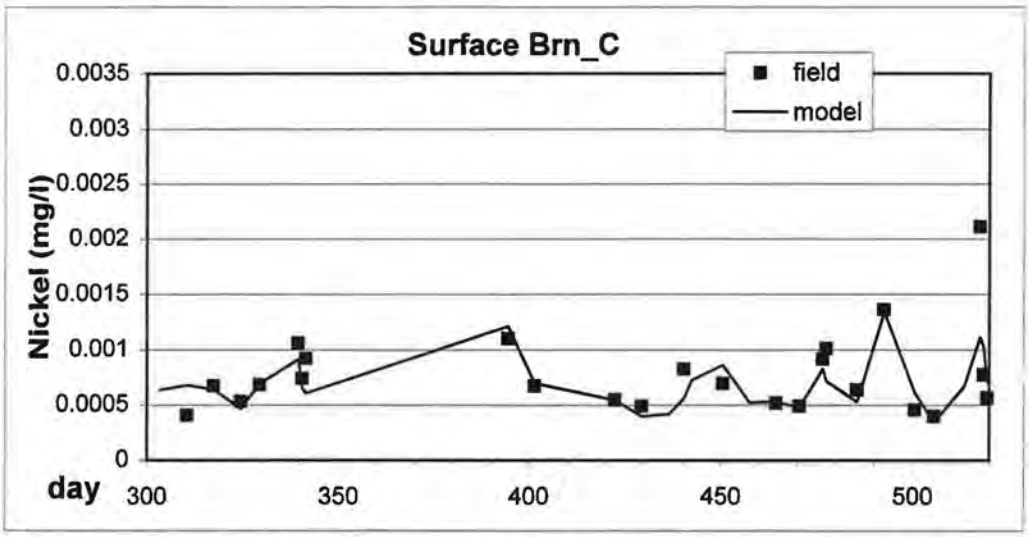

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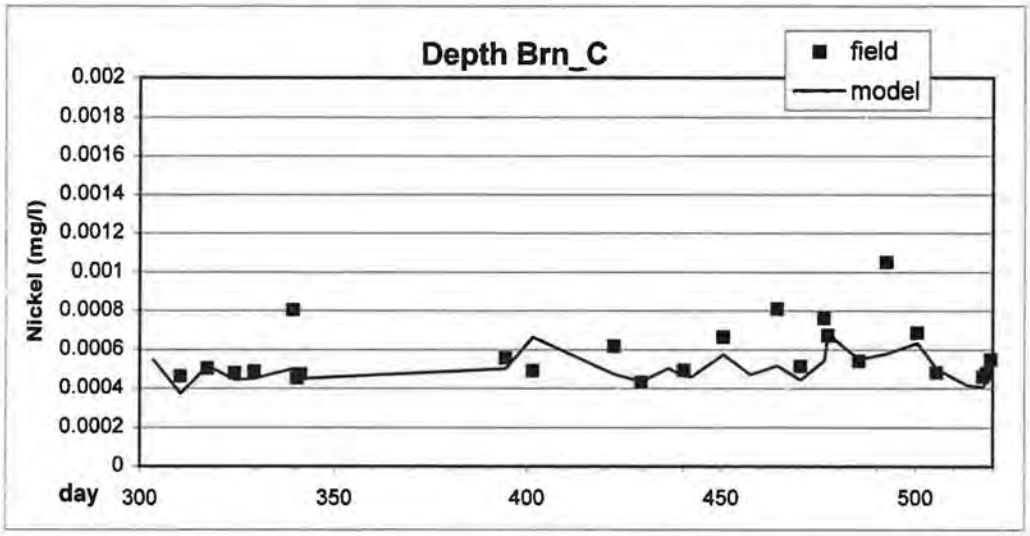

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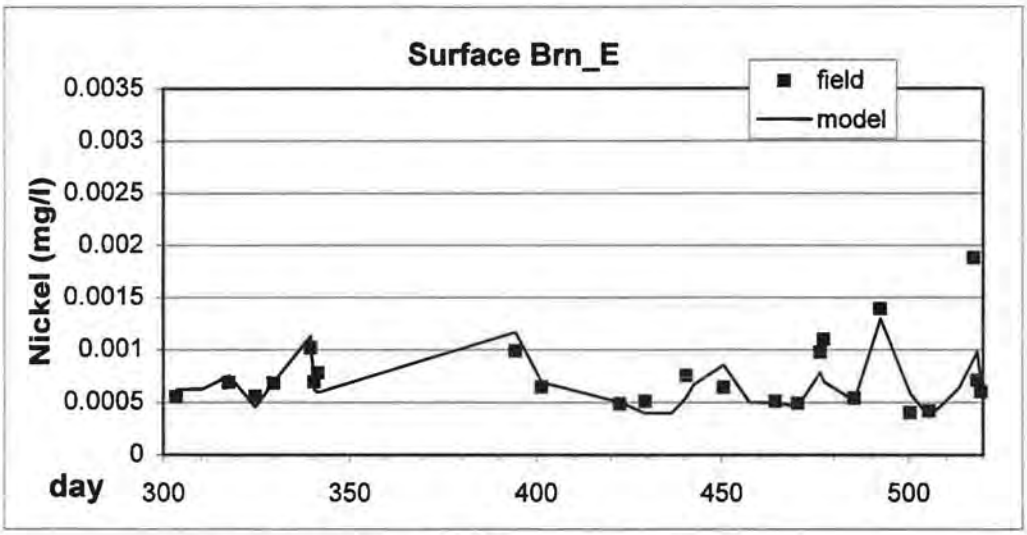

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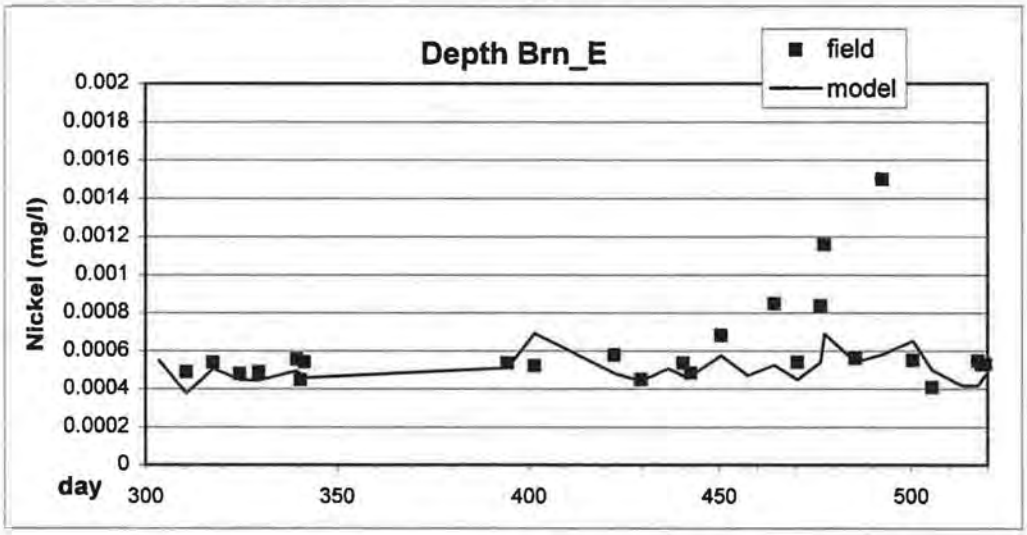

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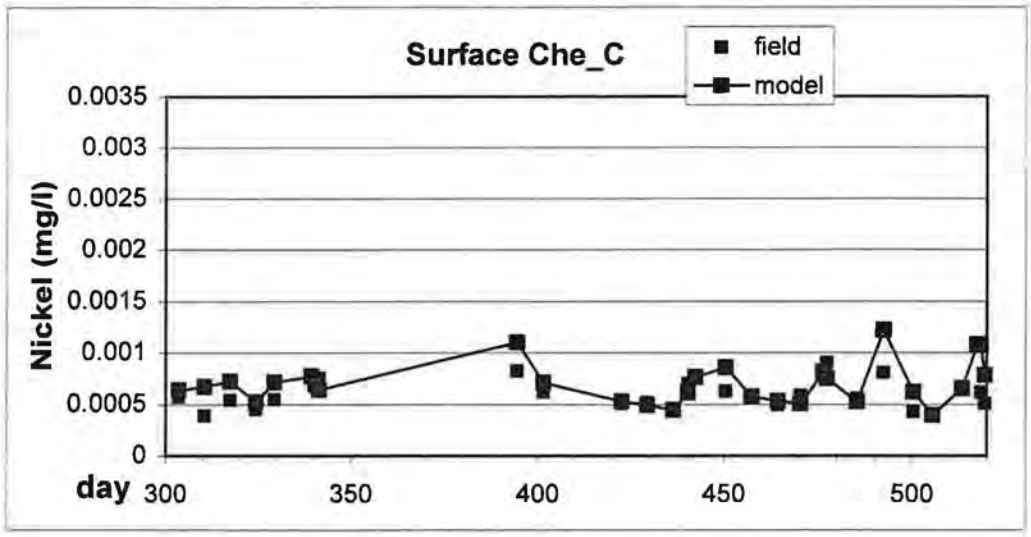

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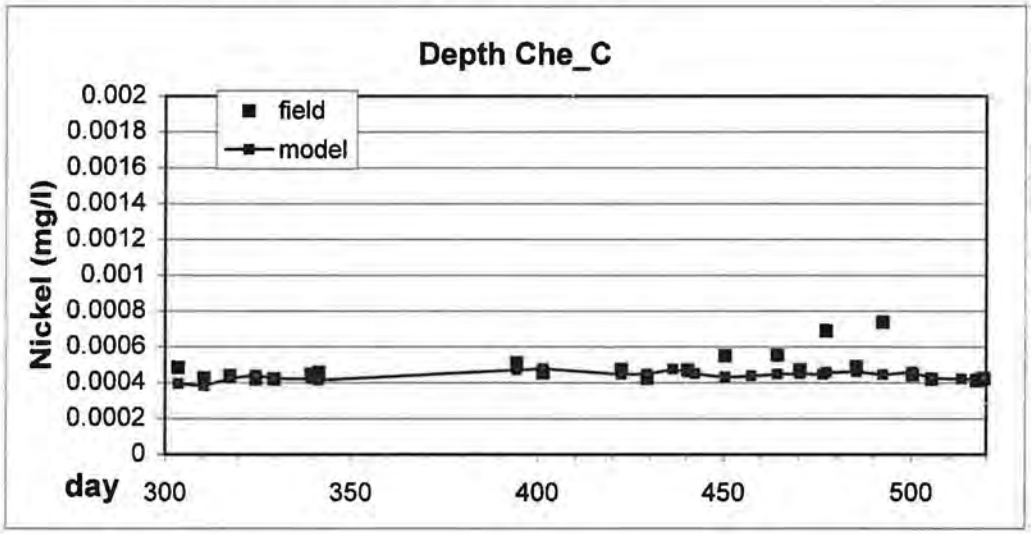

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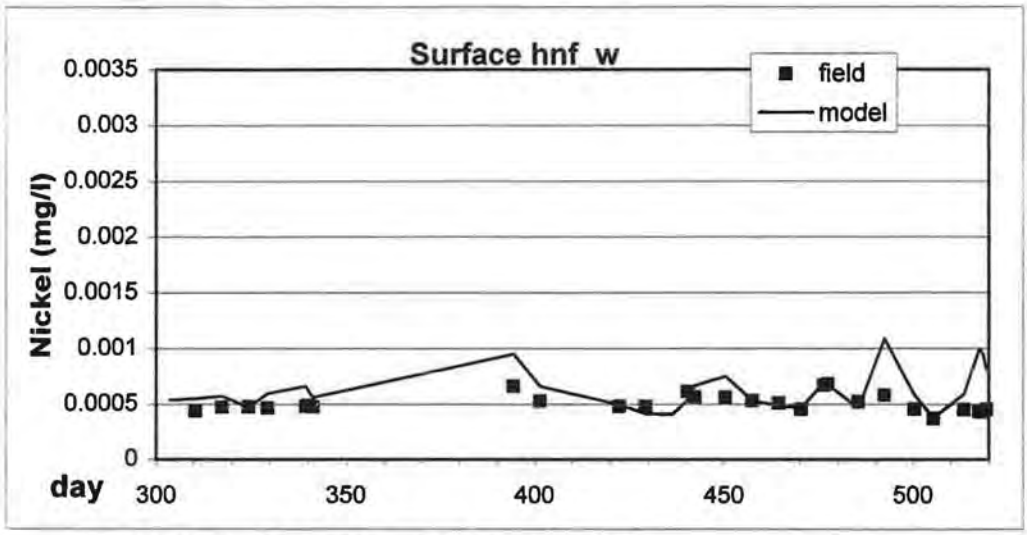

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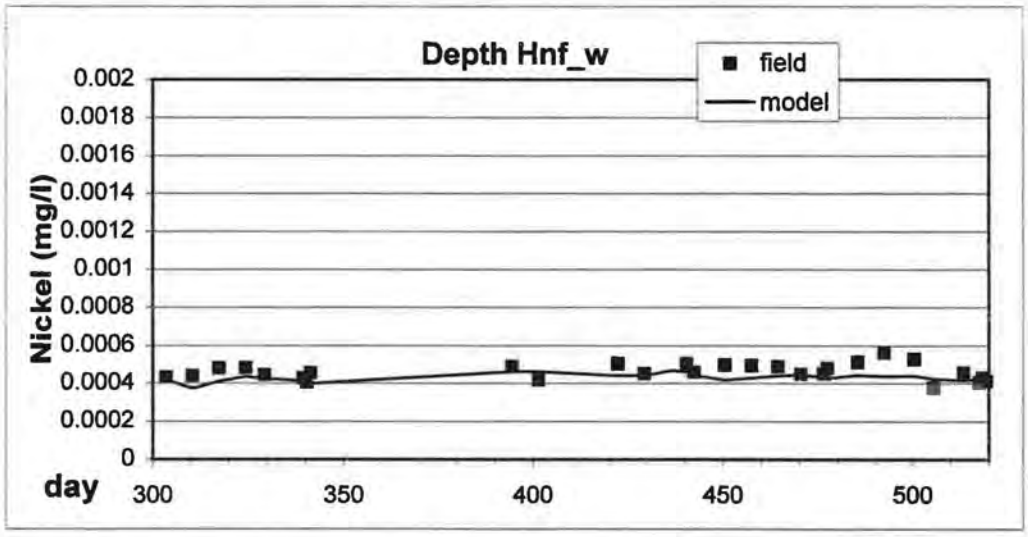

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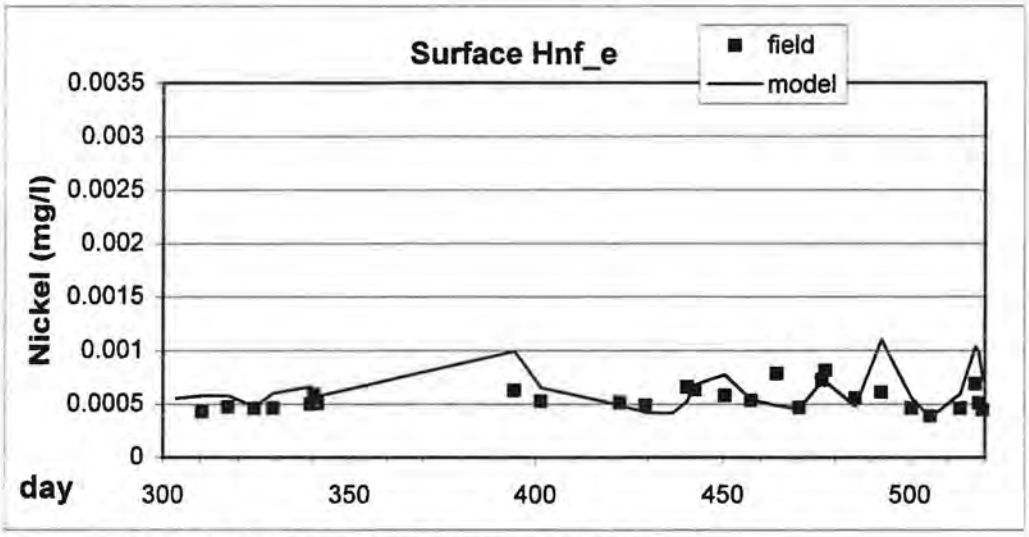

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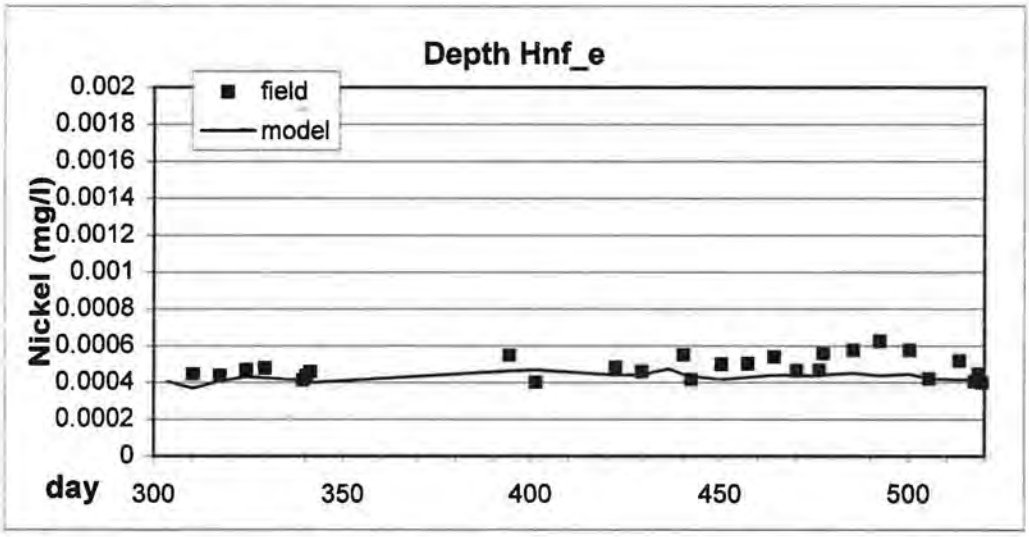

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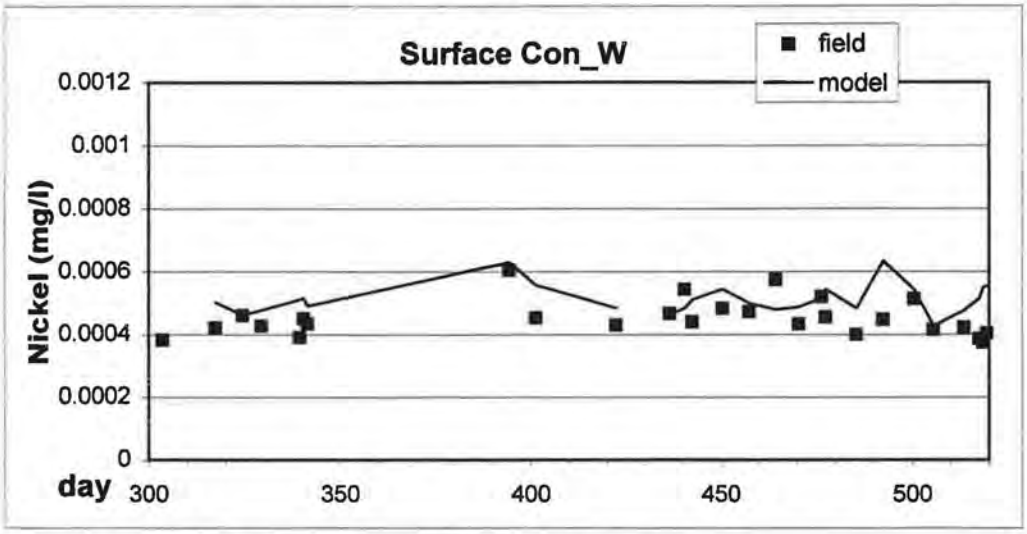

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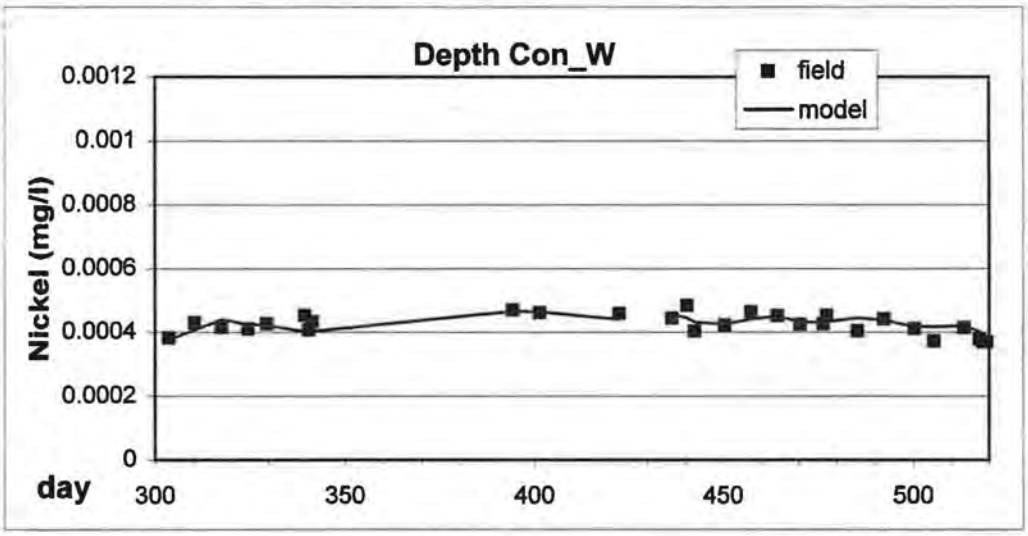

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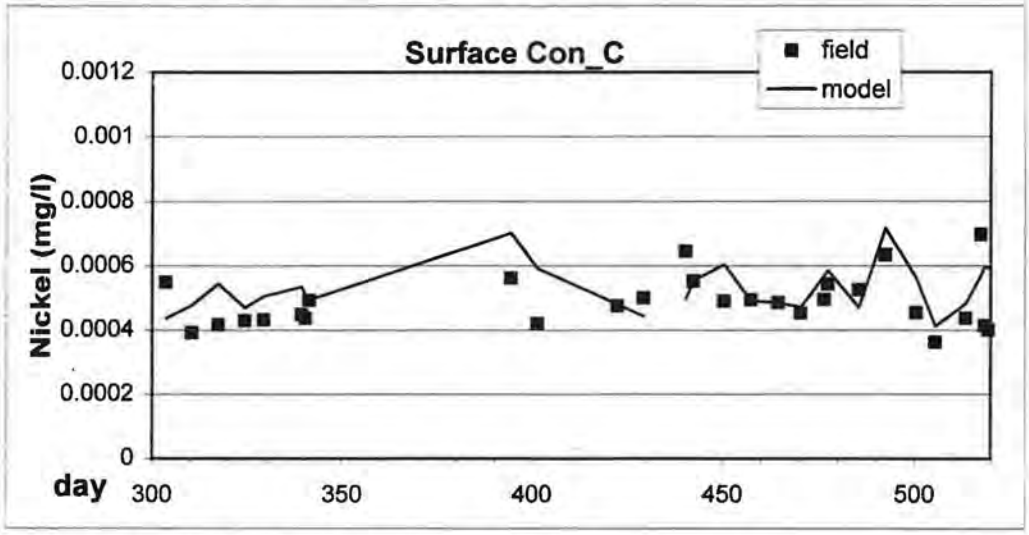

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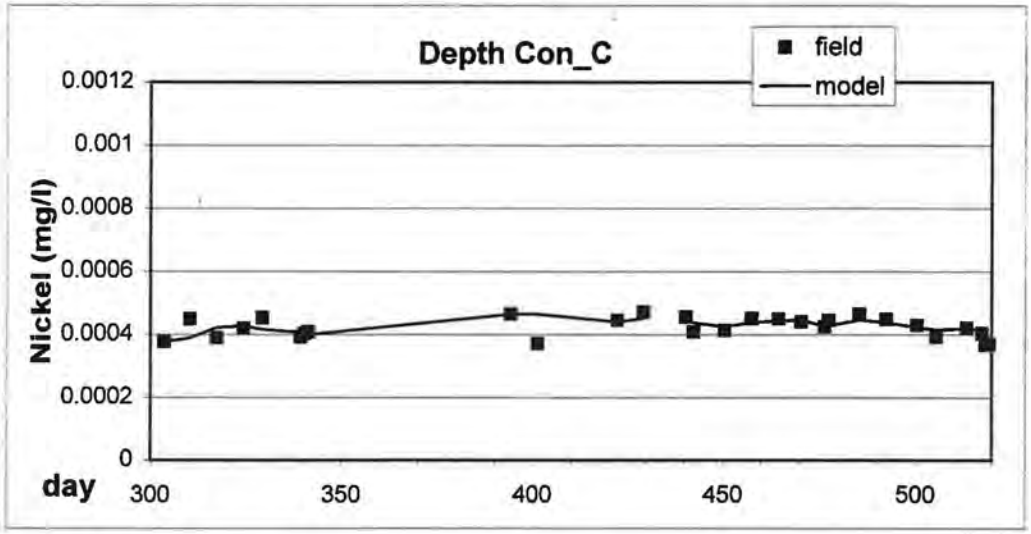

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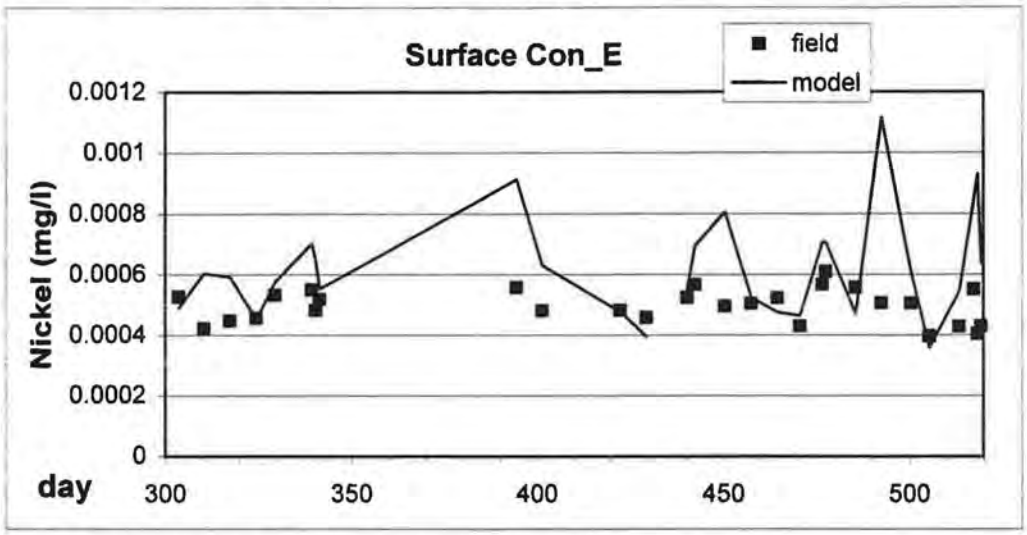

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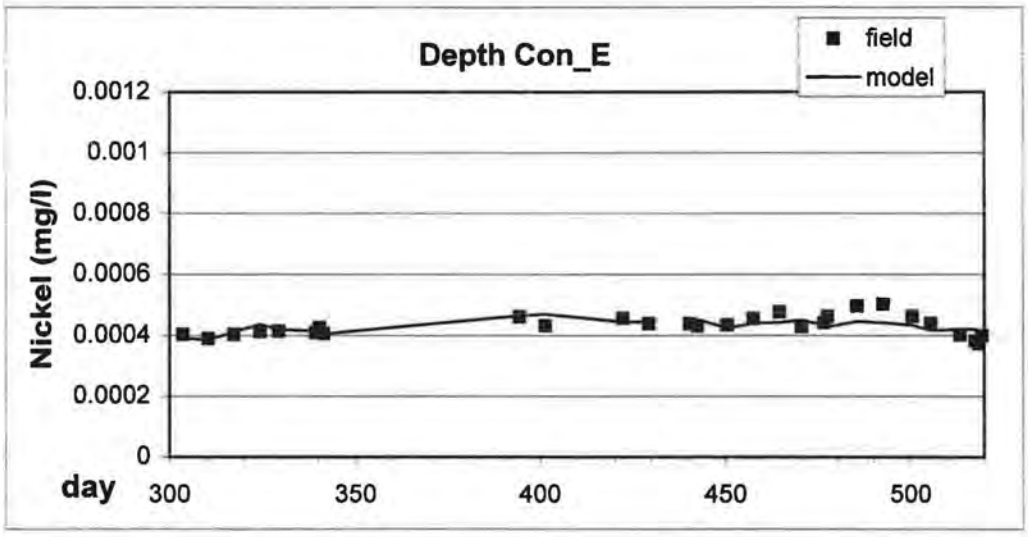

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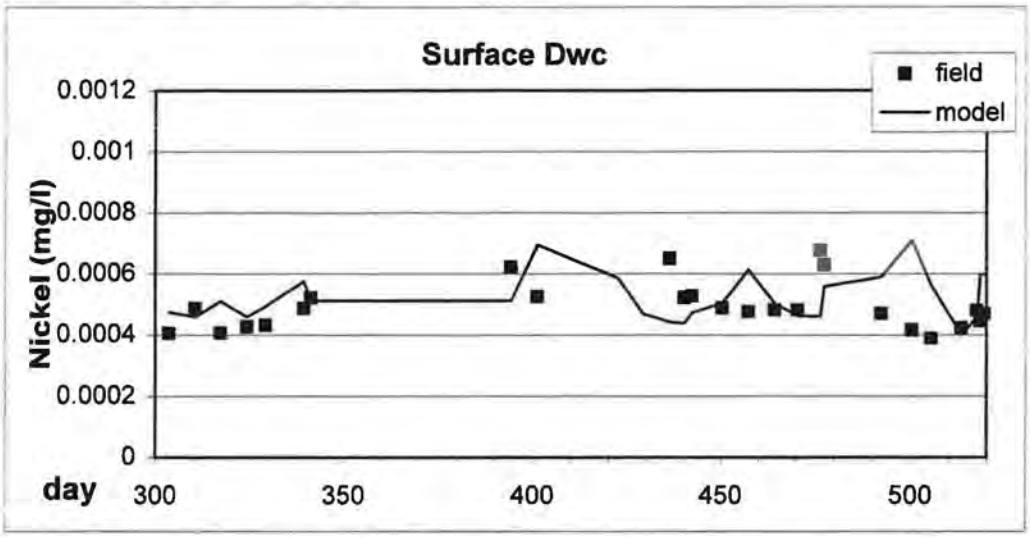

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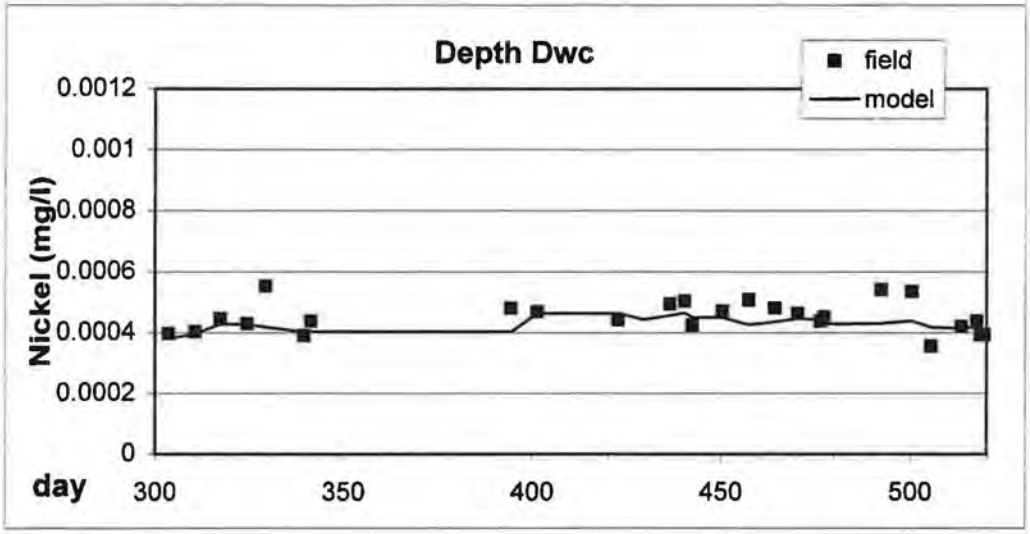

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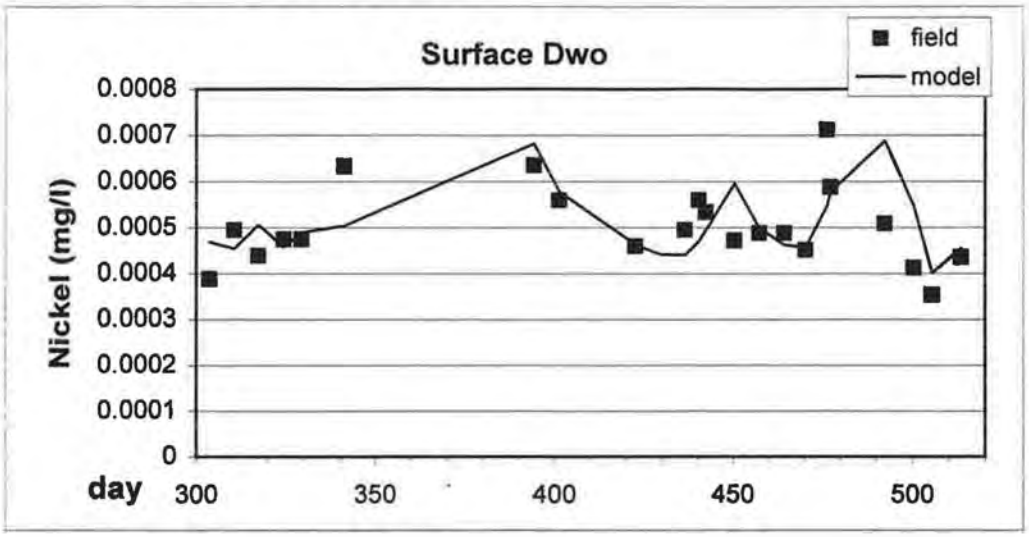

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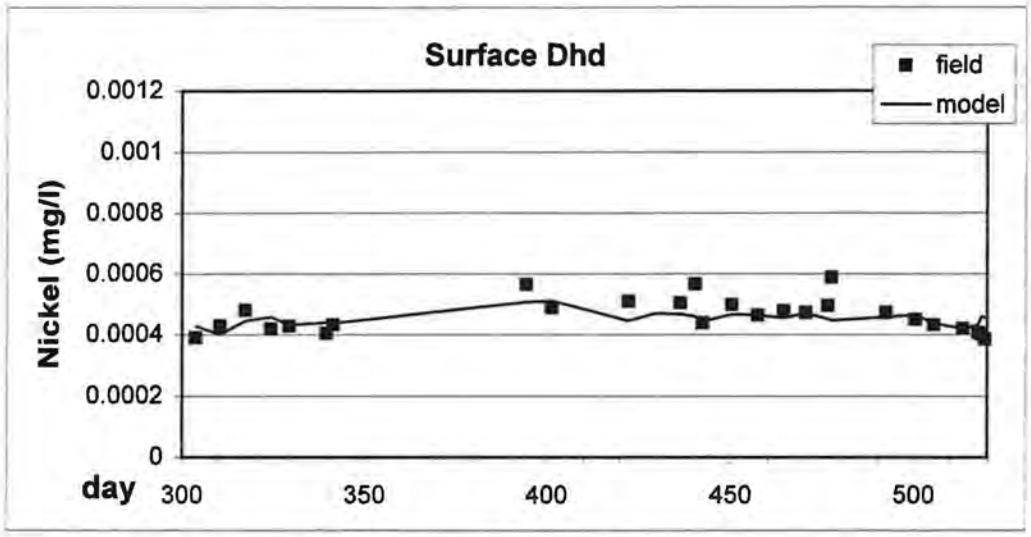

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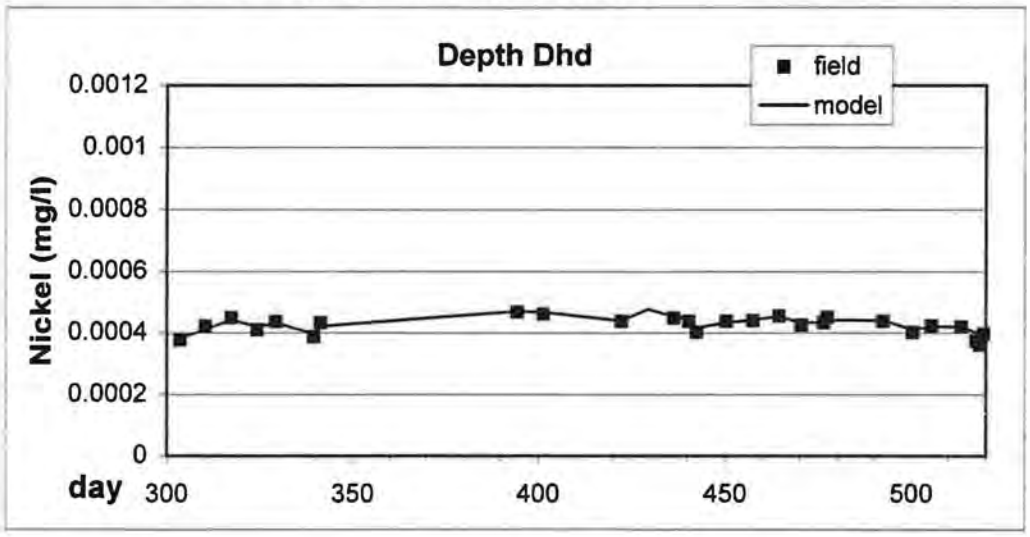

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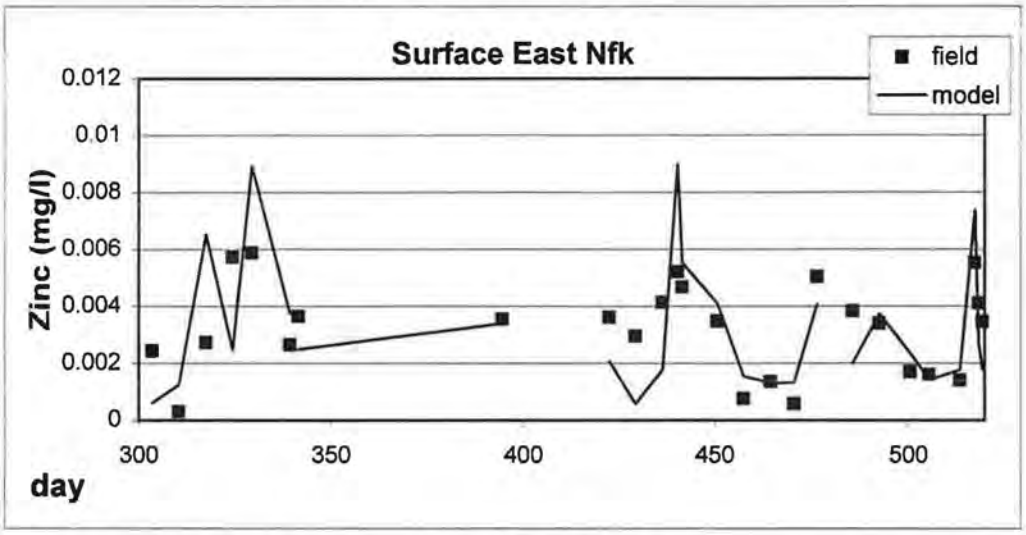

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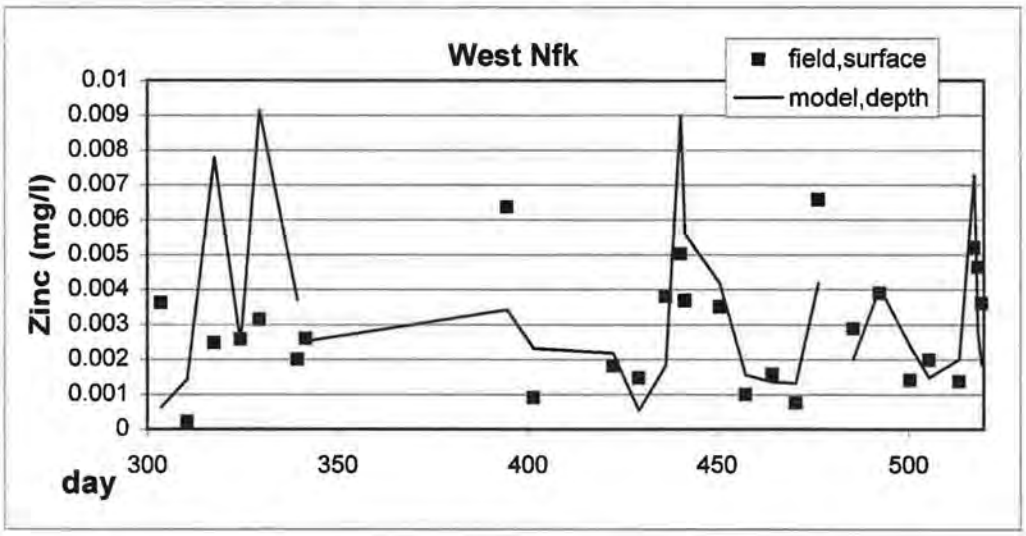

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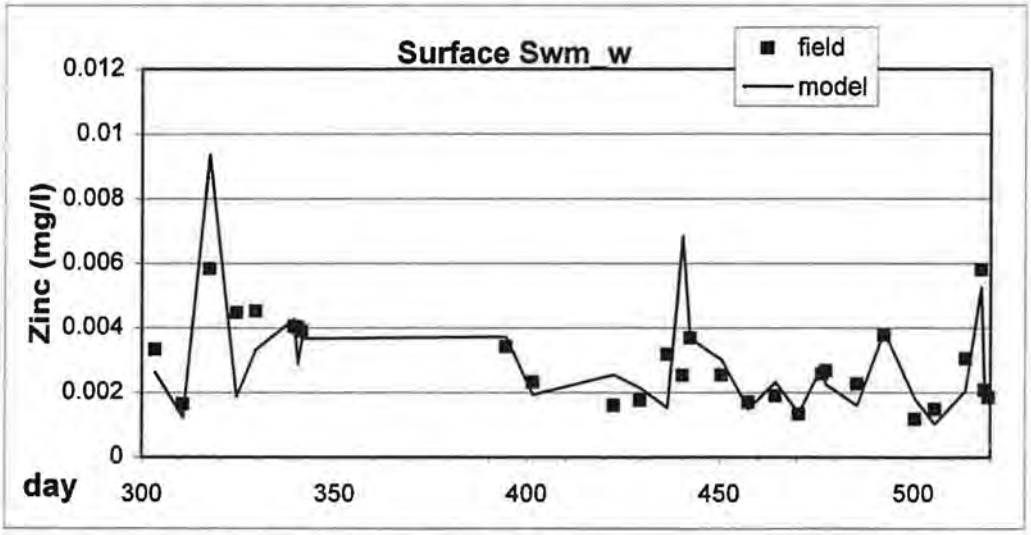

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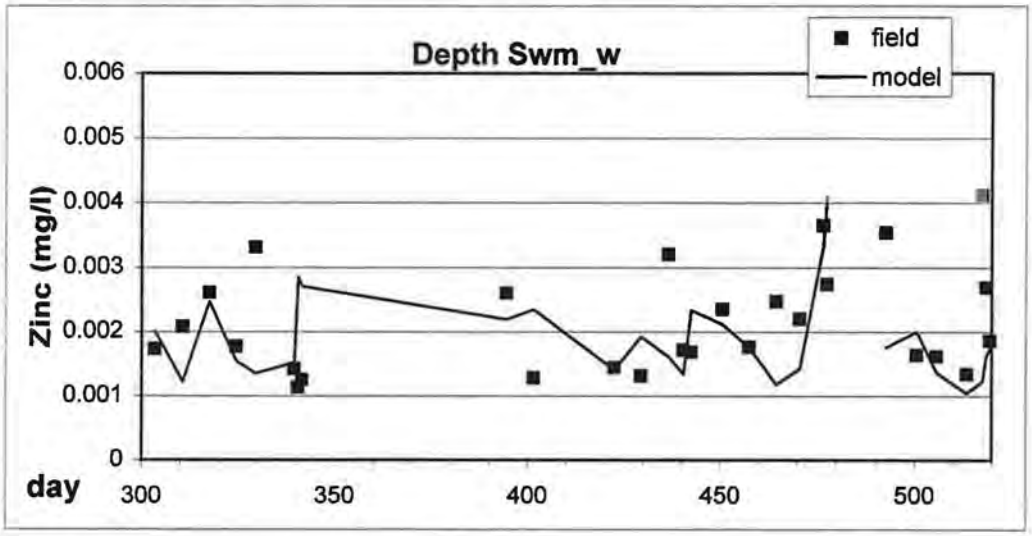

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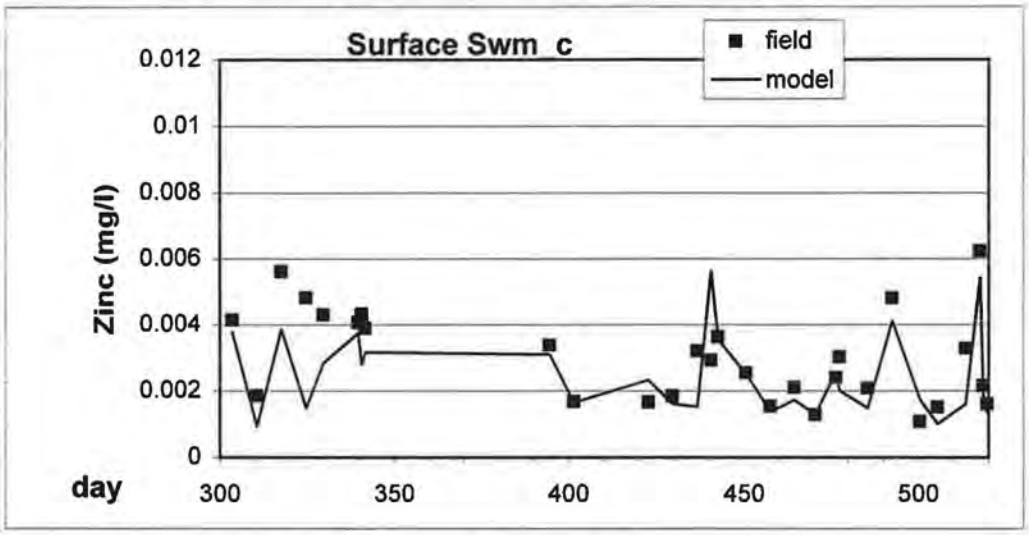

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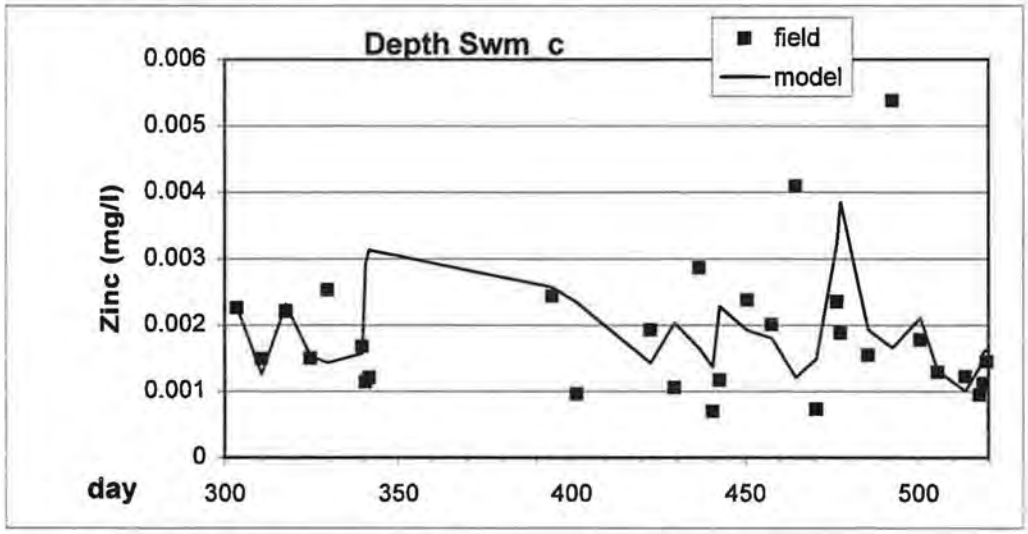

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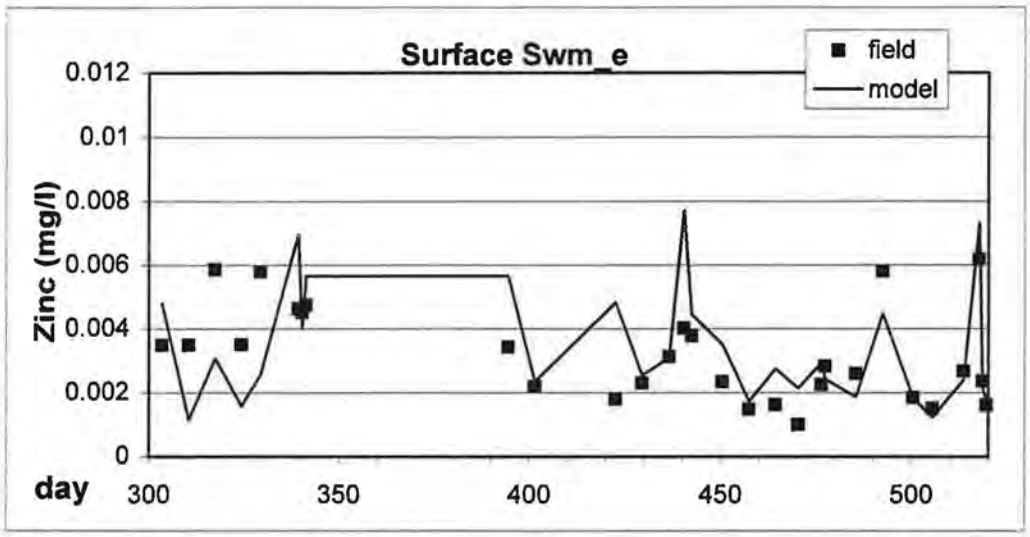

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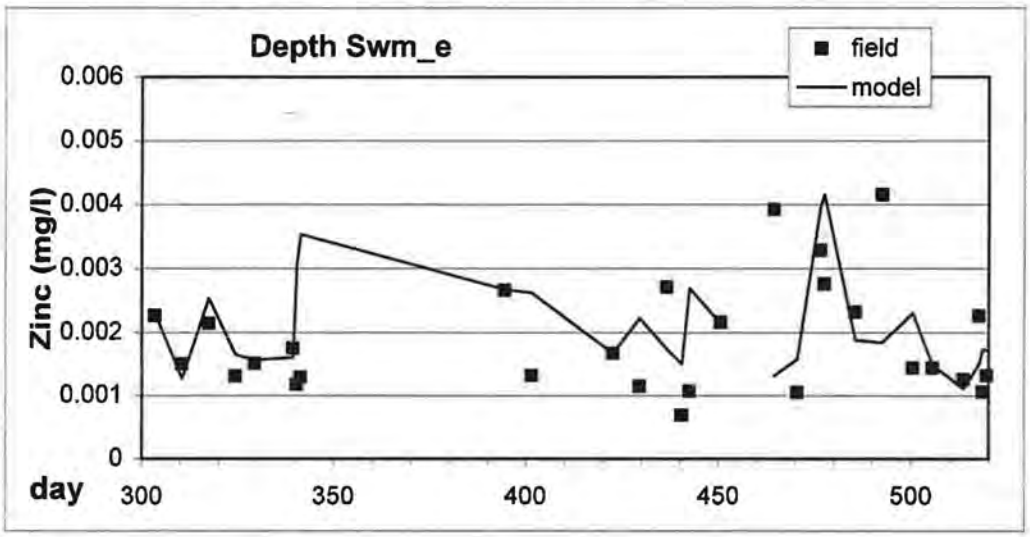

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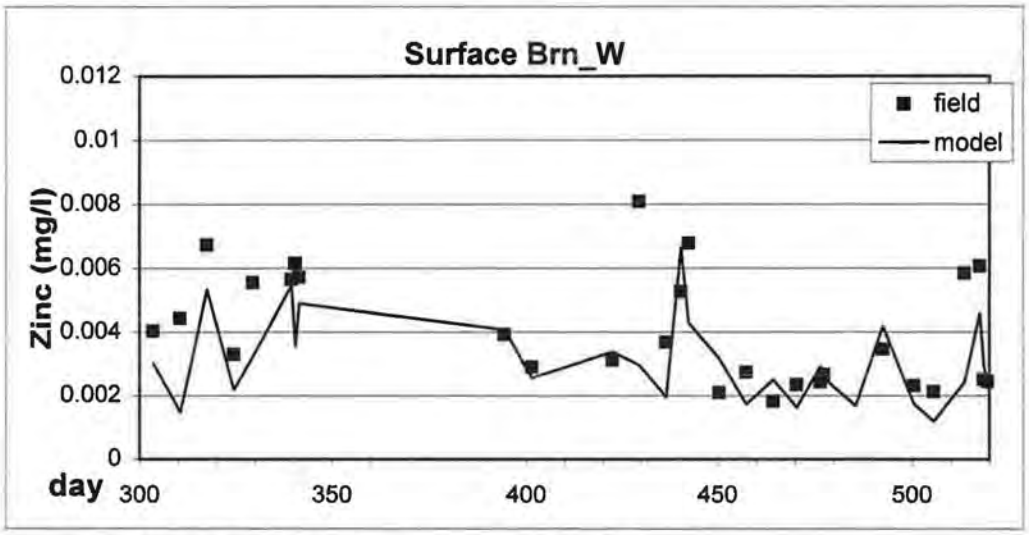

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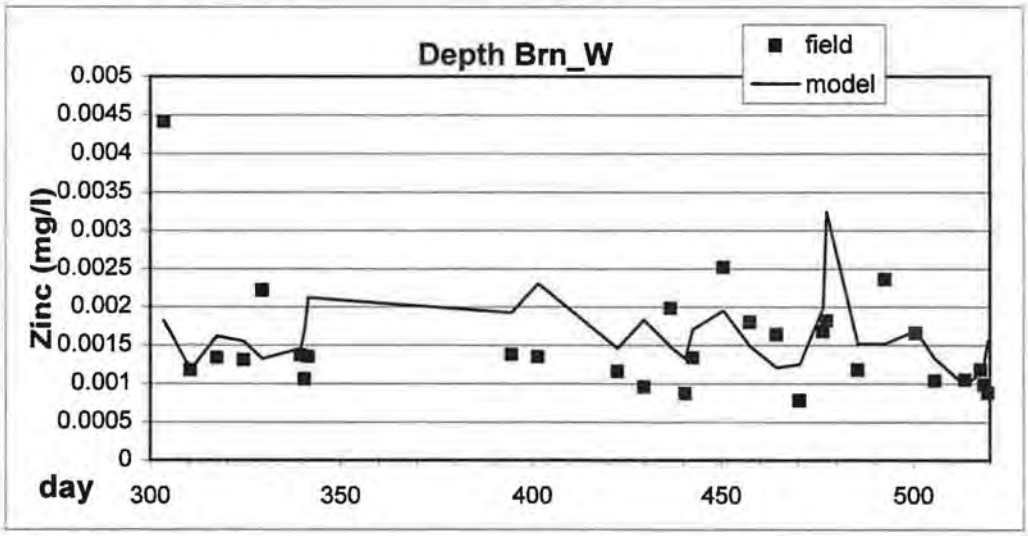

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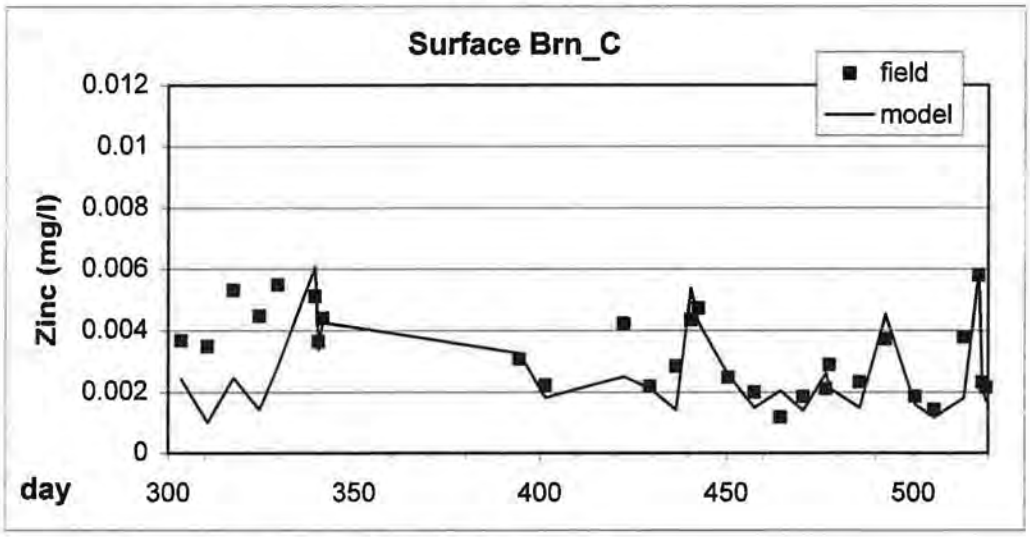

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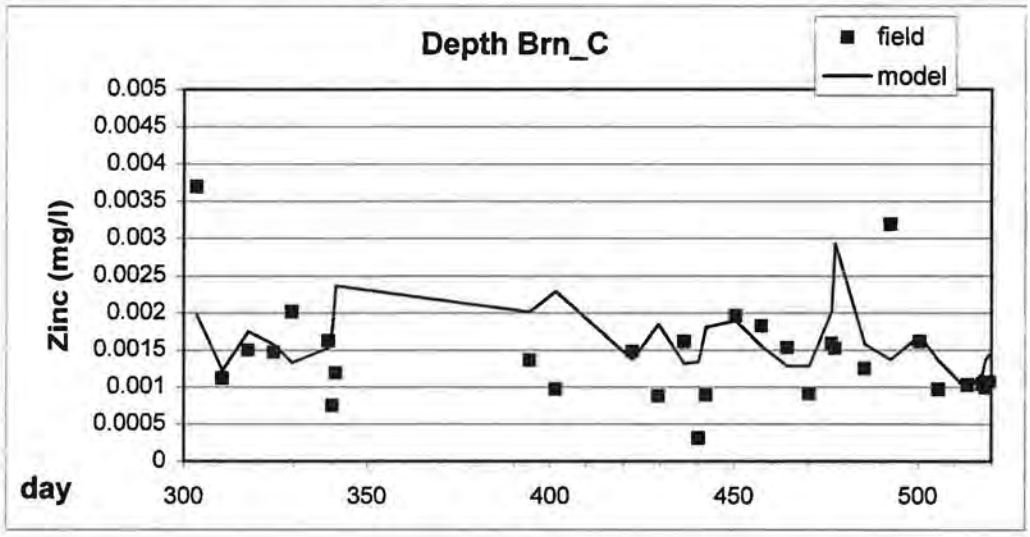

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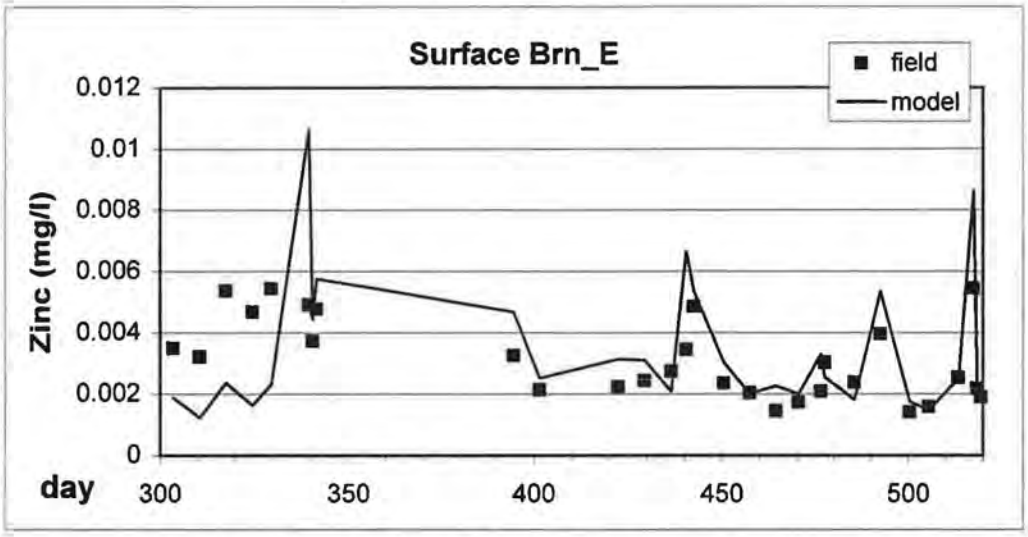

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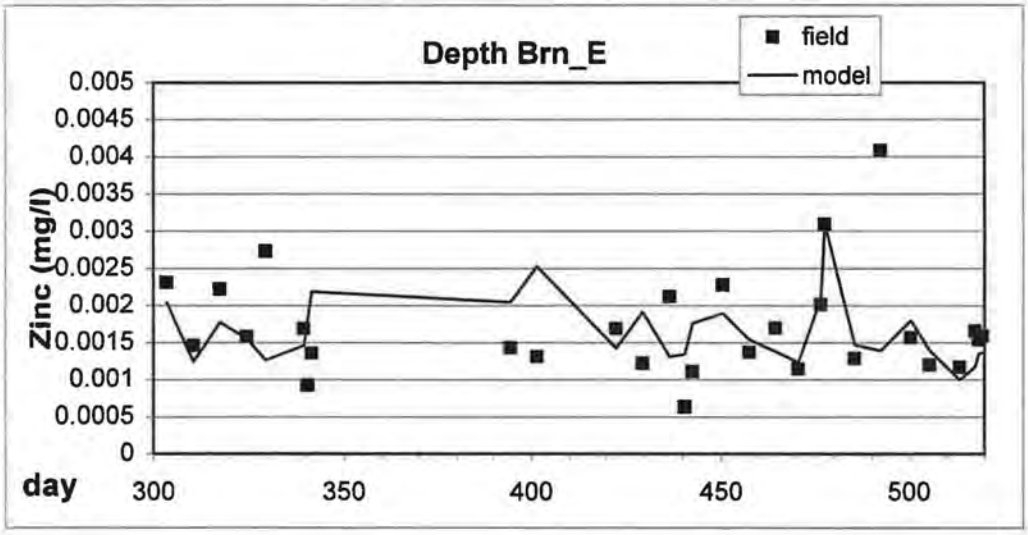

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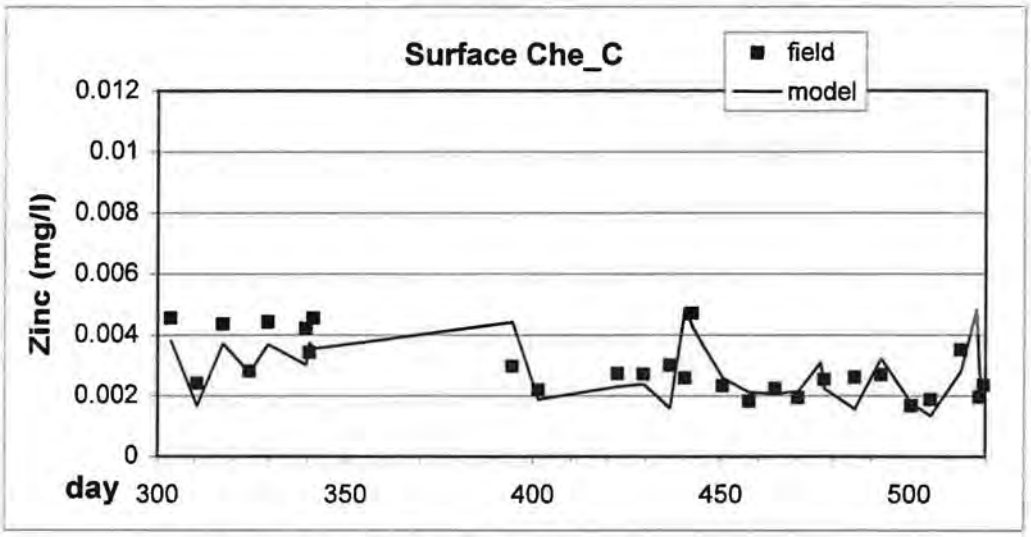

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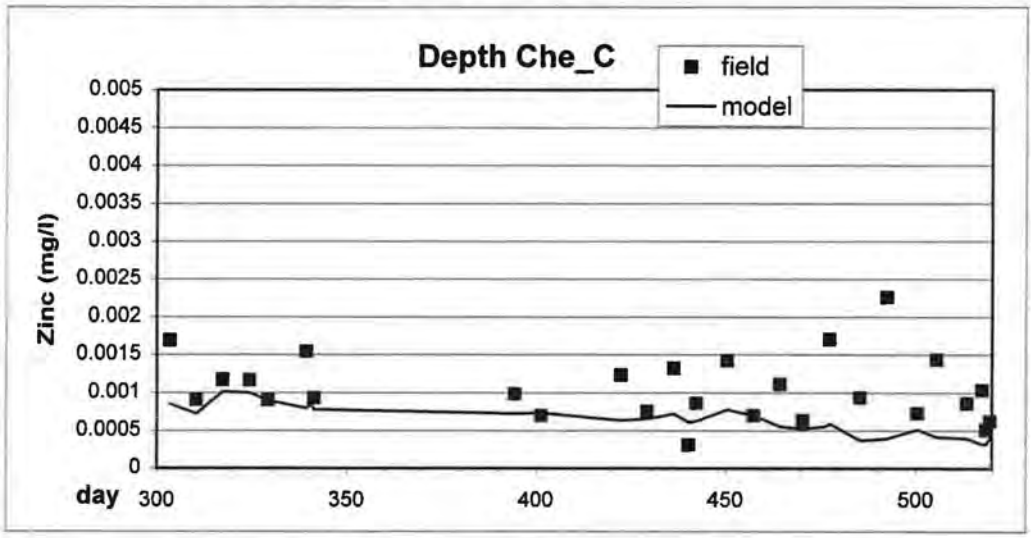

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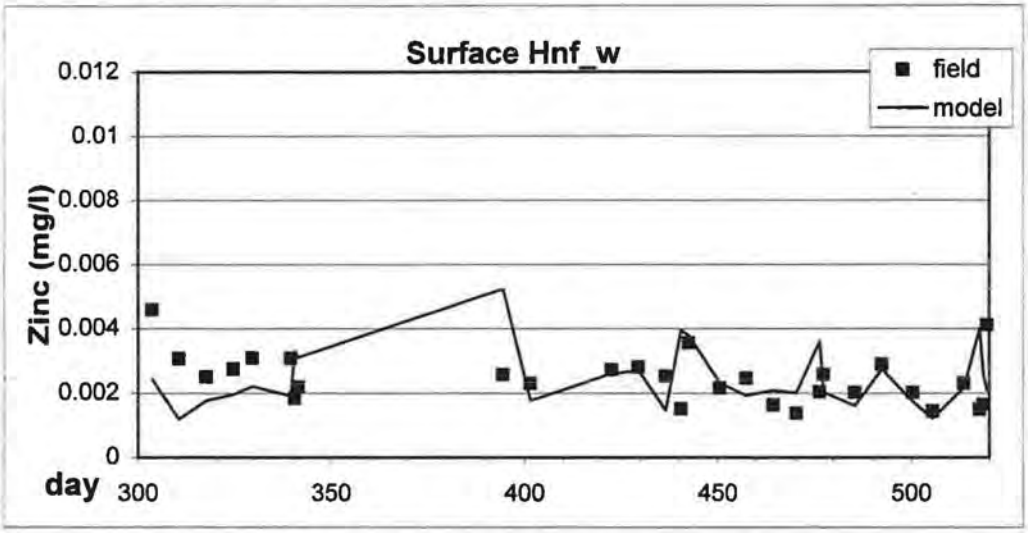

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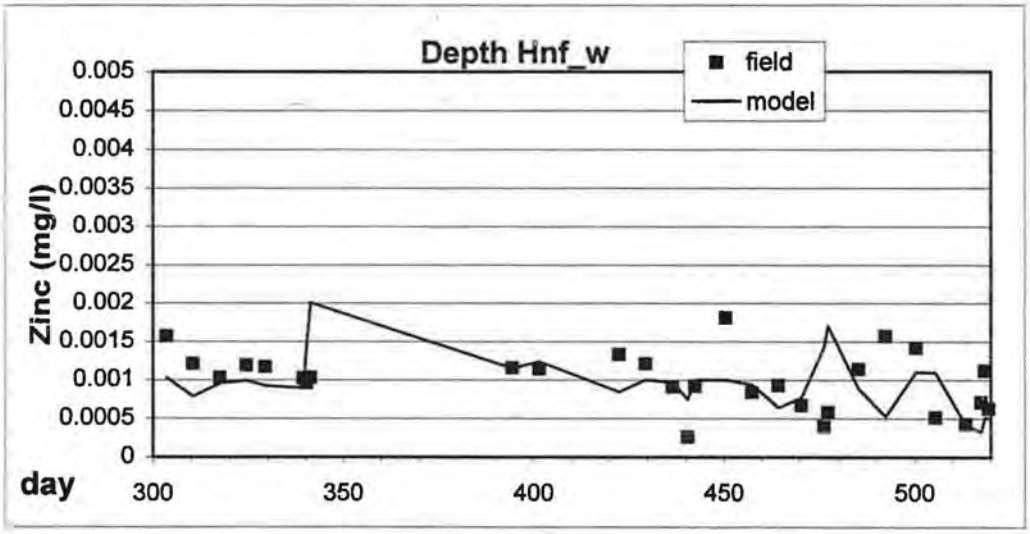

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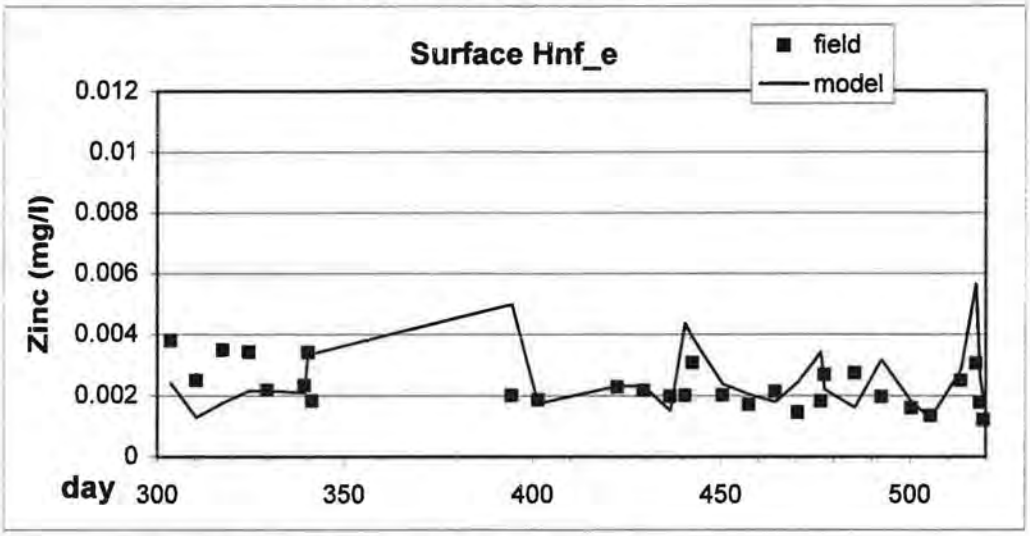

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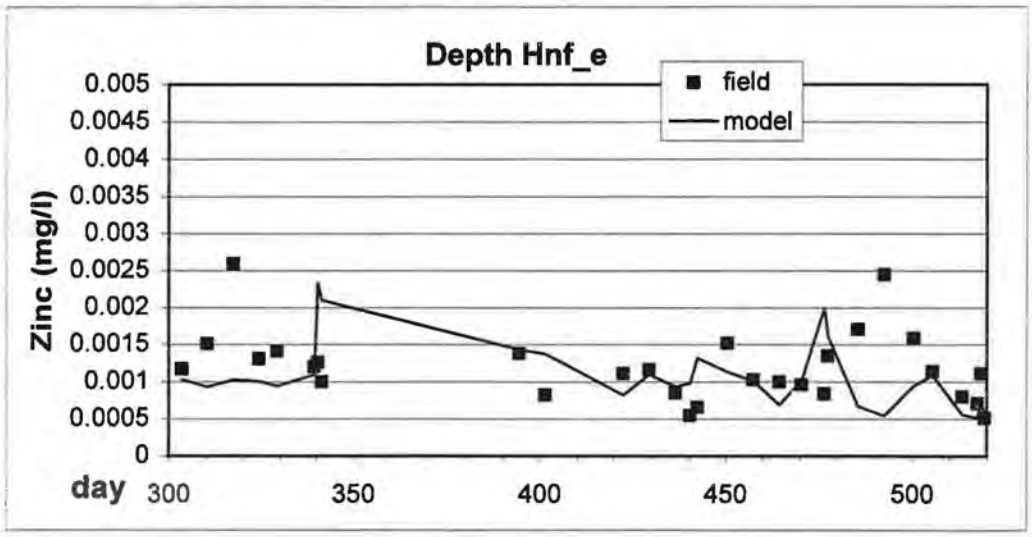

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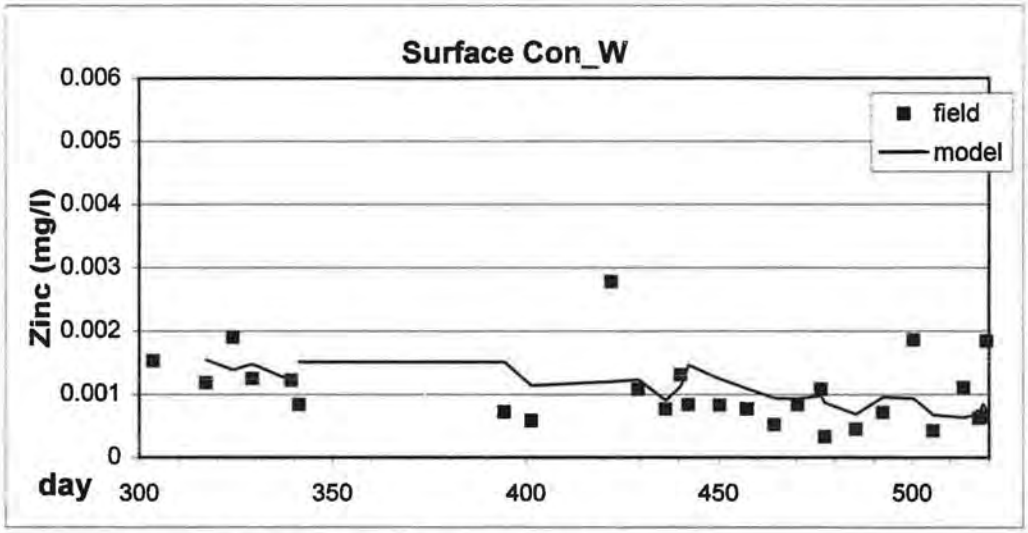

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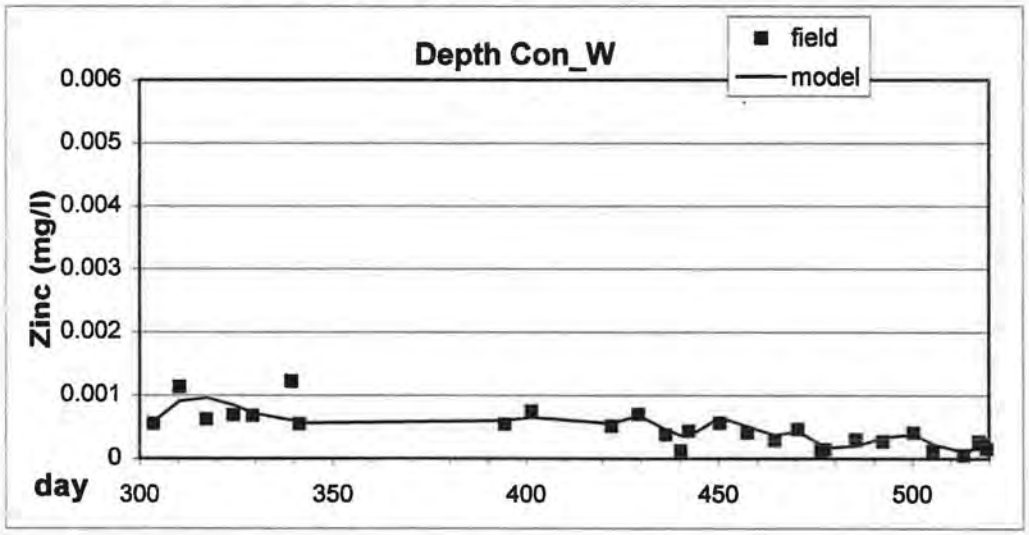

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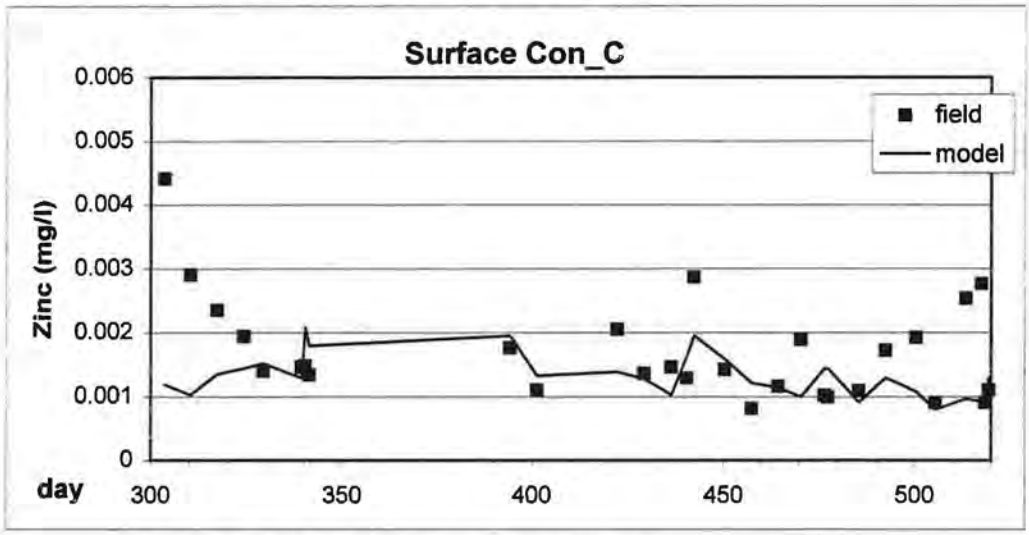

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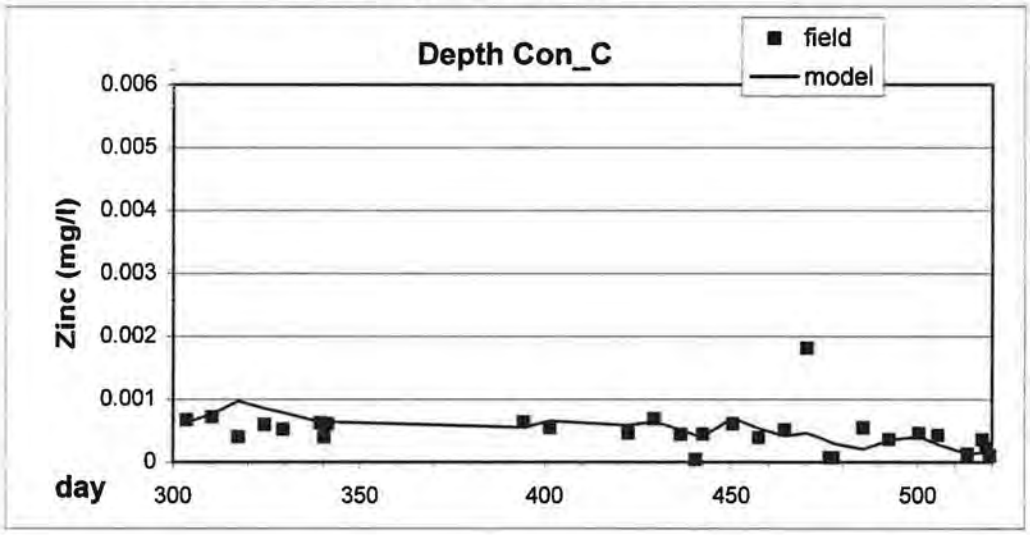

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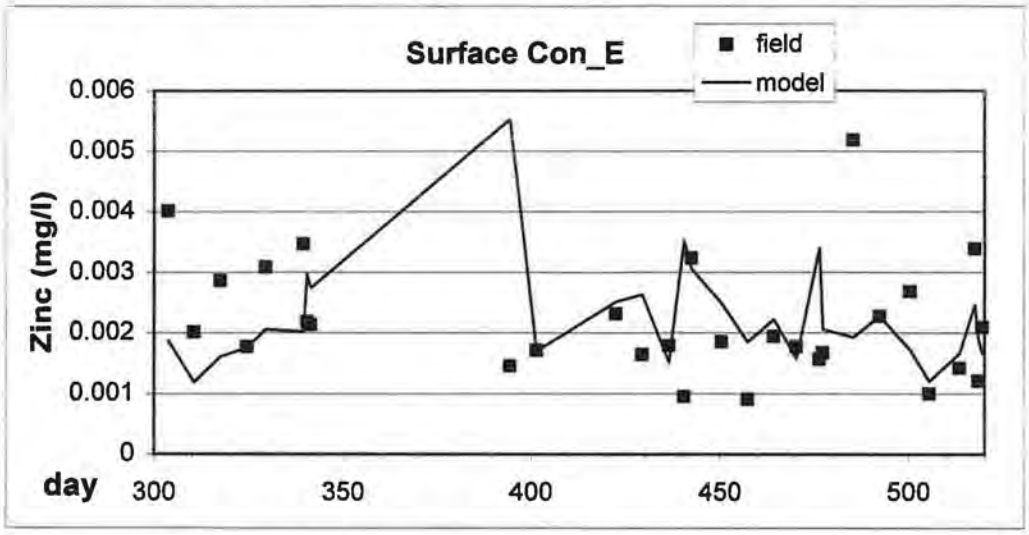

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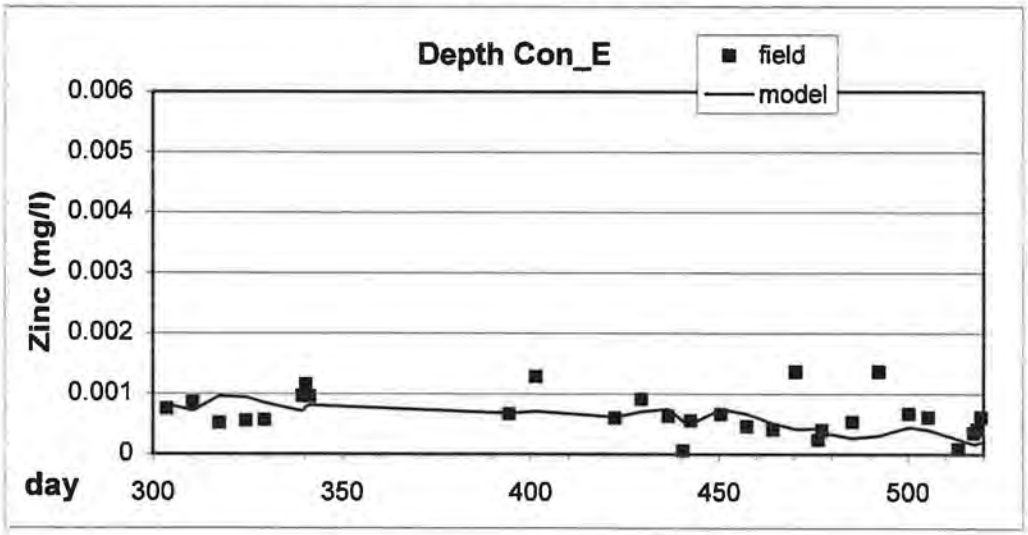

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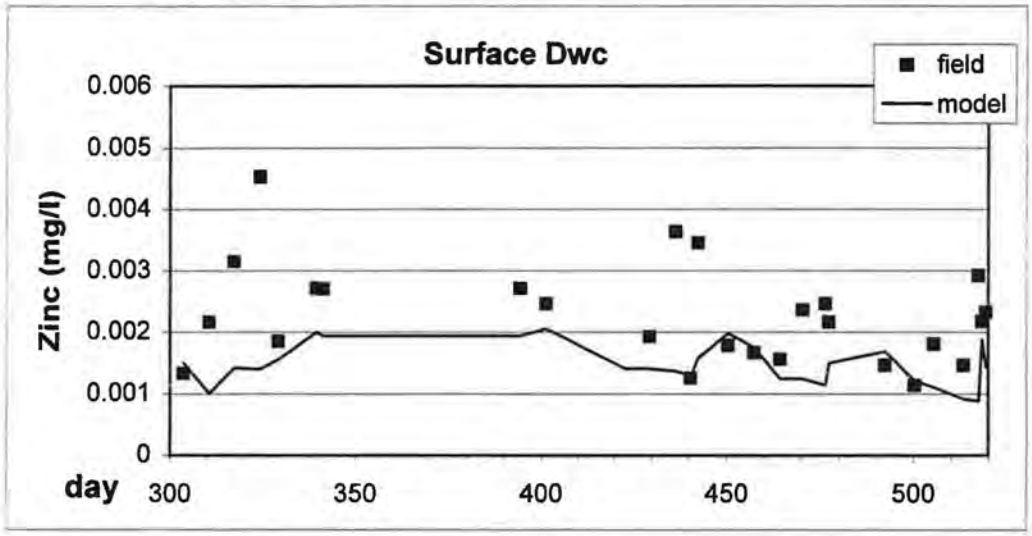

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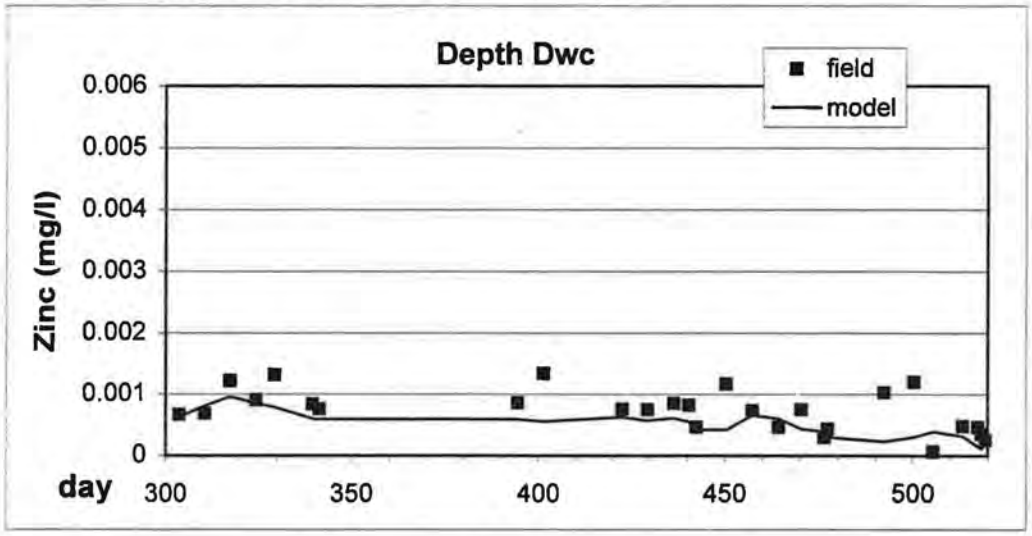

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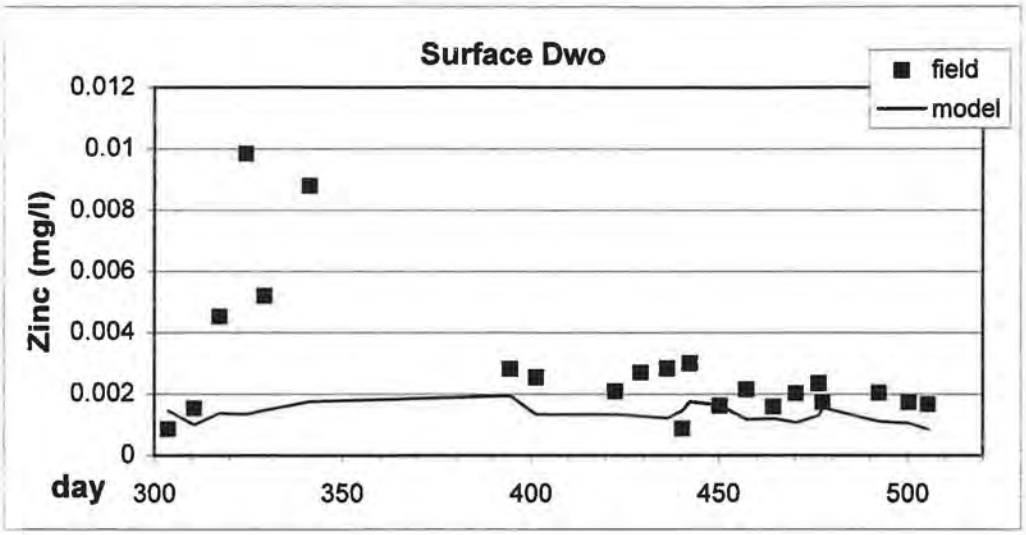

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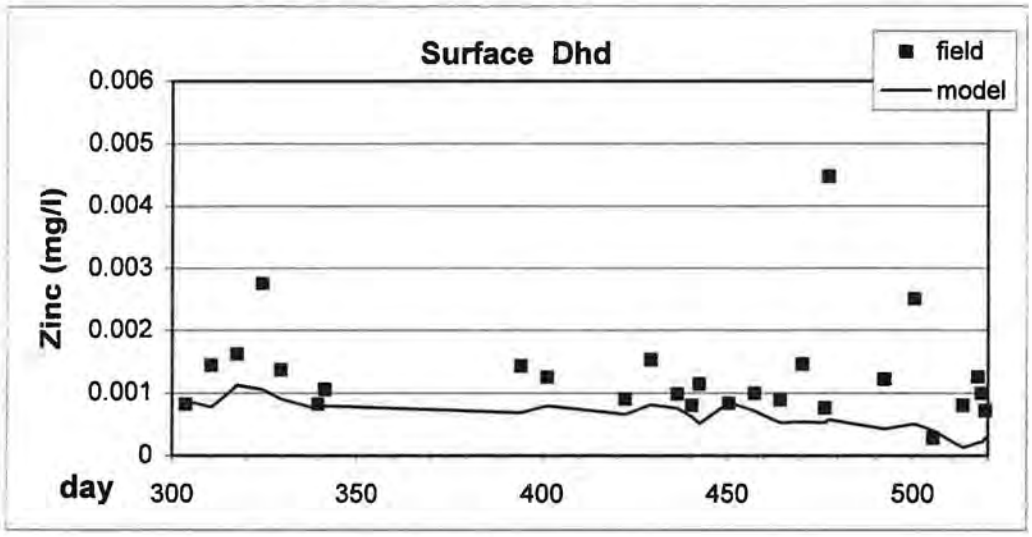

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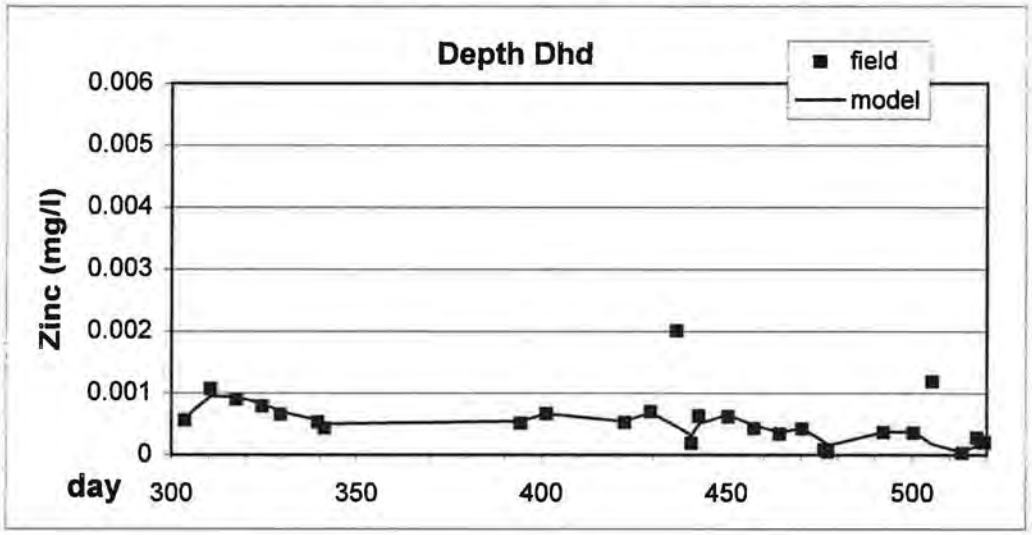
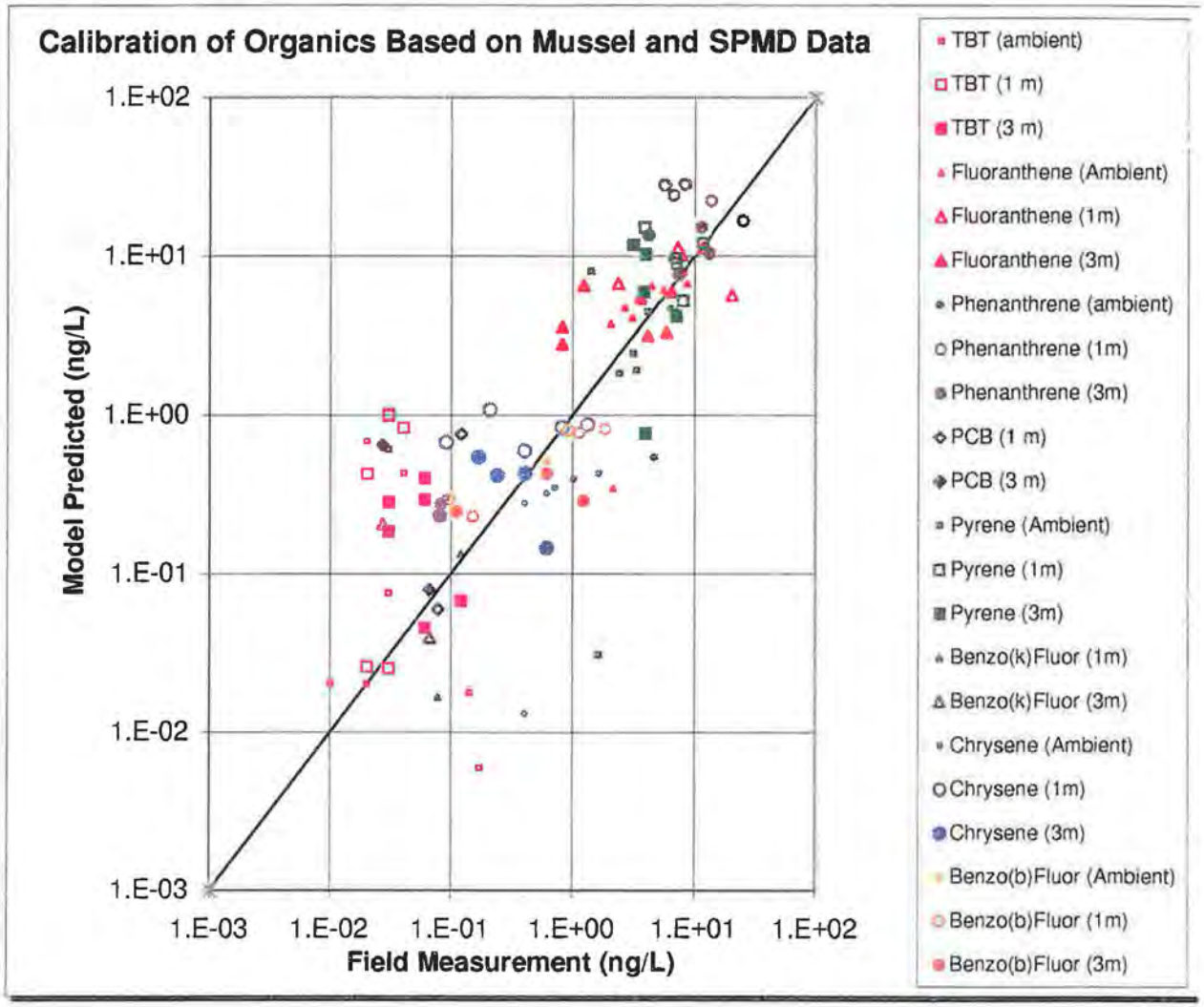


INTRODUCTION

This subappendix presents the calibration curves for eight organic compounds: TBT, fluoranthene, phenanthrene, PCBs, pyrene, benzo(k)fluoranthene, chrysene, and benzo(b)fluoranthene. The curves display predicted chemical concentrations in the water against observed (field measurement) chemical concentrations in the water. The legend breaks out where the compound was measured, one meter or three meters below the surface, or if the data represent that from mussels (ambient). The relative error of the mean (REM) for each compound is summarized in Table J-1.

Table J-1. REM Calibration Parameter for Organic Compounds

	Relative Error of the Means	Average	
		Field	Model
TBT (ambient)	-2.93	0.06	0.24
TBT (3 m)	-18.37	0.03	0.55
TBT (1 m)	-2.54	0.06	0.21
Fluoranthene (ambient)	-0.14	3.94	4.49
Fluoranthene (1m)	0.04	9.21	8.85
Fluoranthene (3m)	-0.20	3.65	4.38
Phenanthrene (ambient)	0.06	5.45	5.12
Phenanthrene (1m)	-1.04	11.70	23.82
Phenanthrene (3m)	-0.32	8.82	11.66
PCBs (1 m)	-3.12	0.10	0.41
PCBs (3 m)	-6.80	0.05	0.36
Pyrene (ambient)	-0.06	3.16	3.33
Pyrene (1m)	-0.37	7.43	10.19
Pyrene (3m)	-0.53	4.31	6.59
Benzo(k)fluoranthene (1m)	0.24	0.10	0.08
Benzo(k)fluoranthene (3m)	-1.65	0.05	0.12
Chrysene (ambient)	0.62	0.78	0.30
Chrysene (1m)	-0.45	0.56	0.81
Chrysene (3m)	-0.20	0.30	0.35
Benzo(b)fluoranthene (ambient)	0.15	0.60	0.51
Benzo(b)fluoranthene (1m)	0.28	0.81	0.58
Benzo(b)fluoranthene (3m)	0.38	0.50	0.31


Calibration of Organics Based on Mussel and SPMD Data
Model Predicted (ng/L)
Field Measurement (ng/L)
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1.E+01
1.E+00
1.E-01
1.E-02
1.E-03
1.E-03
1.E-02
1.E-01
1.E+00
1.E+01
1.E+02
TBT (ambient)
TBT (1 m)
TBT (3 m)
Fluoranthene (Ambient)
Fluoranthene (1m)
Fluoranthene (3m)
Phenanthrene (ambient)
Phenanthrene (1m)
Phenanthrene (3m)
PCB (1 m)
PCB (3 m)
Pyrene (Ambient)
Pyrene (1m)
Pyrene (3m)
Benzo(k)Fluor (1m)
Benzo(k)Fluor (3m)
Chrysene (Ambient)
Chrysene (1m)
Chrysene (3m)
Benzo(b)Fluor (Ambient)
Benzo(b)Fluor (1m)
Benzo(b)Fluor (3m)

SUBAPPENDIX K

FECAL COLIFORMS, BIS(2-ETHYLHEXYL)PHATHALATE, AND MERCURY CALIBRATION CURVES

INTRODUCTION

This subappendix presents the calibration curves for fecal coliforms, bis(2-ethylhexyl)phthalate, and mercury. The curves display predicted chemical concentrations in the water against observed chemical concentrations in the water over time. Field station abbreviations used in each calibration curve are defined in Table K-1. The location is identified by the chart title, the field station name, and indicates whether it was a surface or depth sample. Observed chemical concentrations are represented by a point. Predicted chemical concentrations are represented by a line. Above each figure are three numbers. The numbers are the three statistical calibration measures. The first number is the slope, the second the coefficient of determination, and the third the relative error of the mean (REM). The relative error of the means are also summarized in Tables K-2 and K-3. Note that while bis(2-ethylhexyl)phthalate was detected numerous times, most of the data were qualified as either contaminated, or exhibiting some laboratory error.

Table K-1. Field station abbreviations

Field Station	East Bank	Center Channel	West Bank
Norfolk	East Nfk		West Nfk
Brandon	Brn_e	Brn_c	Brn_w
S/W Michigan	Swm_e	Swm_c	Swm_w
Chelan		Che_c	
Hanford	Hnf_e		Hnf_w
Connecticut	Con_e (bay)	Con_c (bay)	Con_w (bay)
Denny Way (near the CSO)		Dwo	
Denny Way (over the sediment cap)		Dwc	
Duwamish Head (between the Duwamish Head and Smith Cove)		Dhd	

Table K-2. REM Calibration Parameter for Fecal Coliforms

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk	0.02		0.02			
S/W Michigan	-0.01	-0.26	-0.02	0.72	-0.06	0.50
Brandon	-0.20	-0.30	-0.33	0.17	0.03	0.56
Hanford	-1.17		-0.52	-0.09		-0.11
Chelan		-0.26			0.34	
Connecticut	-0.38	-0.02	-0.36	0.38	-0.53	0.11
Dhd (Bay)		0.72			-0.07	
Dwc (Denny)		0.37			-0.77	
Dwo (Denny)		-6.19				

Table K-3. REM Calibration Parameter for Mercury

	Surface			Bottom		
	West	Center	East	West	Center	East
Norfolk		0.53				
Brandon		-0.69			-0.23	
Hanford		-2.33			-0.60	
Chelan		0.41			-0.06	
Dhd (Bay)		0.003			-0.24	

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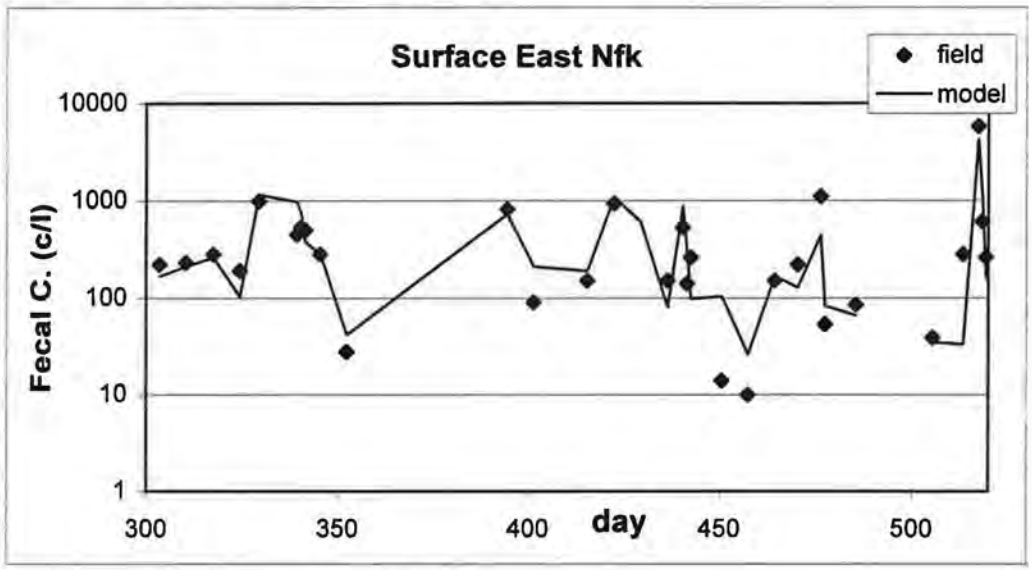

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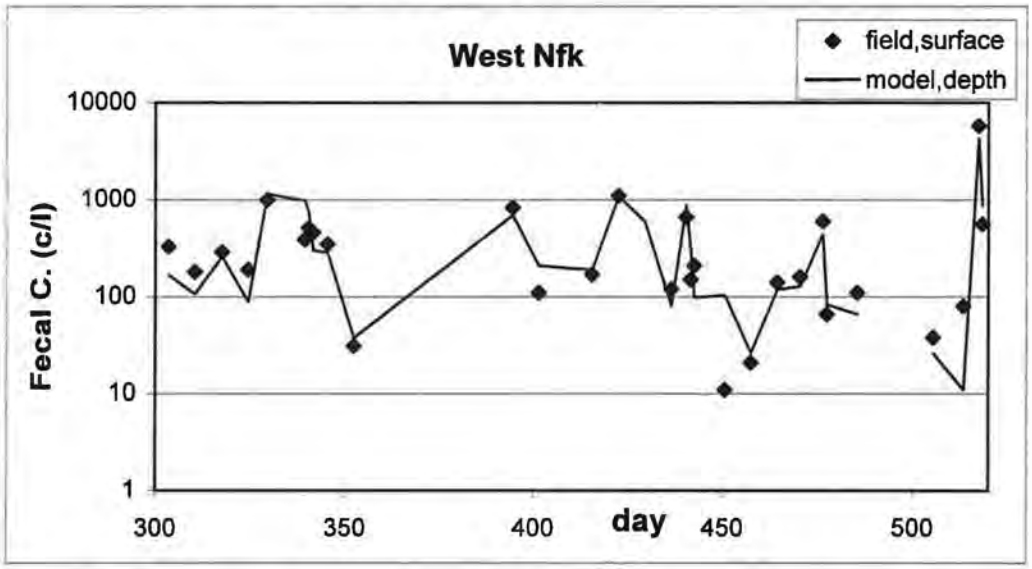

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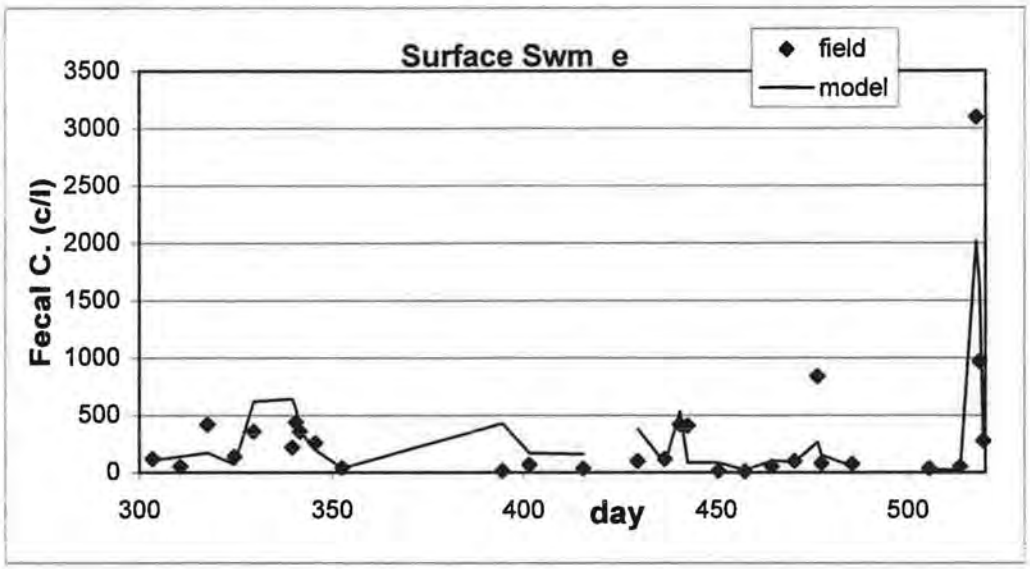

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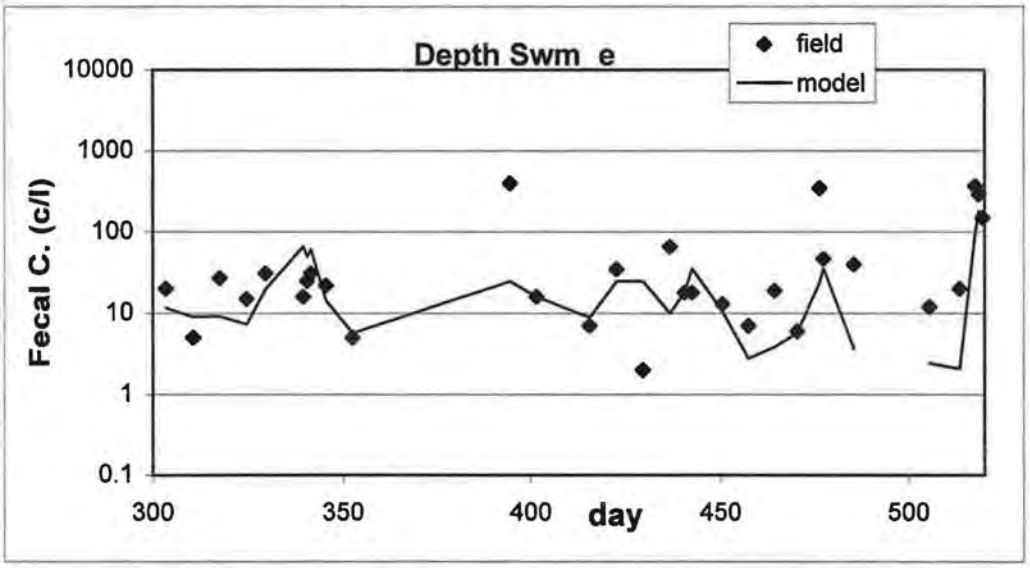

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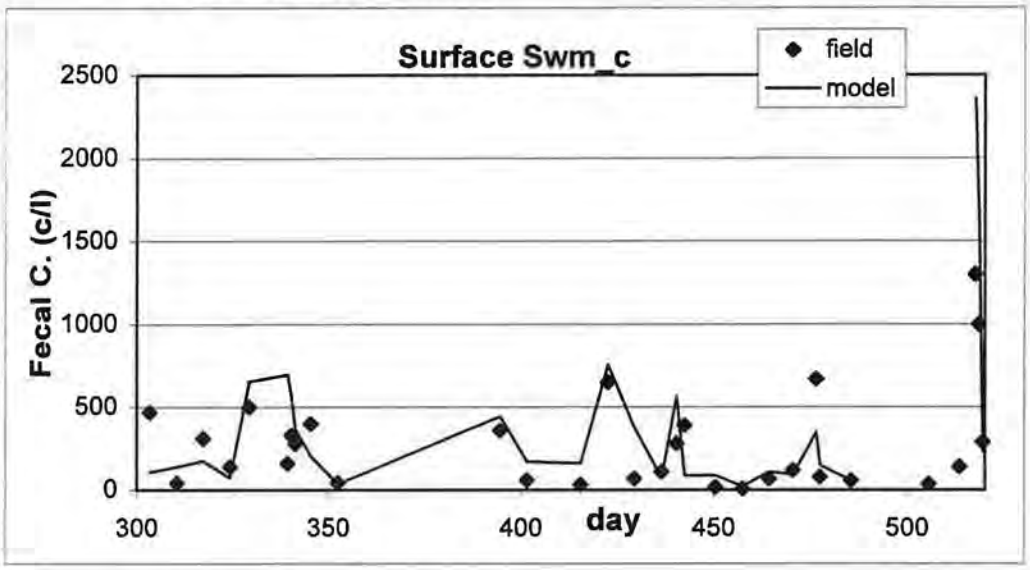

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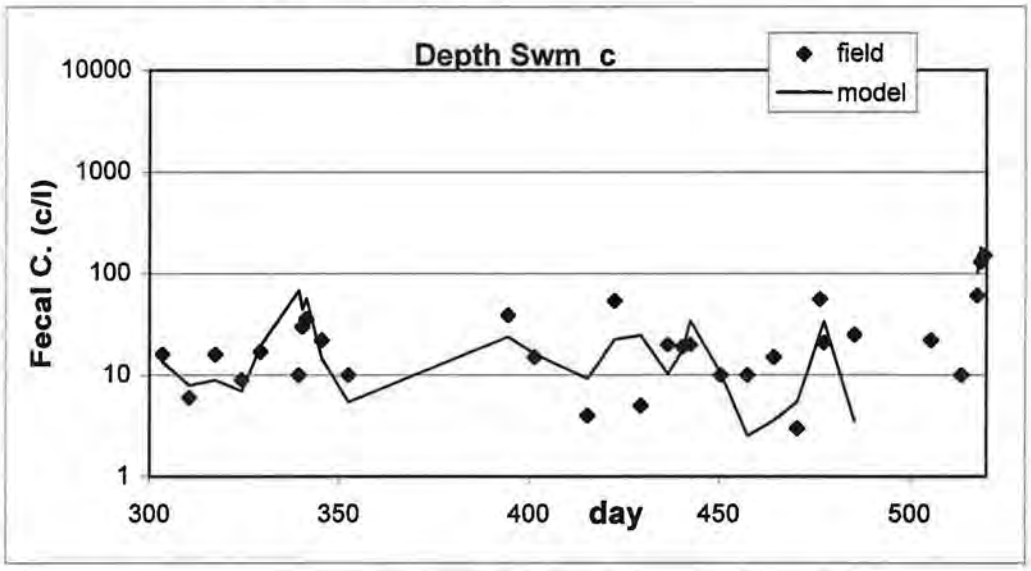

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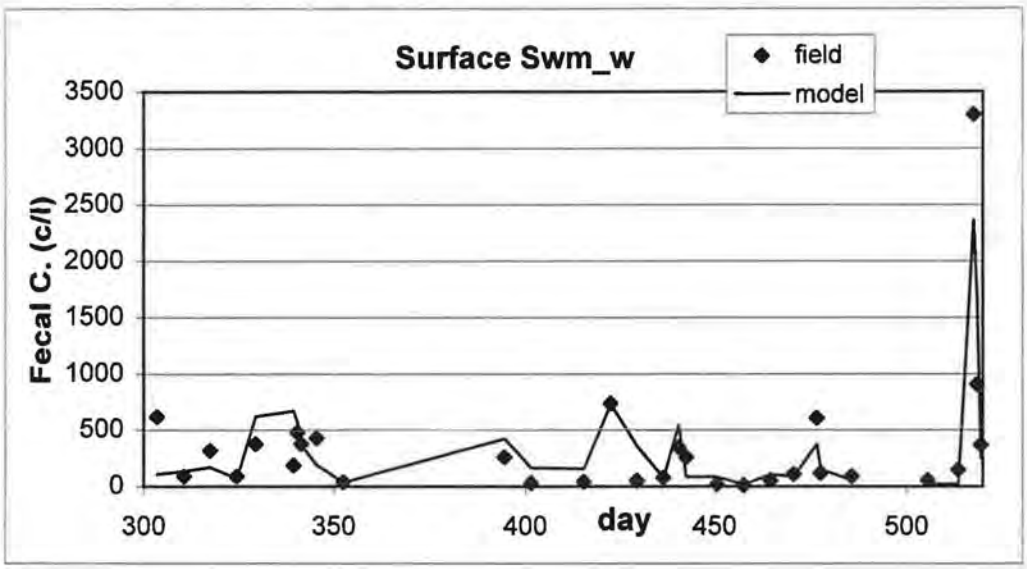

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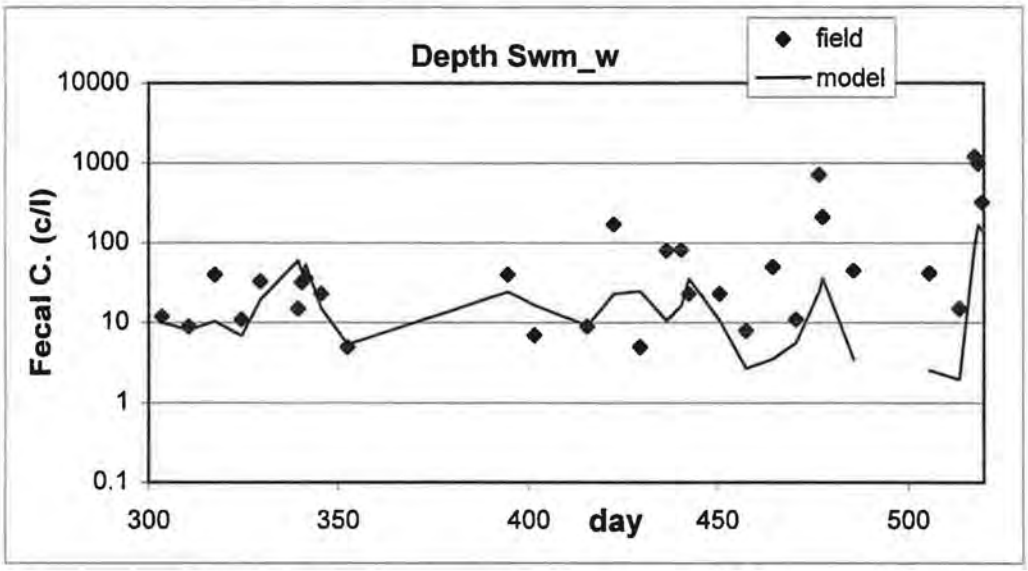

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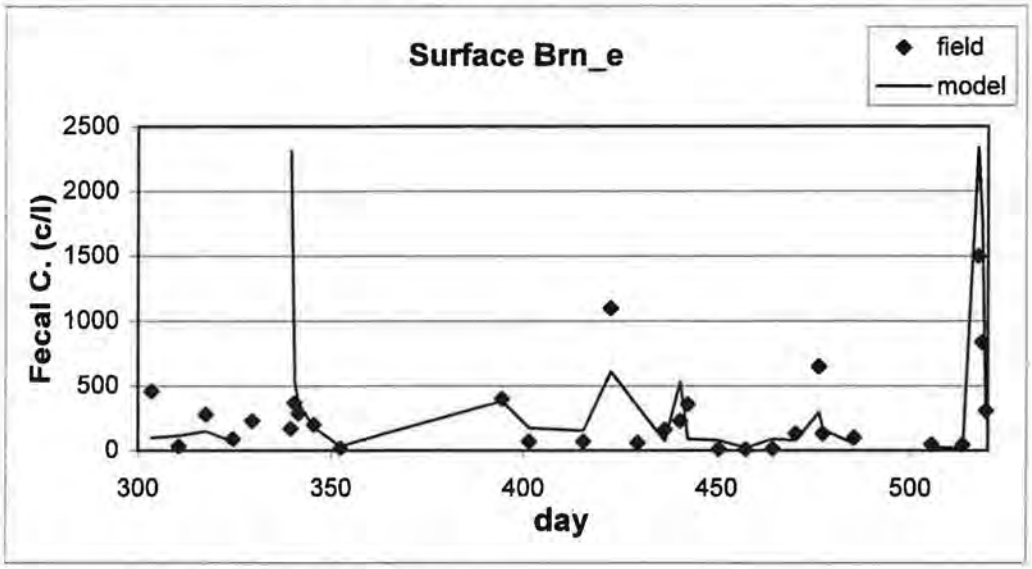

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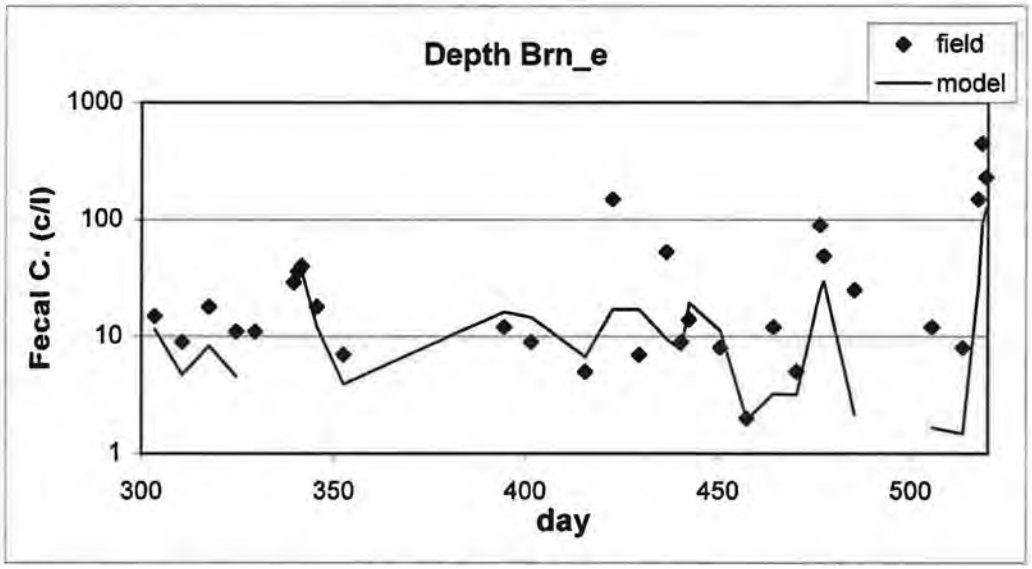

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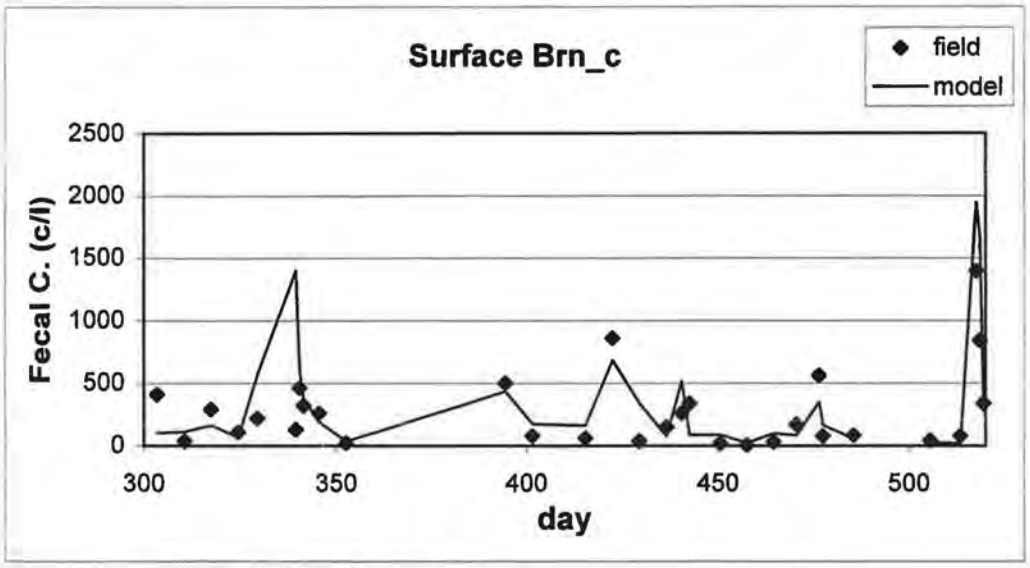

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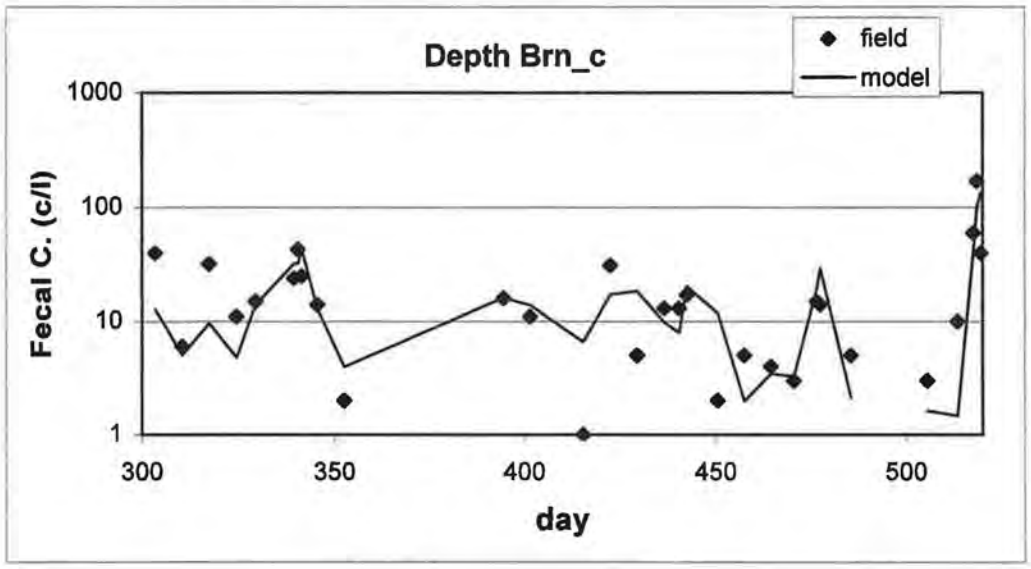

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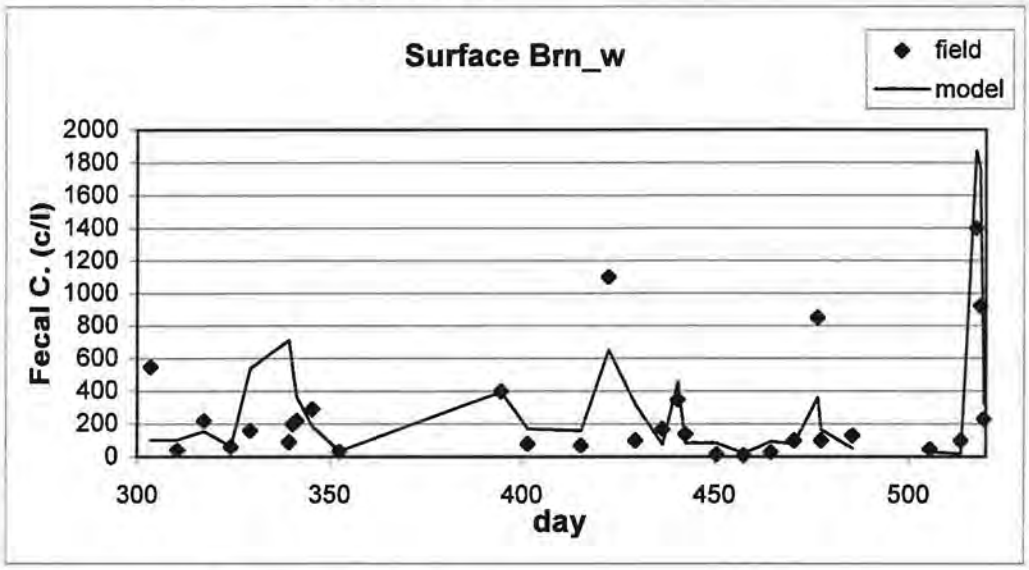

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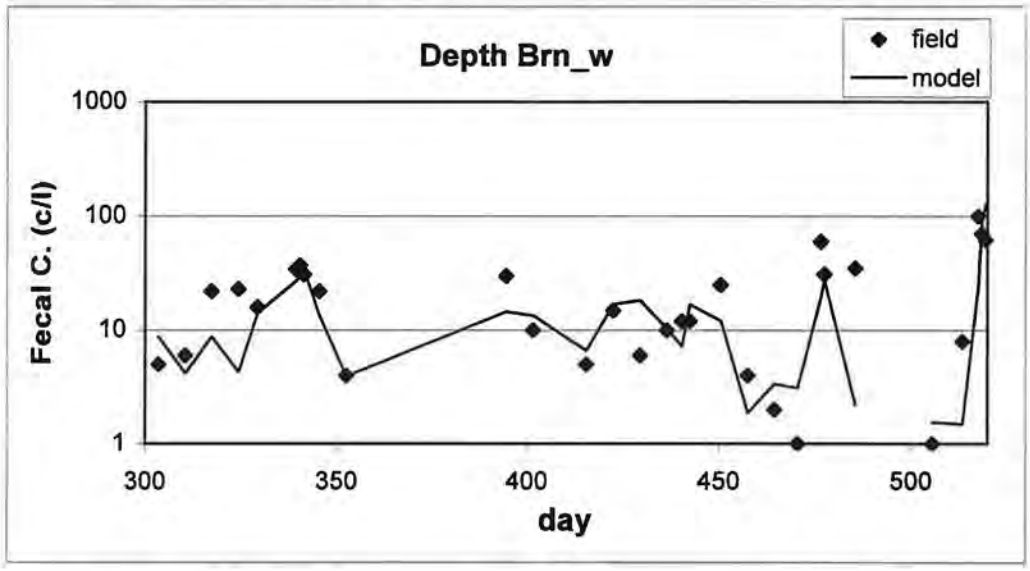

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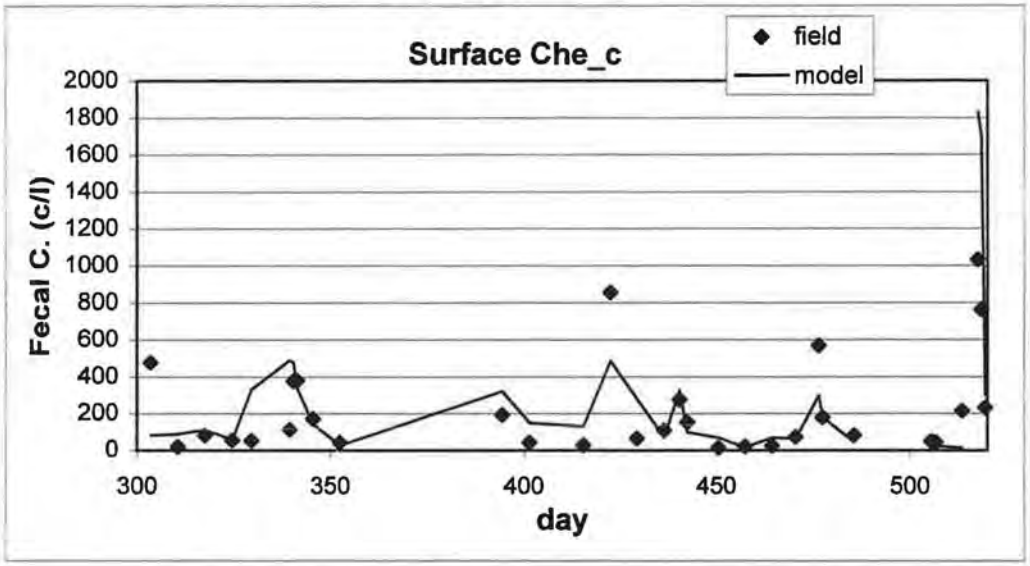

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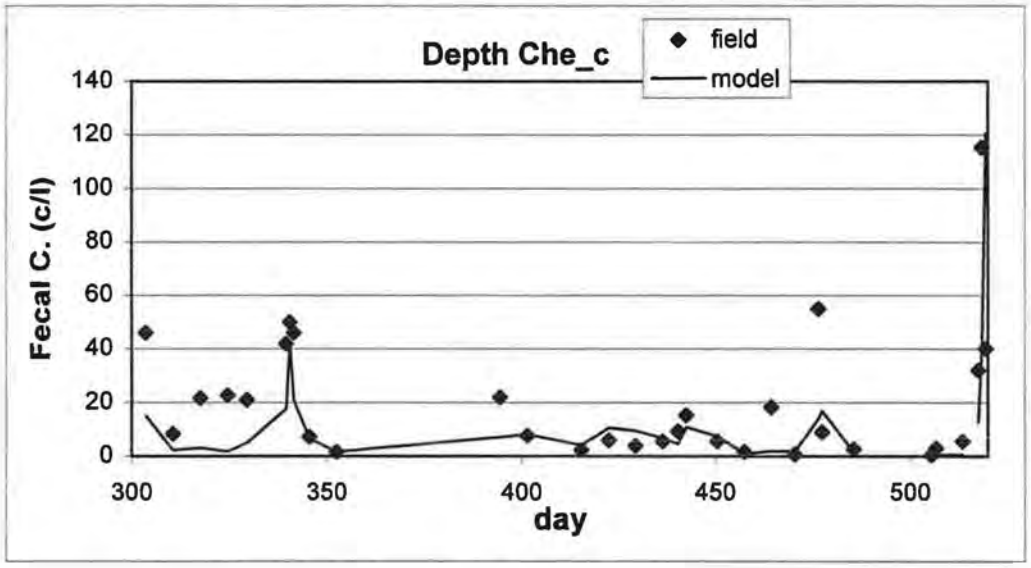

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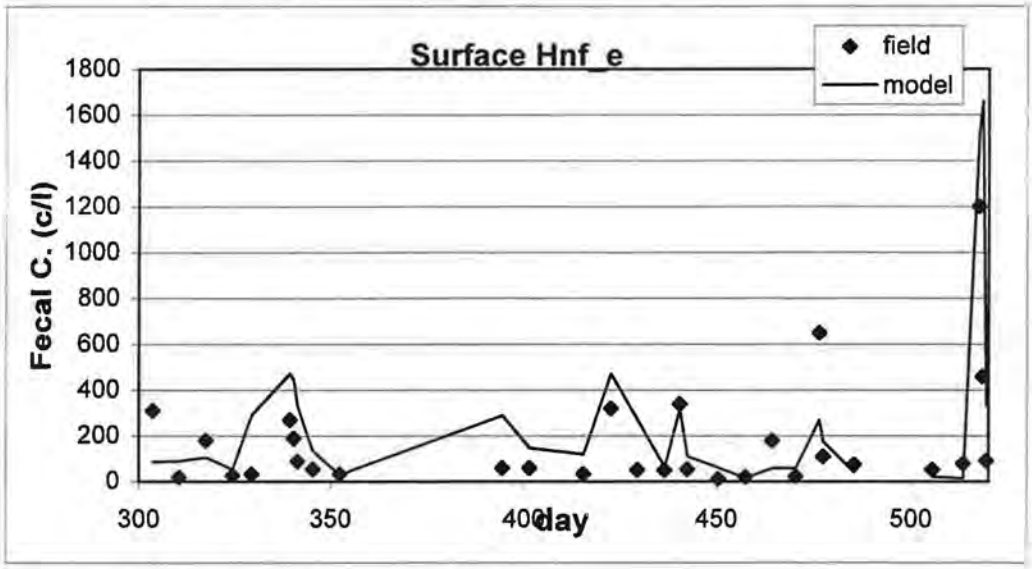

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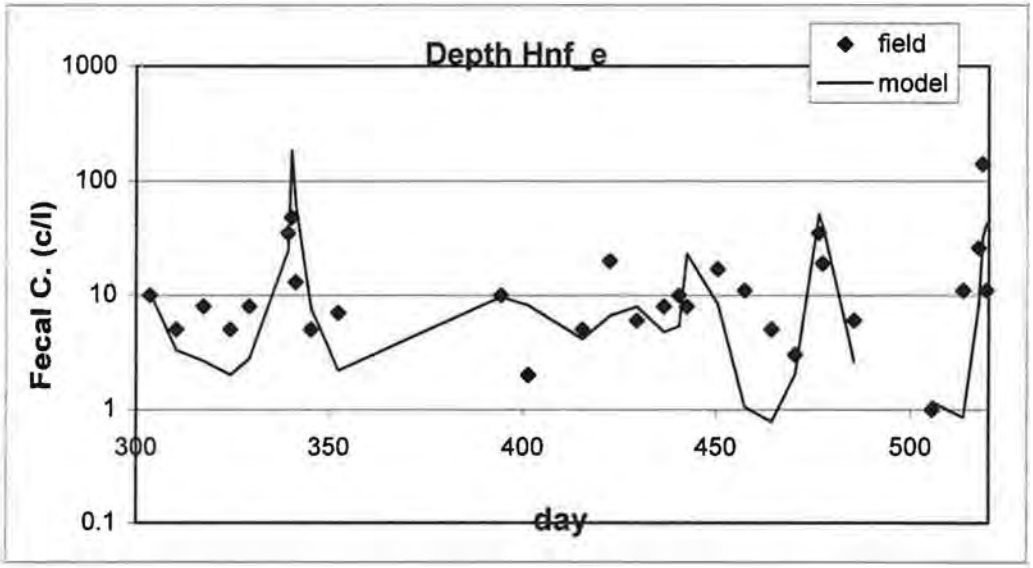

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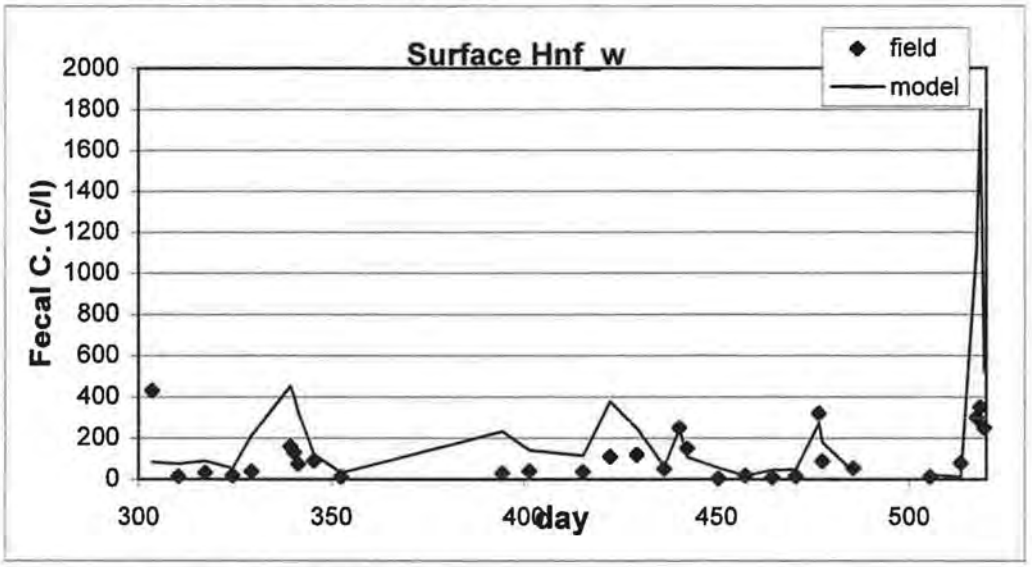

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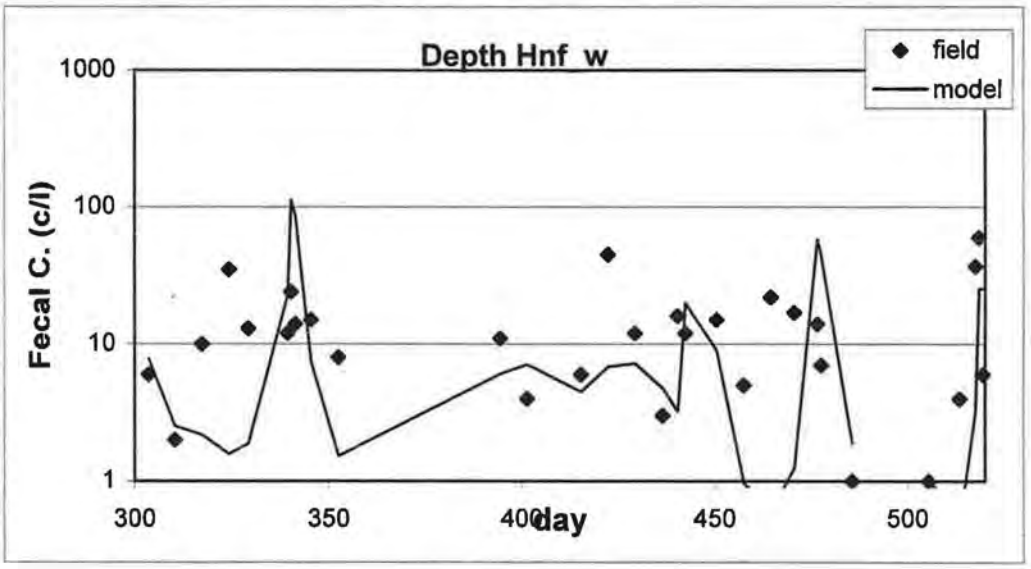

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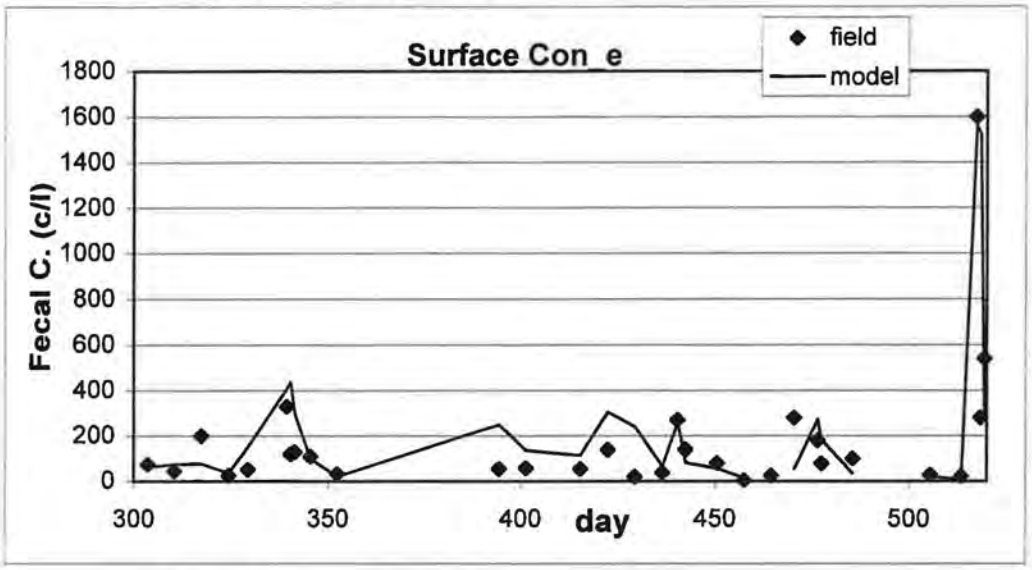

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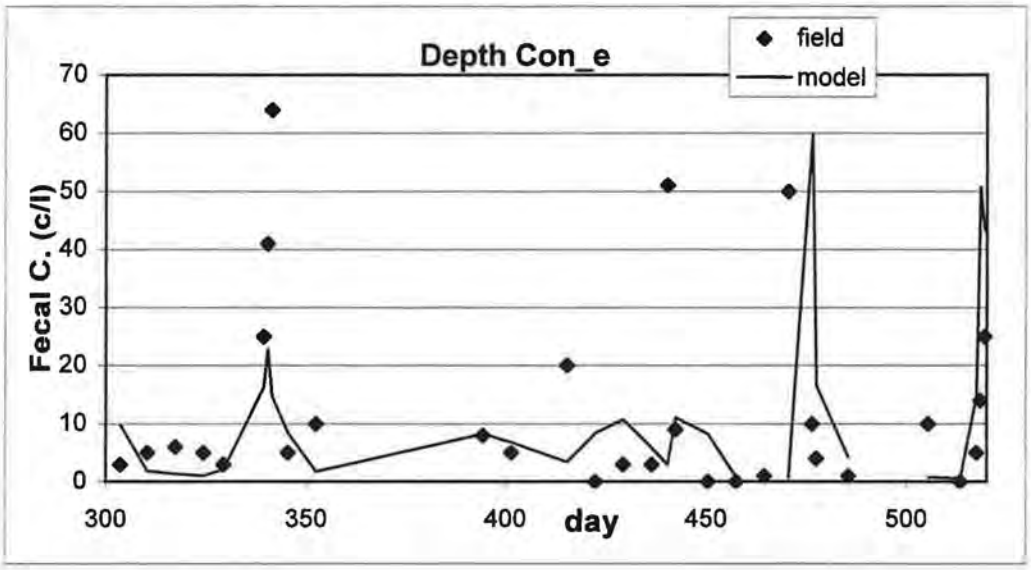

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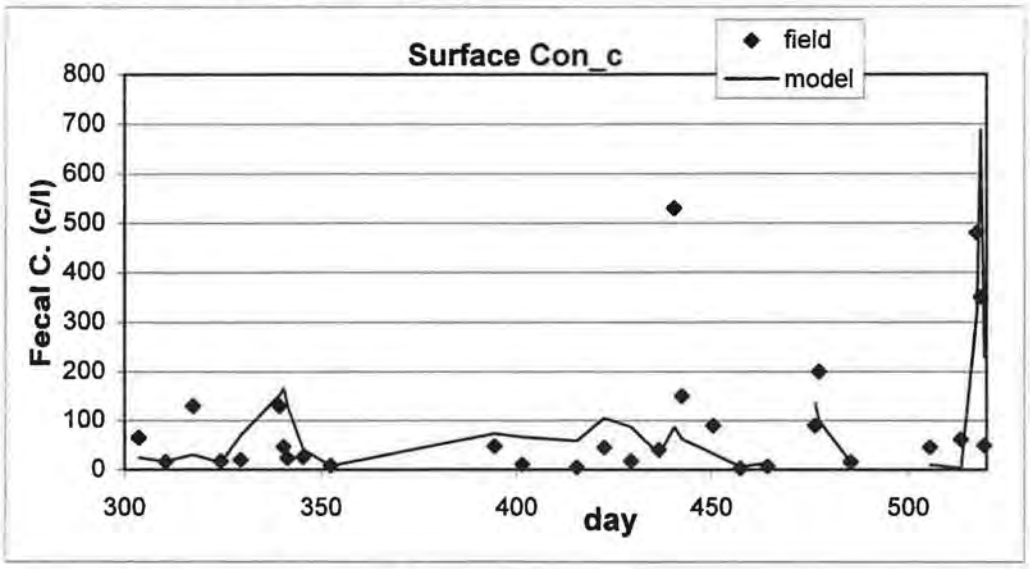

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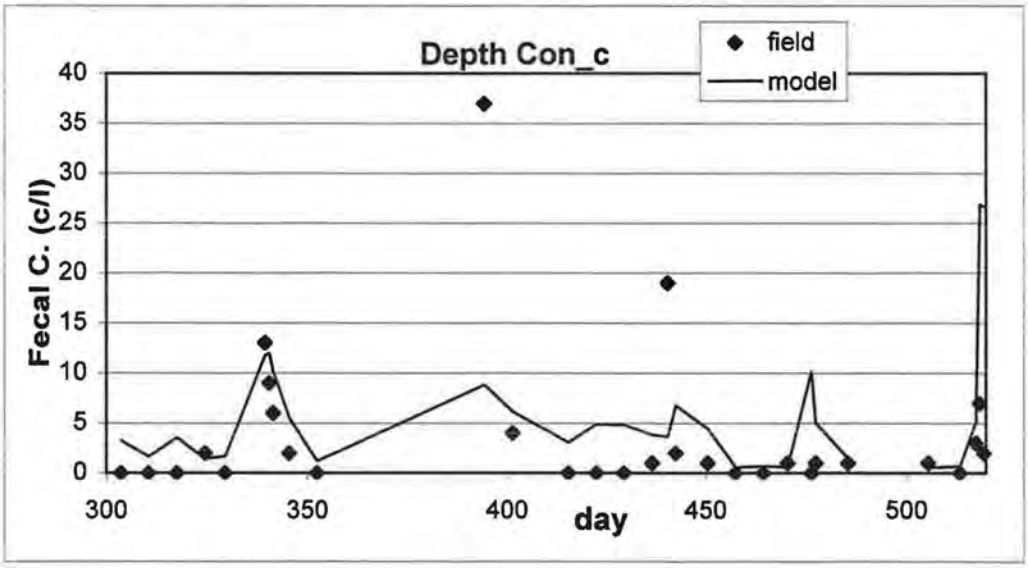

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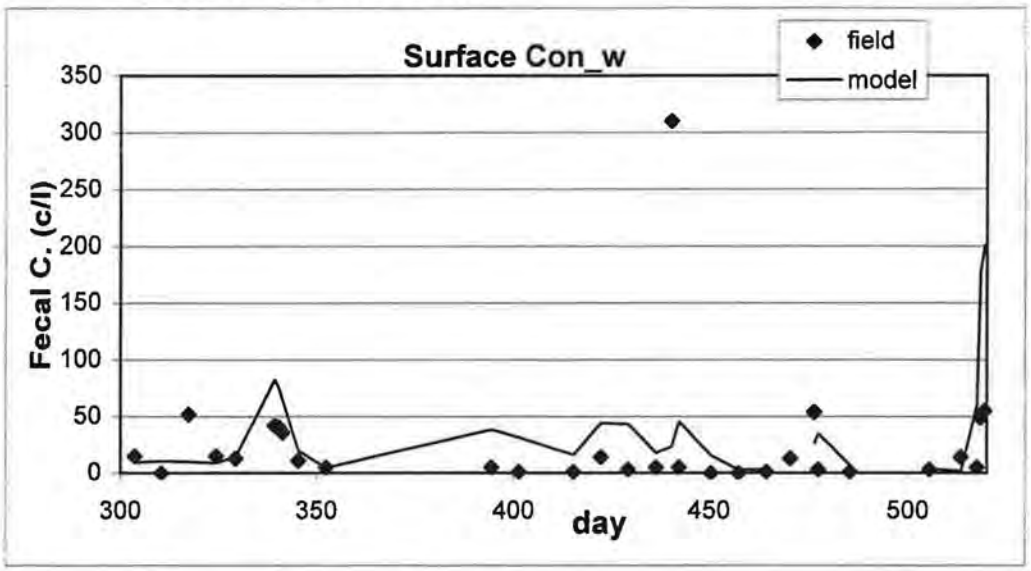

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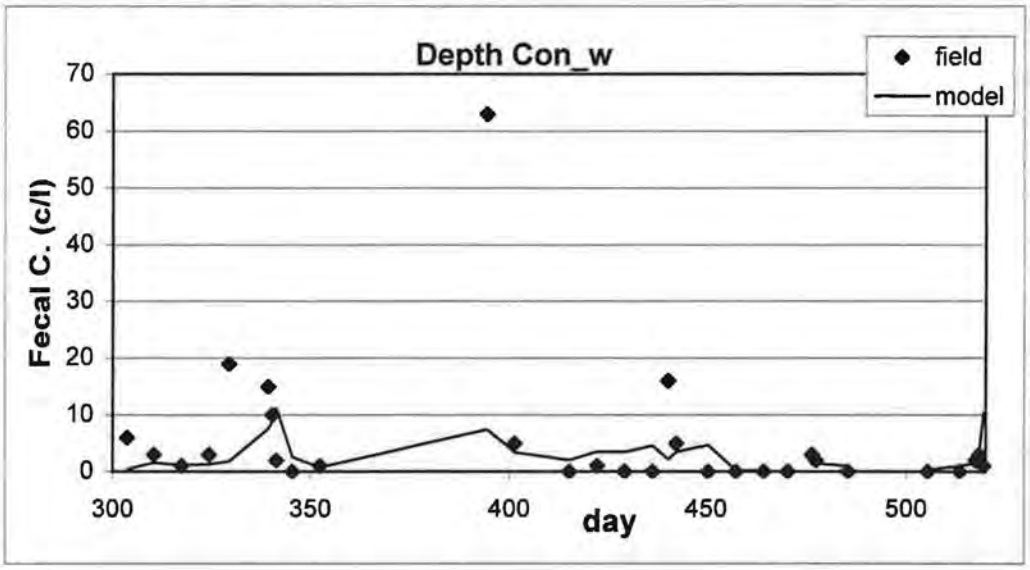

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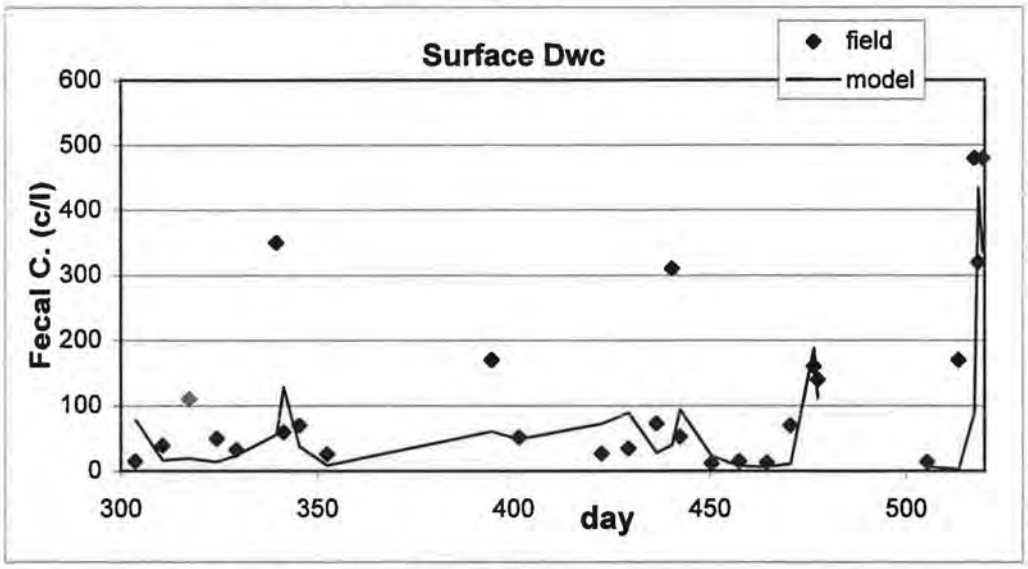

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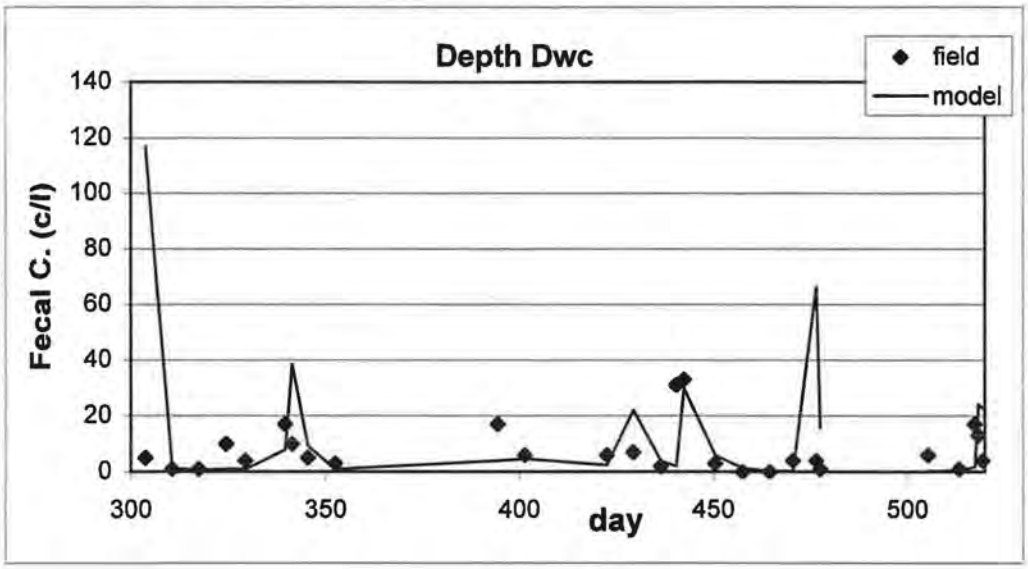

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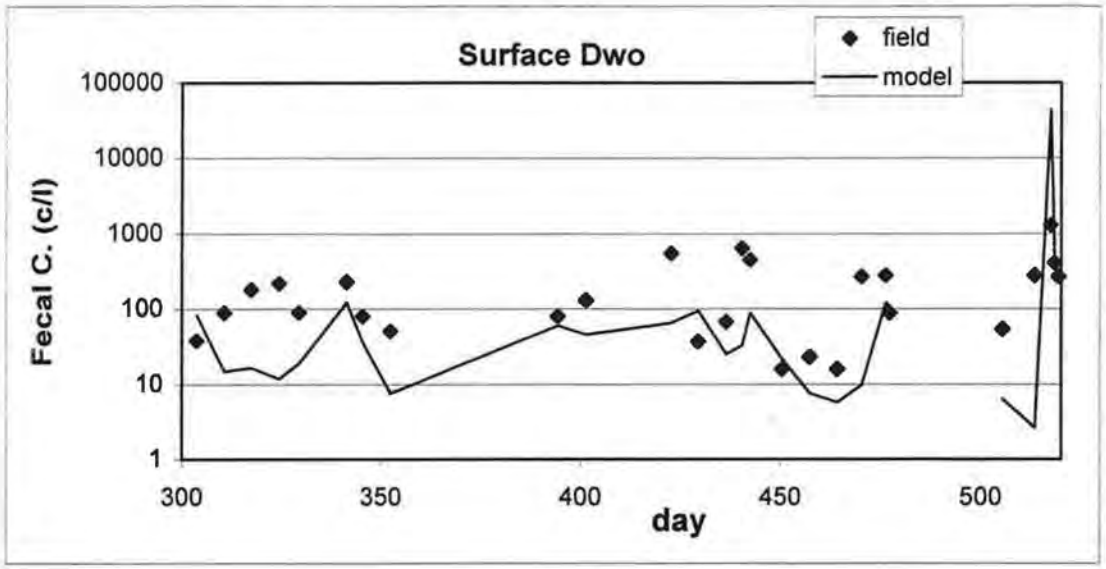

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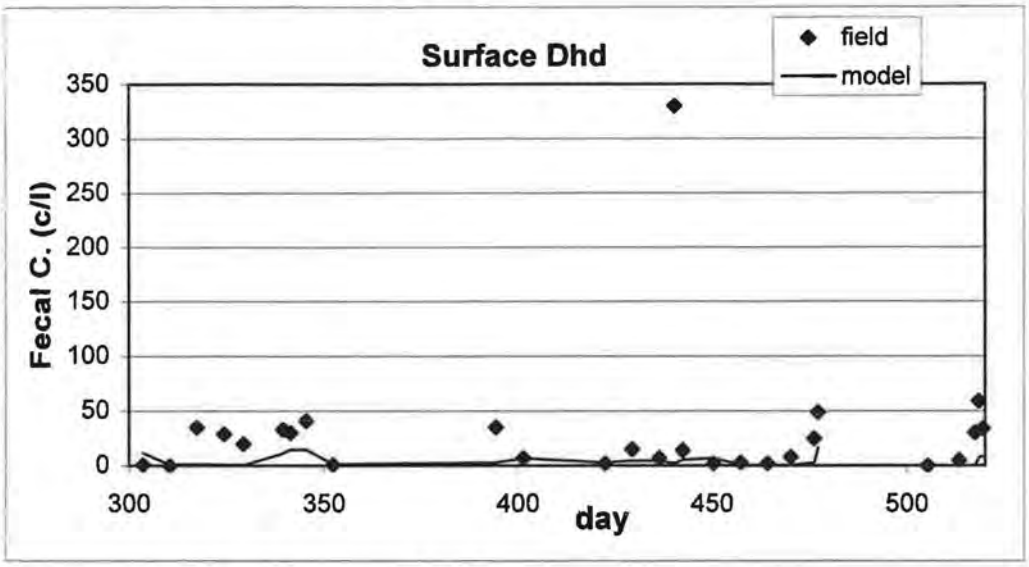

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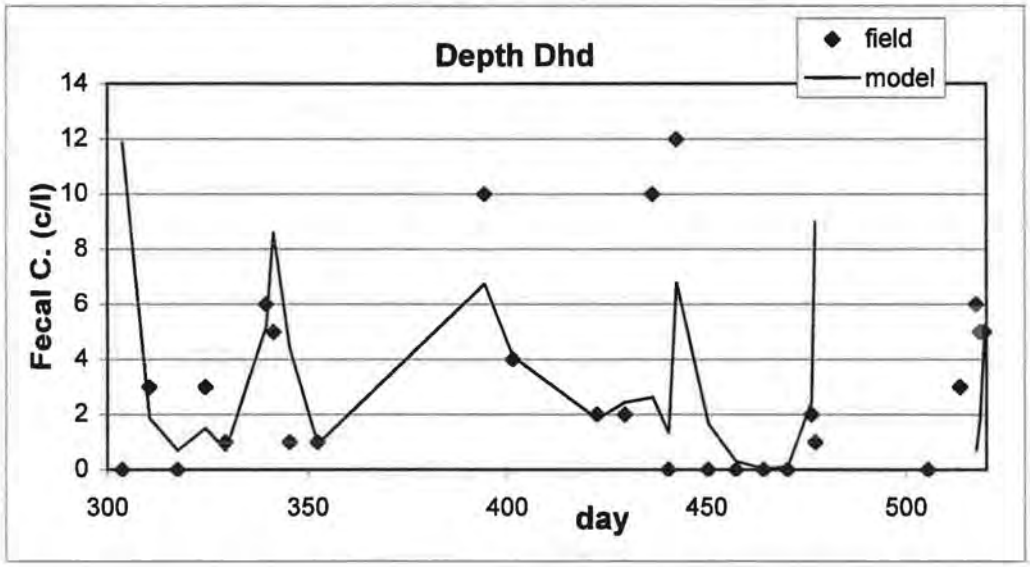

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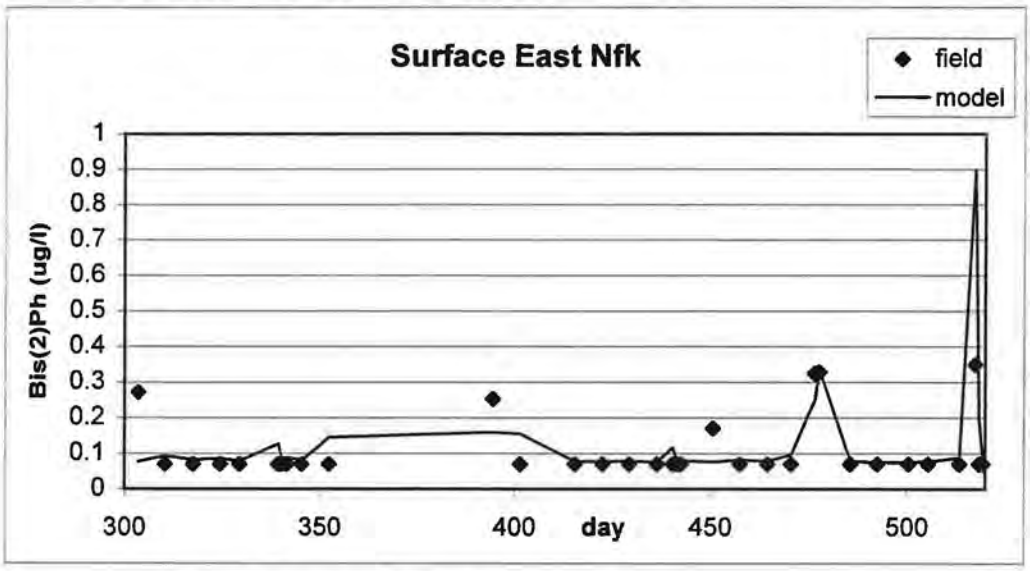

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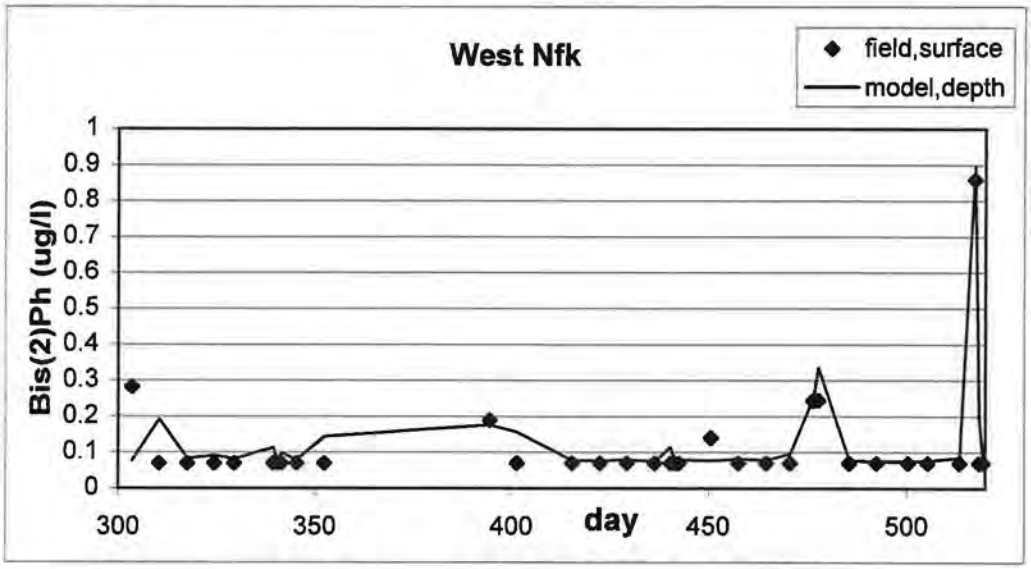

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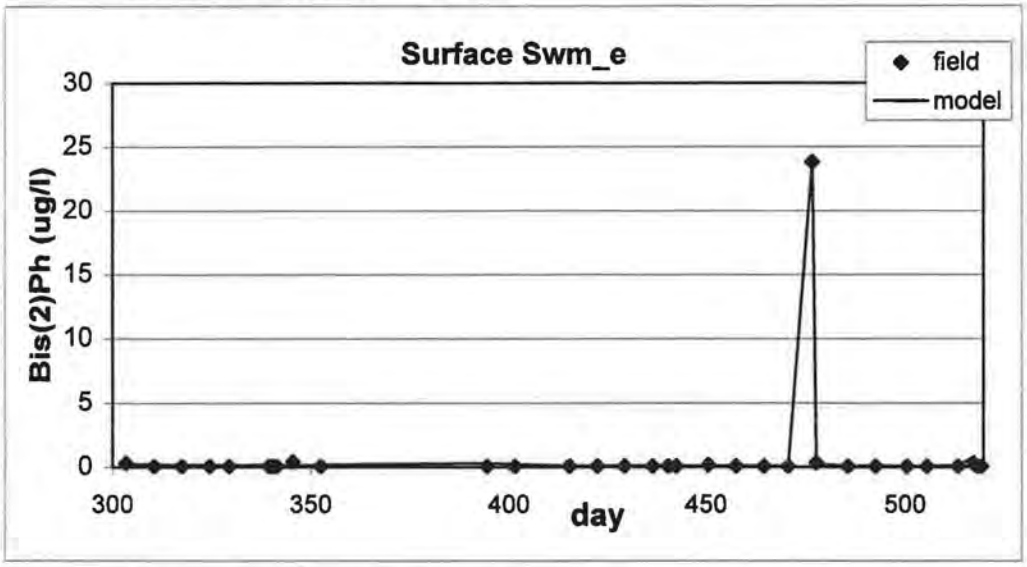

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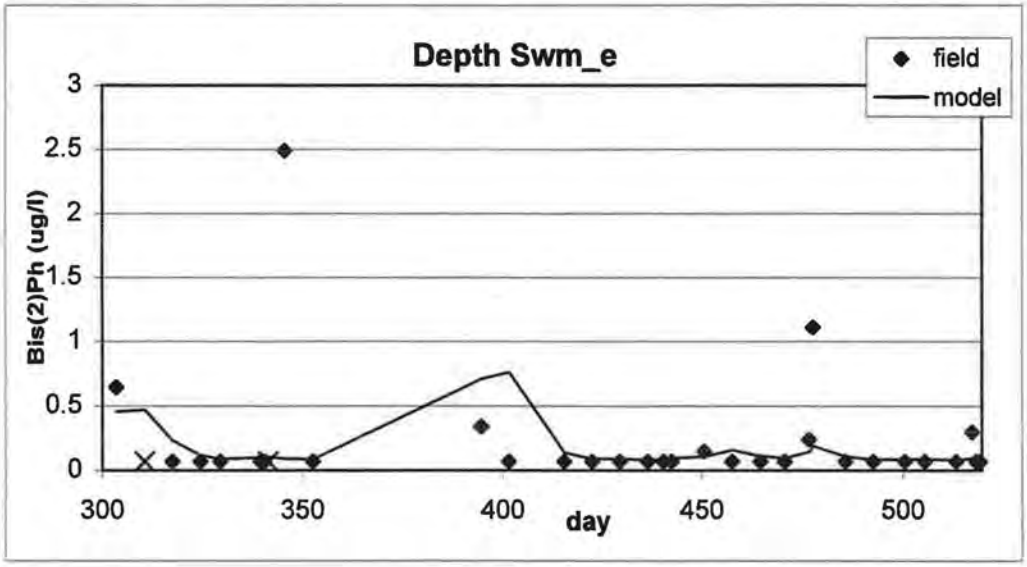

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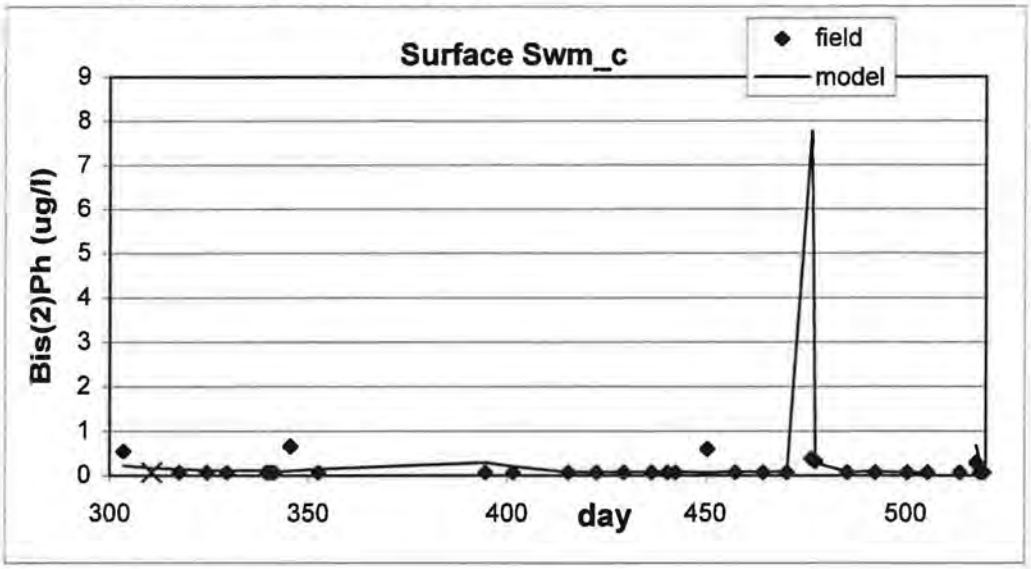

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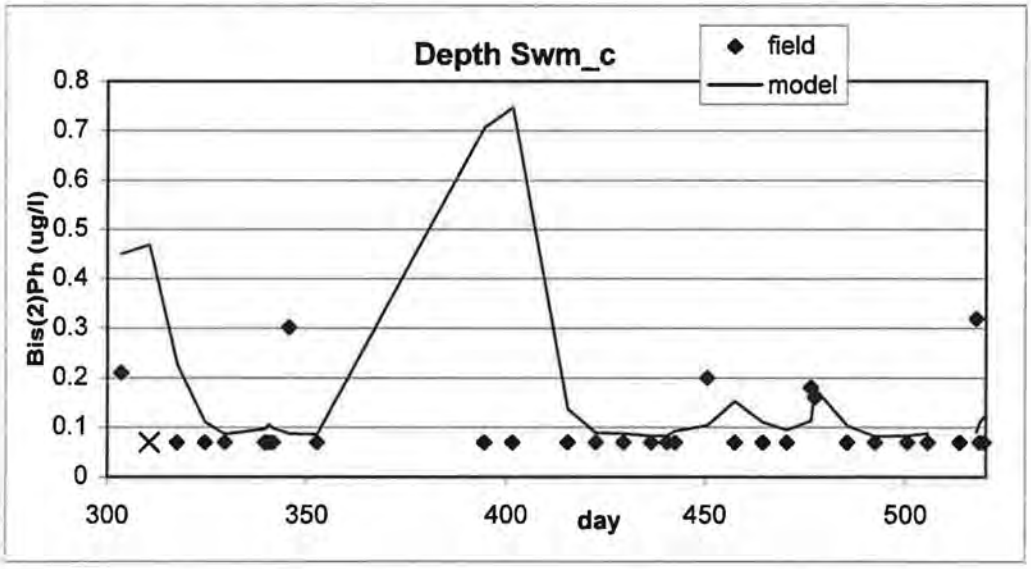

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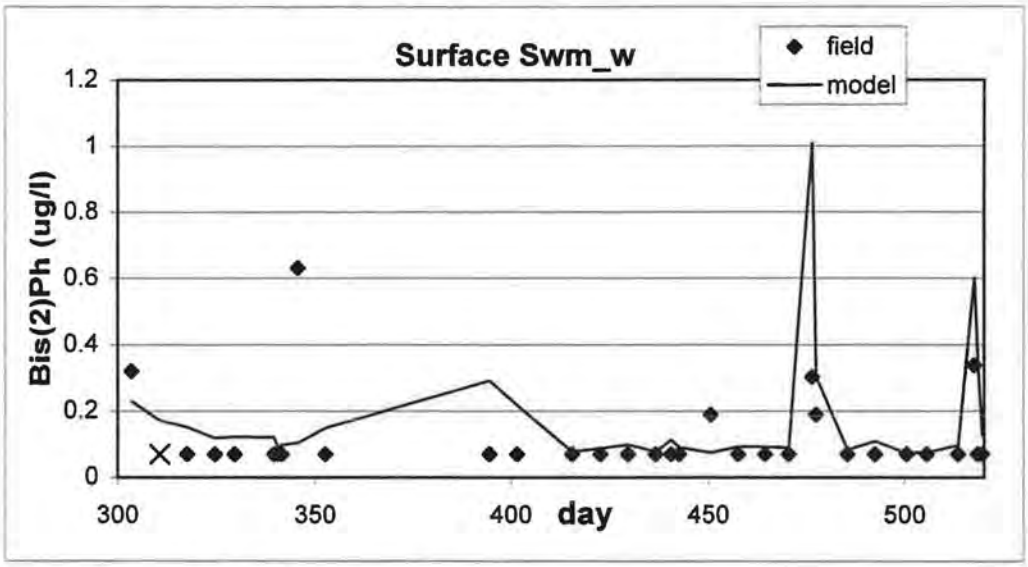

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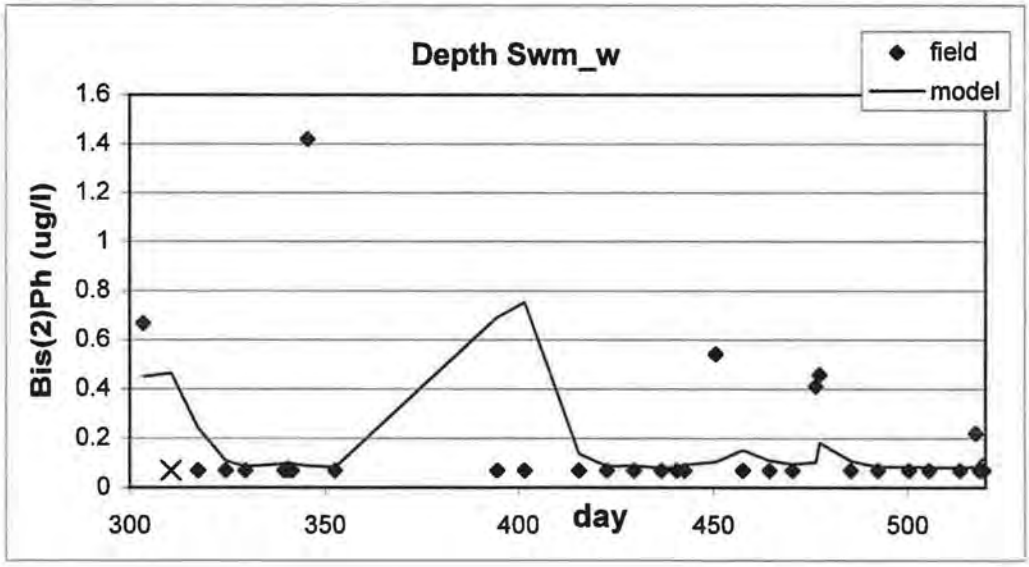

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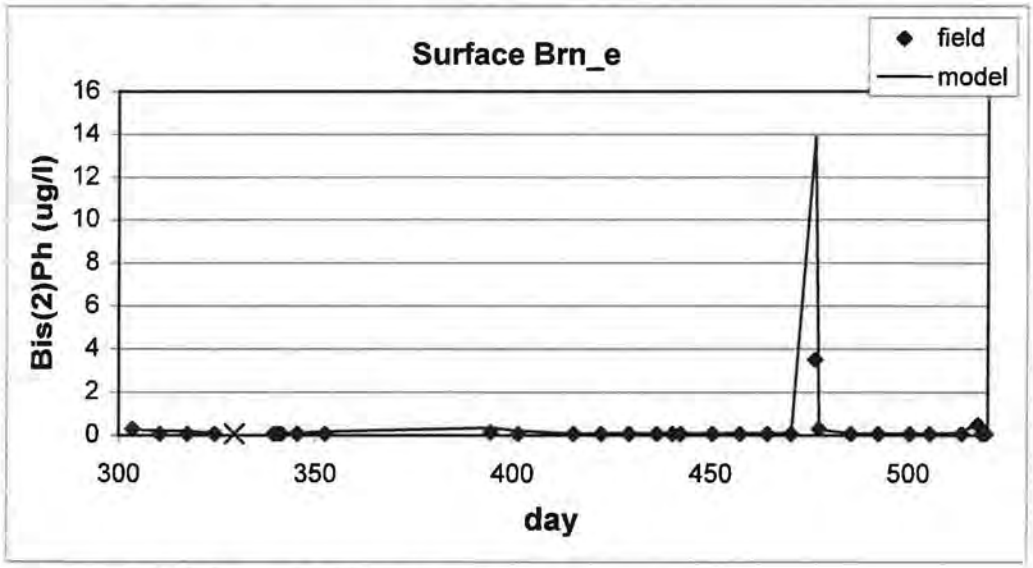

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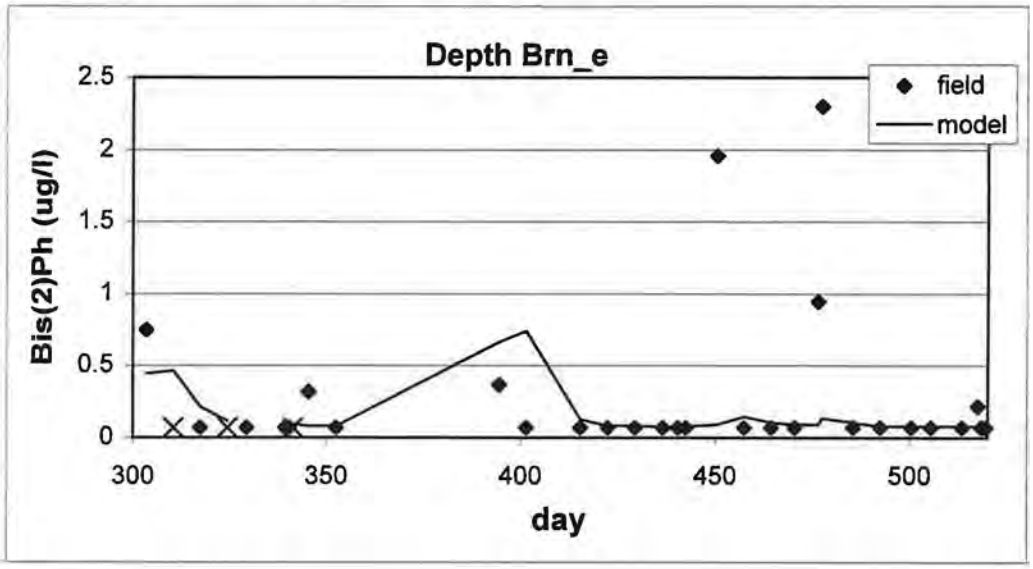

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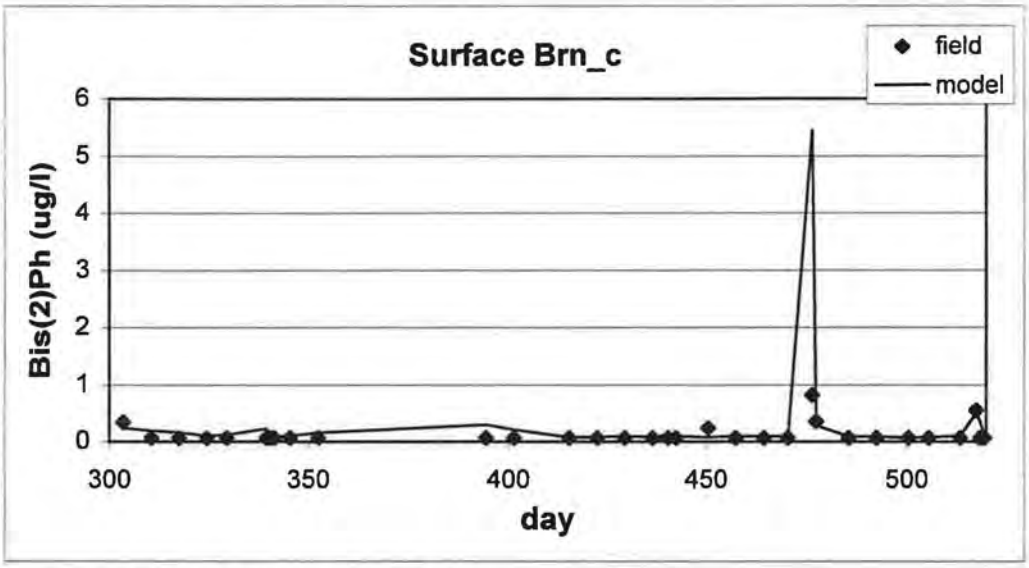

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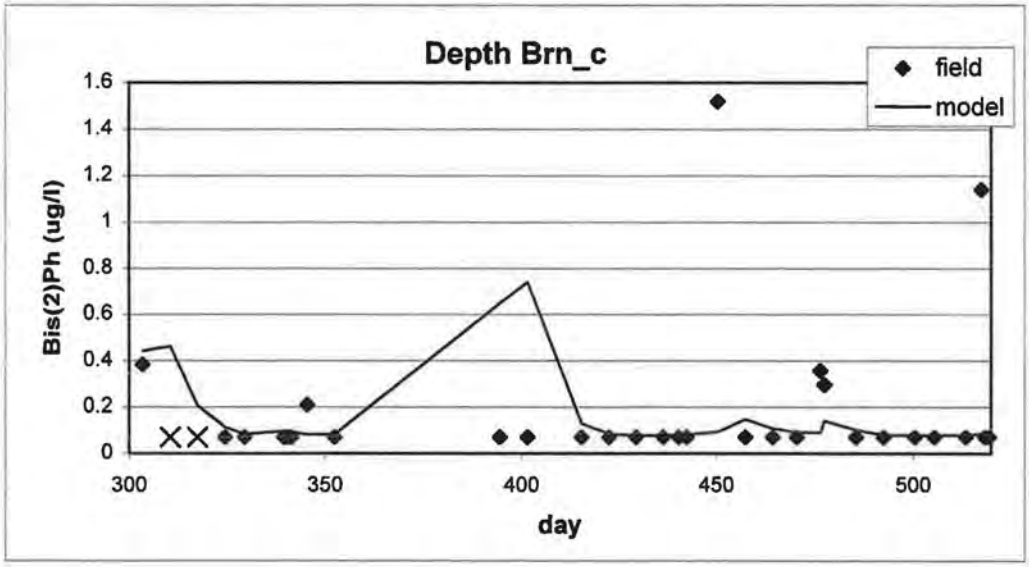

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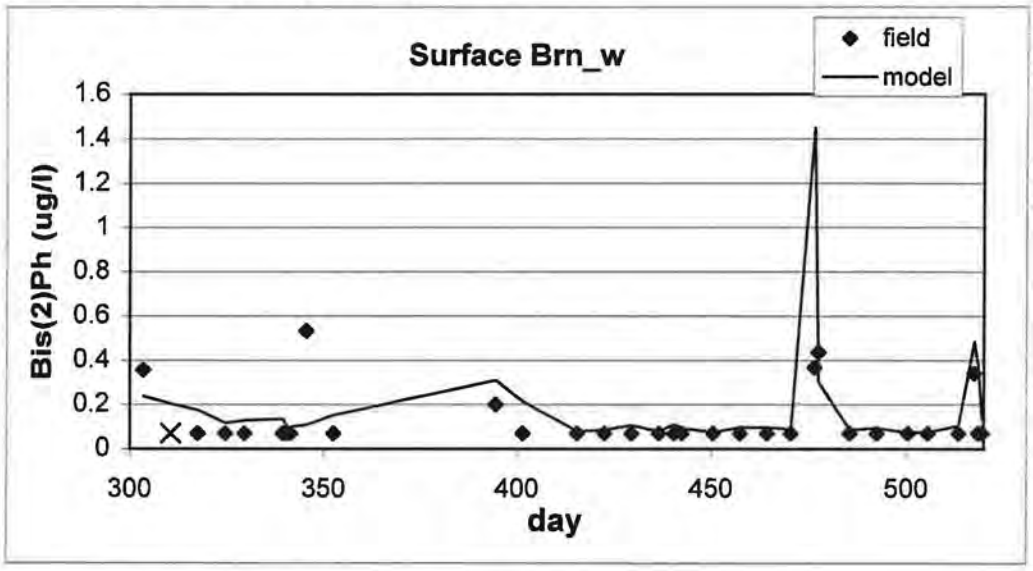

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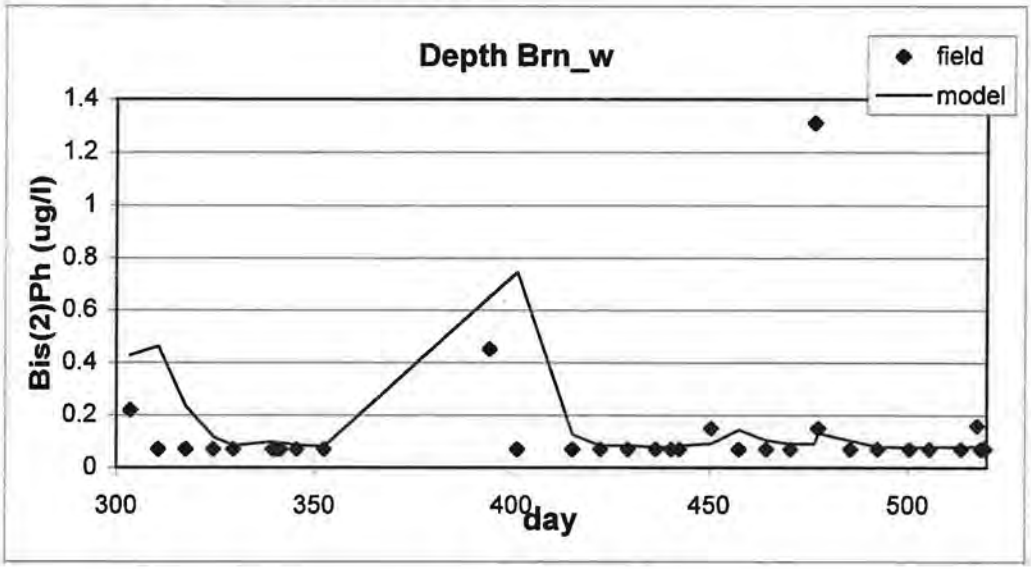

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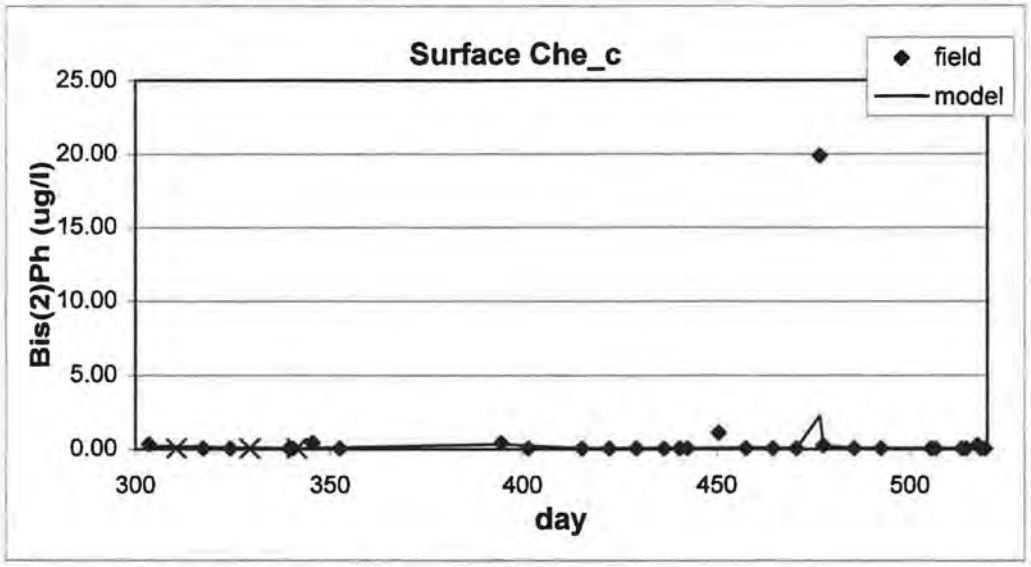

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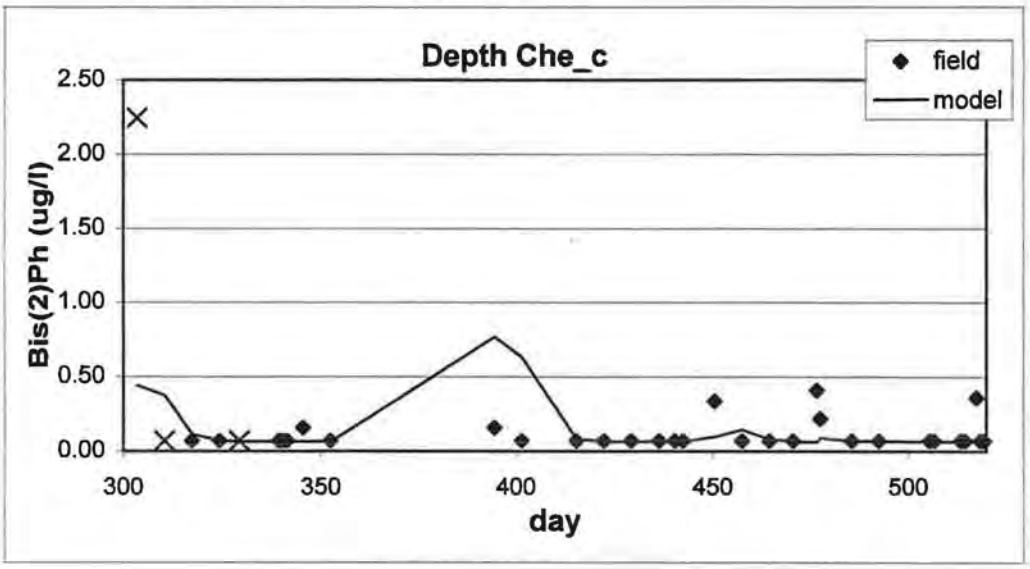

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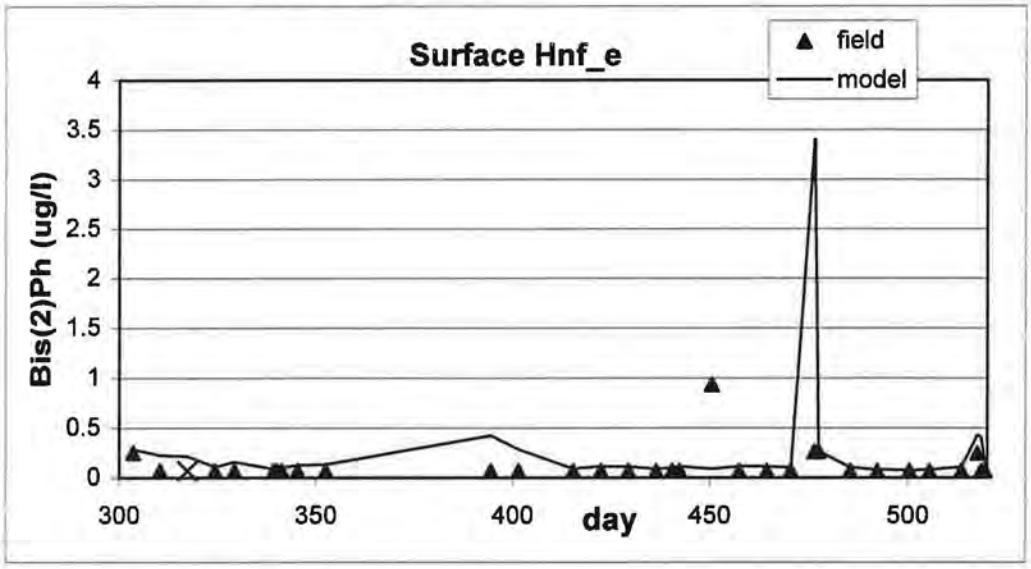

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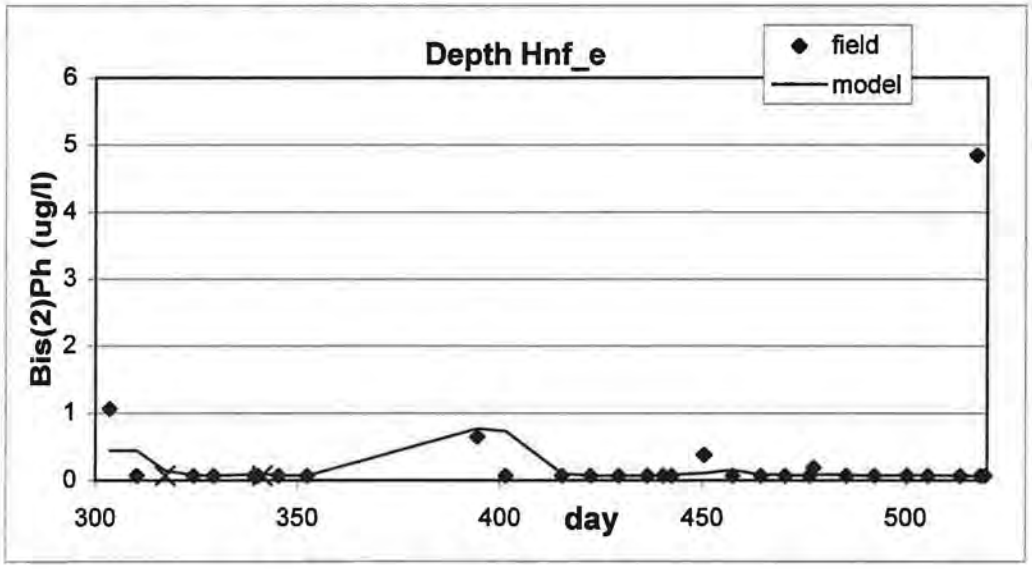

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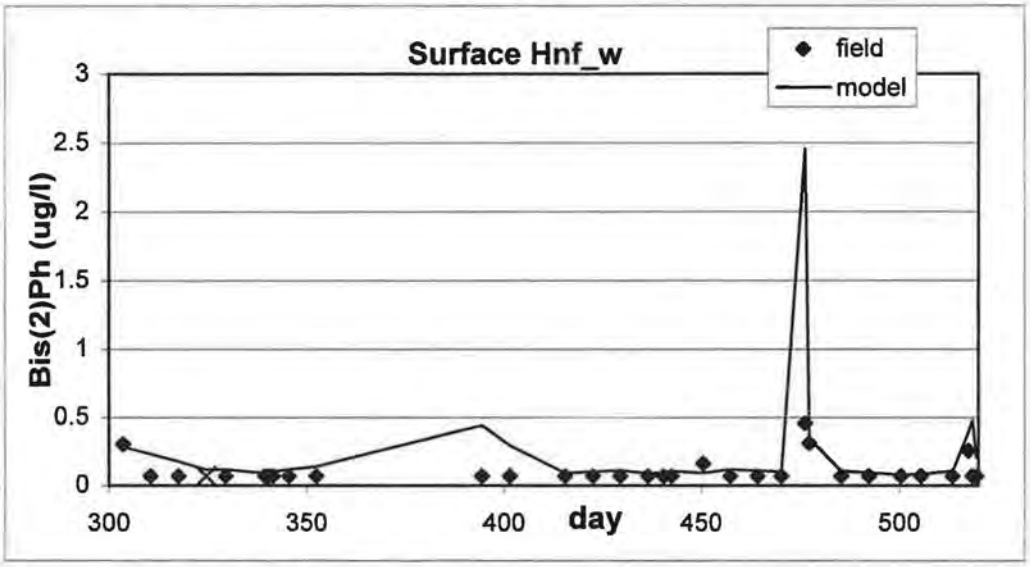

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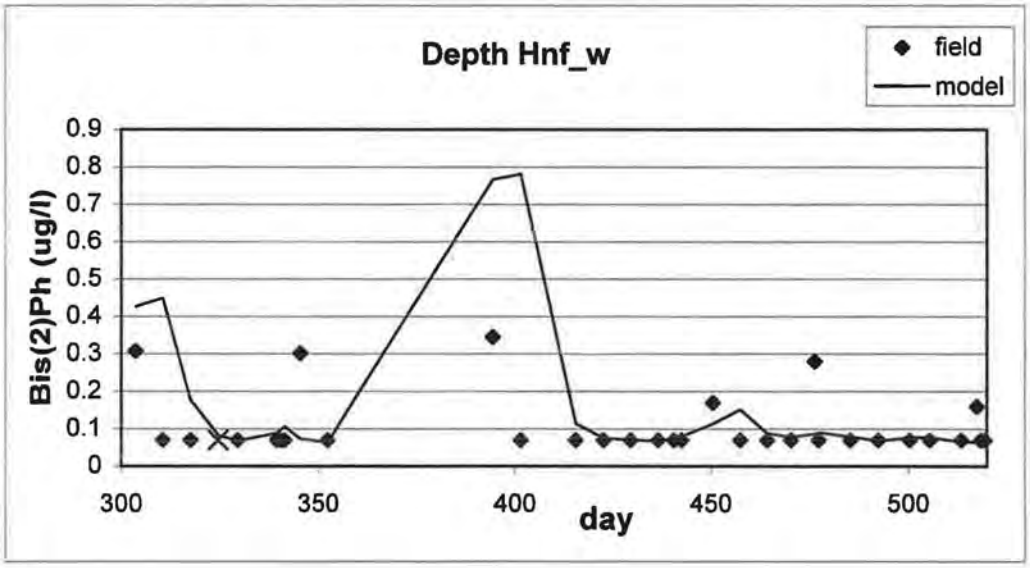

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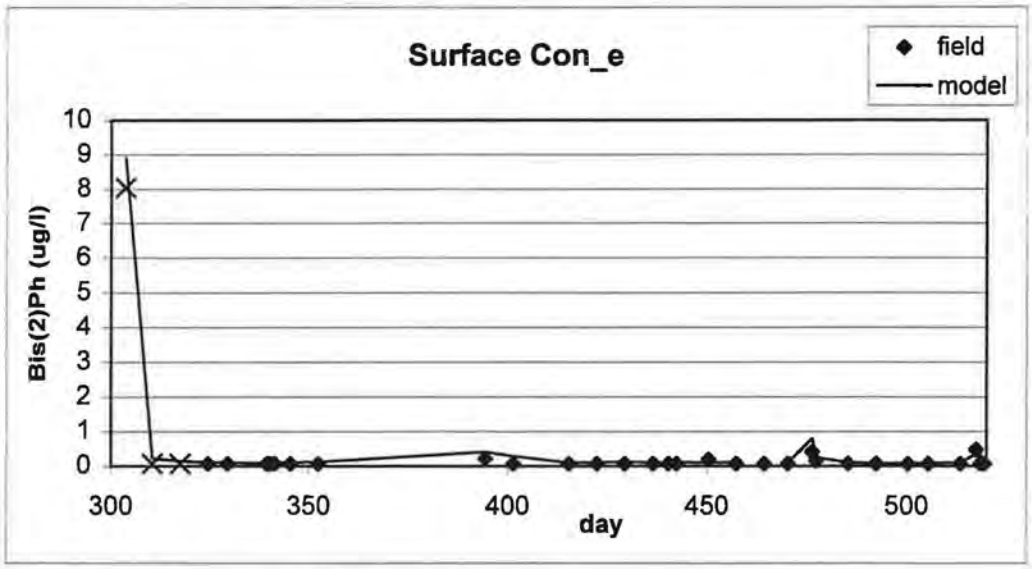

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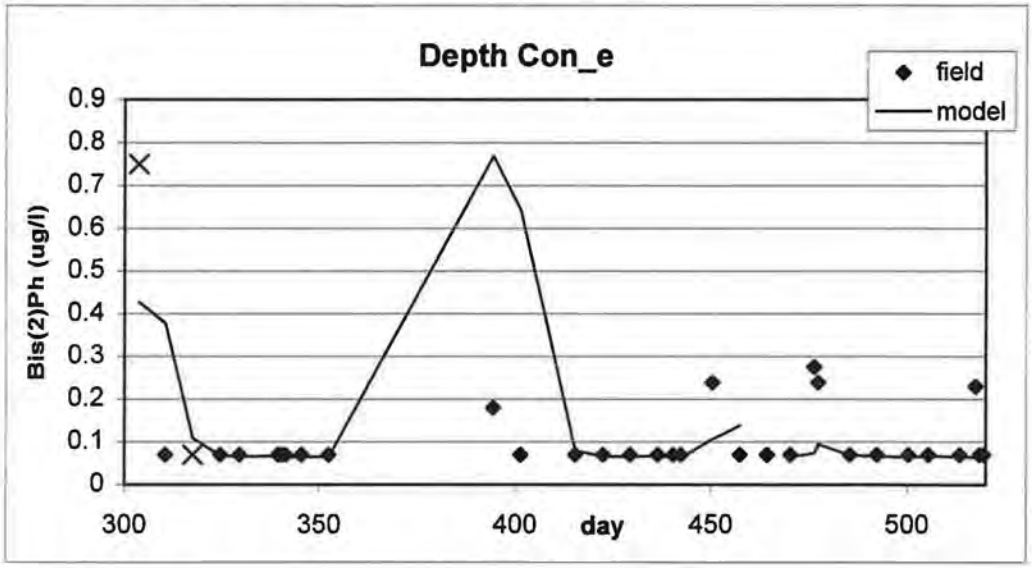

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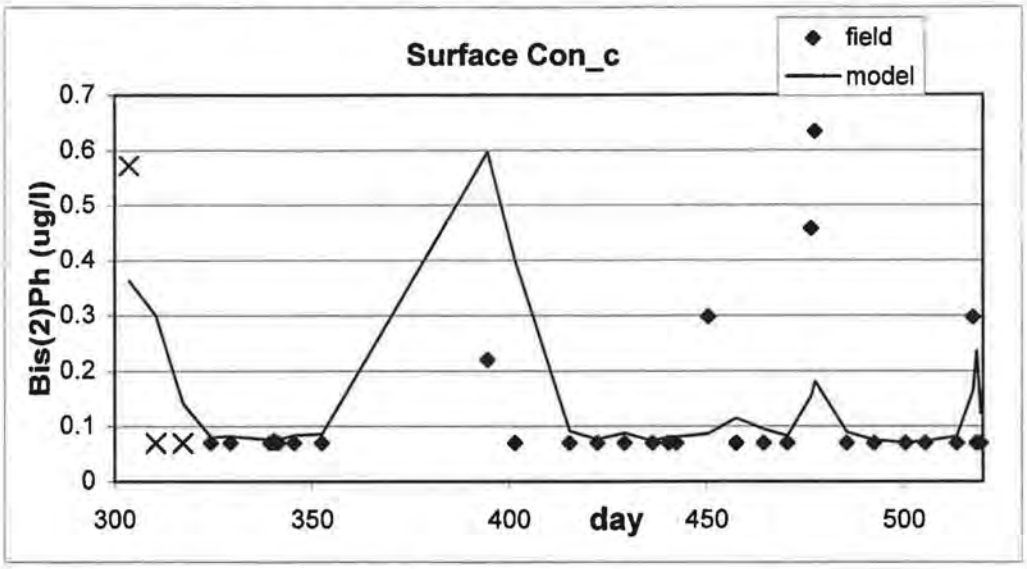

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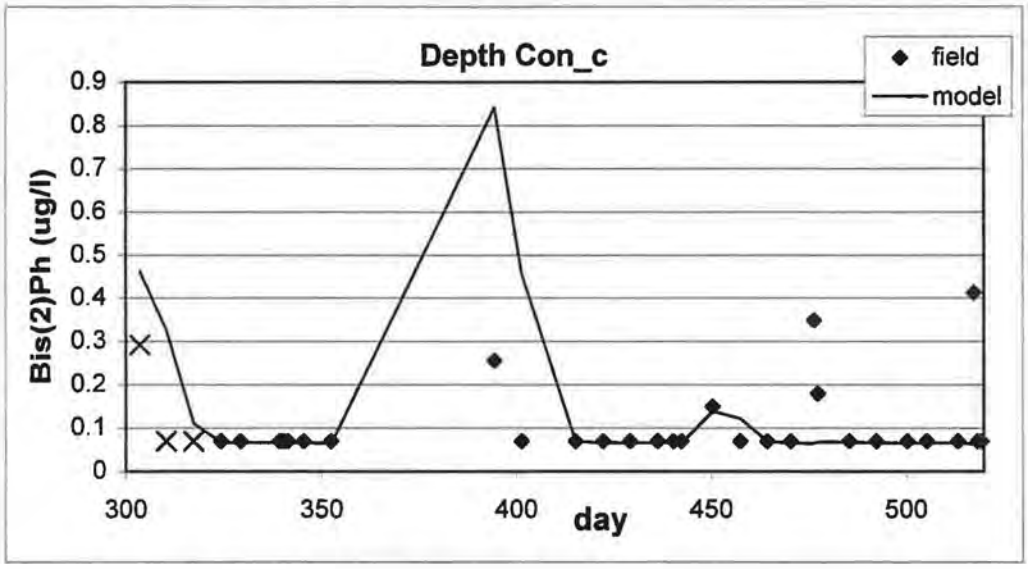

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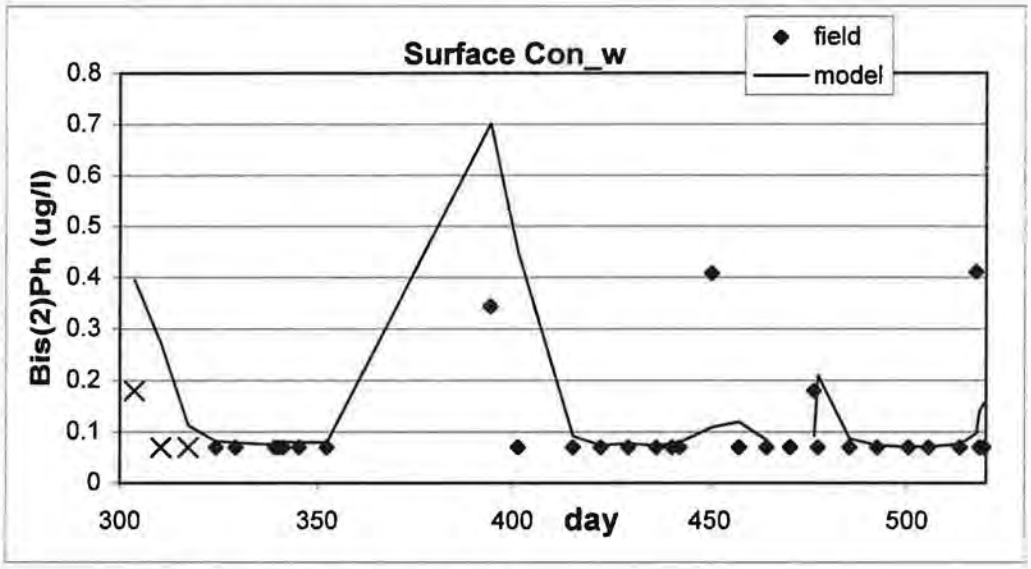

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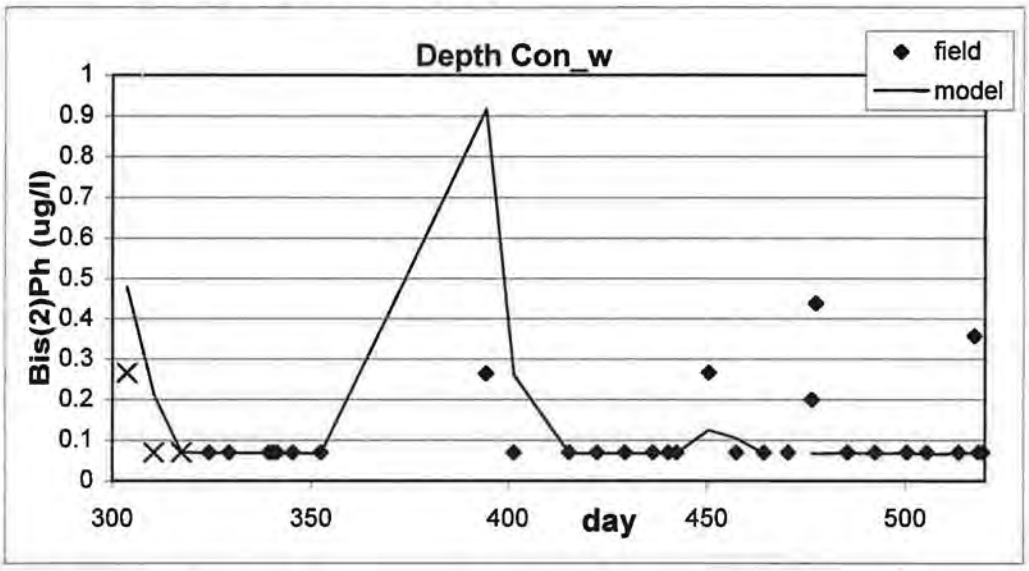

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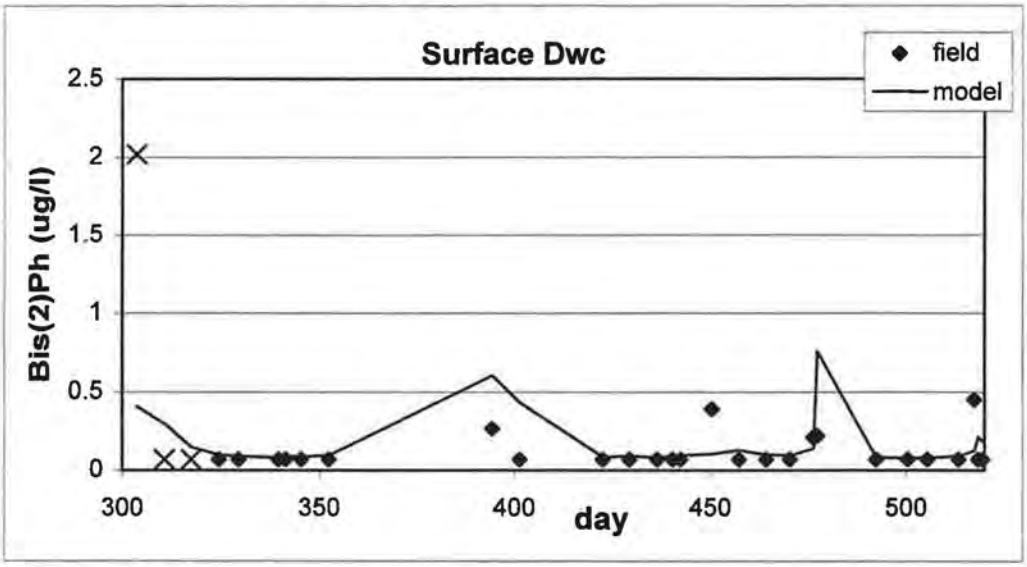

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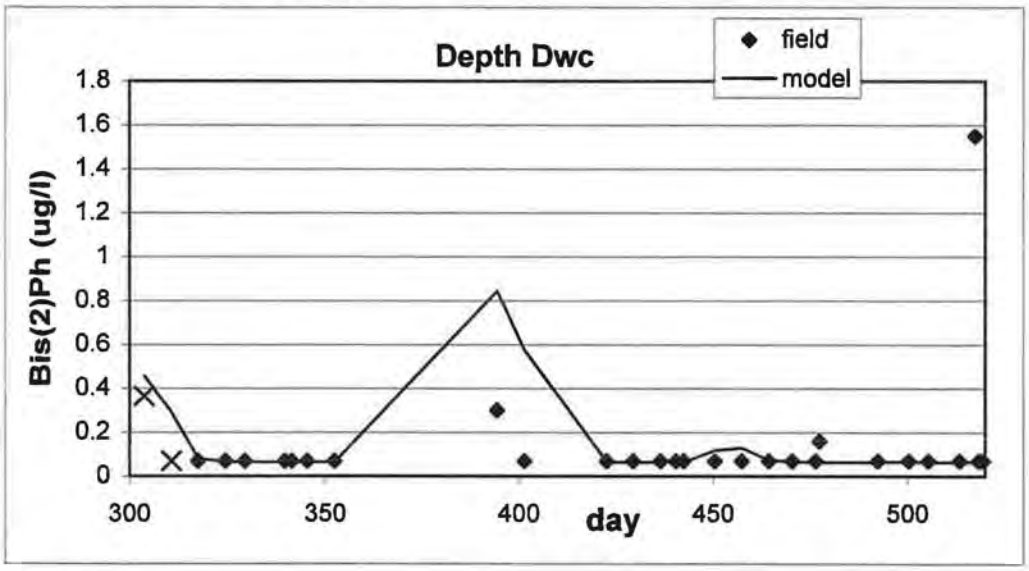

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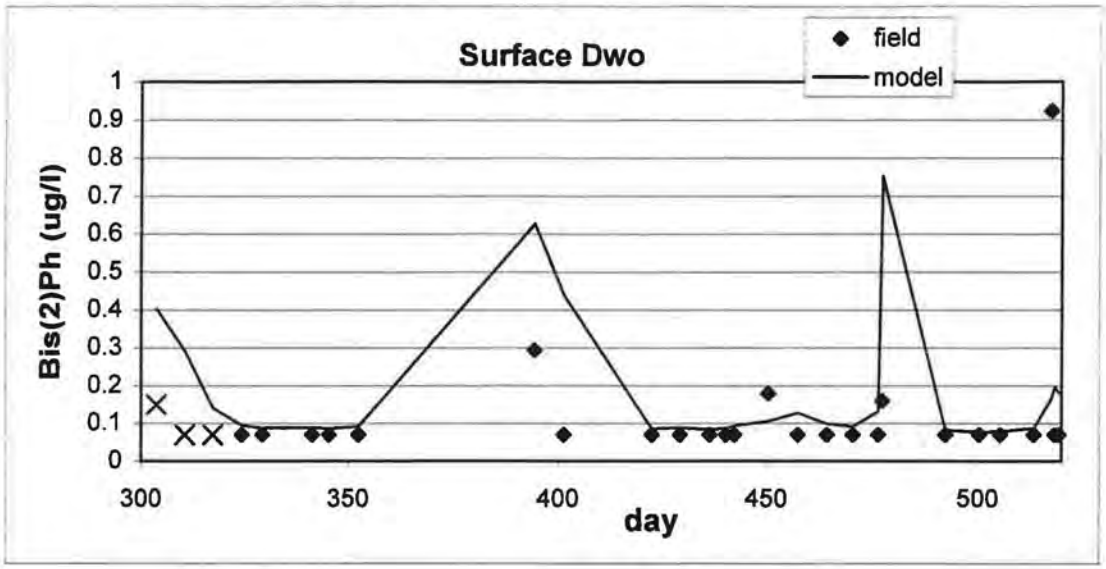

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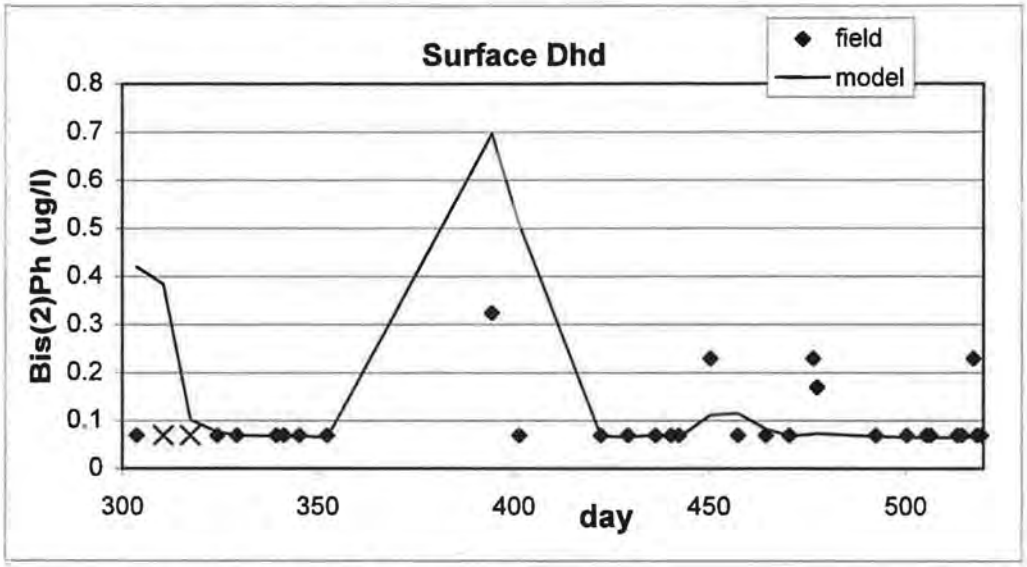

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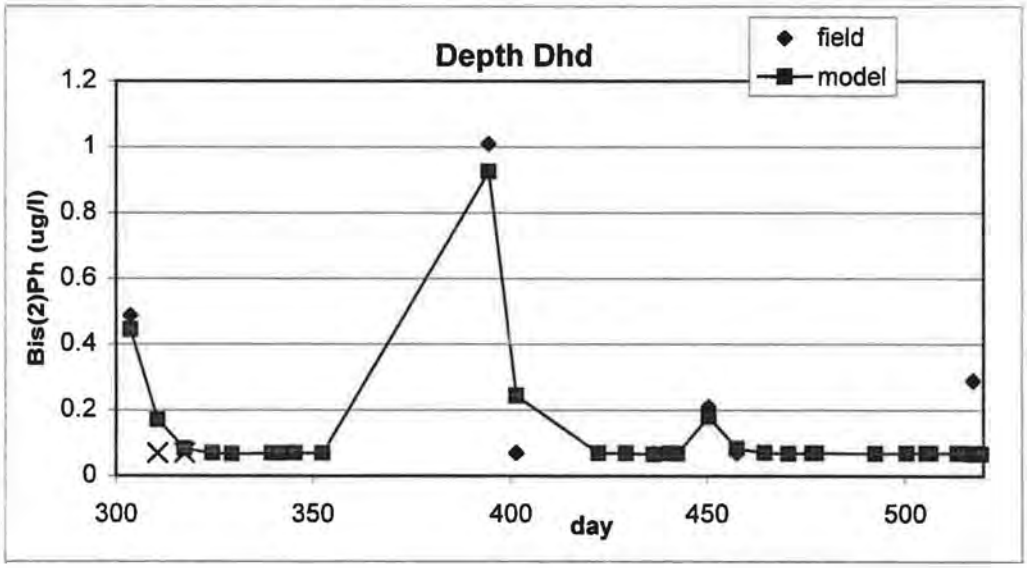

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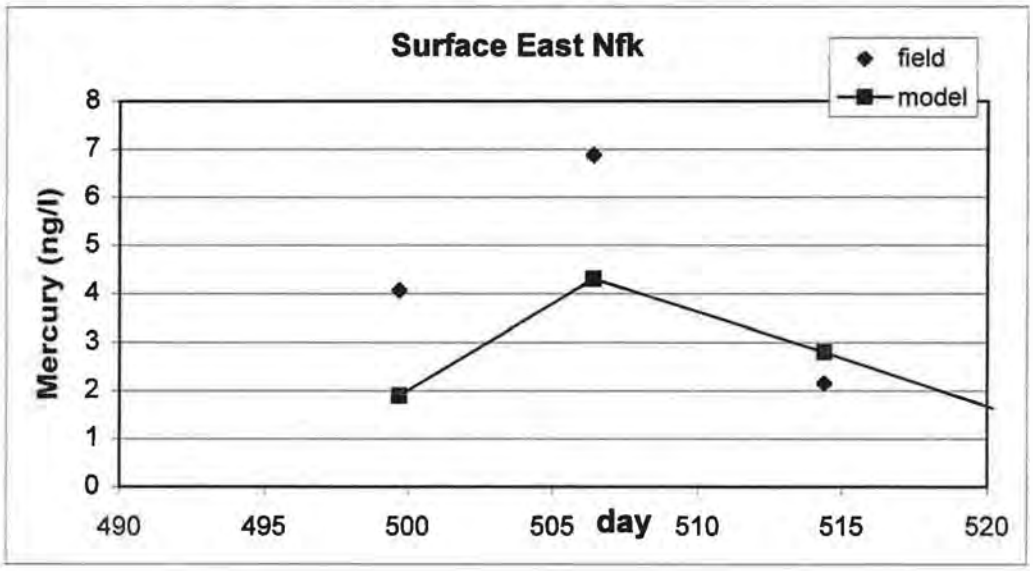

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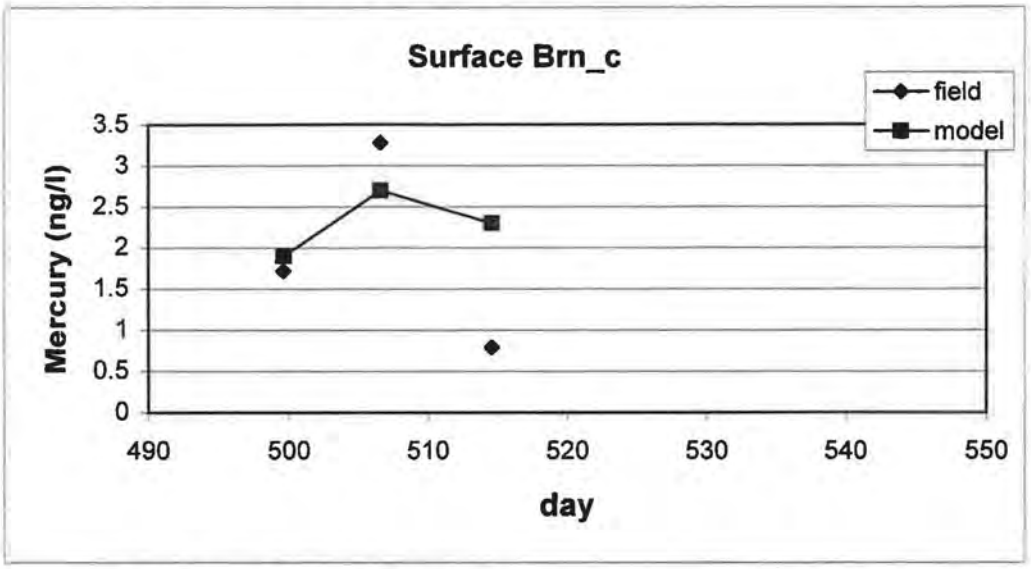

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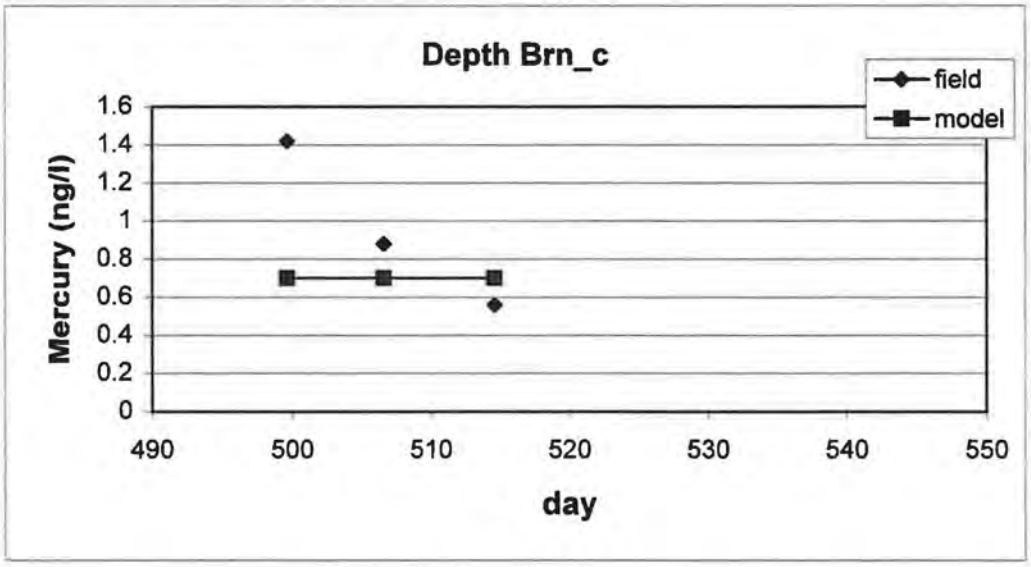

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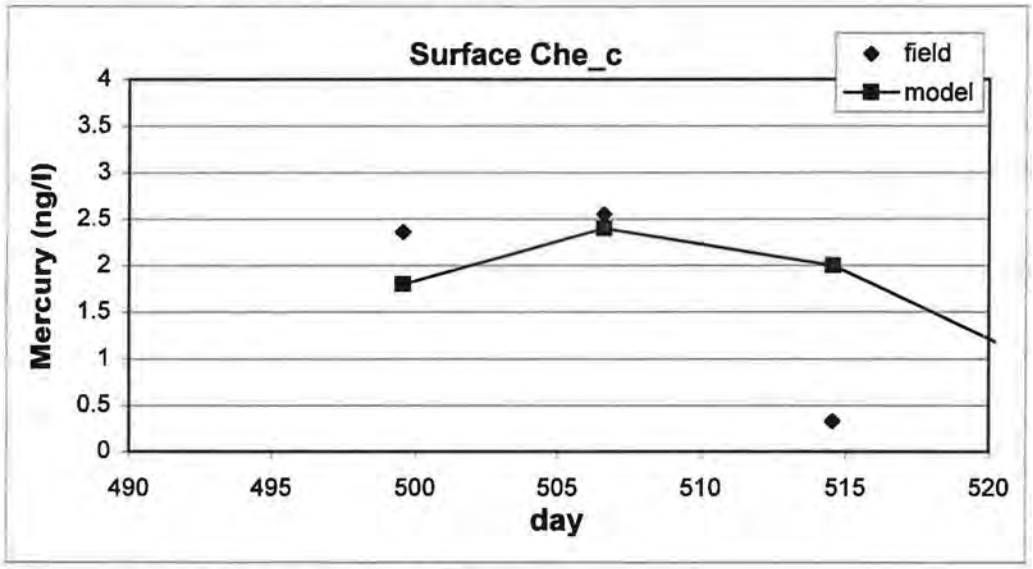

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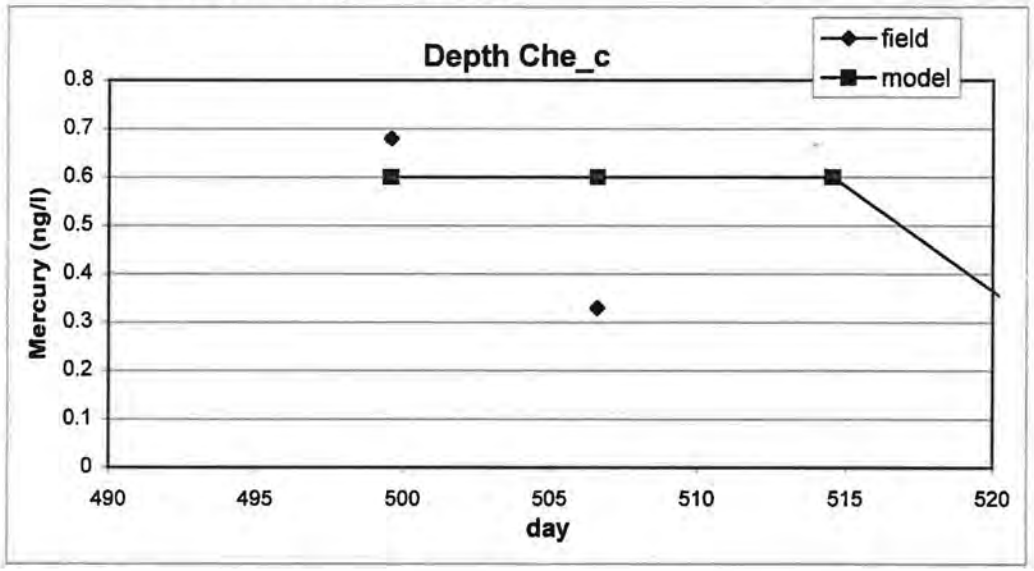

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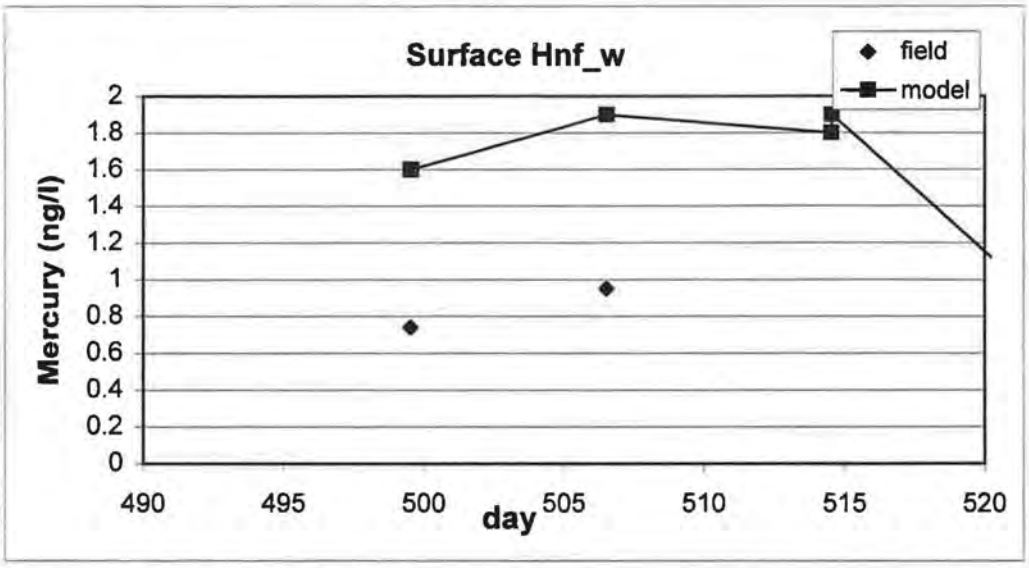

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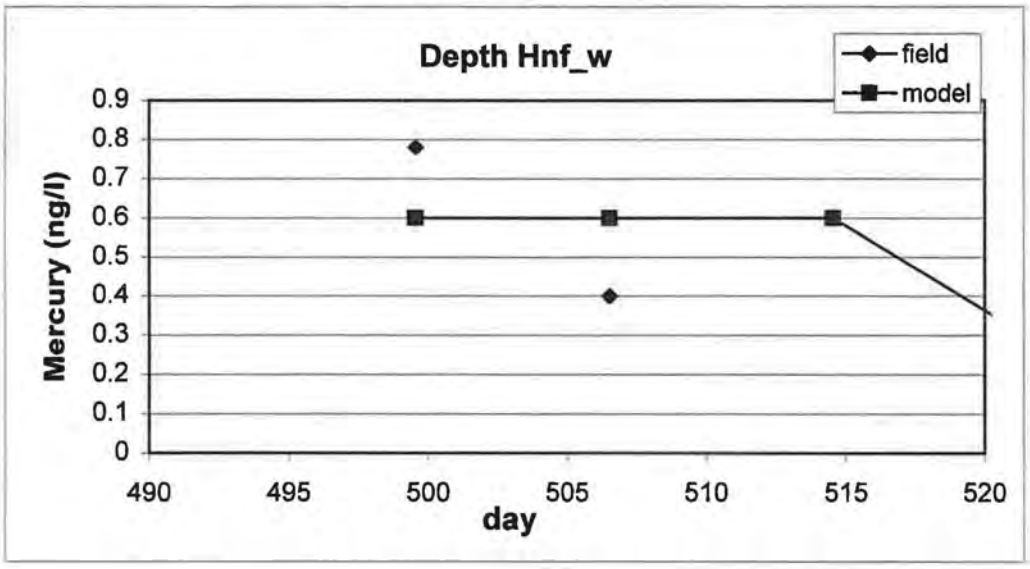

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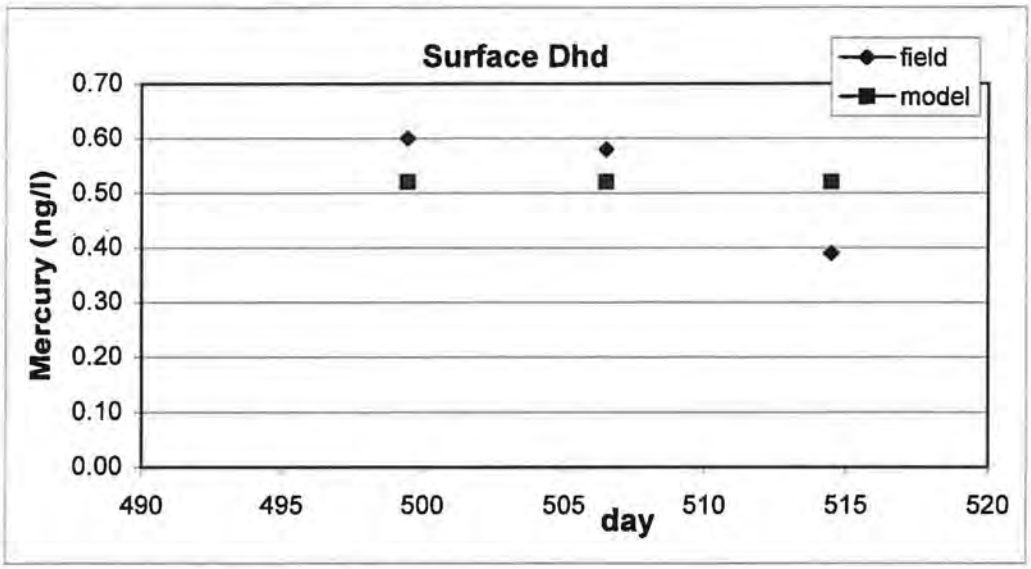
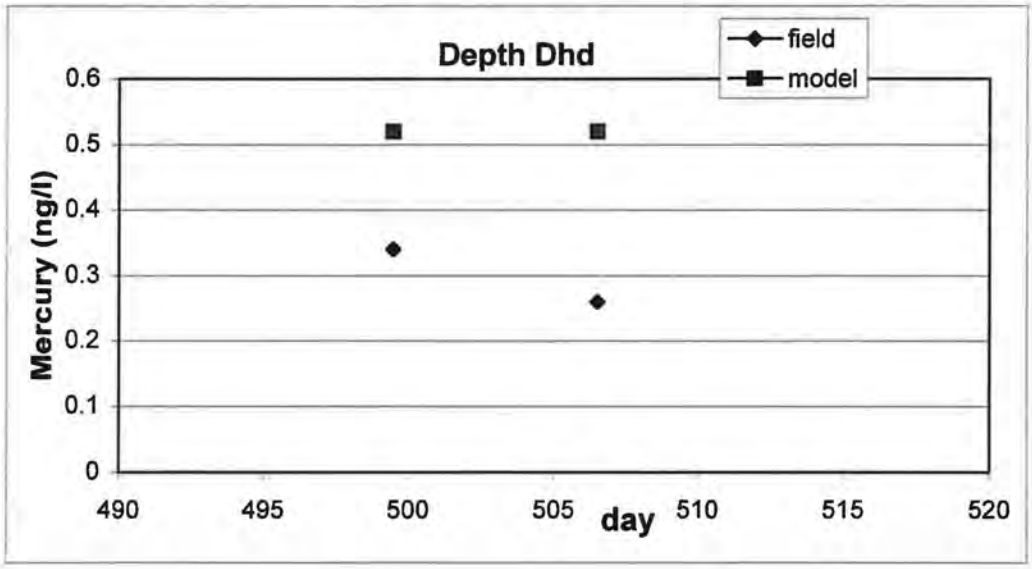
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