



EP-01/097/2001/C

**Provision of EM&A Services at  
Water Recreation Centre**

**Monthly EM&A Report No.14  
(16 September to 15 October 2006)**

October 2006

	Name	Signature
Reviewed & Checked:	Y T Tang	
Approved:	Alan Kwok	

Version:	Revision 0	Date:	27 October 2006
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The information contained in this report is, to the best of our knowledge, correct at the time of printing. The interpretation and recommendations in the report are based on our experience, using reasonable professional skill and judgment, and based upon the information that was available to us. These interpretations and recommendations are not necessarily relevant to any aspect outside the restricted requirements of our brief. This report has been prepared for the sole and specific use of our client and MEMCL accepts no responsibility for its use by others.

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**Hong Kong Disneyland Theme Park  
Water Recreation Centre (Monthly EM&A Report No.14)**

**Submitted by Maunsell Environmental Management  
Consultant Ltd on 25 October 2006**

**This is to verify that:**

**The Water Recreation Centre Monthly EM&A Report No. 14**

**Submitted by: Maunsell Environmental Management  
Consultant Ltd**

**On: 25 October 2006**

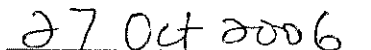
**Has been verified by the undersigned.**

Signed



Ir Dr Anne Watker-Zeris  
Independent Environmental Checker (IECK)  
Retained by Hongkong International Theme Parks Ltd  
pursuant to EP No. EP-01/97/2001/C

Date



Company Chop



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## **EXECUTIVE SUMMARY**

This is the fourteenth monthly Environmental Monitoring and Audit (EM&A) report prepared by Maunsell Environmental Management Consultant Ltd. (MEMCL), the designated Environmental Team (ET), for the project "Provision of EM&A Services at Water Recreation Centre". The Water Recreation Centre (WRC) commenced operation on 16 August 2005.

In accordance with Section 3.6 of the EM&A Plan, the EM&A program is currently being reviewed based upon the monitoring data collected between 15 August 2005 to 16 March 2006.

This report presents the results of EM&A works conducted between 16 September and 15 October 2006.

### **Environmental Monitoring Works**

#### Water Quality

For water quality monitoring, there were 4 marginal exceedances of the action level of pH value at W1 – W3 & W5 on 26 September 2006 and all of them were considered likely due to natural variation of water quality in the lake.

#### Environmental Licensing and Permitting

Environmental permit no. EP-01/097/2001/C was issued to the Hongkong International Theme Parks Limited (HKITP) for the operation of WRC. HKITP has been registered as chemical waste producer (Waste Producer No. 9499-973-H3095-01).

### **Implementation Status of Environmental Mitigation Measures**

Monthly environmental site inspection was carried out on 3 October 2006. Environmental mitigation measures as recommended in the EIA report, Operational EM&A Plan and EP-01/097/2001/C were properly implemented.

### **Environmental Complaints and Prosecution**

No complaint, summons or prosecution related to environmental issues was made against the Project in the reporting period.

### **Future Key Issues**

The operator of WRC is reminded to continue to implement measures as recommended in the EIA report, Operational EM&A Plan and EP-01/097/2001/C.

# 1. INTRODUCTION

## Background

- 1.1 Maunsell Environmental Management Consultants Ltd. (MEMCL) (hereinafter referred as the "ET") was appointed by Hongkong International Theme Park Ltd. (HKITP) (hereinafter referred as the "Operator") to carry out operational Environmental Monitoring and Audit at the Water Recreation Centre since its operation on 16 August 2005. Under the requirements of Section 4 of the Environmental Permit EP-01/097/2001/C, EM&A programme is required to be implemented in accordance with the Operational EM&A Plan approved by the Environmental Protection Department (EPD) on 31 August 2005.
- 1.2 The WRC is a portion of the Contract for "Theme Park and Associated Infrastructures at Penny's Bay", which encompasses an area of approximately 12 ha and contains a multi-function artificial lake, water-based and land-based recreational facilities and ancillary facilities. Apart from recreation purpose, the lake water is a source of irrigation water for the entire Penny's Bay. The location of the WRC is given in Figure 1.1.
- 1.3 Following approval of the EIA, an Environmental Permit (EP) was issued to the Civil Engineering Department (CED) (now Civil and Engineering Development Department (CEDD) and the subsequent variation of the permit no. EP-097/2001/B and EP-138/2002/C contain the requirements and obligations on the Environmental Monitoring and Audit (EM&A) during the operation of the WRC. Under the Contract for "Theme Park and Associated Infrastructures at Penny's Bay", the WRC and ancillary facilities were designed and constructed under the supervision of CEDD and the WRC would be turned over from CEDD to HKITP for operation upon completion of construction. Environmental permit no. EP-01/097/2001/C was issued to the HKITP for the operation of WRC.
- 1.4 In accordance with Section 3.6 of the EM&A Plan, the EM&A program is currently being reviewed based upon the monitoring data collected between 15 August 2005 to 16 March 2006.
- 1.5 This report summarises the environmental monitoring and audit works for the Project between 16 September and 15 October 2006.

## Project Organisation

- 1.6 The structure of the environmental management team is shown in Figure 1.2. Contacts of key environmental staff of the Project are shown in Appendix A.

## Summary of the EM&A Requirements

- 1.7 The EM&A programme requires environmental monitoring for water quality within the WRC. The EM&A requirements for each item are described in subsequent sections, including:
  - Monitoring parameters;
  - Action and Limit Levels;
  - Event-Action Plans;
  - Environmental mitigation measures, as recommended in the EIA report, Operational EM&A Plan and EP-01/097/2001/C.
- 1.8 Site audit and the status of environmental licensing and permits are described in Section 3.
- 1.9 Summary of the advice on the implementation status of environmental protection and pollution control/mitigation measures is summarised in Section 3 of the Report.

## 2. WATER QUALITY

### Monitoring Requirements

- 2.1 Water quality monitoring was conducted at five monitoring stations. Appendix B shows the established Action and Limit Levels (AL Levels) for water quality parameters.

### Monitoring Equipment

- 2.2 Water samples were collected at three depths at all sampling locations: (1) 1m below the water surface, (2) mid depth, and (3) 1m above the bottom of the lake. The parameters of water depth, dissolved oxygen (as % saturation), turbidity, temperature, and pH were measured in-situ. Water samples were collected for analysis by a HOKLAS accredited laboratory. The water quality monitoring equipment deployed is described in Table 2.1.

**Table 2.1 Water Quality Monitoring Equipment**

Equipment	Model and Make
Dissolved Oxygen Measuring Meter	YSI 85D
Turbidimeter	HACH 2100P
pH Meter	Hanna HI9023
Water Sampler	Wildco Alpha Water Bottle (Vertical)
Differential Global Positioning System (DGPS)	MLR FX412
Water depth echo sounder	Cuda 168

### Monitoring Parameters, Frequency and Duration

- 2.3 Table 2.2 summarised the monitoring parameters, frequencies and duration of the water quality monitoring.

**Table 2.2 Water Quality Monitoring Parameters, Period and Frequency**

Monitoring Station	Parameters, unit	Frequency	No. of Depths
WM1-WM5	<sup>1</sup> Dissolved Oxygen Saturation, % <sup>1</sup> Water depth, m <sup>1</sup> pH value <sup>1</sup> Temperature, °C <sup>1</sup> Turbidity, NTU Dissolved Oxygen, mg/L Conductivity, µS/cm Salinity, g/L Copper (Cu), µg/L Chromium (Cr), µg/L Lead (Pb), µg/L Zinc (Zn), µg/L Tributyl Tin (TBT), ng Sn/L Suspended Solids, mg/L Total Nitrogen, mg/L Total Phosphorous, mg/L Total Silica, mg/L 5-day BOD, mg/L COD, mg/L Ammonia, mg/L Chlorophyll a, mg/L	Once per week	3 (Surface, Mid-Depth, Bottom)

Monitoring Station	Parameters, unit	Frequency	No. of Depths
	<i>E. Coli</i> , cfu/100mL		

Note:

- Parameters to be measured *in-situ*.

### Monitoring Locations

- Five stations were designated for water quality monitoring. The locations of these monitoring stations are summarized in Table 2.3 and depicted in Figure 2.1.

**Table 2.3 Water Quality Monitoring Locations**

Location	HK Metric Grid E	HK Metric Grid N
WM1	821 821.66	820 493.99
WM2	822 034.44	820 369.10
WM3	821 839.52	820 377.60
WM4	821 932.82	820 278.32
WM5	821 915.76	820 184.51

### Monitoring Methodology

- Dissolved oxygen saturation, water depth, pH value, temperature and turbidity were measured *in-situ* at the designated water quality monitoring stations. General observation, weather conditions, with the sampling time, date and location were marked on a field record sheet.
- Water samples were taken from each monitoring station with a water sampler for laboratory analysis. The sample was then poured into a pre-labelled bottle. The label contained the sample identification number, sample location, date, time, project name and analyses required.
- The samples were placed in a cooler with ice (to 4°C without being frozen) and kept away from sunlight. Samples were submitted to a Hong Kong Accreditation Scheme (HOKLAS) laboratory for analysis within 24 hours of sampling.

#### Operating/Analytical Procedures

- A differential global positioning system (DGPS) was used to ensure that the correct location was selected prior to sample collection.
- A portable, battery-operated echo sounder was used for the determination of water depth at each designated monitoring station.
- All *in-situ* measurements and samples for analysis were taken at three water depths, namely 1m below water surface, mid-depth and 1m above the bottom of the lake.
- At each measurement/sampling depth, two consecutive measurements for each *in-situ* parameters were taken. Where the difference in the value between the first and second readings of each set was more than 25% of the value of the first reading, the reading was discarded and further readings were taken.
- Water samples were collected using the water sampler and the samples were stored in pre-labelled bottles. Water samples collected were well-mixed in the water sampler prior to transferring to sample bottles. The sample bottles were then packed in cool-boxes (cooled at 4°C without being frozen), and delivered to ALS Technichem (HK) Pty Ltd. for the laboratory analysis.

#### Maintenance and Calibration

- The dissolved oxygen meter, which also measures temperature, was calibrated by the wet bulb method before each monitoring day. Before the routine calibration, the sensor for dissolved oxygen was thermally equilibrated in water-saturated air. The calibration cup served as a calibration chamber and it was loosened from airtight condition before it was used for the calibration. Calibration was also carried out in a water sample with a known concentration of dissolved oxygen at 3-month intervals. The sensor was

immersed in the water and after thermal equilibration, the known mg/L value was keyed in and the calibration was carried out automatically.

- 2.14 The turbidimeter has already been calibrated at 3-month intervals. Before the measurement, a zero check in distilled water was performed with the turbidimeter. The turbidimeter was calibrated with a solution of known NTU.
- 2.15 The pH meter was calibrated at 3-month interval. Before the measurement, a zero check in distilled water was performed with the meter. The probe was calibrated with a solution of known salinity. A similar procedure was carried out for pH value calibration.
- 2.16 Calibration records are presented in Appendix C.

### Laboratory Analysis

- 2.17 All laboratory work was carried out by (HK) Pty. Ltd. The determination work started within 24 hours after collection of the water samples. The analyses followed the standard methods according to Table 2.4 and as described in APHA Standard Methods for the Examination of Water and Wastewater.

**Table 2.4 Analytical Methods to be applied to Water Quality Samples**

Determinant, unit	Reference Method Used <sup>1</sup> (APHA 20 <sup>th</sup> ed)	Reporting Limits
Dissolved Oxygen, mg/L	4500O: G	0.1 mg/L
Conductivity, $\mu$ S/cm	2510B	1 $\mu$ S/cm
Salinity, g/L	2520B	0.1 g/L
Copper, $\mu$ g/L	3125 / ICPMS	1 $\mu$ g/L
Chromium, $\mu$ g/L		1 $\mu$ g/L
Lead, $\mu$ g/L		1 $\mu$ g/L
Zinc, $\mu$ g/L		10 $\mu$ g/L
Tributyl Tin, ng Sn/L	UNEP/ICO/IAEA	5 ng Sn/L
Suspended Solids, mg/L	2540D	2 mg/L
Total Nitrogen, mg/L	4500Norg: B 4500NO <sub>3</sub> : F	0.1 mg/L
Total Phosphorus, mg/L	4500P: B4, F	0.1 mg/L
Total Silica, mg/L	4500Si: F	0.01 mg/L
5-day BOD, mg/L	5210B	2 mg/L
COD, mg/L	5220B	2 mg/L
Ammonia Nitrogen, mg/L	4500NH <sub>3</sub> : G	0.01 mg/L
Chlorophyll-a, mg/L	10200H2	5 mg/L
<i>E. Coli.</i> cfu/100mL	DoE Section 7.9.4.2 & 4	1 cfu/100mL

Note:

1. All testing conducted by the laboratory are In-House methods based on the method stated in the "Standard Methods for the Testing of Water and Wastewater, 19<sup>th</sup> & 20<sup>th</sup> ed" (APHA) or the USEPA SW846.

### QA/QC Procedure

- 2.18 ALS Technichem (HK) Pty. Ltd. has comprehensive quality assurance and quality control programmes. The QA/QC procedures for each analytical batch:
- At least 1 reagent blank solution was prepared and analyzed;
  - At least 1 duplicate sample analysis was performed in every 10 samples;
  - At least 1 in every 10 samples was spiked with a known concentration of the analyte to determine the matrix effect of the sample.

## Results and Observations

- 2.19 Monitoring of water quality was carried out at the 5 designated monitoring stations on 4 occasions during the reporting period (20, 26 September, 5 and 13 October 2006). The monitoring schedule is presented in Appendix D. All monitoring data and graphical presentation of the monitoring results are provided in Appendix E and summarised in Table 2.5.

**Table 2.5 Summary of Water Quality Monitoring Results**

Parameters	Monitoring Data (Depth Averaged Data)				
	WM1	WM2	WM3	WM4	WM5
Temperature, °C	20.1 – 29.0 (20.3 – 28.9)	20.4 – 28.7 (20.6 – 28.5)	20.7 – 28.7 (20.8 – 28.7)	20.9 – 28.7 (20.9 – 28.7)	20.3 – 28.7 (20.5 – 28.7)
Daily Temperature Difference <sup>1</sup> , °C	0.0 – 1.2				
Turbidity, NTU	1.9 – 3.3	1.7 – 3.4	1.9 – 3.7	1.9 – 3.6	1.6 – 3.4
pH	7.4 – 8.7 (7.5 – 8.6)	7.4 – 8.5 (7.6 – 8.5)	7.3 – 8.6 (7.3 – 8.6)	7.3 – 8.7 (7.4 – 8.7)	7.3 – 8.9 (7.4 – 8.8)
Dissolved Oxygen, mg/L	7.5 – 11.1 (8.2 – 10.0)	8.1 – 11.5 (8.2 – 9.6)	4.6 – 10.5 (7.3 – 9.7)	8.2 – 12.8 (8.2 – 10.2)	7.4 – 9.2 (8.0 – 8.8)
Conductivity, µS/cm	75 – 79	75 – 79	74 – 80	72 – 80	75 – 81
Salinity, g/L	all <0.1	all <0.1	all <0.1	all <0.1	all <0.1
Copper, µg/L	<1 – 1.0	<1 – 1.0	<1 – 1.0	all <1	all <1
Chromium, µg/L	all <1	all <1	all <1	all <1	all <1
Lead, µg/L	all <1	all <1	all <1	all <1	all <1
Zinc, µg/L	all <10	all <10	all <10	all <10	all <10 – 12
Tributyl Tin, ng Sn/L	all <5	all <5	all <5	all <5	all <5
Suspended Solids <sup>2</sup> , mg/L	all <2	all <2	all <2	all <2	all <2
Total Nitrogen, mg/L	0.2 – 0.4 (0.2 – 0.5)	0.2 – 0.6 (0.2 – 0.4)	0.2 – 0.4 (0.2 – 0.3)	0.1 – 0.3 (0.1 – 0.3)	<0.1 – 0.3 (<0.1 – 0.3)
Total Phosphorous <sup>1</sup> , mg/L	all <0.02	all <0.02	all <0.02	all <0.02	all <0.02
Silica, mg/L	3.4 – 4.4 (3.5 – 4.3)	3.6 – 4.5 (3.6 – 4.5)	3.6 – 4.3 (3.6 – 4.2)	3.5 – 4.3 (3.6 – 4.2)	3.4 – 4.2 (3.6 – 4.2)
Ammonia Nitrogen, mg/L	<0.01 – 0.08	<0.01 – 0.07	<0.01 – 0.03	<0.01 – 0.03	<0.01 – 0.05
Unionised Ammonia <sup>3</sup> , mg/L	<0.00072 – <0.00083	<0.00076 – <0.00087	<0.00070 – <0.00073	<0.00094 – <0.00103	<0.00069 – <0.00078
BOD <sub>5</sub> , mg/L	all <2	all <2	all <2	all <2	all <2
COD, mg/L	6 – 10 (6 – 9)	6 – 11 (6 – 10)	6 – 10 (7 – 9)	5 – 11 (5 – 10)	5 – 10 (5 – 9)
Chlorophyll-a, mg/L	9.8 – 16.8	9.8 – 19.4	9.1 – 19.2	9.0 – 18.6	9.1 – 18.7
<i>E. Coli</i> <sup>4</sup> , cfu/100mL	all <1	<1 – <2	all <2	<2 – <3	<1 – <2

Note: 1. Present as depth average 2. Present as annual median  
3. Present as annual median 4. Present as geometric mean for last 5 measurements

- 2.20 The QA/QC results for laboratory testing in the reporting period were acceptable. The QA/QC results are summarised in Appendix F.
- 2.21 All recorded levels during the reporting period were below the AL Levels except 4 exceedances of the action level of pH value at W1 – W3 & W5 on 26 September 2006. There was no specific observation noted during the monitoring event and all other monitoring parameters also complied with the AL levels. Since the pH value only marginally exceeded the action level, they were likely due to natural fluctuation of water quality in the lake. The conditions resumed to normal on 5 October 2006 as all monitoring

parameters, including pH, were below the AL levels. No exceedance was recorded on 13 October 2006. Table 2.6 summarises water quality exceedances in the reporting period.

**Table 2.6 Summary of Water Quality Exceedances**

Parameters	WM1		WM2		WM3		WM4		WM5		Total	
	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit	Action	Limit
Dissolved Oxygen	0	0	0	0	0	0	0	0	0	0	0	0
pH	1	0	1	0	1	0	0	0	1	0	4	0
Temperature	-	0	-	0	-	0	-	0	-	0	-	0
Suspended Solids	0	0	0	0	0	0	0	0	0	0	0	0
Ammonia Nitrogen	0	0	0	0	0	0	0	0	0	0	0	0
<i>E. Coli</i>	0	0	0	0	0	0	0	0	0	0	0	0
BOD <sub>5</sub>	0	0	0	0	0	0	0	0	0	0	0	0
COD	0	0	0	0	0	0	0	0	0	0	0	0

Note: Assessment criteria applied to depth averaged results at each location.

- 2.22 Water temperatures measured ranged from 20.1 – 29.0 °C. The maximum daily variation between each station was 1.2 °C on 13 October 2006. The variation was within the AL Levels. Salinity measurements at all stations were below detection limit, indicating no intrusion of saline water was present in WRC. DO level at all stations were above the *Theme Park EIA* proposed standard of 4.2 mg/L.
- 2.23 BOD<sub>5</sub> levels at all stations were below detection limit while COD levels measured from 5 – 11 mg/L. Depth averaged results of both parameters complied with the standards proposed in the *Theme Park EIA* (5 and 30 mg/L respectively). The medians of SS measurements during the same period also observed to comply with the proposed standards (25 mg/L). Low levels of SS measurements (annual median all <2 mg/L) correlate with the low in-situ turbidity measurements (1.6 – 3.7 NTU).
- 2.24 Conductivity measured ranged from 72 to 81 µ S/cm, while minor variations in silica concentration ranged from 3.4 to 4.5 was measured. The relatively constant range of conductivity indicated that a discharge or some other source of pollution was not present.
- 2.25 The unionised ammonia levels, derived from ammonia nitrogen, temperature, pH and salinity levels, were substantially lower than the proposed standard of 0.021 mg/L. Together with other measurements in terms of Total Nitrogen and Total Phosphorus, nutrient levels within the WRC were relatively low.
- 2.26 For heavy metals (Cu, Cr, Pb, Zn), all readings were below the detection limit. All TBT readings were below the detection limit and AL Levels.
- 2.27 Chlorophyll-a ranged from 9.0 to 19.4 mg/L which were higher than those recorded in the previous months. Higher chlorophyll-a concentration would be recorded when direct sunlight was shined to the lake or temperature and humidity were changed within the reporting period. High chlorophyll-a recorded is thus considered a natural phenomenon.
- 2.28 For *E.Coli*, the geometric means of the last five readings at all monitoring locations were below the AL Levels.

### 3. ENVIRONMENTAL AUDIT

#### Implementation Status of Environmental Mitigation Measures

- 3.1 Site audit was carried out on a monthly basis to monitor environmental issues to ensure that all mitigation measures were implemented timely and properly.
- 3.2 Monthly site inspection was carried out on 3 October 2006. Environmental mitigation measures for water quality, waste management, landscape and visual, as recommended in the EIA report, Operational EM&A Plan and EP were properly implemented. There was no specific observations requiring following up action. In general, the conditions of the WRC was satisfactory:
- No floating refuse was observed.
  - No uncontrolled surface runoff into the lake was observed.
  - Environmental Permit was posted at vehicle site entrance.
- 3.3 A summary of the Environmental Mitigation Implementation Schedule (EMIS) is presented in Appendix G.

#### Status of Environmental Licensing and permitting

- 3.4 All permits/licences/notifications obtained as of the reporting period are summarised in Table 3.1

**Table 3.1 Summary of Environmental Notification, Licensing and Permit Status**

Permit No.	Valid Period		Description	Status
	From	To		
<b>Environmental Permit</b>				
EP-01/097/2001/C	19 Oct. 05	-	Operation of an approximately 32 ha water recreation centre with a 12 ha multi-function artificial lake, water-based and land-based recreational facilities and ancillary facilities	Valid
<b>Chemical Waste Registration</b>				
9499-973-H3095-01	29 Jul. 05	-	Theme Park at Penny's Bay	Valid

#### Implementation Status of Event and Action Plans

- 3.5 The Event and Action Plans for water quality are presented in Appendix H.
- 3.6 There were 4 marginal exceedances of the action level of pH value at W1 – W3 & W5 on 26 September 2006. ET identified that the causes of exceedances were likely due to natural variation of water quality. No further exceedance was recorded in the subsequent monitoring. Therefore, no further action was required.

#### Waste Management

- 3.7 Waste management of WRC was implemented as stipulated in the Waste Management Plan.
- 3.8 As Waste Management of WRC was undertaken as part of the overall Theme Park Resort waste management scheme, records of waste handling and disposal would be reported in the Theme Park EM&A report.

### **Implementation Status of Environmental Complaint Handling Procedures**

- 3.9 Appendix I presents the environmental complaint flow diagram of the Project.
- 3.10 No complaint, summons or prosecution related to environmental issues was received or made against the Project in the reporting period.

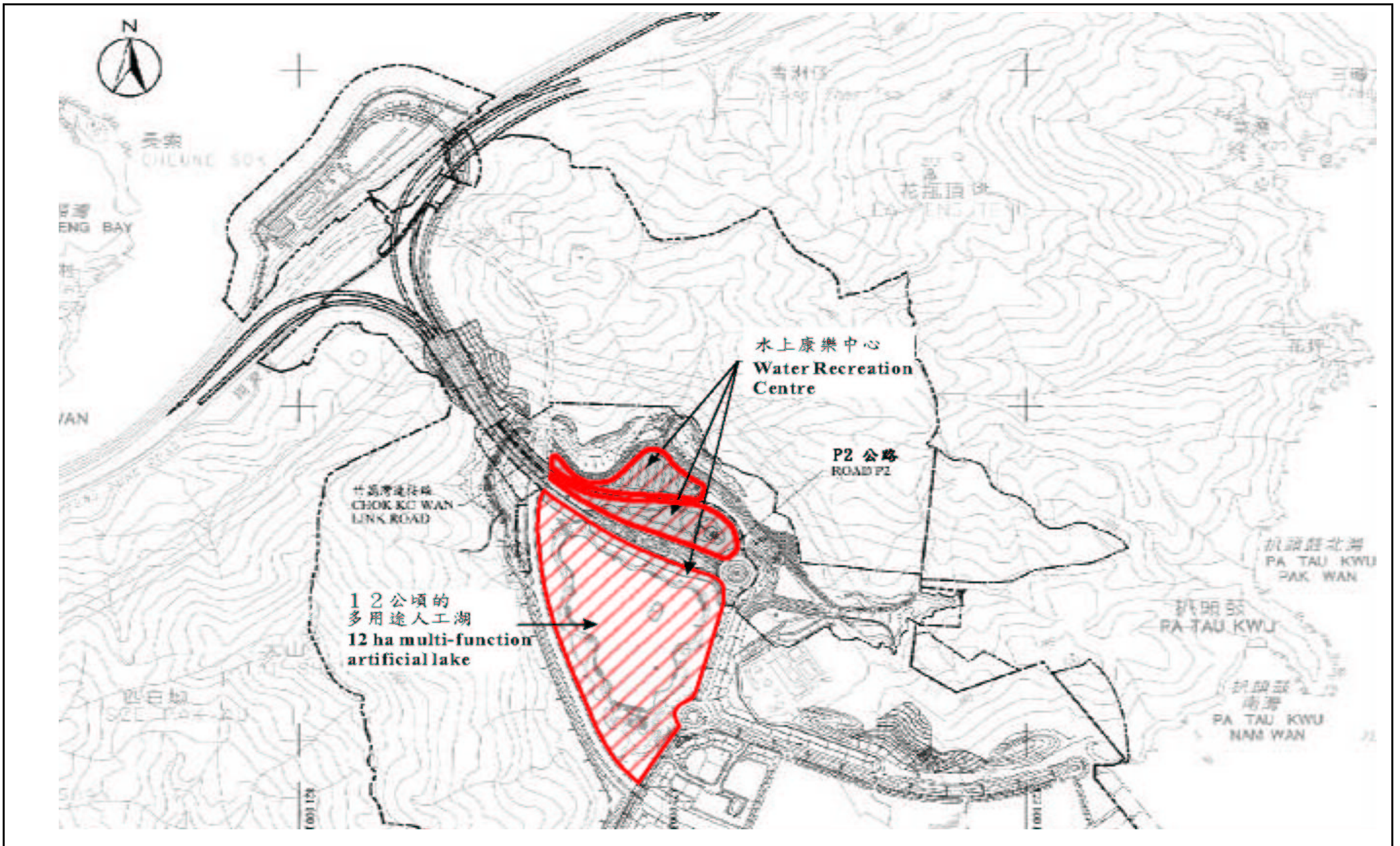
## **4. CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusions**

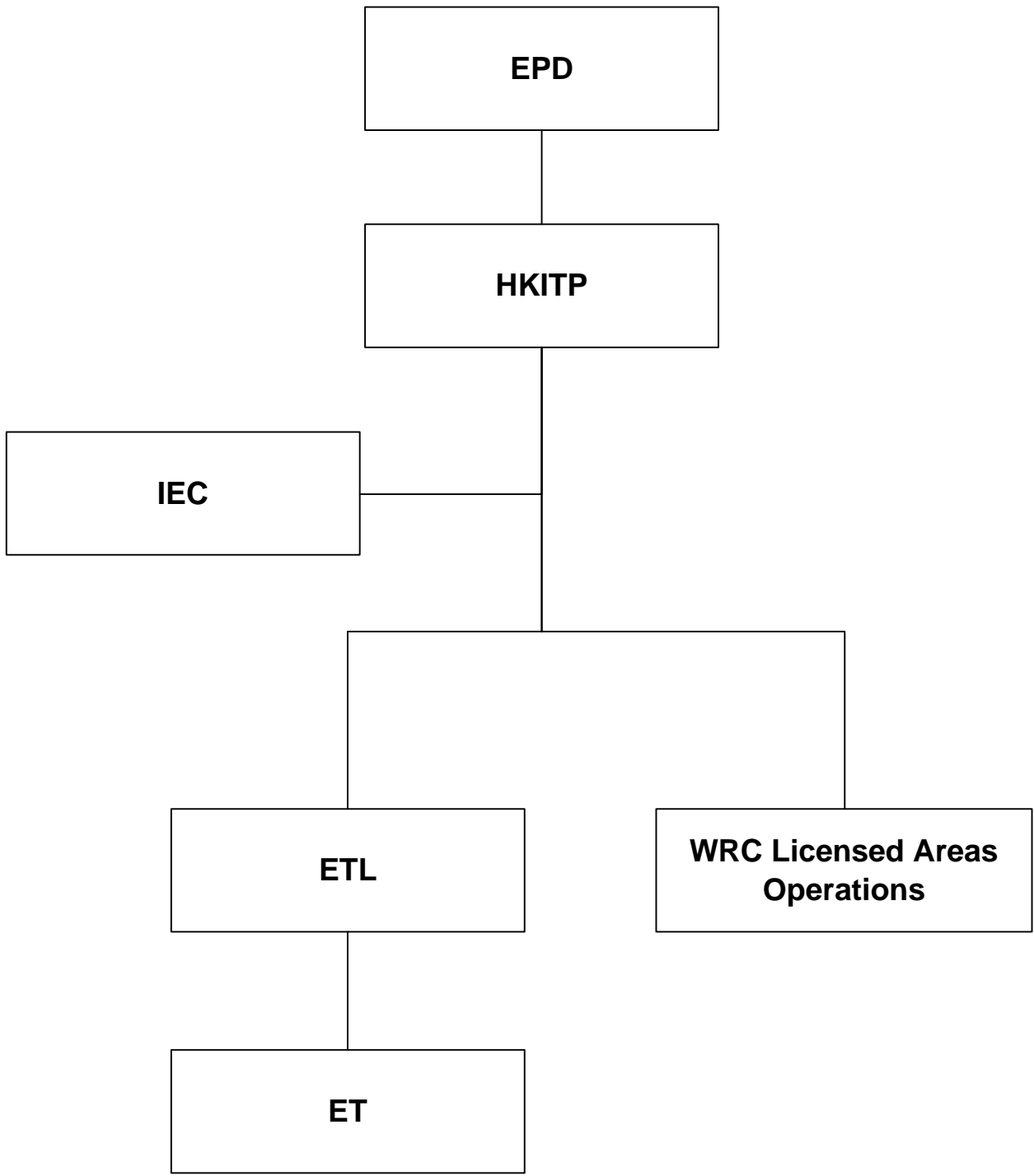
- 4.1 Environmental monitoring was performed between 16 September and 15 October 2006. All monitoring results in the reporting period were checked and reviewed.
- 4.2 All water quality measurements in the reporting period were below the AL Levels except 4 marginal exceedances of the action level of pH value at W1 – W3 & W5 on 26 September 2006. No further exceedance was recorded in the subsequent monitoring. Upon investigation, these exceedances were likely due to natural variation of water quality and thus no further action was required.
- 4.3 Environmental mitigation measures as recommended in the EIA Report, Operational EM&A Plan and EP were properly implemented.
- 4.4 No complaint, summons or prosecution related to environmental issues was made against the Project in the reporting period.

### **Recommendations**

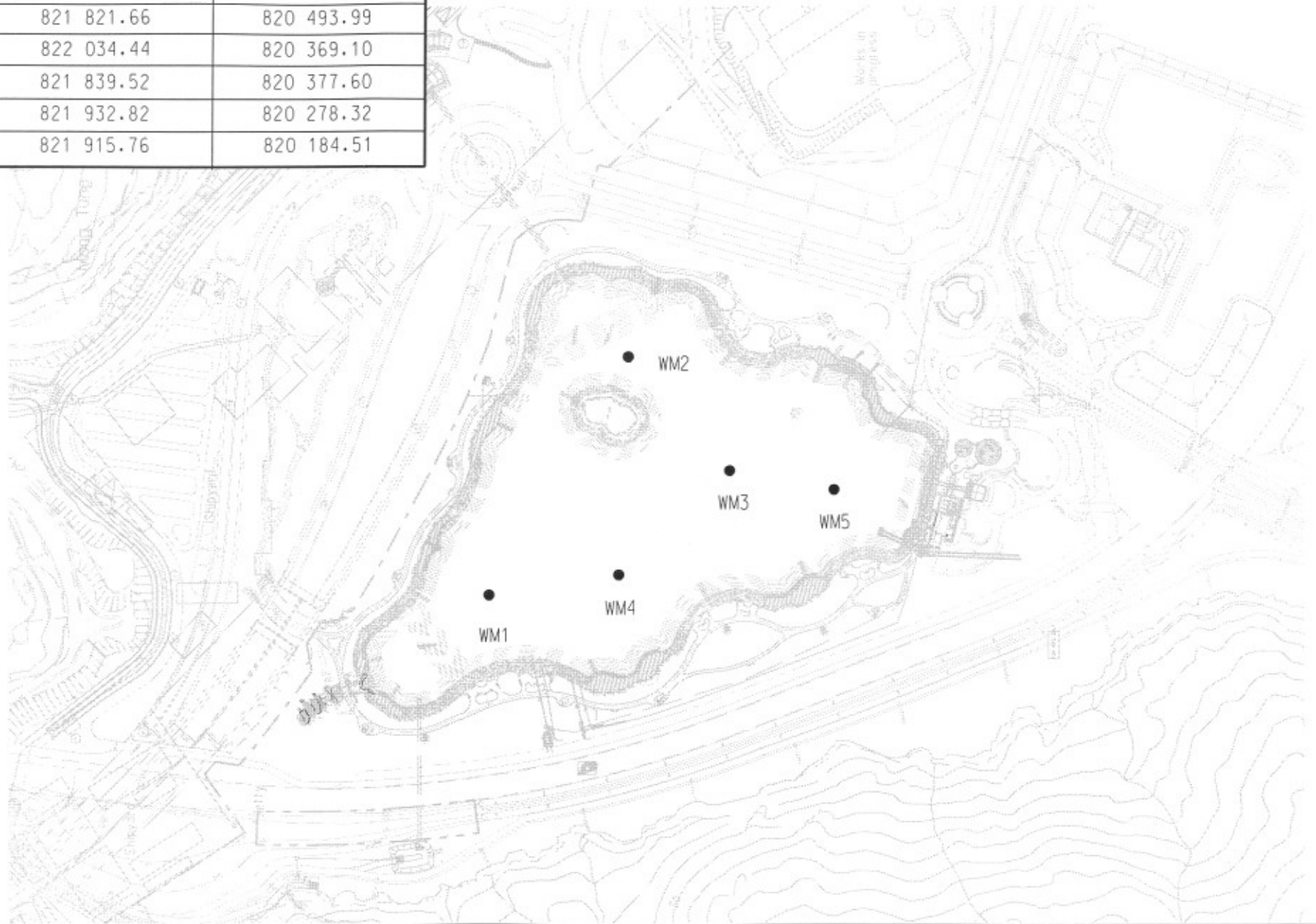
- 4.5 The operator of WRC is reminded to continue to implement measures as recommended in EIA Report and EP.



SCALE	N.T.S.	DATE	2005	
CHECK	KCHC	DRAWN	LLMC	
JOB NO.	S07105	FIGURE NO.	1.1	Rev -



Location	HK Metric Grid E	HK Metric Grid N
WM1	821 821.66	820 493.99
WM2	822 034.44	820 369.10
WM3	821 839.52	820 377.60
WM4	821 932.82	820 278.32
WM5	821 915.76	820 184.51



**MAUNSELL | AECOM**

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Management Consultants Ltd

FEP-01/097/2001/B  
PROVISION OF ENVIRONMENTAL MONITORING & AUDIT SERVICES FOR WATER RECREATION CENTRE

**LOCATIONS OF WATER QUALITY MONITORING STATIONS**

SCALE	A4 1:5000	DATE	2005
CHECK	KCHC	DRAWN	YPK
JOB No.	S07105	DRAWING No.	2.1
		REV	-

## Appendix A: Contacts of Key Environmental Staff

	<u>Name</u>	<u>Telephone</u>	<u>Fax</u>
<b><u>IEC</u></b>			
<b>Mott MacDonald</b>			
Independent Environmental Checker	Dr. Anne Watker-Zeris	2828 5757	2827 1823
<b><u>ET</u></b>			
<b>Maunsell Environmental Management Consultants Limited</b>			
Environmental Team Leader	Mr. Alan Kwok	2893 1551	2891 0305
Environmental Scientist	Mr. Eddie Yang	2893 1551	2891 0305

## Appendix B – Action and Limit Levels

### Action and Limit Levels for Water Quality Monitoring

Parameter, unit	Action	Limit
Dissolved Oxygen	<4.2 mg/L	<2.0 mg/L
pH	<6.3 or >8.5	<6 or >9
Temperature	Not applicable	Within a daily range of 2°C
Suspended Solids	>23.75 mg/L, measured as annual median	>25 mg/L, measured as annual median
Ammonia Nitrogen	>0.01995 mg/L for unionized form, as annual average	>0.021 mg/L for unionized form, as annual average
E. coli	>171 cfu per 100mL, geometric mean for last 5 measurements	>180 cfu per 100mL, geometric mean for last 5 measurements
5-day BOD	>4.75 mg/L	>5 mg/L
COD	>28.5 mg/L	>30 mg/L

## Appendix C      Calibration Details

<b>Equipment Type</b>	<b>Equipment No.</b>	<b>Calibration Date</b>	<b>Next Calibration Date</b>
HANNA pH Meter HI9023	W.003.05A	16 Aug. 2006	16 Nov. 2006
Turbidimeter HACH 2100P	W.001.09	15 Sep. 2006	15 Dec. 2006
YSI Multimeter YSI 85D	W.015.02	16 Aug. 2006	16 Nov. 2006

**Environmental Monitoring and Audit Services for Water Recreation Centre  
Environmental Monitoring and Audit Schedule for September/October 2006**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
17-Sep	18-Sep	19-Sep	20-Sep	21-Sep	22-Sep	23-Sep
			Weekly Water Quality Monitoring			
24-Sep	25-Sep	26-Sep	27-Sep	28-Sep	29-Sep	30-Sep
		Weekly Water Quality Monitoring				
1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct	7-Oct
		Monthly Site Inspection		Weekly Water Quality Monitoring		
8-Oct	9-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct
					Weekly Water Quality Monitoring	
15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct

**Water Quality Monitoring Results at WM1**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		In-situ Monitoring										Laboratory Analysis														
						Temperature (°C)		DO Saturation (%)		Turbidity (NTU)			pH			Dissolved Oxygen (mg/L)		Conductivity (mS/cm)		Salinity (g/L)		Copper (mg/L)		Chromium (mg/L)		Lead (mg/L)		Zinc (mg/L)		
						Value	Average	Value	Average	Value	Average	DA	Value	Average	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value
20-Sep-06	Sunny	Moderate	8:52	Surface	1	27.6 27.4	27.5	76.6 76.8	76.7	1.6 1.7	1.7	1.9	7.4 7.5	7.5	7.5	11.1	10.0	75.0	75.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.3	27.2 27.3	27.3	73.9 73.8	73.9	1.8 1.9	1.9		7.4 7.5	7.5		9.2		75.0		<0.1		<1		<1		<1		<1		<10
				Bottom	3.6	27.0 27.0	27.0	73.5 73.5	73.5	2.0 2.0	2.0		7.6 7.6	7.6		9.6		76.0		<0.1		<1		<1		<1		<10		
26-Sep-06	Sunny	Calm	9:00	Surface	1	28.0 28.0	28.0	78.9 78.2	78.6	2.6 3.1	2.9	3.3	8.6 8.6	8.6	8.6	8.4	8.2	77.0	76.0	<0.1	<0.1	1	1.0	<1	<1	<1	<1	<10	<10	
				Middle	2.3	27.7 27.7	27.7	76.4 76.1	76.3	3.8 3.8	3.8		8.6 8.6	8.6		8.7		77.0		<0.1		<1		<1		<1		<10		
				Bottom	3.6	27.8 27.8	27.8	75.2 74.8	75.0	3.2 3.2	3.2		8.7 8.7	8.7		7.5		75.0		<0.1		1		<1		<1		<10		
5-Oct-06	Sunny	Calm	9:23	Surface	1	20.2 20.4	20.3	86.5 85.0	85.8	2.4 3.0	2.7	2.6	8.5 8.5	8.5	8.5	8.0	8.4	78.0	79.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.3	20.3 20.5	20.4	83.0 84.2	83.6	2.5 2.7	2.6		8.5 8.5	8.5		8.5		79.0		<0.1		<1		<1		<1		<10		
				Bottom	3.5	20.1 20.1	20.1	82.1 83.9	83.0	2.3 2.4	2.4		8.4 8.4	8.4		8.8		79.0		<0.1		1		<1		<1		<10		
13-Oct-06	Sunny	Calm	8:46	Surface	1	28.9 29.0	29.0	82.6 82.9	82.8	2.1 2.2	2.2	2.4	8.0 7.9	8.0	7.8	8.4	8.4	78.0	79.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.3	28.9 28.9	28.9	80.2 78.3	79.3	2.4 2.3	2.4		7.8 7.8	7.8		8.6		79.0		<0.1		<1		<1		<1		<10		
				Bottom	3.6	28.7 28.6	28.7	79.7 78.4	79.1	2.5 2.4	2.5		7.6 7.7	7.7		8.1		79.0		<0.1		<1		<1		<1		<10		

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM1**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		Laboratory Analysis																							
						Tributyltin (ng Sn/L)		Suspended Solid (mg/L)			Total Nitrogen (mg/L)		Total Phosphorous (mg/L)		Silica (mg/L)		5-day BOD (mg/L)		COD (mg/L)		Ammonia Nitrogen (mg/L)		Unionised Ammonia (mg/L)	chlorophyll-a (mg/L)		E.Coli (cfu/100mL)			
						Value	DA	Value	DA	AM	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	AA	Value	DA	Value	DA	GM	
20-Sep-06	Sunny	Moderate	8:52	Surface	1	<5		<2			0.2		<0.02		3.5		<2		7.000		0.08			13.1		<1			
				Middle	2.3	<5	<5	<2	<2	<2.00	0.2	0.2	<0.02	<0.02	3.4	3.5	<2	<2	6.000	6.0	0.03	<0.04000	<0.00072	12.8	12.8	<1	<1	<1	
				Bottom	3.6	<5		2.0			0.2		<0.02		3.6		<2		6.000		<0.01000			12.4		<1			
26-Sep-06	Sunny	Calm	9:00	Surface	1	<5		3.0			0.4		<0.02		3.6		<2		9.000		0.03			13.2		<1			
				Middle	2.3	<5	<5	2.0	<2	<2.00	0.3	0.4	<0.02	<0.02	3.6	3.6	<2	<2	7.000	8.0	0.01	0.020	<0.00081	13.7	13.7	<1	<1	<1	
				Bottom	3.6	<5		<2			0.4		<0.02		3.5		<2		9.000		0.02			14.1		<1			
5-Oct-06	Sunny	Calm	9:23	Surface	1	<5		2.0			0.2		<0.02		3.8		<2		9.000		<0.01000			10.1		<1			
				Middle	2.3	<5	<5	3.0	<2	<2.00	0.2	0.3	<0.02	<0.02	3.7	3.7	<2	<2	9.000	9.0	<0.01000	<0.01667	<0.00083	10.2	10.0	<1	<1	<1	
				Bottom	3.5	<5		<2			0.5		<0.02		3.5		<2		10.000		0.03			9.8		<1			
13-Oct-06	Sunny	Calm	8:46	Surface	1	<1		4.0			0.3		<0.02		4.4		<2		9.000		0.02			16.8		3			
				Middle	2.3	<1	<1	2.0	3.0	<2.00	0.3	0.3	<0.02	<0.02	4.4	4.3	<2	<2	9.000	9.0	0.02	0.020	<0.00083	15.7	15.9	<1	<2	<1	
				Bottom	3.6	<1		2.0			0.4		<0.02		4.2		<2		10.000		0.02			15.3		<1			

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM2**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		In-situ Monitoring											Laboratory Analysis													
						Temperature (°C)		DO Saturation (%)		Turbidity (NTU)			pH			Dissolved Oxygen (mg/L)		Conductivity (mS/cm)		Salinity (g/L)		Copper (mg/L)		Chromium (mg/L)		Lead (mg/L)		Zinc (mg/L)		
						Value	Average	Value	Average	Value	Average	DA	Value	Average	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	
20-Sep-06	Sunny	Moderate	8:10	Surface	1	27.5 27.6	27.6	78.1 78.0	78.1	1.8 2.0	1.9	1.9	7.5 7.4	7.5	7.6	9.4	9.6	75.0	76.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.4	27.5 27.4	27.5	76.3 76.2	76.3	1.7 1.7	1.7		7.6 7.6	7.6		8.9		76.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10
				Bottom	3.8	27.1 27.0	27.1	74.2 75.8	75.0	2.2 2.2	2.2		7.6 7.6	7.6		10.4		76.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10
26-Sep-06	Sunny	Calm	9:17	Surface	1	27.5 27.5	27.5	76.6 75.6	76.1	3.4 3.4	3.4	3.3	8.5 8.5	8.5	8.5	8.2	9.4	76.0	76.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.4	27.5 27.5	27.5	75.8 75.0	75.4	3.3 3.3	3.3		8.5 8.5	8.5		8.4		77.0	<0.1	<0.1	1	1.0	<1	<1	<1	<1	<1	<10	<10	
				Bottom	3.8	27.5 27.5	27.5	77.9 77.2	77.6	3.3 3.2	3.3		8.5 8.5	8.5		11.5		76.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<1	<1	<10	<10
5-Oct-06	Sunny	Calm	9:38	Surface	1	20.8 20.7	20.8	79.8 80.2	80.0	2.0 2.1	2.1	2.3	8.2 8.2	8.2	8.2	8.4	8.6	79.0	79.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.4	20.4 20.6	20.5	81.6 78.9	80.3	2.1 2.2	2.2		8.2 8.2	8.2		8.7		79.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<1	<10	<10	
				Bottom	3.7	20.5 20.5	20.5	77.6 78.0	77.8	2.4 2.5	2.5		8.2 8.2	8.2		8.6		78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10
13-Oct-06	Sunny	Calm	9:04	Surface	1	28.7 28.6	28.7	84.6 84.7	84.7	2.3 2.2	2.3	2.8	7.7 7.6	7.7	7.7	8.2	8.2	78.0	78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10	
				Middle	2.4	28.5 28.5	28.5	79.4 79.1	79.3	2.7 2.7	2.7		7.6 7.6	7.6		8.2		78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<10	<10	
				Bottom	3.8	28.2 28.1	28.2	78.3 77.7	78.0	3.2 3.3	3.3		7.6 7.7	7.7		8.1		78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM2**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		Laboratory Analysis																						
						Tributyltin (ng Sn/L)		Suspended Solid (mg/L)			Total Nitrogen (mg/L)		Total Phosphorous (mg/L)		Silica (mg/L)		5-day BOD (mg/L)		COD (mg/L)		Ammonia Nitrogen (mg/L)		Unionised Ammonia (mg/L)	chlorophyll-a (mg/L)		E.Coli (cfu/100mL)		
						Value	DA	Value	DA	AM	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	AA	Value	DA	Value	DA	GM
20-Sep-06	Sunny	Moderate	8:10	Surface	1	<5		3.0			0.2		<0.02		3.7		<2		6.000		0.05			12.6		1		
				Middle	2.4	<5	<5	2.0	3.0	<2.00	0.2	0.2	<0.02	<0.02	3.8	3.8	<2	<2	6.000	6.0	0.01	<0.02333	<0.00076	13.1	12.5	1	<1	<2
				Bottom	3.8	<5		3.0			0.2		<0.02		3.8		<2		6.000		<0.01000			11.9		<1		
26-Sep-06	Sunny	Calm	9:17	Surface	1	<5		<2			0.4		<0.02		3.6		<2		8.000		0.01			14.1		<1		
				Middle	2.4	<5	<5	<2	<2	<2.00	0.3	0.4	<0.02	<0.02	3.6	3.6	<2	<2	7.000	8.0	0.02	0.033	<0.00087	13.1	13.5	<1	<1	<2
				Bottom	3.8	<5		<2			0.6		<0.02		3.6		<2		8.000		0.07			13.4		<1		
5-Oct-06	Sunny	Calm	9:38	Surface	1	<5		<2			0.2		<0.02		3.6		<2		10.000		<0.01000			9.8		<1		
				Middle	2.4	<5	<5	3.0	<2	<2.00	0.2	0.2	<0.02	<0.02	3.6	3.6	<2	<2	11.000	10.0	<0.01000	<0.01000	<0.00087	11.2	10.8	<1	<1	<2
				Bottom	3.7	<5		2.0			0.3		<0.02		3.6		<2		9.000		<0.01000			11.4		<1		
13-Oct-06	Sunny	Calm	9:04	Surface	1	<1		<2			0.3		<0.02		4.5		<2		10.000		0.02			17.0		<1		
				Middle	2.4	<1	<1	3.0	<2	<2.00	0.2	0.3	<0.02	<0.02	4.4	4.5	<2	<2	10.000	10.0	0.07	<0.03333	<0.00087	19.4	17.9	<1	<1	<1
				Bottom	3.8	<1		2.0			0.4		<0.02		4.5		<2		9.000		<0.01000			17.4		<1		

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM3**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		In-situ Monitoring											Laboratory Analysis																	
						Temperature (°C)		DO Saturation (%)		Turbidity (NTU)			pH			Dissolved Oxygen (mg/L)		Conductivity (mS/cm)		Salinity (g/L)		Copper (mg/L)		Chromium (mg/L)		Lead (mg/L)		Zinc (mg/L)						
						Value	Average	Value	Average	Value	Average	DA	Value	Average	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA					
20-Sep-06	Sunny	Moderate	8:27	Surface	1	27.7 27.6	27.7	75.2 75.6	75.4	2.0 2.1	2.1	2.1	7.5 7.4	7.5	7.5	9.0	9.7	76.0	76.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10					
				Middle	2.4	27.4 27.2	27.3	76.0 77.1	76.6	1.9 2.0	2.0		7.5 7.5	7.5		9.7		76.0	76.0	<0.1		<0.1		<1		<1		<1		<1	<1	<1	<10	<10
				Bottom	3.8	26.9 27.1	27.0	73.4 72.8	73.1	2.2 2.3	2.3		7.6 7.6	7.6		10.5		77.0	77.0	<0.1		<0.1		<1		<1		<1		<1	<1	<1	<10	<10
26-Sep-06	Sunny	Calm	9:34	Surface	1	27.7 27.7	27.7	75.0 75.4	75.2	3.5 3.5	3.5	3.5	8.6 8.6	8.6	8.6	4.6	8.6	74.0	74.0	<0.1	<0.1	1	1.0	<1	<1	<1	<1	<10	<10					
				Middle	2.4	27.7 27.7	27.7	77.0 76.7	76.9	3.4 3.4	3.4		8.6 8.6	8.6		8.6		74.0	74.0	<0.1		<0.1		1		<1		<1		<1	<1	<1	<10	<10
				Bottom	3.8	27.7 27.7	27.7	74.3 74.0	74.2	3.7 3.6	3.7		8.6 8.6	8.6		8.8		75.0	75.0	<0.1		<0.1		1		<1		<1		<1	<1	<1	<10	<10
5-Oct-06	Sunny	Calm	9:52	Surface	1	21.0 21.0	21.0	84.0 84.7	84.4	2.3 2.2	2.3	2.5	8.2 8.1	8.2	8.2	8.6	8.7	80.0	79.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10					
				Middle	2.3	20.8 20.8	20.8	81.2 80.6	80.9	2.5 2.5	2.5		8.2 8.2	8.2		8.4		79.0	79.0	<0.1		<0.1		<1		<1		<1		<1	<1	<1	<10	<10
				Bottom	3.6	20.7 20.8	20.8	83.1 82.0	82.6	2.6 2.5	2.6		8.1 8.1	8.1		9.0		78.0	78.0	<0.1		<0.1		<1		<1		<1		<1	<1	<1	<10	<10
13-Oct-06	Sunny	Calm	9:20	Surface	1	28.7 28.7	28.7	85.4 85.1	85.3	2.2 2.1	2.2	2.8	7.3 7.3	7.3	7.3	8.7	8.3	78.0	78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10					
				Middle	2.4	28.4 28.6	28.5	80.2 80.1	80.2	3.1 3.0	3.1		7.3 7.3	7.3		7.7		78.0	78.0	<0.1		<0.1		<1		<1		<1		<1	<1	<1	<10	<10
				Bottom	3.8	27.9 27.9	27.9	76.4 78.7	77.6	3.2 3.1	3.2		7.3 7.4	7.4		8.5		79.0	79.0	<0.1		<0.1		1		<1		<1		<1	<1	<1	<10	<10

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM3**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		Laboratory Analysis																						
						Tributyltin (ng Sn/L)		Suspended Solid (mg/L)			Total Nitrogen (mg/L)		Total Phosphorous (mg/L)		Silica (mg/L)		5-day BOD (mg/L)		COD (mg/L)		Ammonia Nitrogen (mg/L)		Unionised Ammonia (mg/L)	chlorophyll-a (mg/L)		E.Coli (cfu/100mL)		
						Value	DA	Value	DA	AM	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	AA	Value	DA	Value	DA	GM
20-Sep-06	Sunny	Moderate	8:27	Surface	1	<5		3.0			0.2		<0.02		3.9		<2		8.000		<0.01000			10.5		<1		
				Middle	2.4	<5	<5	<2	<2	<2.00	0.3	0.2	<0.02	<0.02	3.8	3.8	<2	<2	6.000	7.0	0.03	<0.01667	<0.00070	11.6	11.1	<1	<1	<2
				Bottom	3.8	<5		2.0			0.2		<0.02		3.8		<2		6.000		<0.01000			11.1		<1		
26-Sep-06	Sunny	Calm	9:34	Surface	1	<5		4.0			0.3		<0.02		3.6		<2		8.000		<0.01000			13.4		<1		
				Middle	2.4	<5	<5	<2	<3	<2.00	0.3	0.3	<0.02	<0.02	3.6	3.6	<2	<2	8.000	8.0	0.01	<0.01000	<0.00073	13.2	12.7	<1	<1	<2
				Bottom	3.8	<5		<2			0.3		<0.02		3.6		<2		8.000		<0.01000			11.5		<1		
5-Oct-06	Sunny	Calm	9:52	Surface	1	<5		2.0			0.2		<0.02		3.6		<2		9.000		<0.01000			10.9		<1		
				Middle	2.3	<5	<5	<2	<2	<2.00	0.2	0.2	<0.02	<0.02	3.6	3.6	<2	<2	9.000	9.0	<0.01000	<0.01000	<0.00073	10.3	10.1	<1	<1	<2
				Bottom	3.6	<5		<2			0.3		<0.02		3.6		<2		8.000		0.01			9.1		<1		
13-Oct-06	Sunny	Calm	9:20	Surface	1	<1		8.0			0.3		<0.02		4.2		<2		10.000		0.01			19.2		2		
				Middle	2.4	<1	<1	<2	<4	<2.00	0.3	0.3	<0.02	<0.02	4.3	4.2	<2	<2	9.000	9.0	<0.01000	<0.01000	<0.00072	14.0	17.2	<1	<1	<2
				Bottom	3.8	<1		<2			0.4		<0.02		4.2		<2		9.000		0.01			18.3		<1		

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM4**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		In-situ Monitoring										Laboratory Analysis																
						Temperature (°C)		DO Saturation (%)		Turbidity (NTU)			pH			Dissolved Oxygen (mg/L)		Conductivity (mS/cm)		Salinity (g/L)		Copper (mg/L)		Chromium (mg/L)		Lead (mg/L)		Zinc (mg/L)				
						Value	Average	Value	Average	Value	Average	DA	Value	Average	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA			
20-Sep-06	Sunny	Moderate	8:43	Surface	1	27.5 27.5	27.5	75.3 75.5	75.4	2.1 2.1	2.1	2.2	7.3 7.4	7.4	7.6	8.7	10.2	80.0	78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10			
				Middle	2.4	27.2 27.2	27.2	74.2 73.9	74.1	2.0 2.0	2.0		7.7 7.8	7.8		12.8		76.0		<0.1		<1		<1		<1		<1		<1	<1	<10
				Bottom	3.8	27.0 27.1	27.1	72.0 71.4	71.7	2.4 2.5	2.5		7.7 7.7	7.7		9.0		77.0		<0.1		<1		<1		<1		<1		<1	<1	<10
26-Sep-06	Sunny	Calm	9:58	Surface	1	27.7 27.7	27.7	75.1 74.6	74.9	3.5 3.6	3.6	3.5	8.7 8.7	8.7	8.7	8.2	8.2	78.0	75.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<10	<10			
				Middle	2.4	27.5 27.5	27.5	73.5 73.1	73.3	3.4 3.4	3.4		8.7 8.7	8.7		8.3		75.0		<0.1		<1		<1		<1		<1		<1	<10	
				Bottom	3.8	27.5 27.5	27.5	73.0 72.5	72.8	3.4 3.5	3.5		8.7 8.7	8.7		8.2		72.0		<0.1		<1		<1		<1		<1		<1	<10	
5-Oct-06	Sunny	Calm	10:15	Surface	1	21.2 21.3	21.3	80.6 80.1	80.4	1.9 1.9	1.9	2.0	7.9 8.0	8.0	8.0	8.6	8.8	80.0	79.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10			
				Middle	2.4	20.9 20.9	20.9	79.8 77.6	78.7	1.9 1.9	1.9		7.9 7.9	7.9		8.7		79.0		<0.1		<1		<1		<1		<1		<1	<10	
				Bottom	3.8	21.0 21.0	21.0	81.4 83.0	82.2	2.0 2.1	2.1		8.0 8.0	8.0		9.0		78.0		<0.1		<1		<1		<1		<1		<1	<10	
13-Oct-06	Sunny	Calm	9:35	Surface	1	28.6 28.7	28.7	83.1 83.9	83.5	2.3 2.4	2.4	2.5	7.4 7.5	7.5	7.4	8.7	8.9	78.0	78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<10	<10			
				Middle	2.4	27.4 27.6	27.5	82.4 82.6	82.5	2.2 2.2	2.2		7.4 7.4	7.4		8.2		79.0		<0.1		<1		<1		<1		<1		<1	<10	
				Bottom	3.8	27.8 27.8	27.8	78.6 78.5	78.6	2.8 2.8	2.8		7.3 7.3	7.3		9.8		78.0		<0.1		<1		<1		<1		<1		<1	<10	

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM4**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		Laboratory Analysis																						
						Tributyltin (ng Sn/L)		Suspended Solid (mg/L)			Total Nitrogen (mg/L)		Total Phosphorous (mg/L)		Silica (mg/L)		5-day BOD (mg/L)		COD (mg/L)		Ammonia Nitrogen (mg/L)		Unionised Ammonia (mg/L)	chlorophyll-a (mg/L)		E.Coli (cfu/100mL)		
						Value	DA	Value	DA	AM	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	AA	Value	DA	Value	DA	GM
20-Sep-06	Sunny	Moderate	8:43	Surface	1	<5		4.0			0.3		<0.02		3.8		<2		6.000		<0.01000			12.7		<1		
				Middle	2.4	<5	<5	4.0	3.0	<2.00	0.2	0.2	<0.02	<0.02	3.9	3.9	<2	<2	5.000	5.0	<0.01000	<0.01000	<0.00094	11.5	12.3	<1	<1	<3
				Bottom	3.8	<5		2.0			0.2		<0.02		3.9		<2		5.000		<0.01000			12.6		1		
26-Sep-06	Sunny	Calm	9:58	Surface	1	<5		<2			0.3		0.02		3.6		<2		9.000		0.03			12.6		<1		
				Middle	2.4	<5	<5	3.0	<2	<2.00	0.3	0.3	<0.02	<0.02	3.7	3.7	<2	<2	8.000	8.0	0.02	0.020	<0.00103	11.5	12.0	<1	<1	<3
				Bottom	3.8	<5		<2			0.3		<0.02		3.7		<2		8.000		0.01			11.9		<1		
5-Oct-06	Sunny	Calm	10:15	Surface	1	<5		<2			0.3		<0.02		3.5		<2		9.000		0.01			9.0		<1		
				Middle	2.4	<5	<5	<2	<2	<2.00	0.2	0.3	<0.02	<0.02	3.6	3.6	<2	<2	11.000	10.0	0.01	0.010	<0.00102	10.3	9.5	<1	<1	<2
				Bottom	3.8	<5		<2			0.3		<0.02		3.7		<2		9.000		0.01			9.2		<1		
13-Oct-06	Sunny	Calm	9:35	Surface	1	<1		2.0			0.1		<0.02		4.1		<2		8.000		0.01			16.8		1		
				Middle	2.4	<1	<1	3.0	2.0	<2.00	0.1	0.1	<0.02	<0.02	4.2	4.2	<2	<2	8.000	8.0	0.02	0.013	<0.00101	18.6	17.3	<1	<1	<2
				Bottom	3.8	<1		2.0			0.2		<0.02		4.3		<2		9.000		0.01			16.4		<1		

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

**Water Quality Monitoring Results at WM5**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		In-situ Monitoring											Laboratory Analysis																
						Temperature (°C)		DO Saturation (%)		Turbidity (NTU)			pH			Dissolved Oxygen (mg/L)		Conductivity (mS/cm)		Salinity (g/L)		Copper (mg/L)		Chromium (mg/L)		Lead (mg/L)		Zinc (mg/L)					
						Value	Average	Value	Average	Value	Average	DA	Value	Average	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA				
20-Sep-06	Sunny	Moderate	8:57	Surface	1	27.3 27.6	27.5	79.4 79.3	79.4	1.6 1.7	1.7	1.8	7.7 7.6	7.7	7.6	8.5	8.2	76.0	76.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10		
				Middle	2.3	27.0 27.1	27.1	76.8 76.6	76.7	1.6 1.7	1.7		7.5 7.6	7.6		7.4		76.0		<0.1		<1		<1		<1		<1		<1		<1	<10
				Bottom	3.6	26.8 26.9	26.9	75.4 75.1	75.3	2.0 1.8	1.9		7.6 7.6	7.6		8.8		77.0		<0.1		<1		<1		<1		<1		<1		<1	<10
26-Sep-06	Sunny	Calm	10:20	Surface	1	27.9 27.9	27.9	73.9 73.2	73.6	3.4 3.4	3.4	3.4	8.8 8.8	8.8	8.8	8.2	8.0	77.0	76.0	<0.1	<0.1	1	<1	<1	<1	<1	<1	<1	<1	12.0	<11		
				Middle	2.3	27.5 27.5	27.5	72.2 73.9	73.1	3.4 3.4	3.4		8.8 8.8	8.8		7.8		75.0		<0.1		<1		<1		<1		<1		<1		<1	<10
				Bottom	3.8	27.2 27.3	27.3	75.3 74.5	74.9	3.2 3.4	3.3		8.9 8.8	8.9		7.9		76.0		<0.1		<1		<1		<1		<1		<1		<1	<10
5-Oct-06	Sunny	Calm	10:34	Surface	1	20.5 20.7	20.6	82.1 83.1	82.6	2.3 2.3	2.3	2.5	8.0 8.0	8.0	8.0	9.2	8.8	78.0	78.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10		
				Middle	2.4	20.3 20.6	20.5	80.2 80.9	80.6	2.6 2.6	2.6		8.0 8.0	8.0		8.6		78.0		<0.1		<1		1		<1		<1		<1		<1	<10
				Bottom	3.7	20.5 20.4	20.5	79.6 80.8	80.2	2.5 2.6	2.6		8.1 8.0	8.1		8.5		78.0		<0.1		<1		<1		<1		<1		<1		<1	<10
13-Oct-06	Sunny	Calm	9:49	Surface	1	28.6 28.7	28.7	82.1 82.9	82.5	2.3 2.4	2.4	2.3	7.3 7.4	7.4	7.4	8.5	8.3	79.0	80.0	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10		
				Middle	2.3	28.3 28.0	28.2	79.4 79.1	79.3	2.2 2.2	2.2		7.4 7.3	7.4		8.2		80.0		<0.1		<1		<1		<1		<1		<1		<1	<10
				Bottom	3.7	27.8 27.9	27.9	77.3 77.6	77.5	2.2 2.2	2.2		7.3 7.3	7.3		8.3		81.0		<0.1		<1		<1		<1		<1		<1		<1	<10

Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

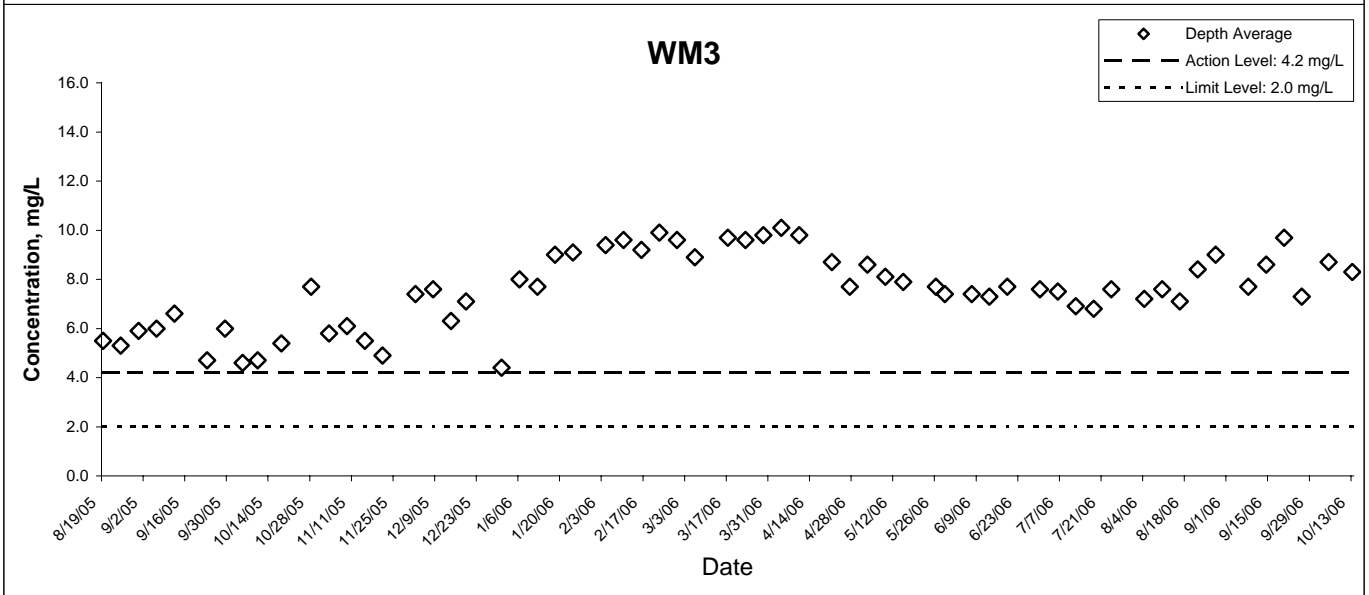
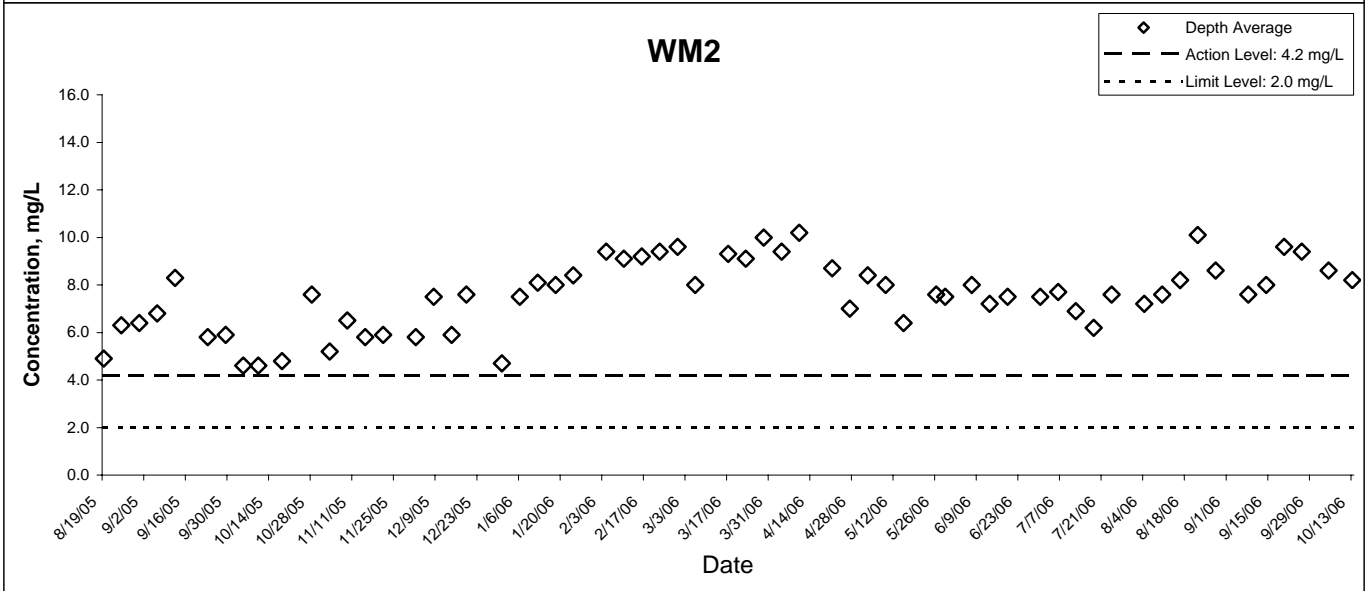
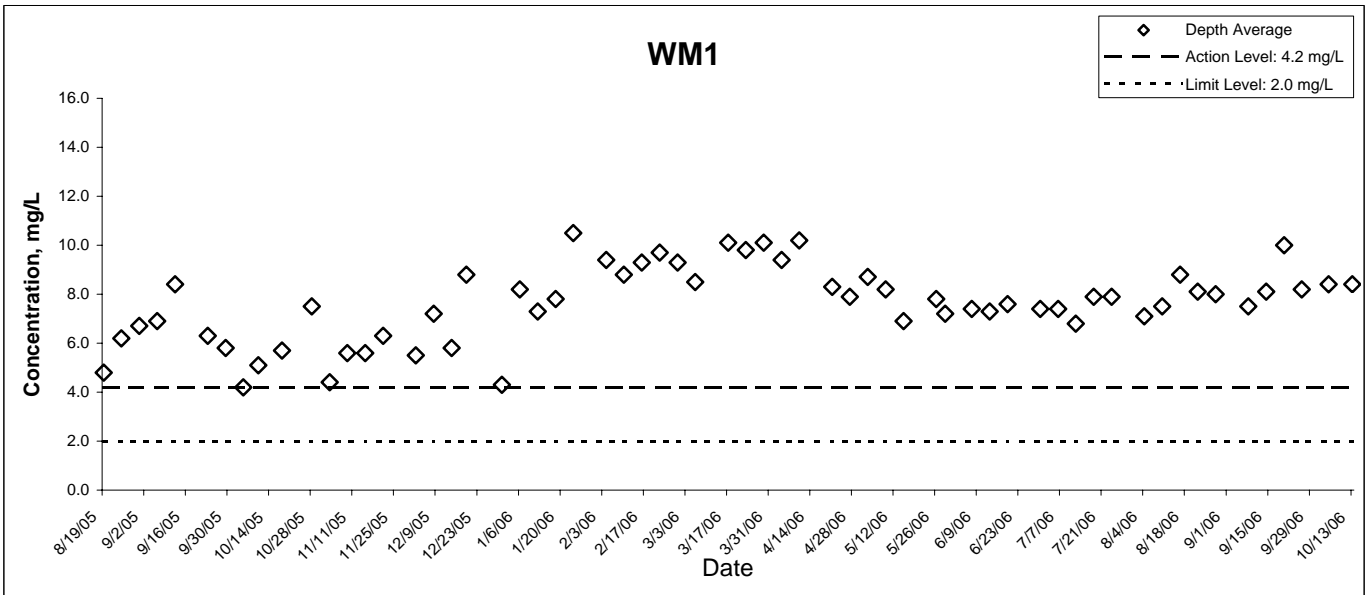
**Water Quality Monitoring Results at WM5**

Date	Weather Condition	Lake Condition	Sampling Time	Depth (m)		Laboratory Analysis																						
						Tributyltin (ng Sn/L)		Suspended Solid (mg/L)			Total Nitrogen (mg/L)		Total Phosphorous (mg/L)		Silica (mg/L)		5-day BOD (mg/L)		COD (mg/L)		Ammonia Nitrogen (mg/L)		Unionised Ammonia (mg/L)	chlorophyll-a (mg/L)		E.Coli (cfu/100mL)		
						Value	DA	Value	DA	AM	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	Value	DA	AA	Value	DA	Value	DA	GM
20-Sep-06	Sunny	Moderate	8:57	Surface	1	<5		2.0			0.2		<0.02		3.9		<2		6.000		<0.01000			13.0		<1		
				Middle	2.3	<5	<5	3.0	2.0	<2.00	0.2	0.2	<0.02	<0.02	3.9	3.9	<2	<2	5.000	5.0	0.01	<0.01000	<0.00069	11.4	12.1	<1	<1	<2
				Bottom	3.6	<5		2.0			0.2		<0.02		3.9		<2		5.000		<0.01000			12.0		<1		
26-Sep-06	Sunny	Calm	10:20	Surface	1	<5		<2			0.3		<0.02		3.7		<2		8.000		0.01			11.7		1		
				Middle	2.3	<5	<5	<2	<2	<2.00	0.3	0.3	<0.02	<0.02	3.7	3.7	<2	<2	8.000	8.0	0.02	<0.01333	<0.00077	11.4	12.0	<1	<1	<2
				Bottom	3.8	<5		2.0			0.4		0.03		3.6		<2		8.000		<0.01000			13.0		<1		
5-Oct-06	Sunny	Calm	10:34	Surface	1	<5		<2			0.2		<0.02		3.7		<2		9.000		0.02			10.9		<1		
				Middle	2.4	<5	<5	<2	<2	<2.00	0.3	0.3	<0.02	<0.02	3.7	3.6	<2	<2	8.000	9.0	0.03	0.027	<0.00078	9.1	9.7	<1	<1	<1
				Bottom	3.7	<5		<2			0.3		<0.02		3.4		<2		9.000		0.03			9.2		<1		
13-Oct-06	Sunny	Calm	9:49	Surface	1	<1		4.0			0.3		<0.02		4.2		<2		8.000		0.04			18.2		1		
				Middle	2.3	<1	<1	3.0	3.0	<2.00	0.3	0.3	<0.02	<0.02	4.2	4.2	<2	<2	10.000	9.0	0.05	0.033	<0.00077	18.7	18.2	1	1.0	<1
				Bottom	3.7	<1		3.0			0.3		<0.02		4.1		<2		9.000		0.01			17.6		1		

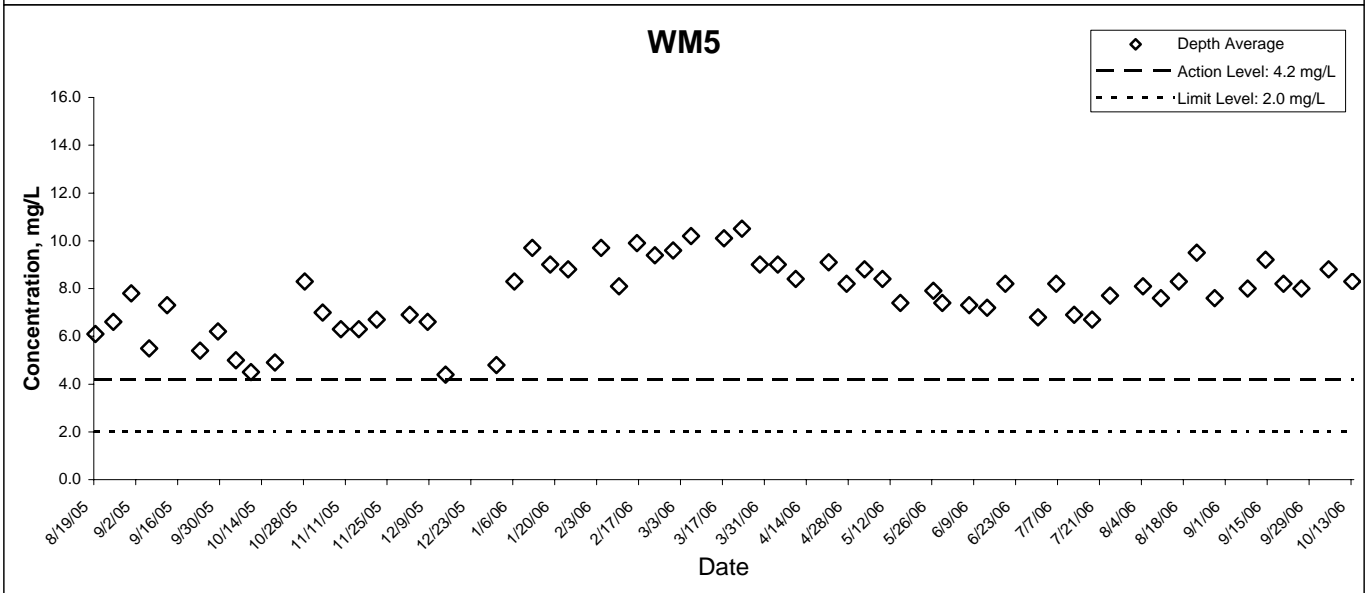
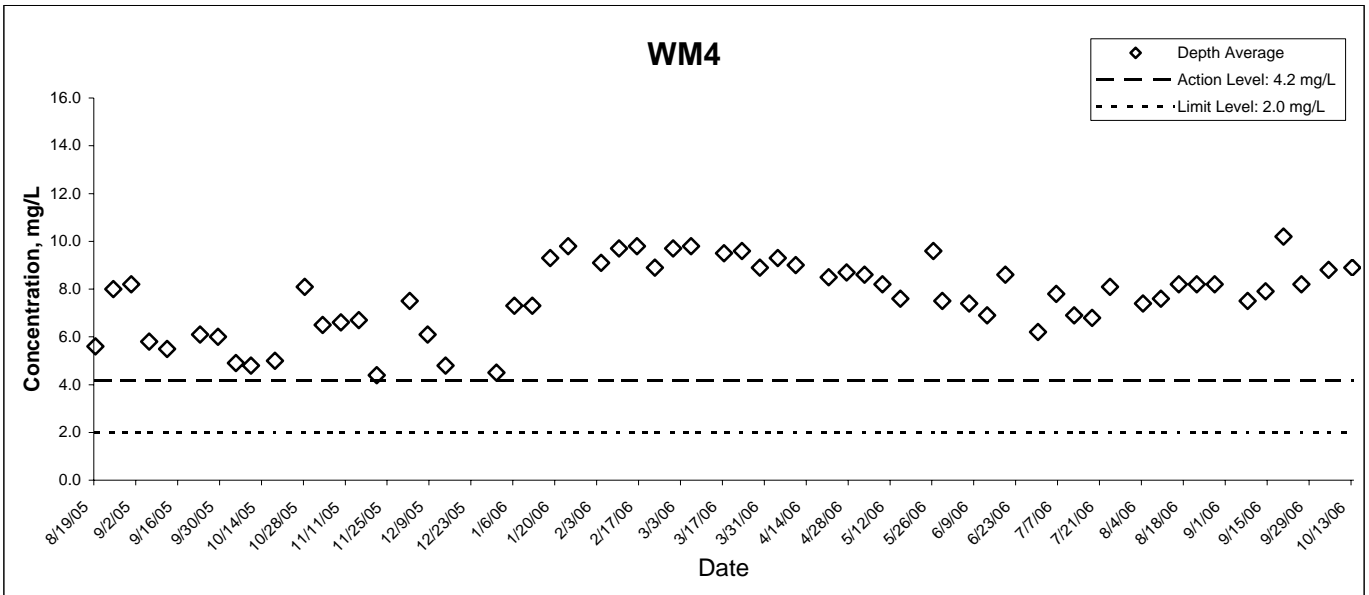
Note:  
 Lake Condition - Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher  
 DA - Depth Average  
 AA - Annual Average  
 AM - Annual Median  
 GM - Geometric Mean for last 5 measurements

Remarks: \* Calm: Small or no wave; Moderate: Between calm and rough; Rough : White capped or rougher

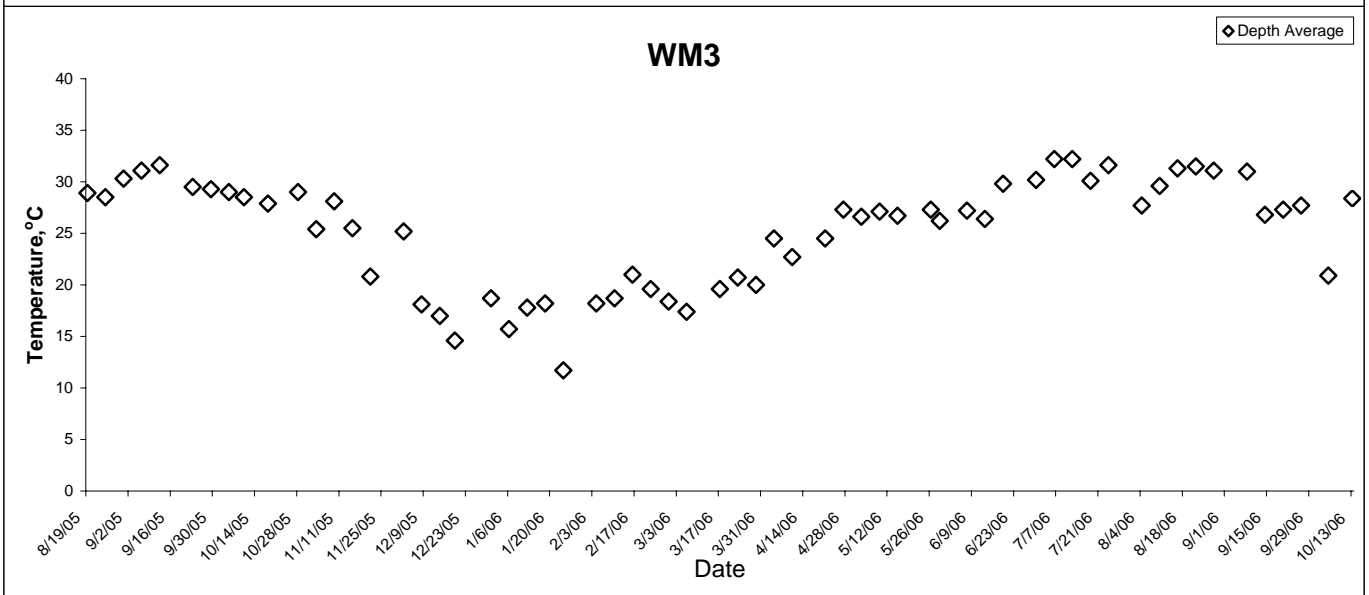
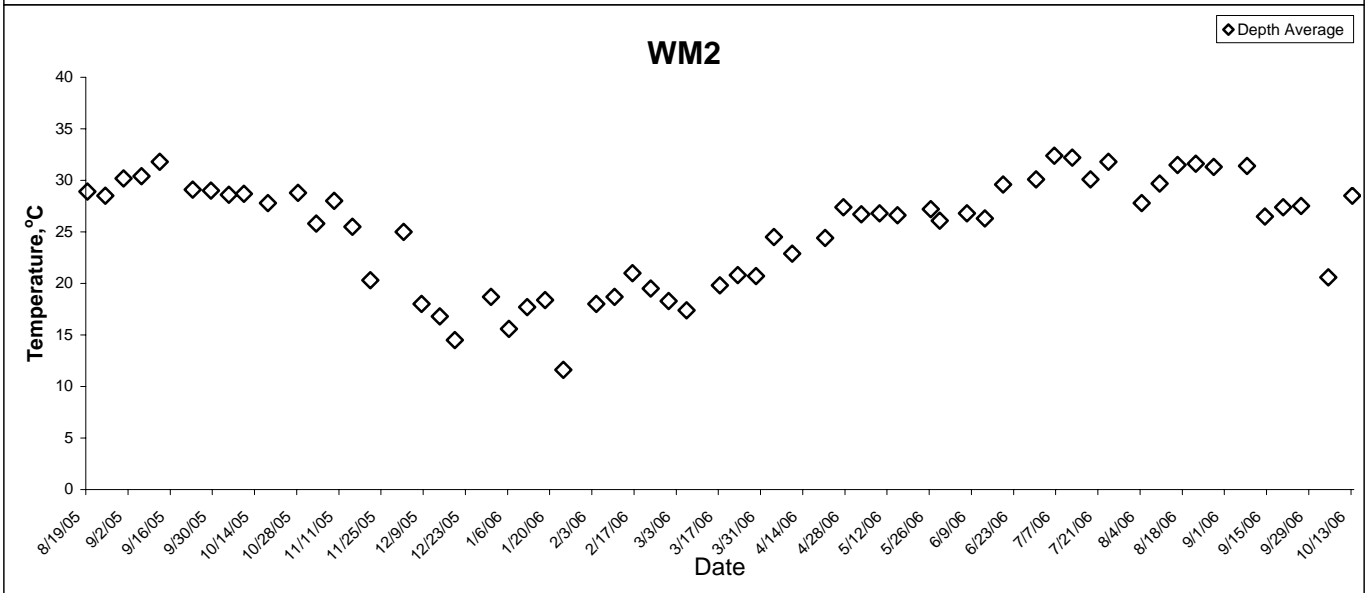
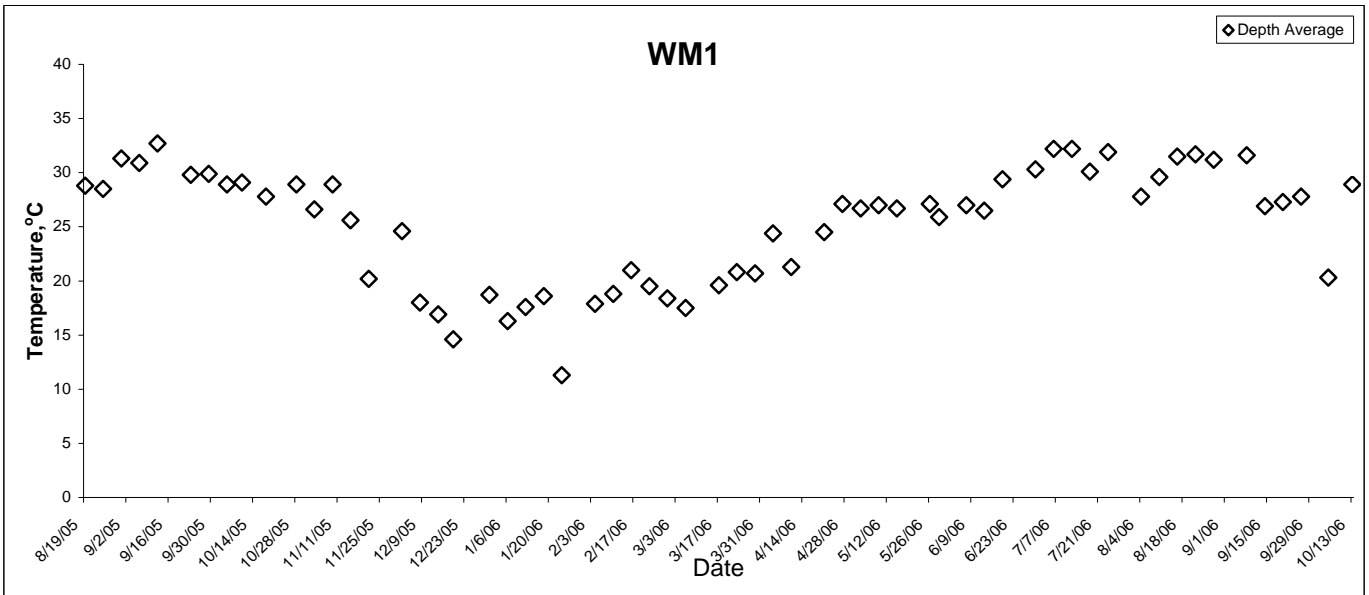
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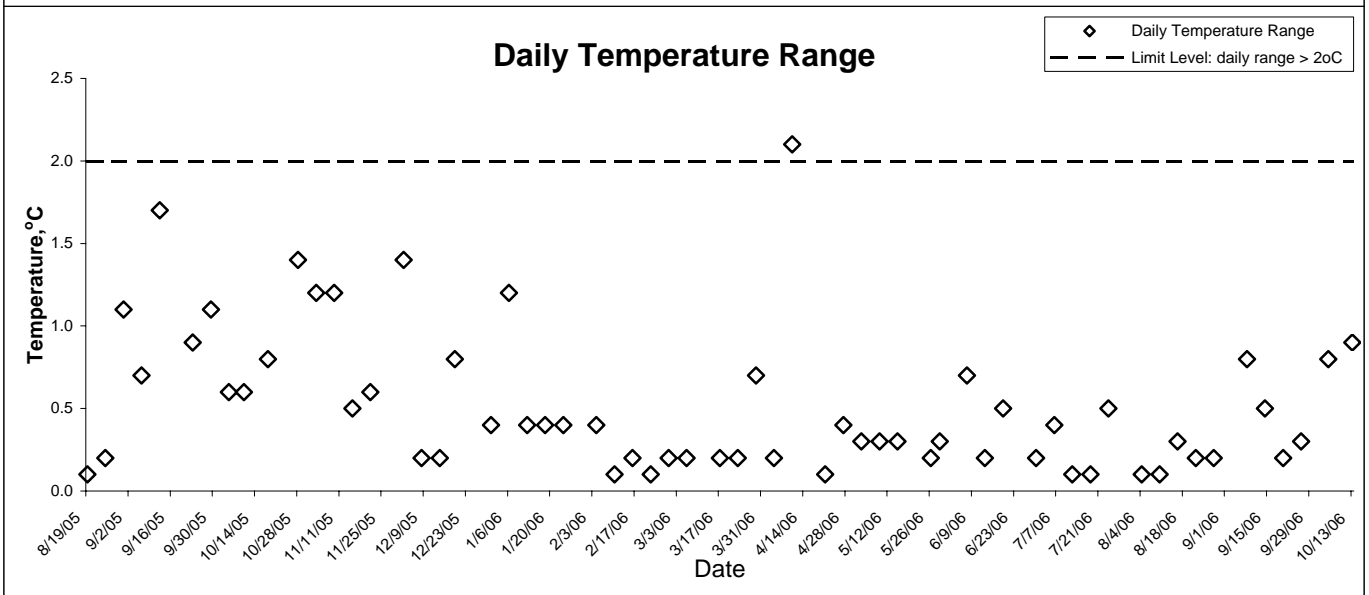
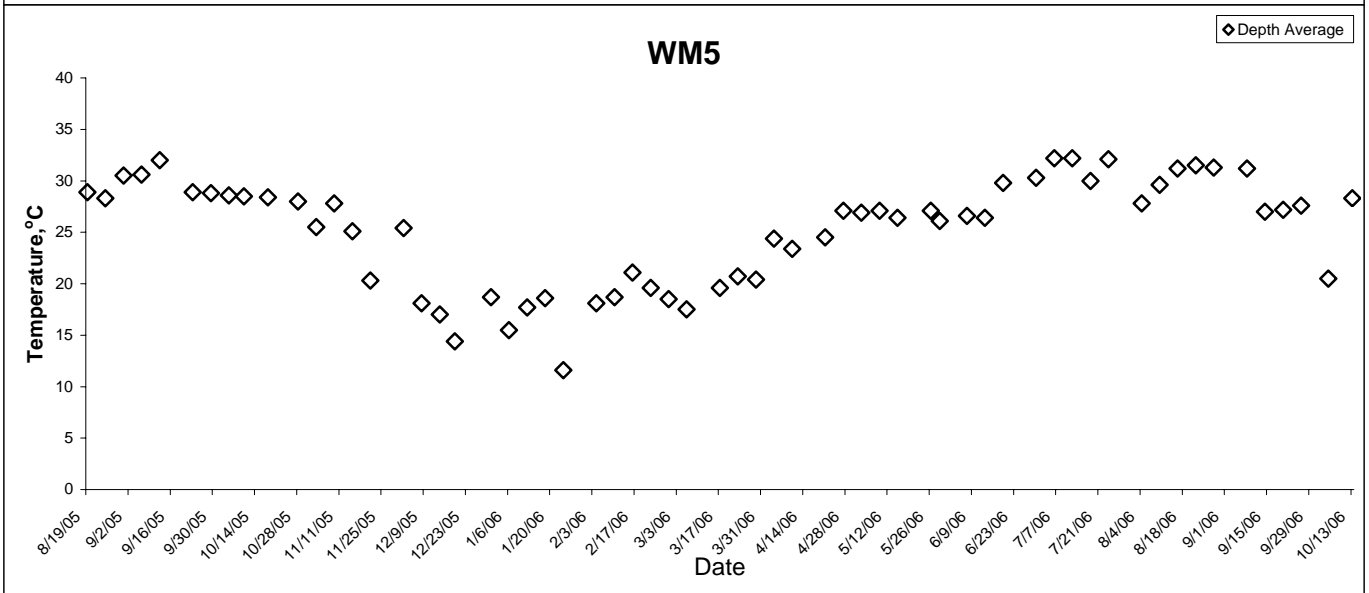
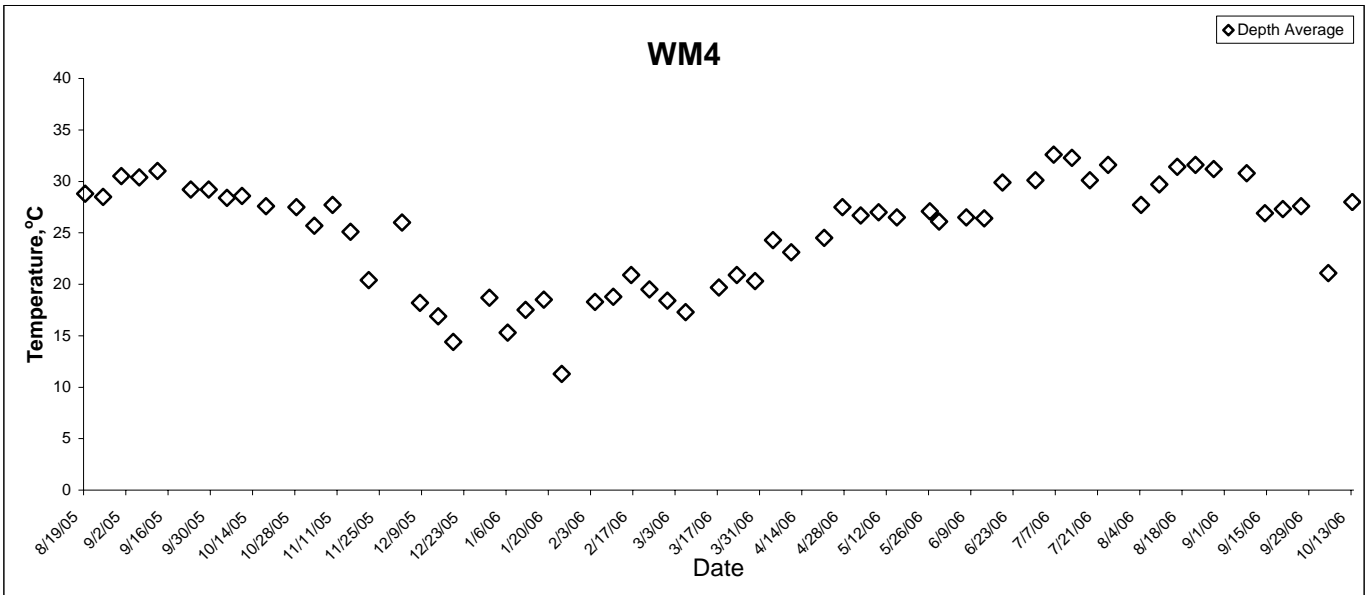
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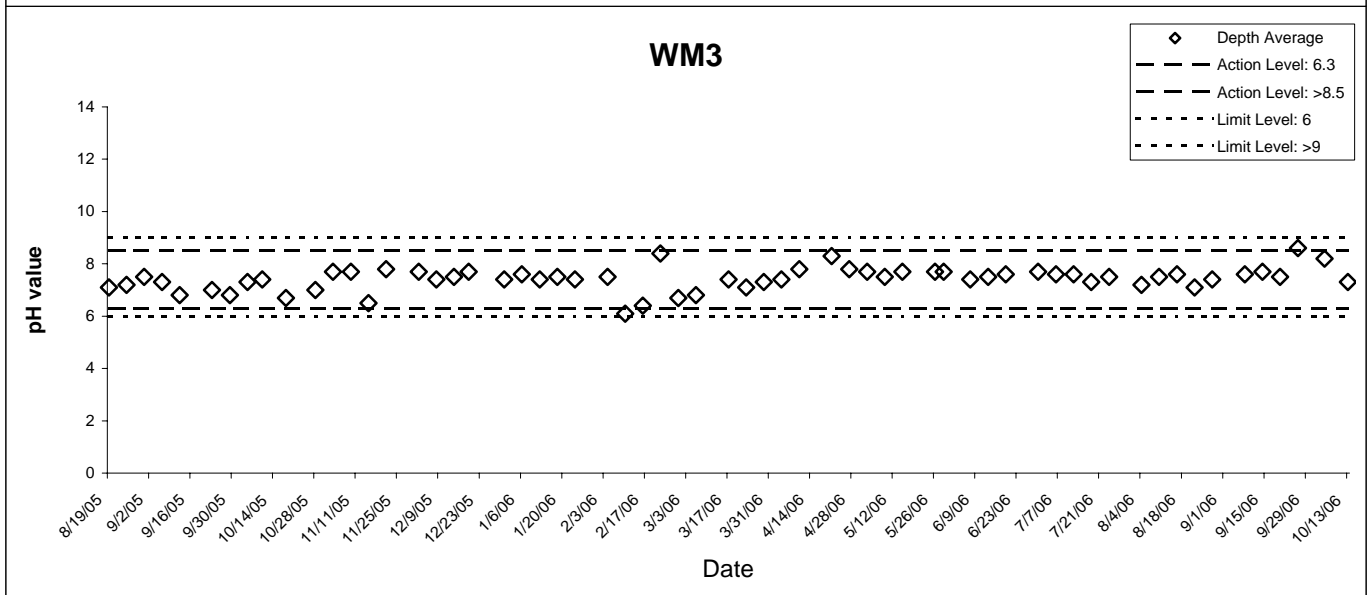
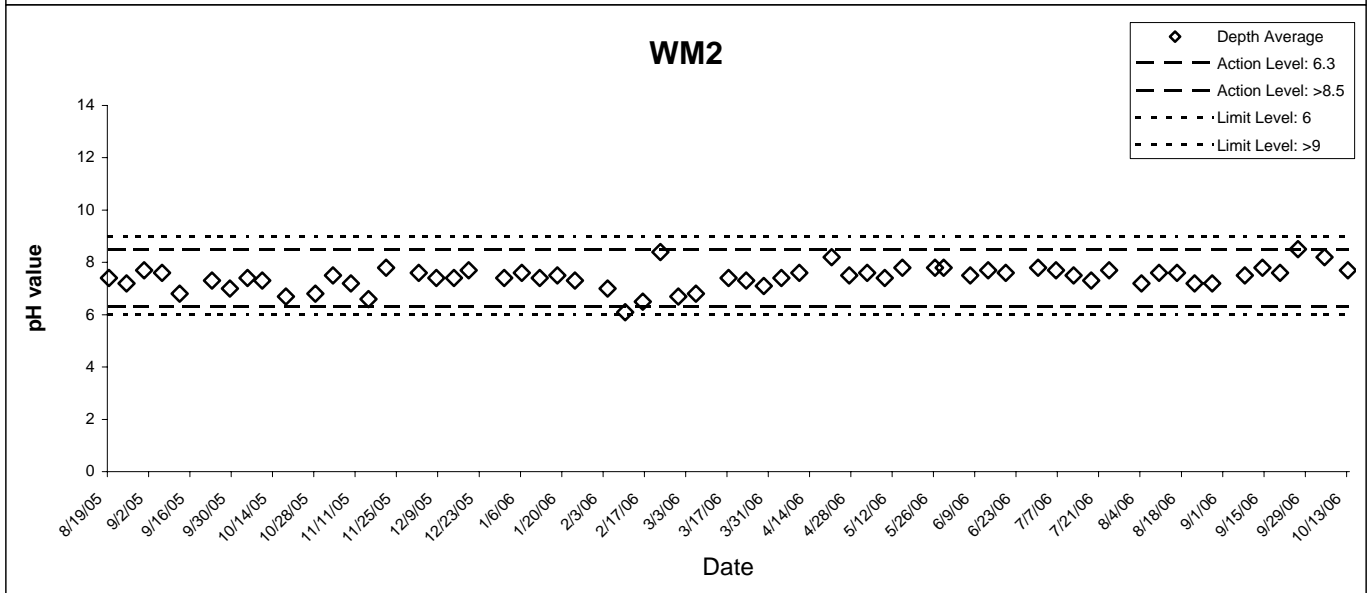
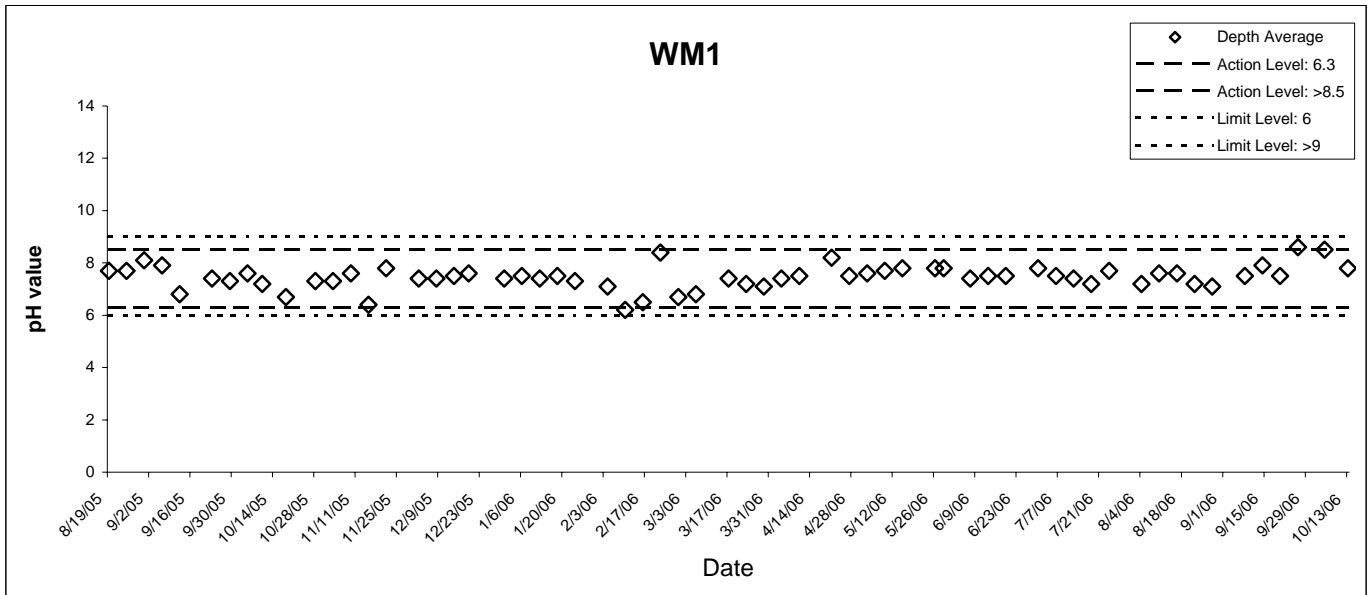
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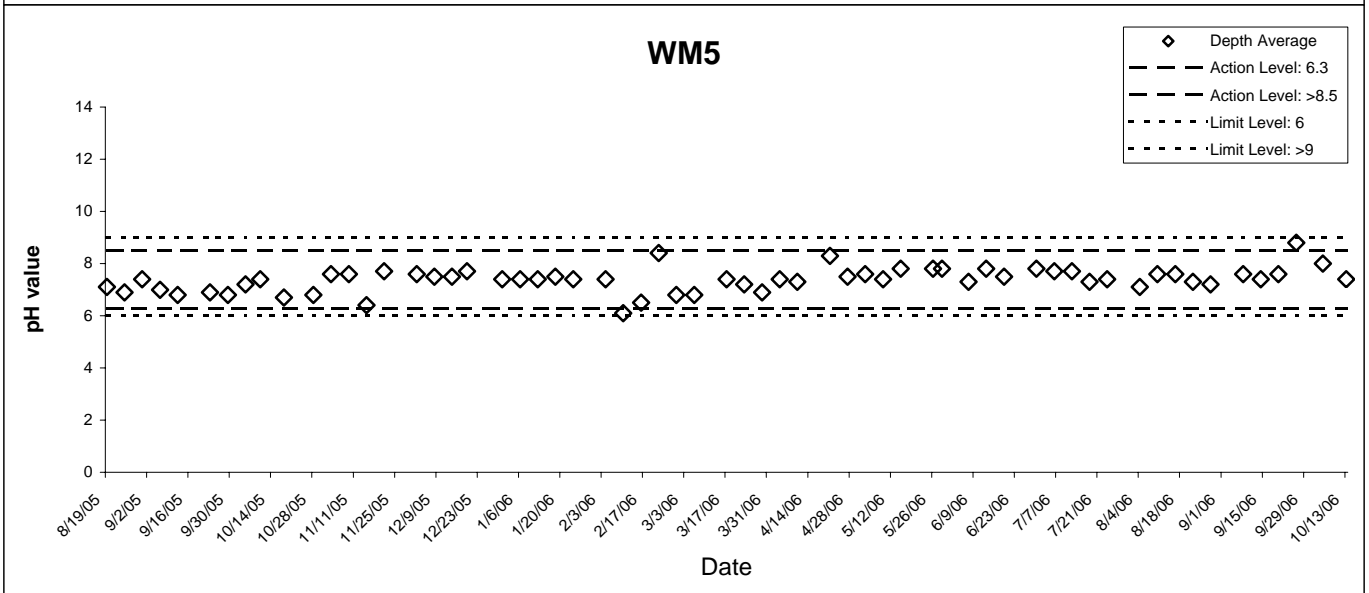
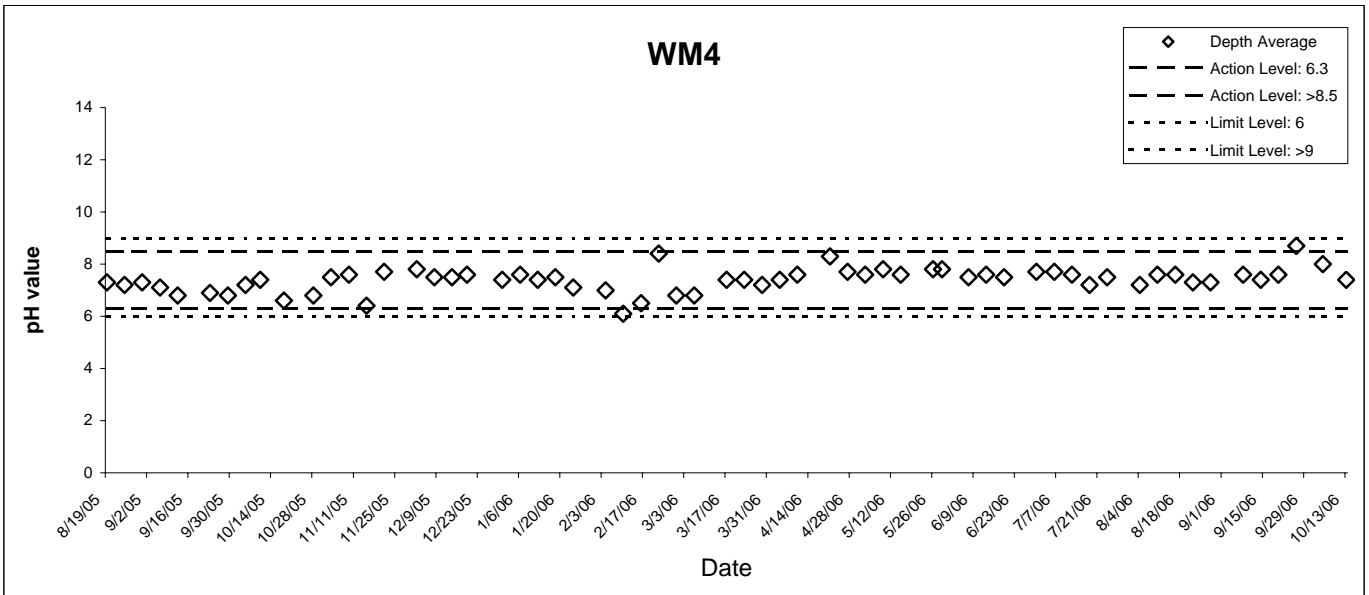
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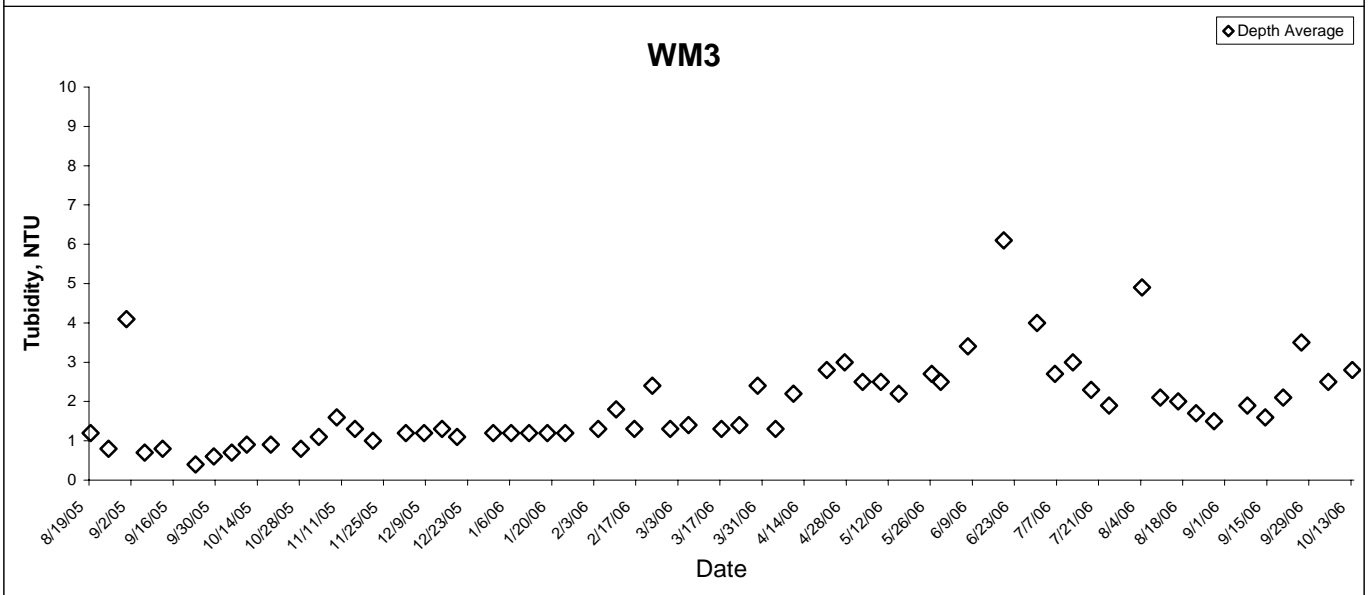
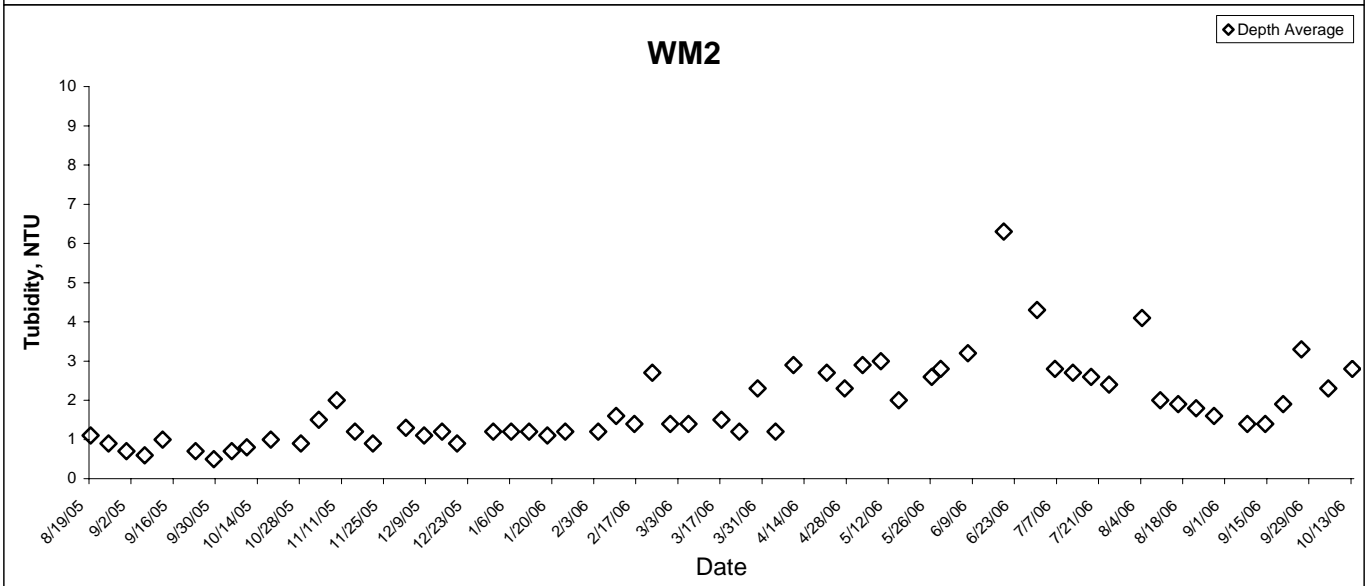
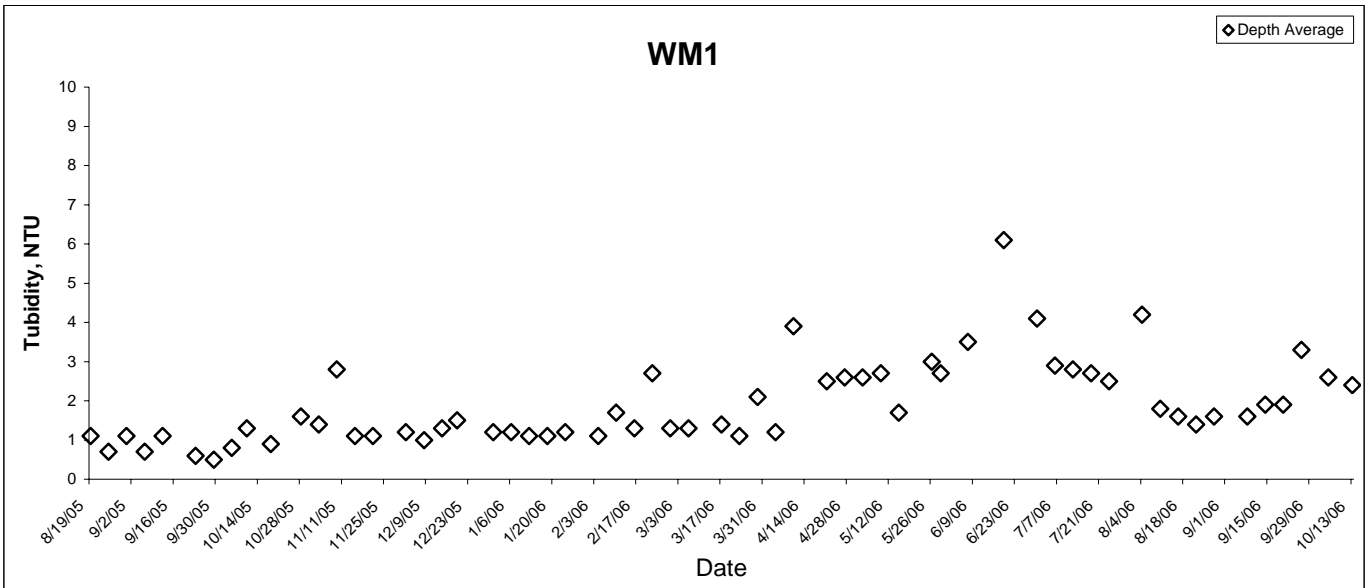
# pH



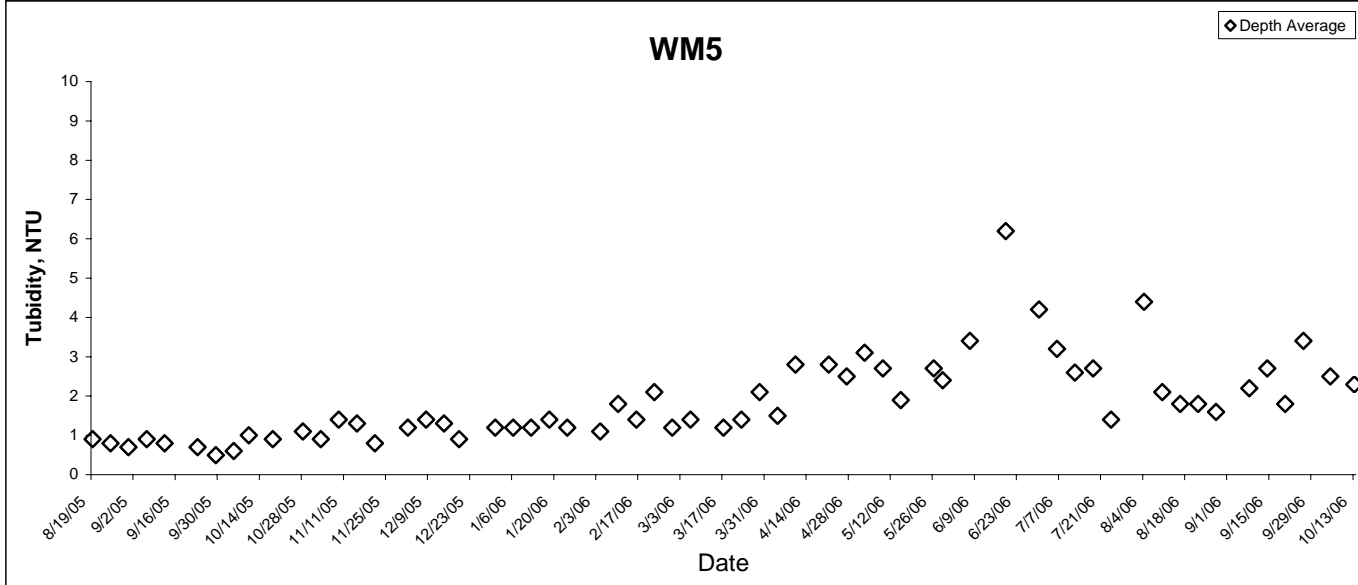
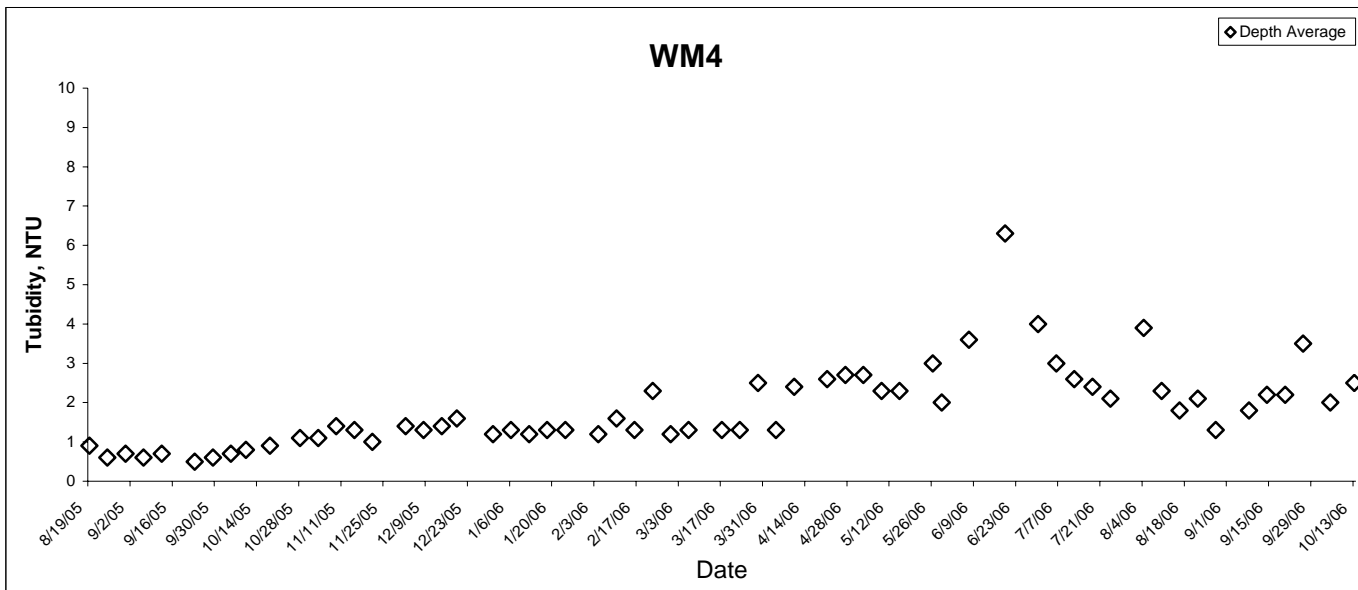
# pH



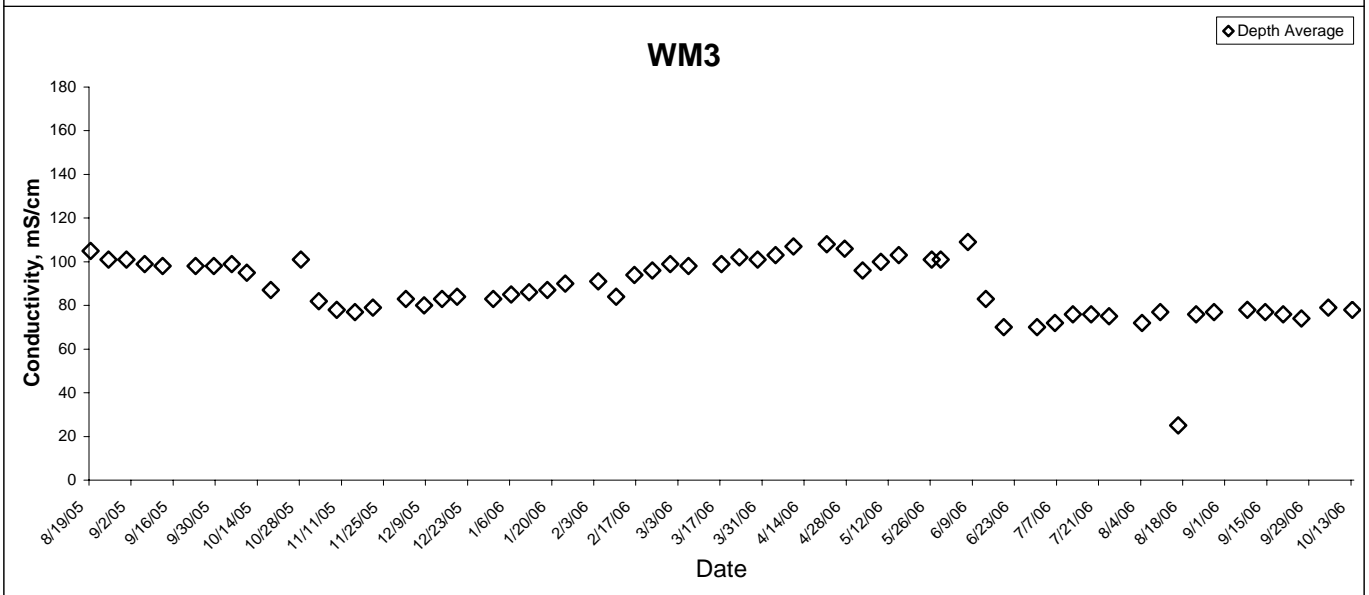
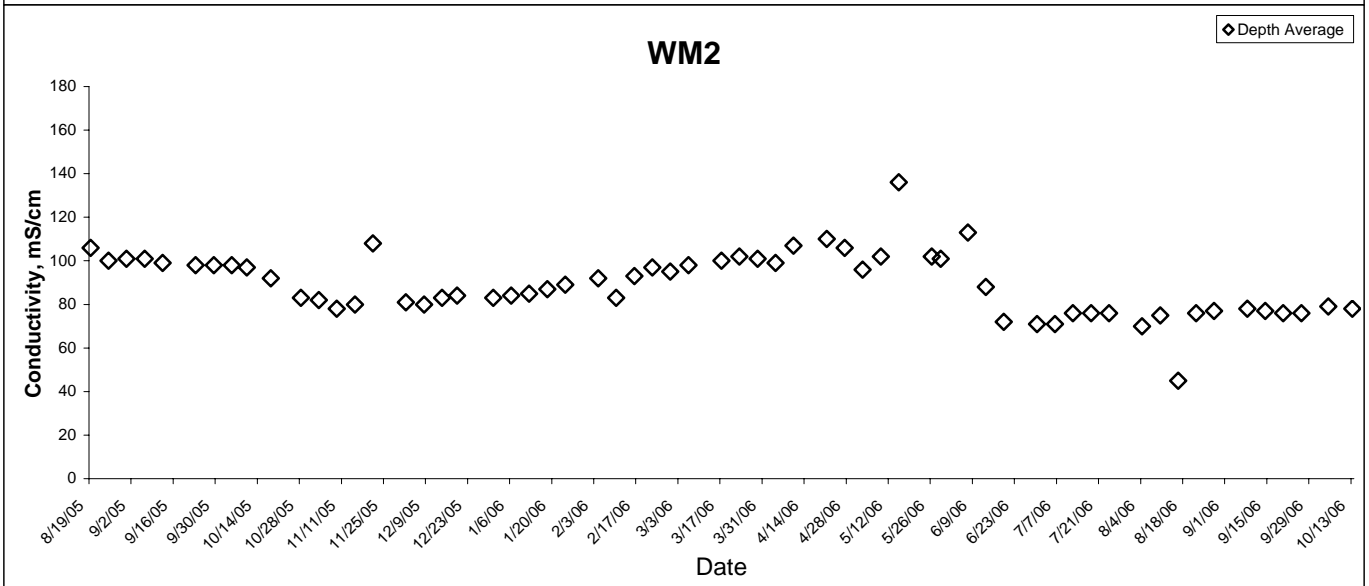
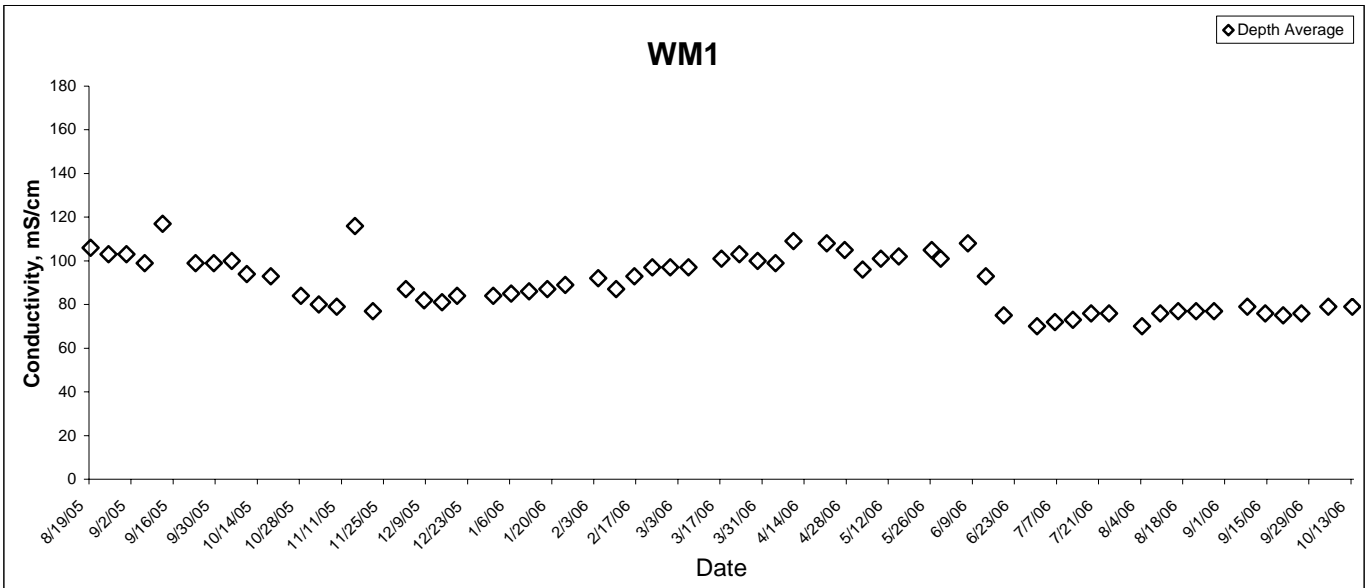
# Turbidity



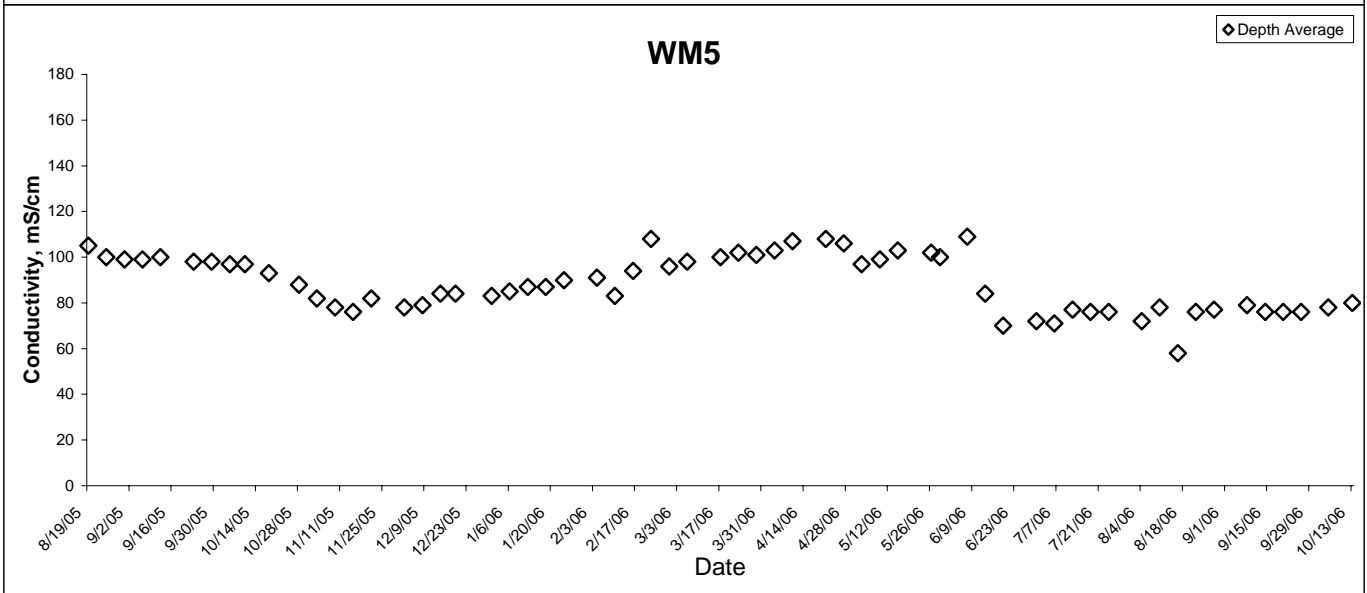
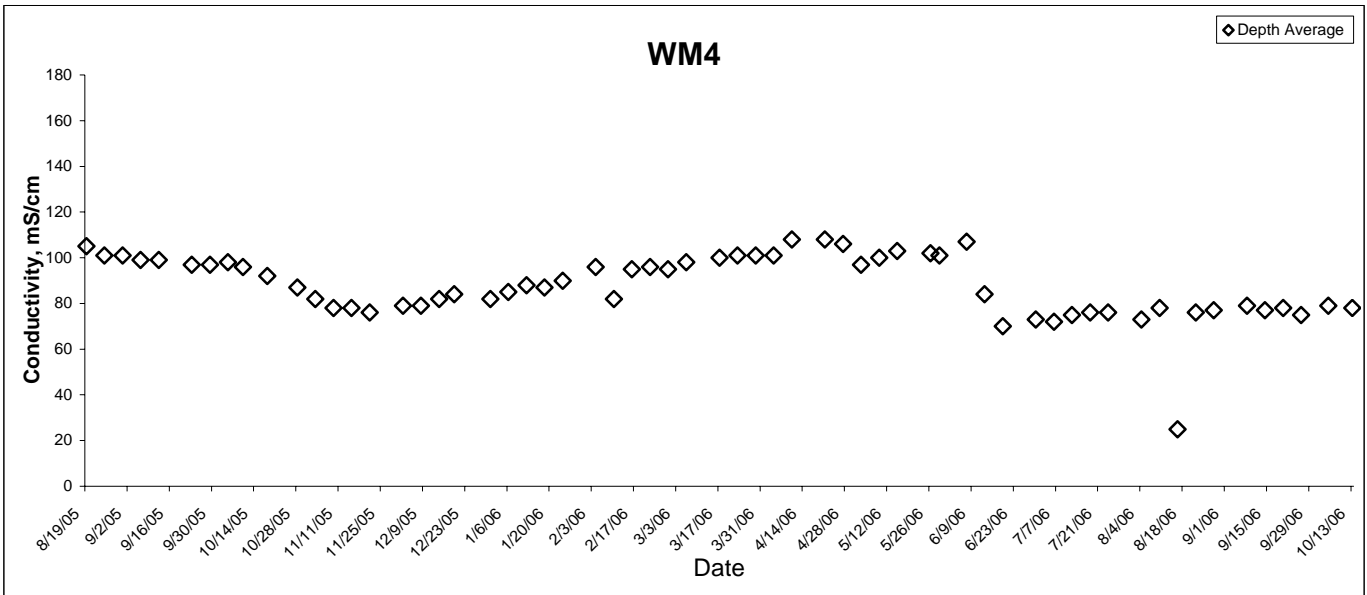
# Turbidity



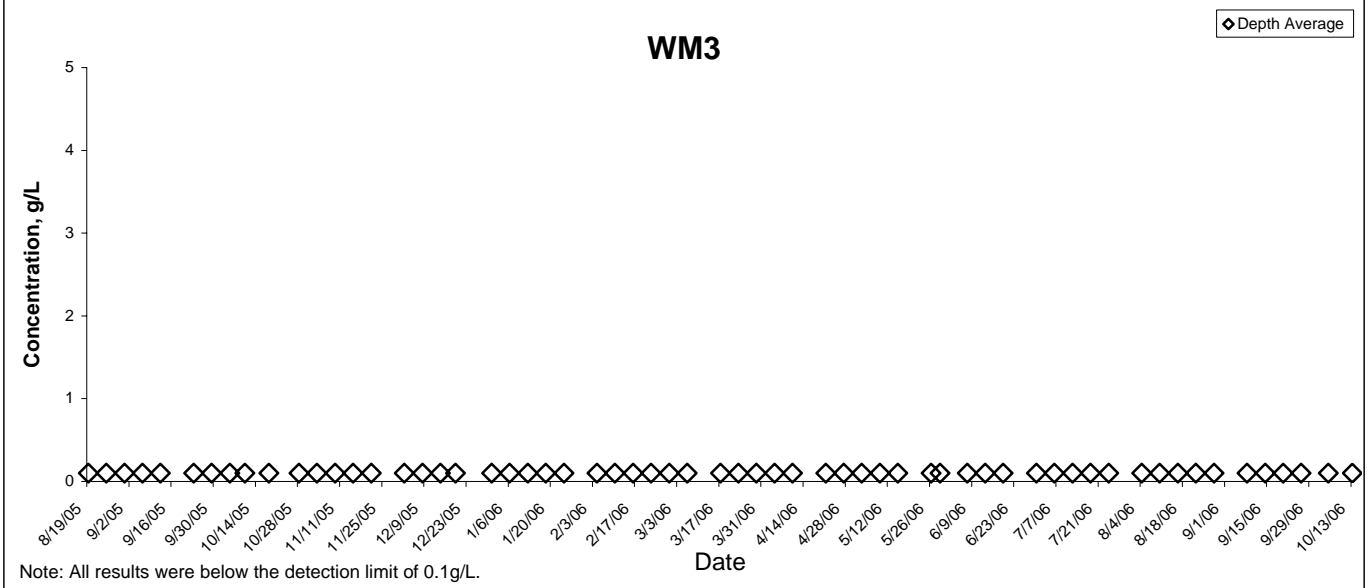
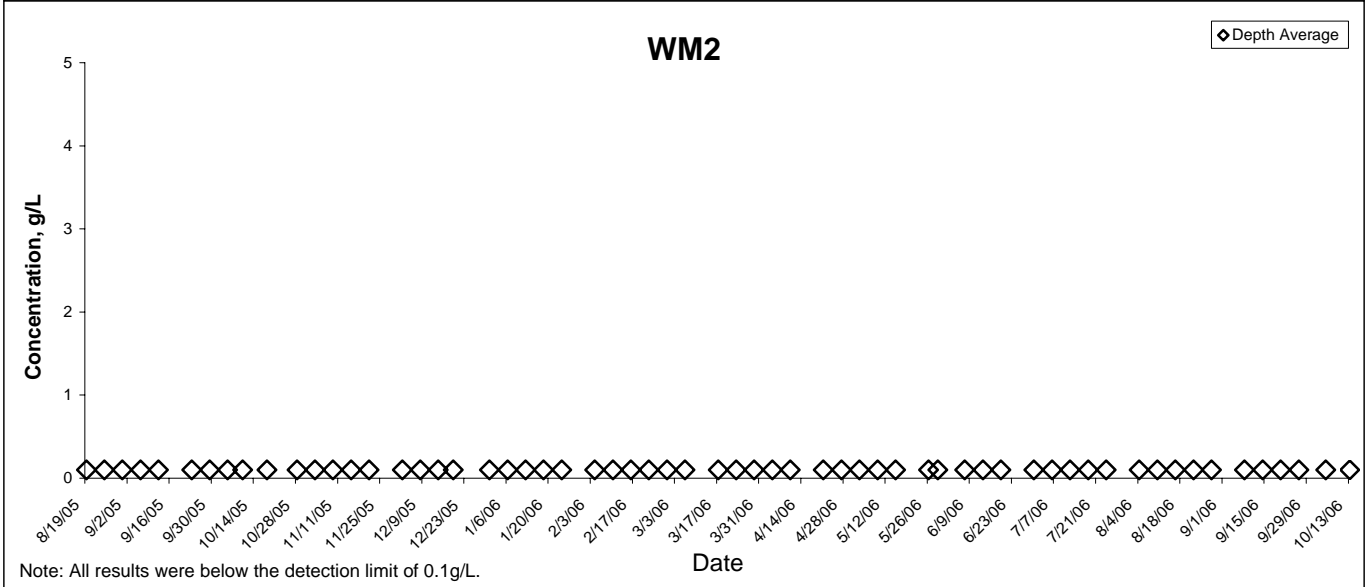
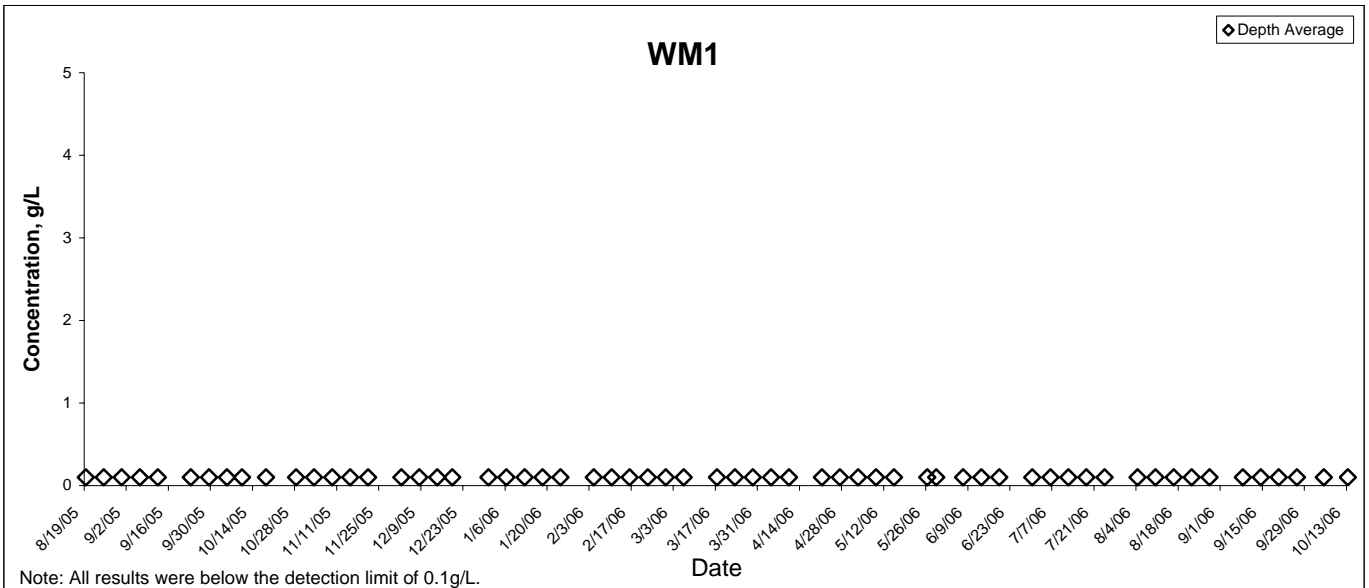
# Conductivity



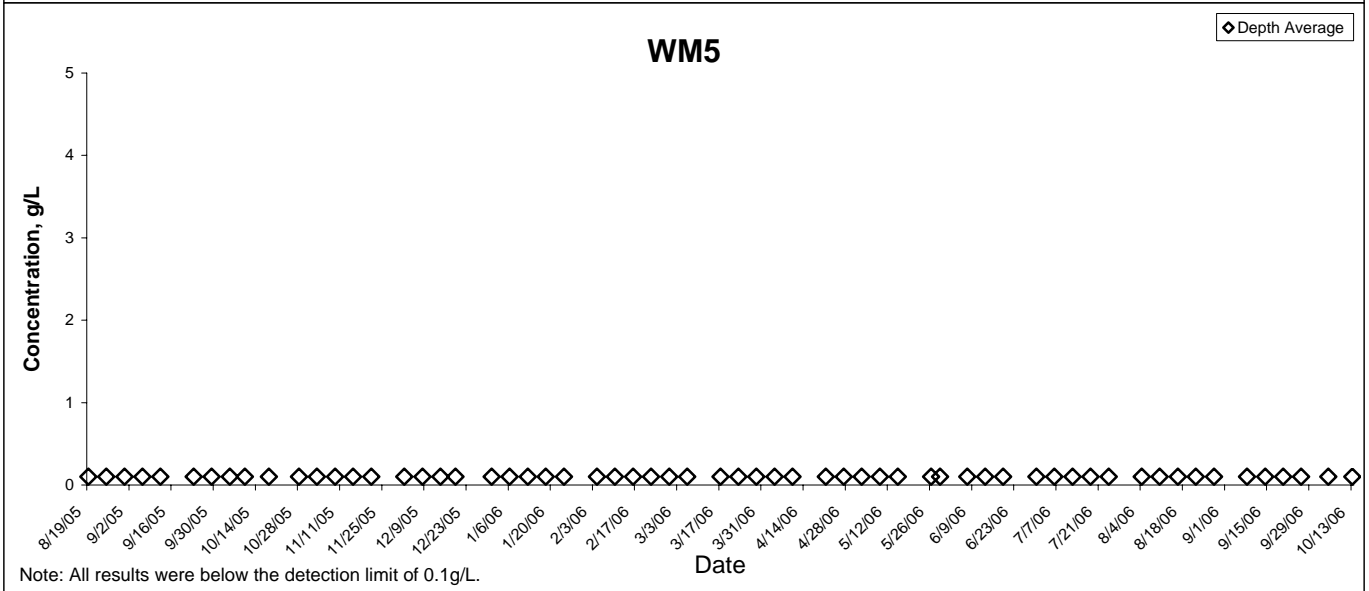
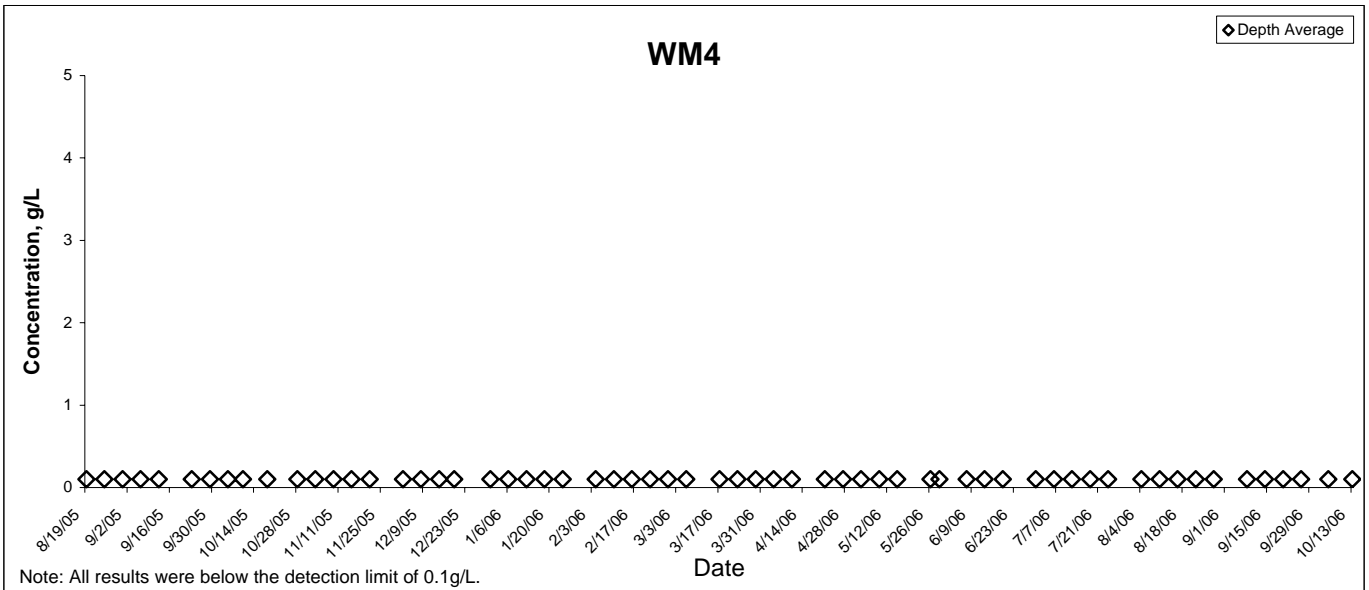
## Conductivity



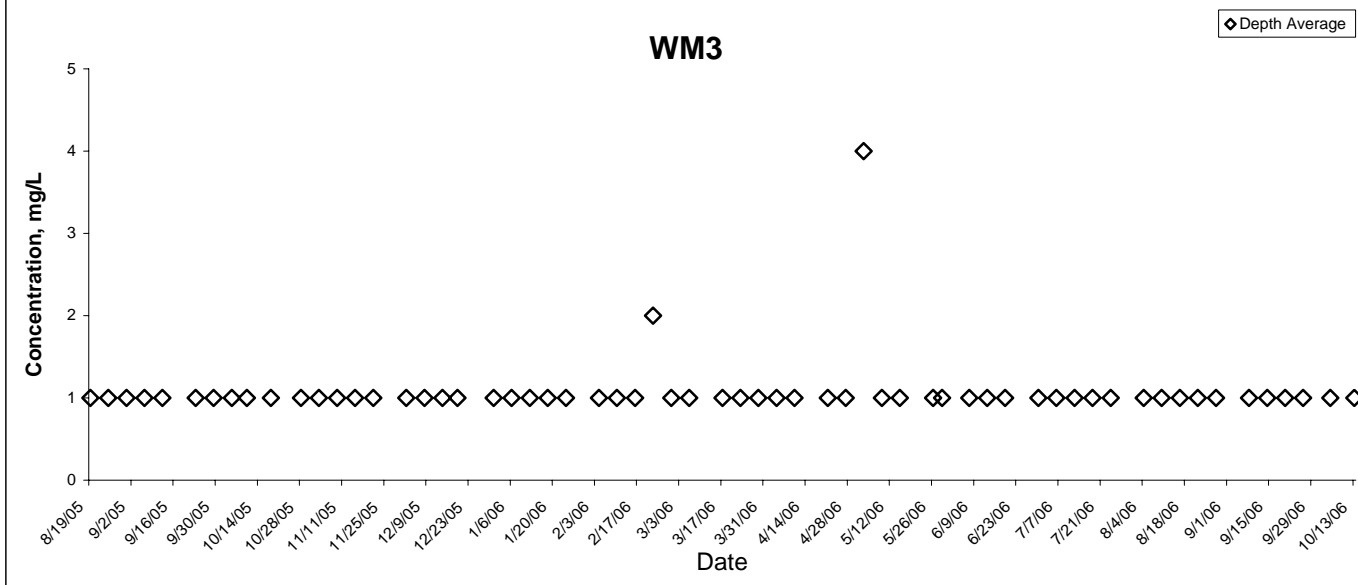
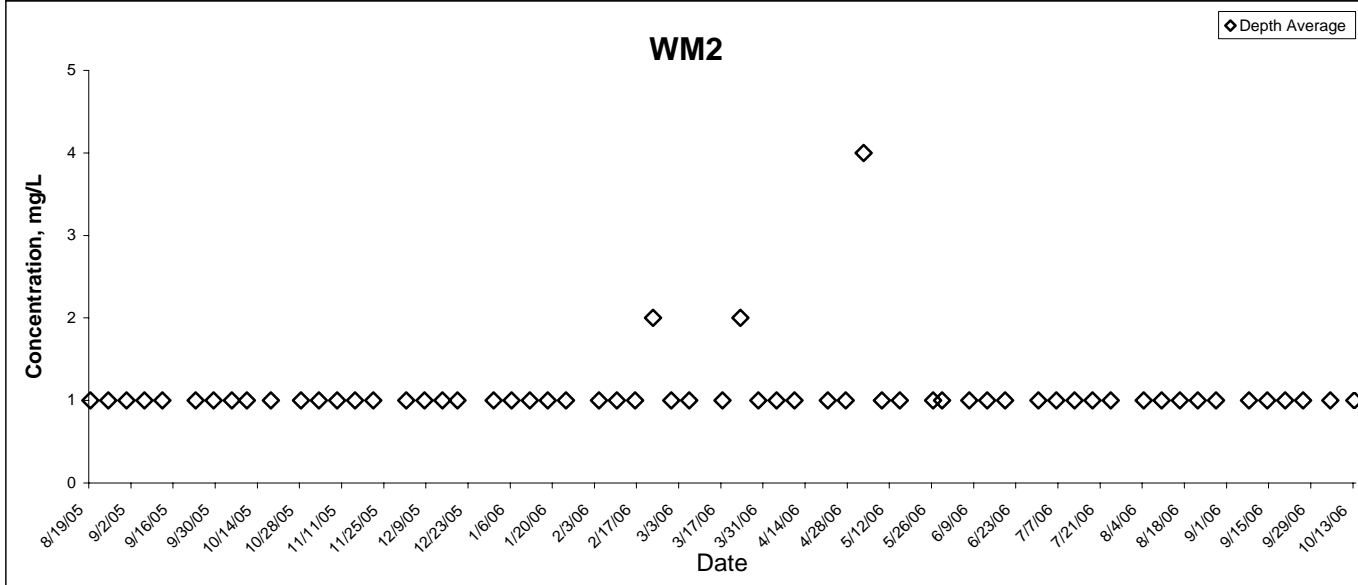
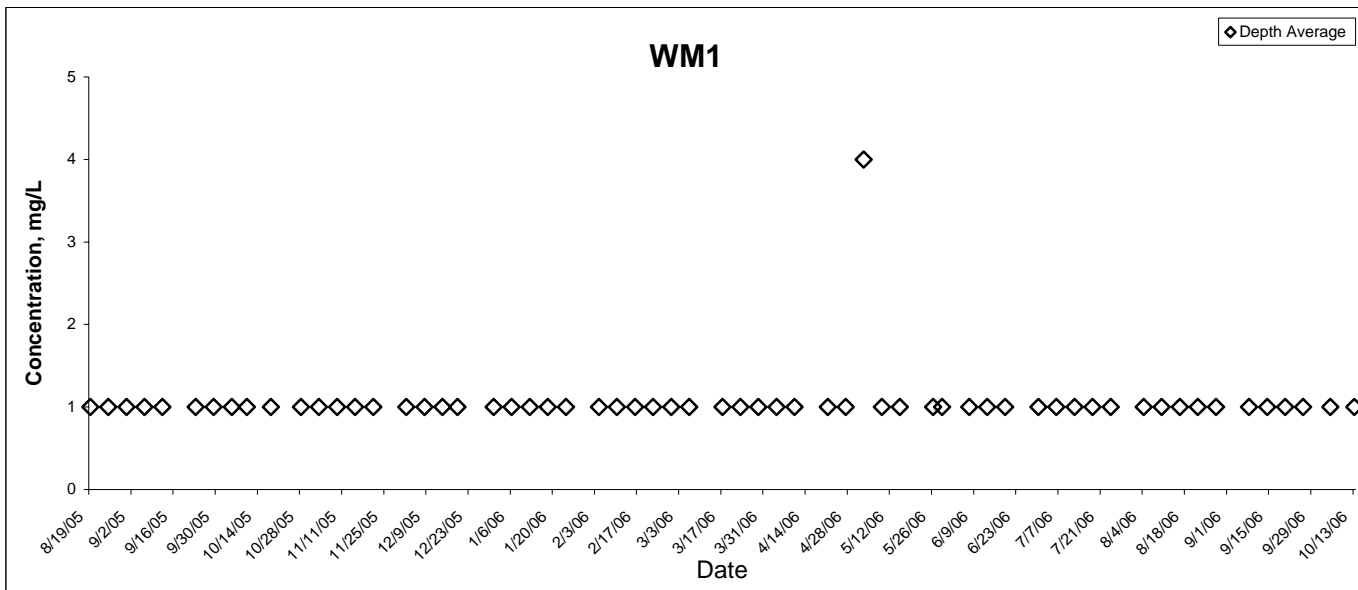
# Salinity



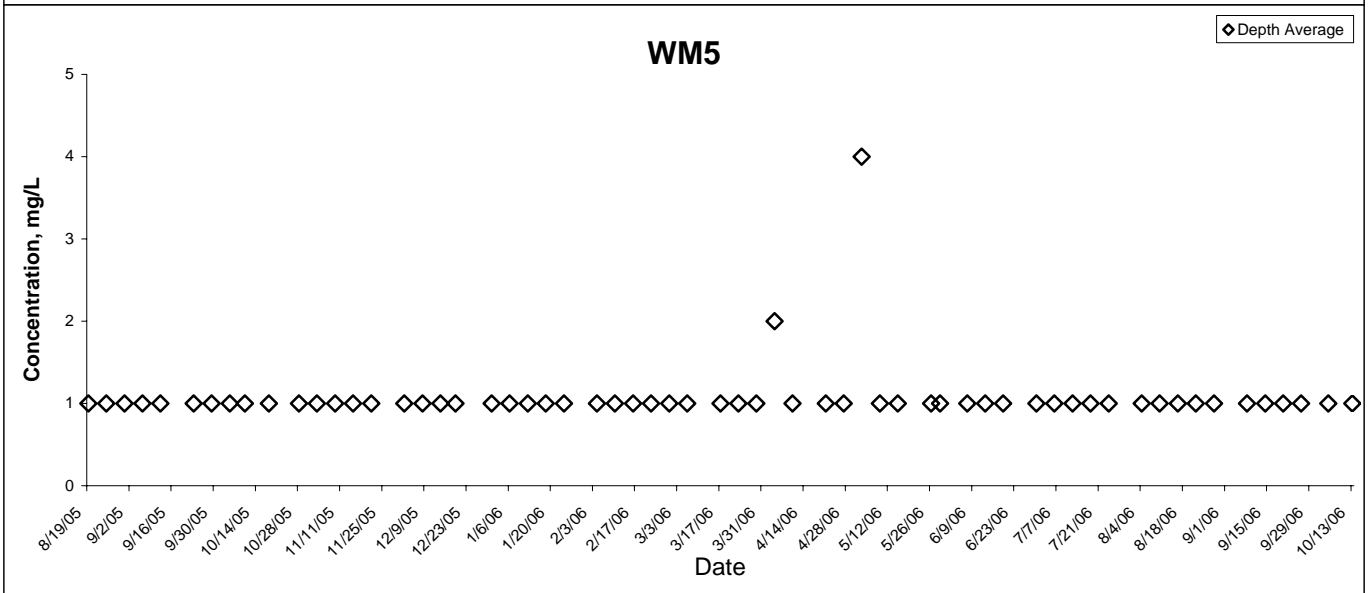
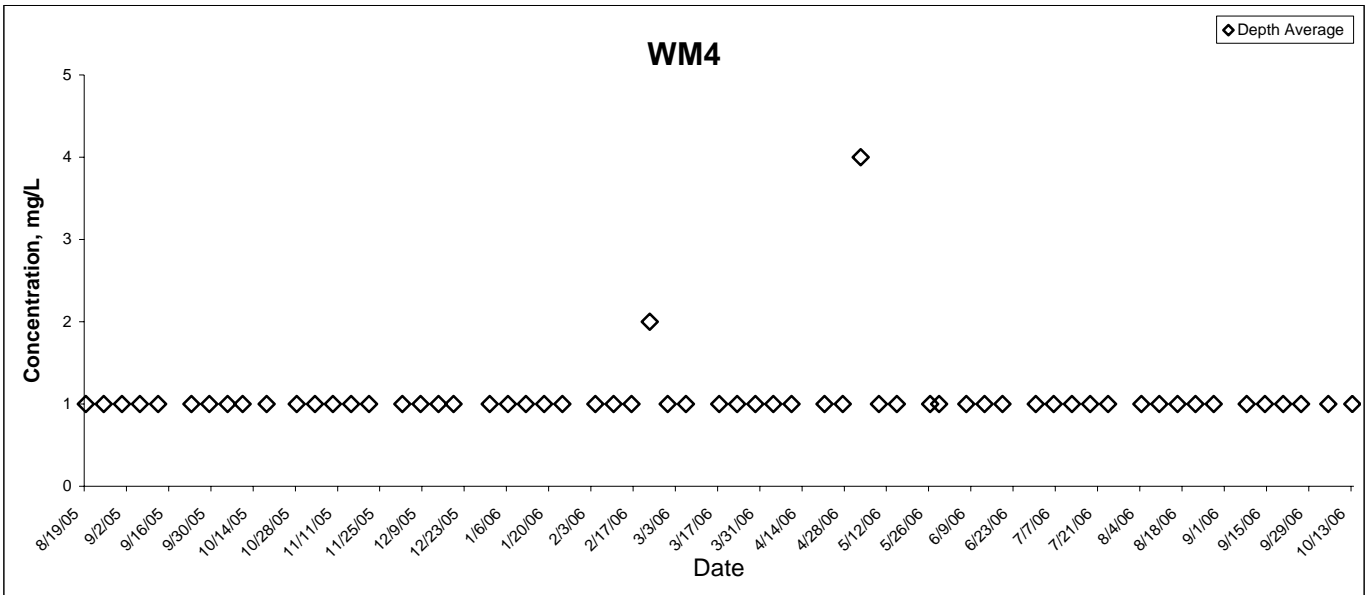
# Salinity



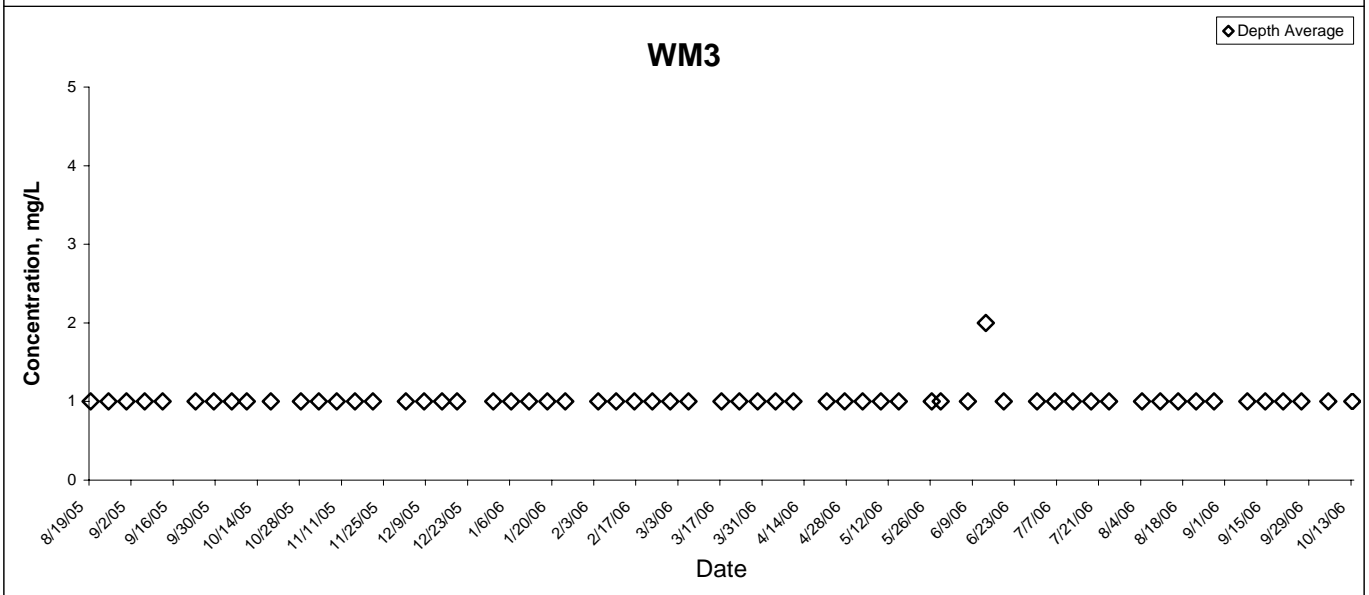
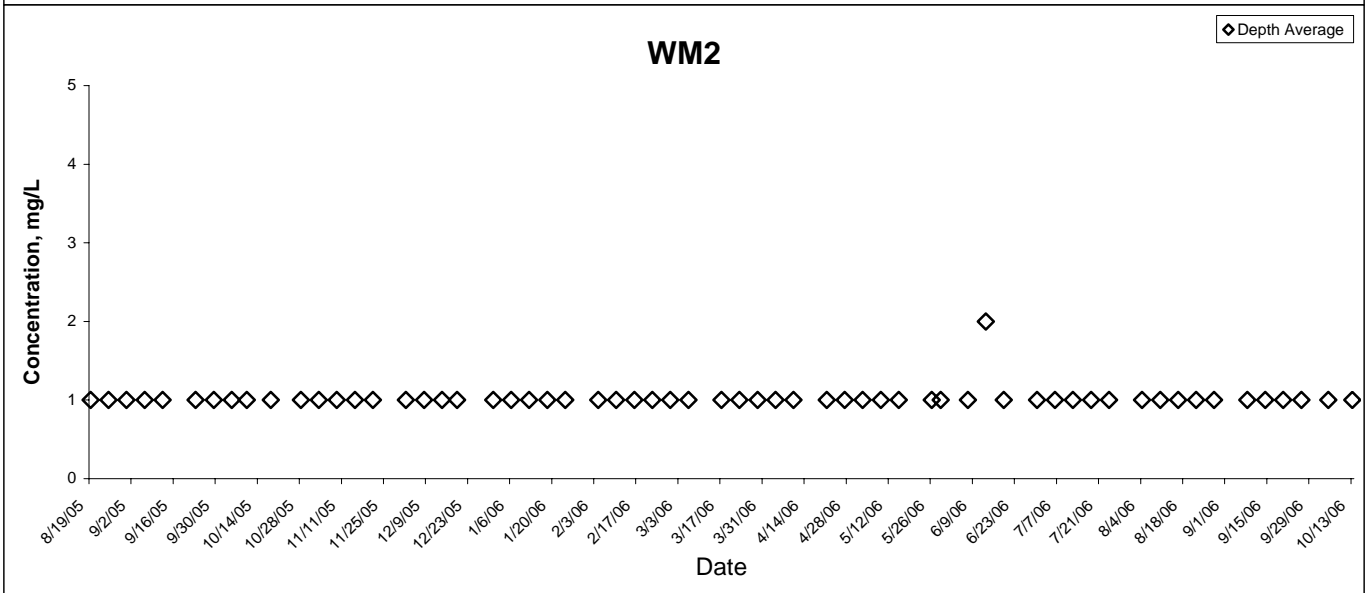
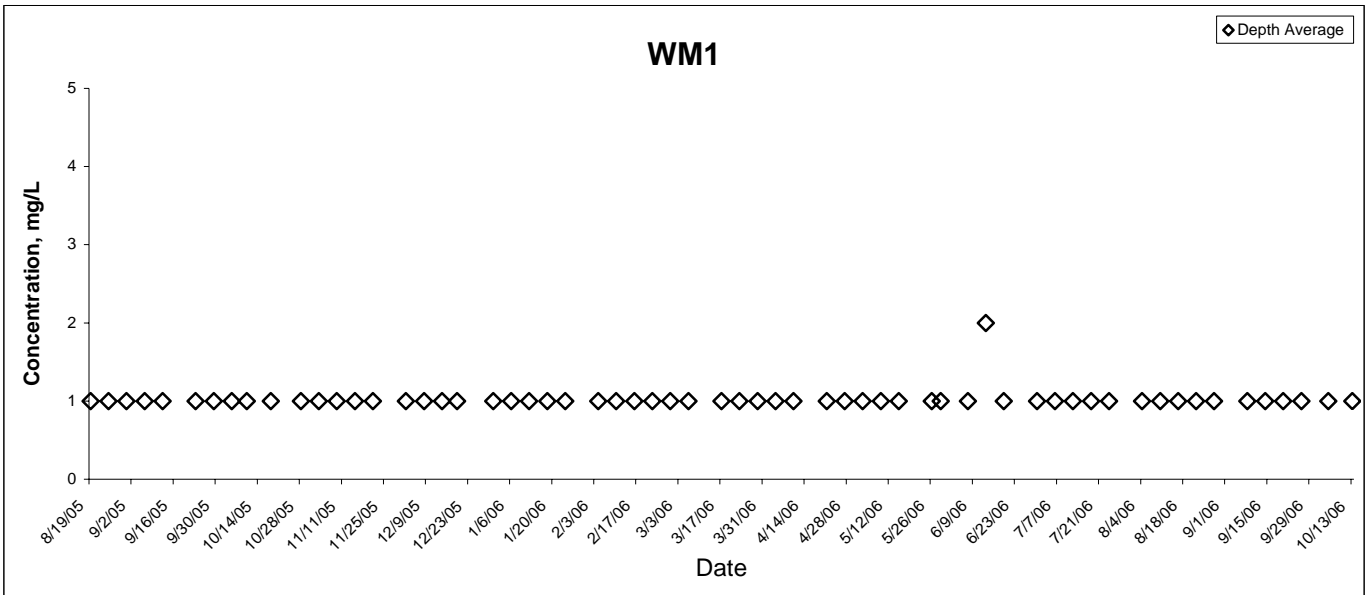
# Copper



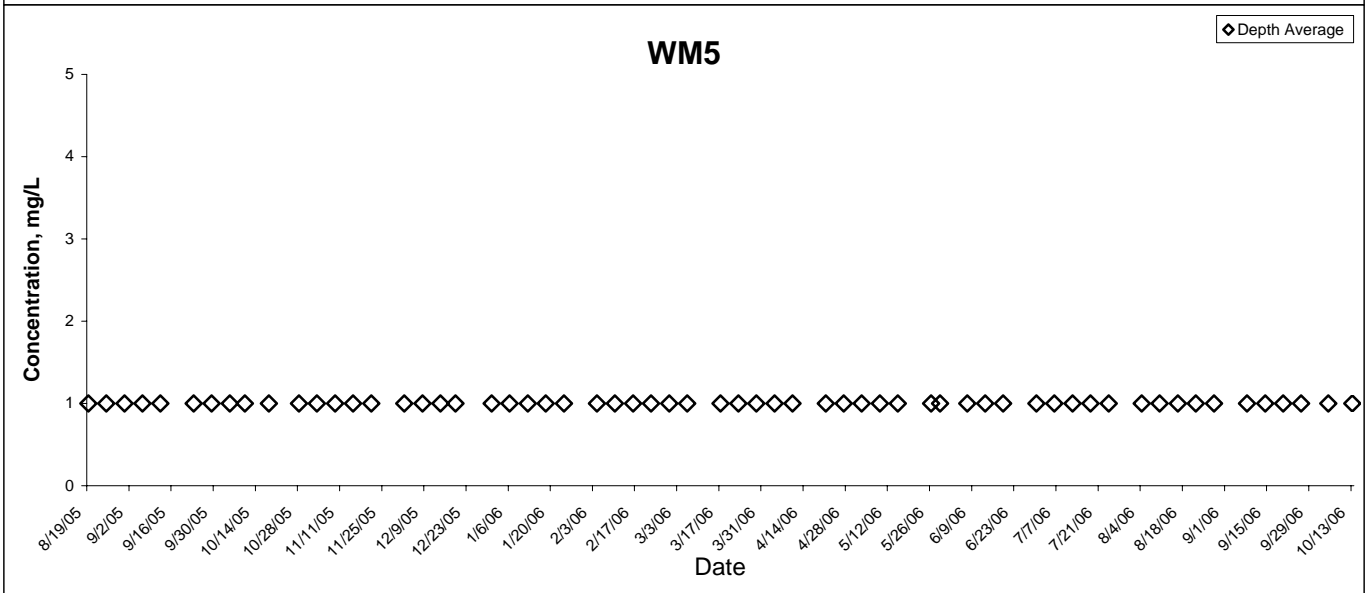
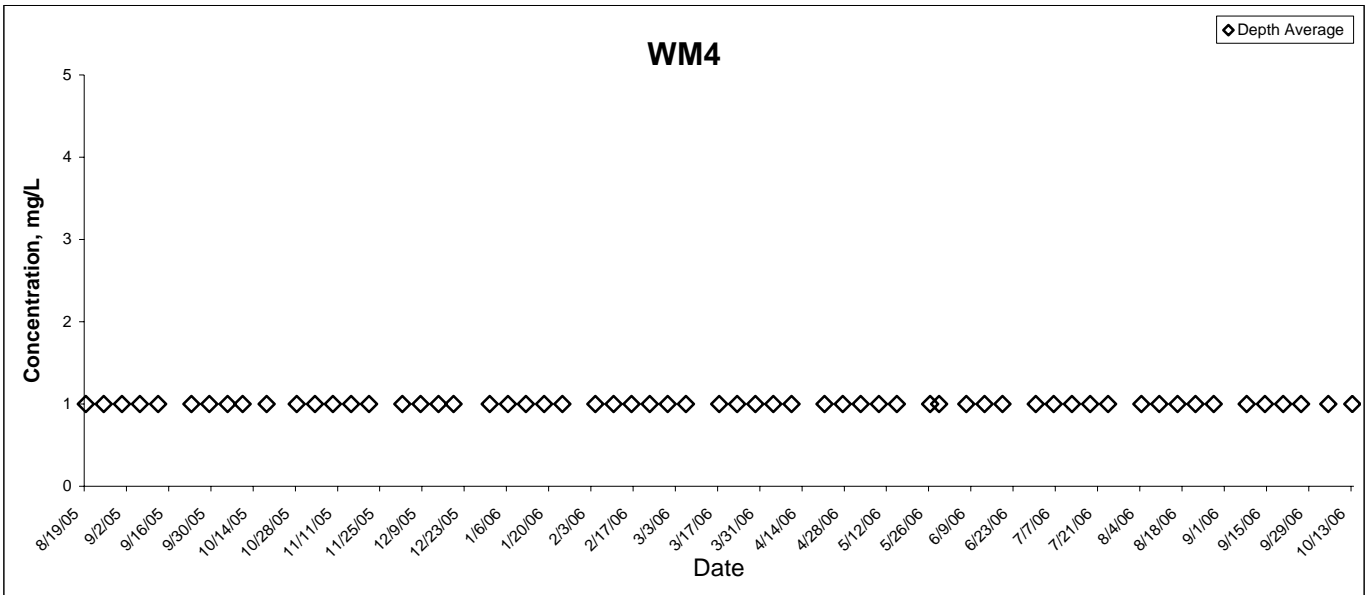
# Copper



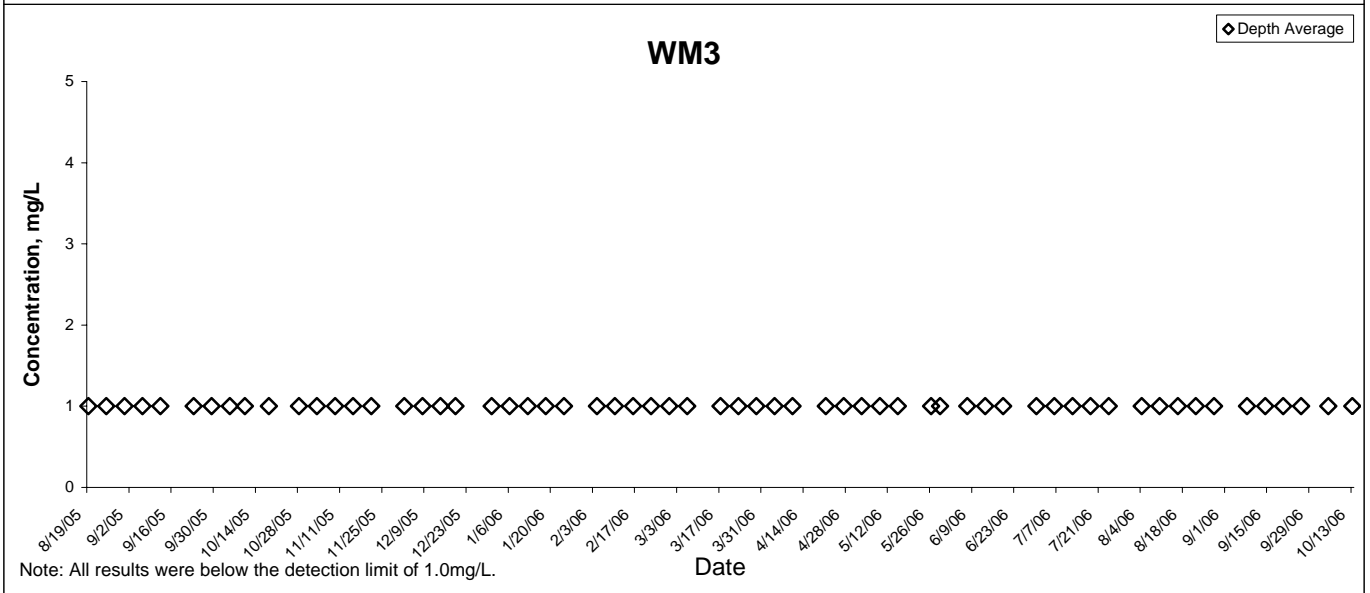
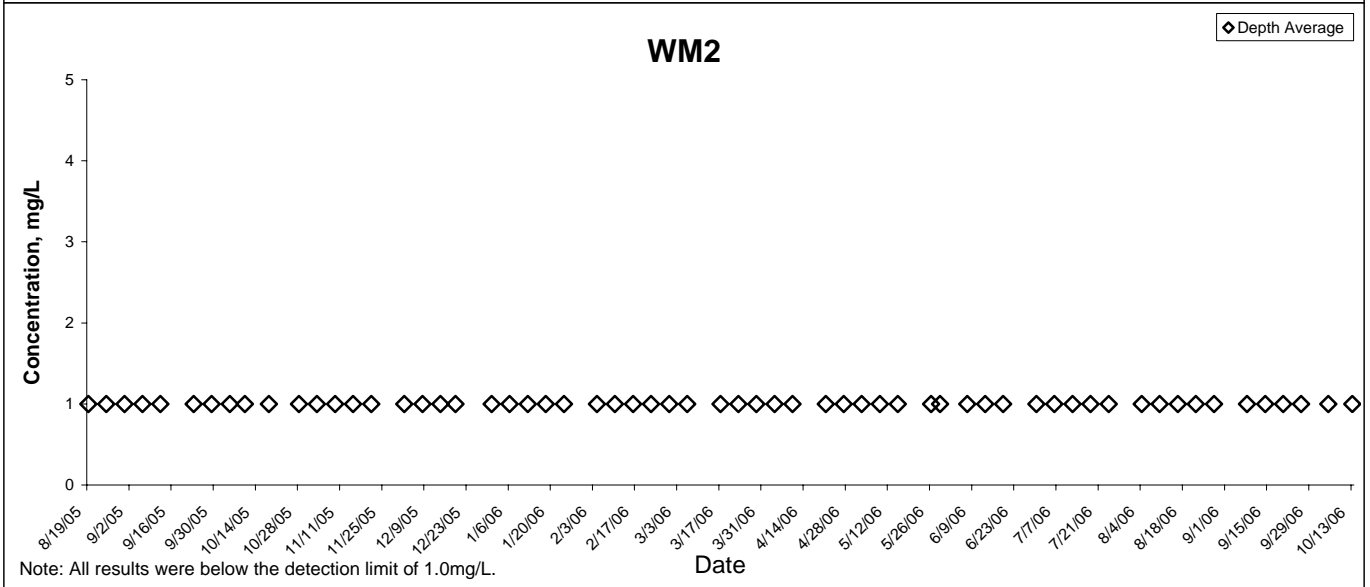
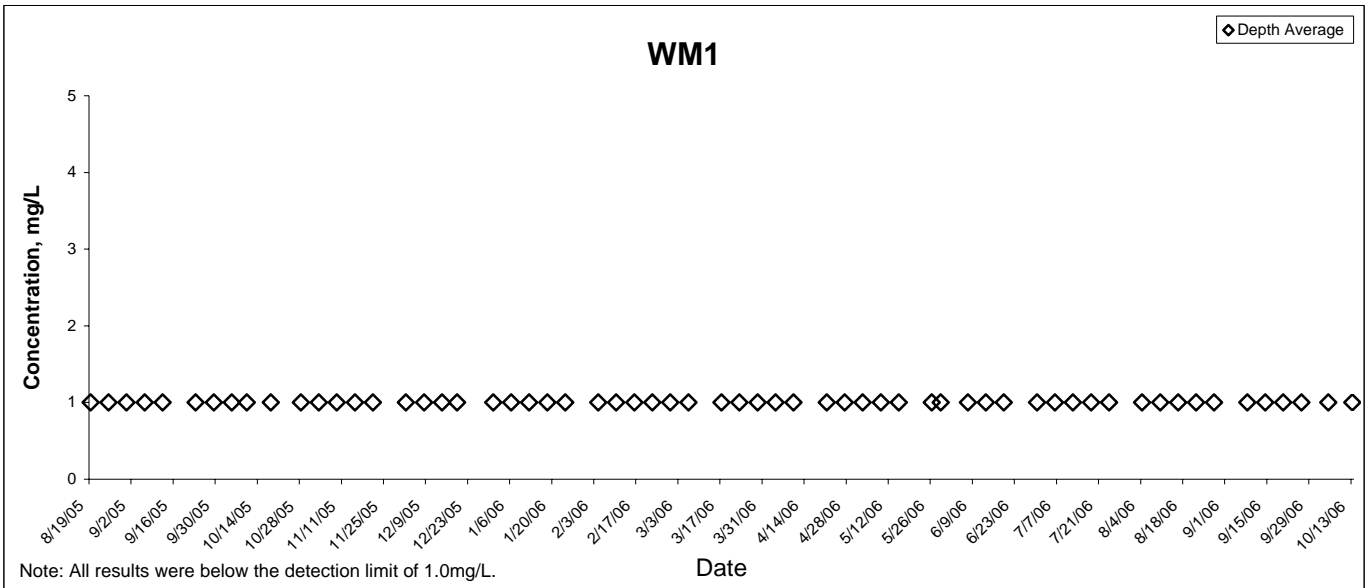
# Chromium



# Chromium



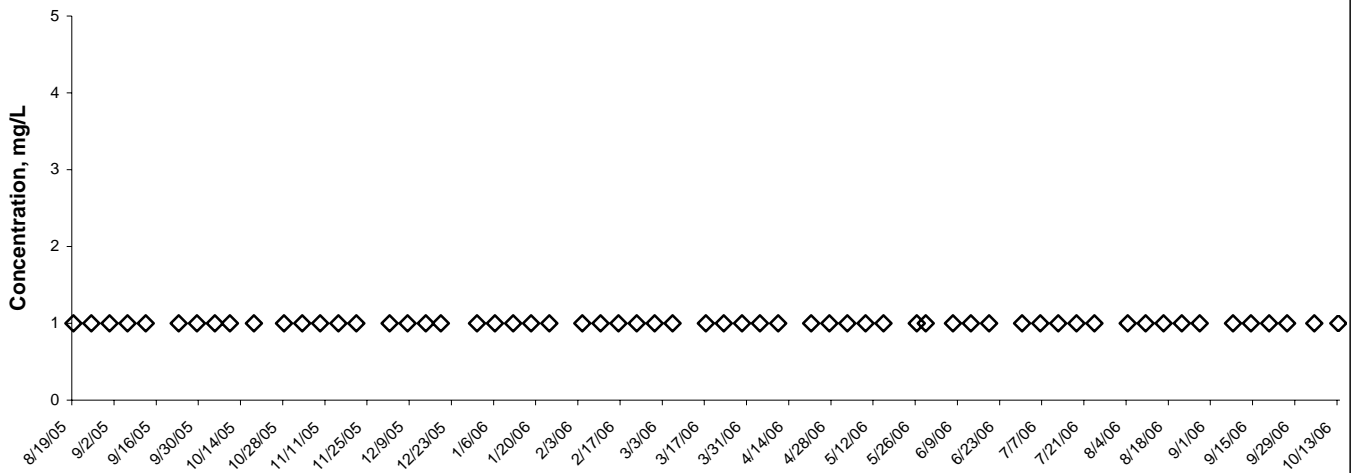
# Lead



# Lead

## WM4

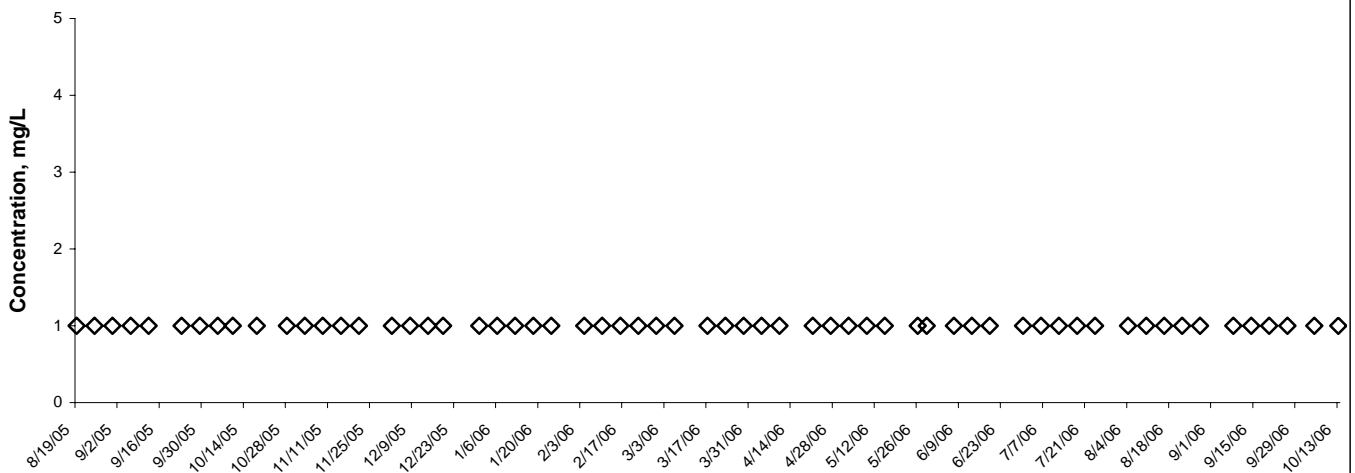
◆ Depth Average



Note: All results were below the detection limit of 1.0mg/L.

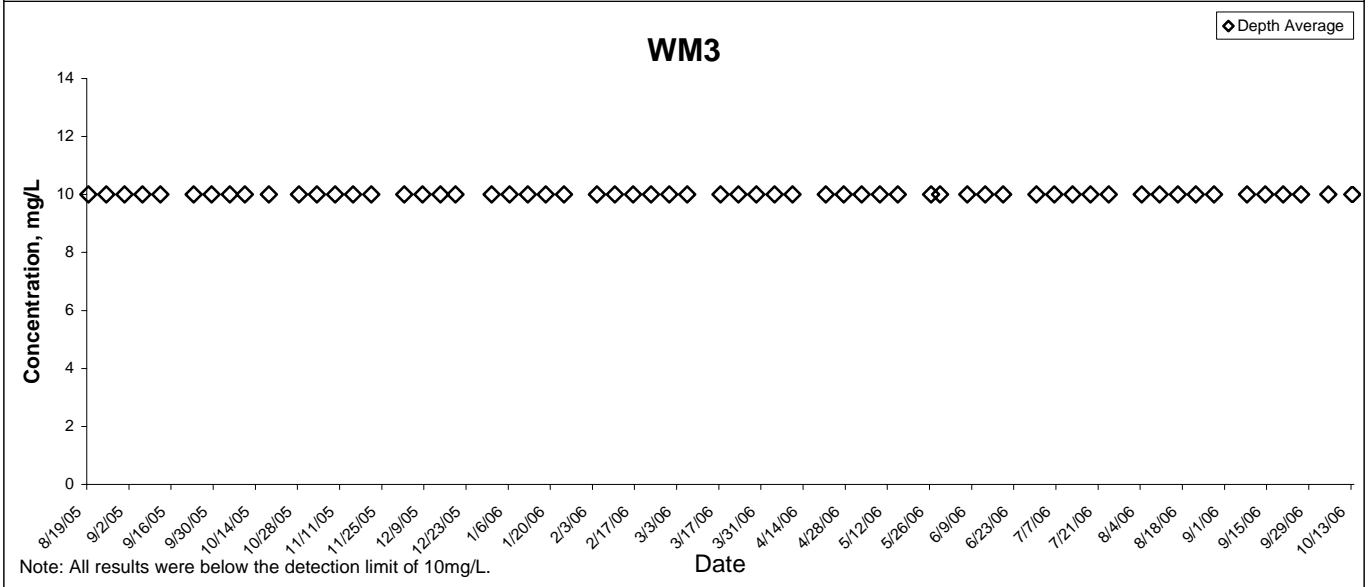
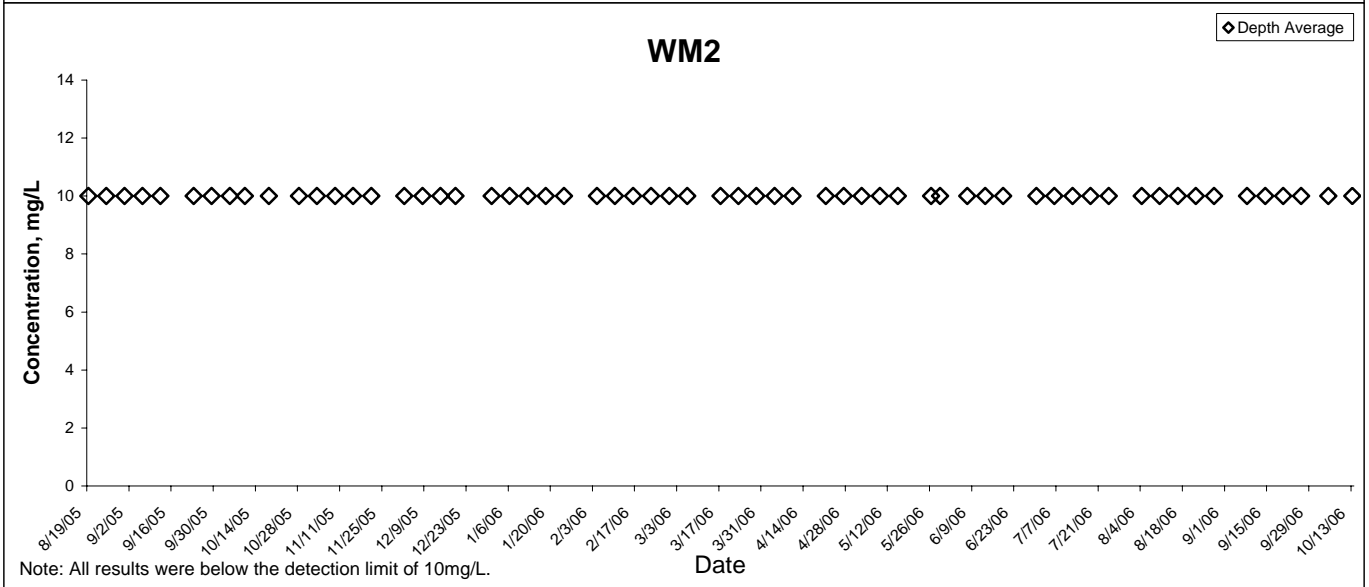
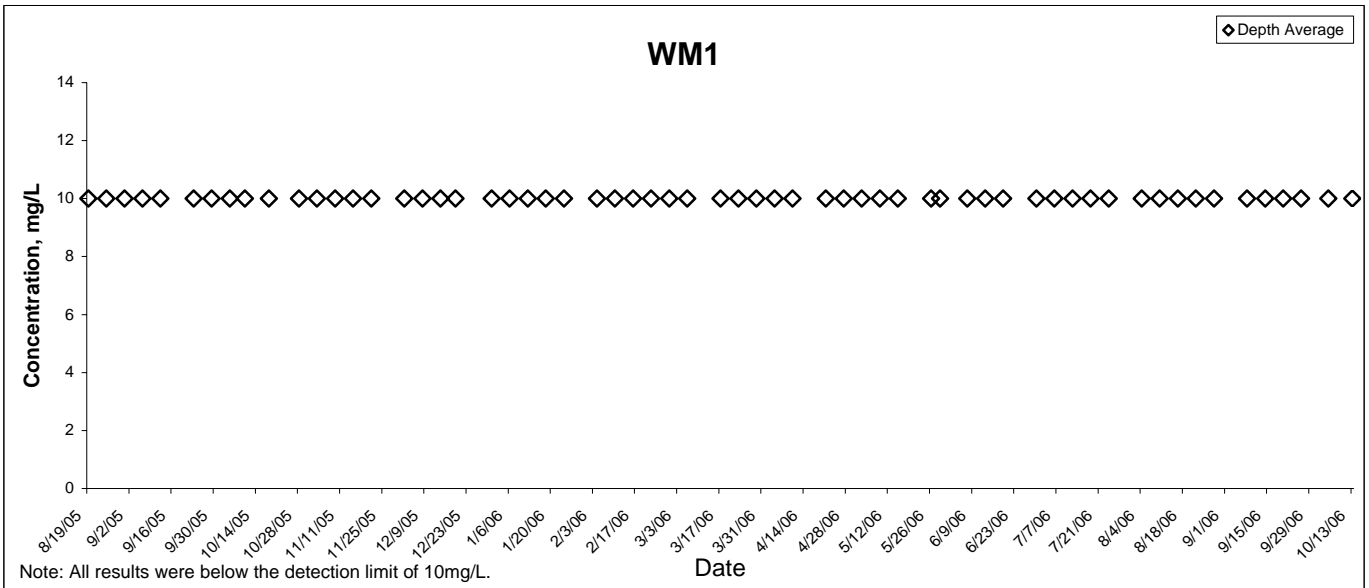
## WM5

◆ Depth Average

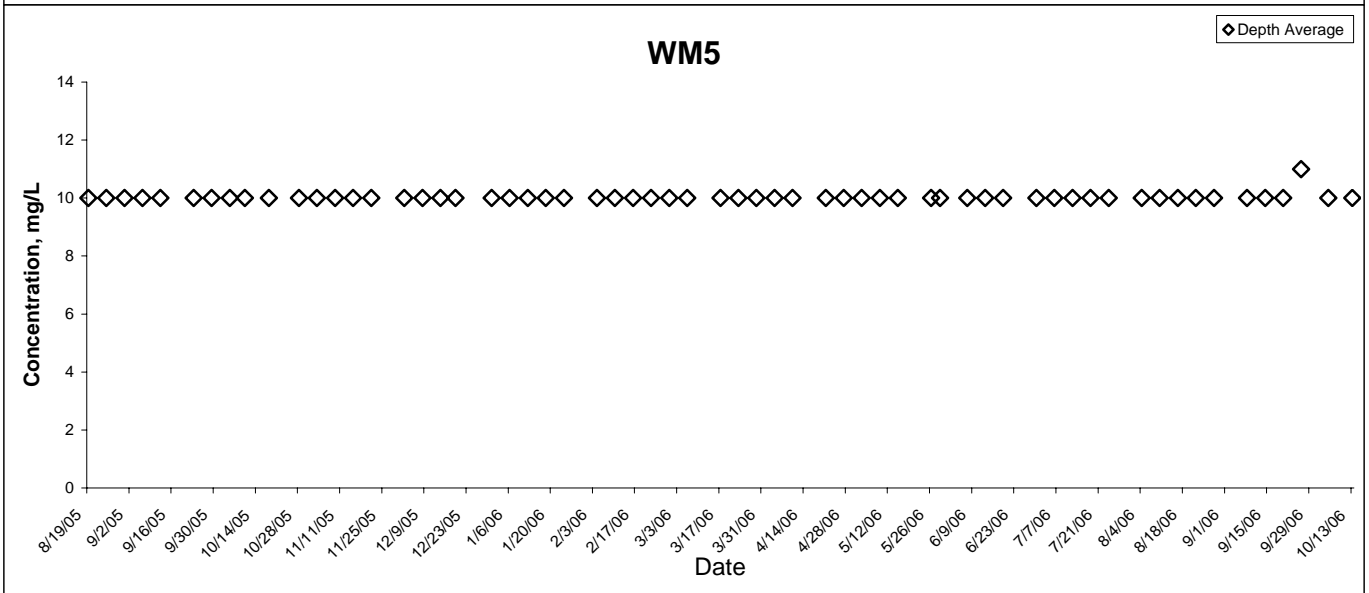
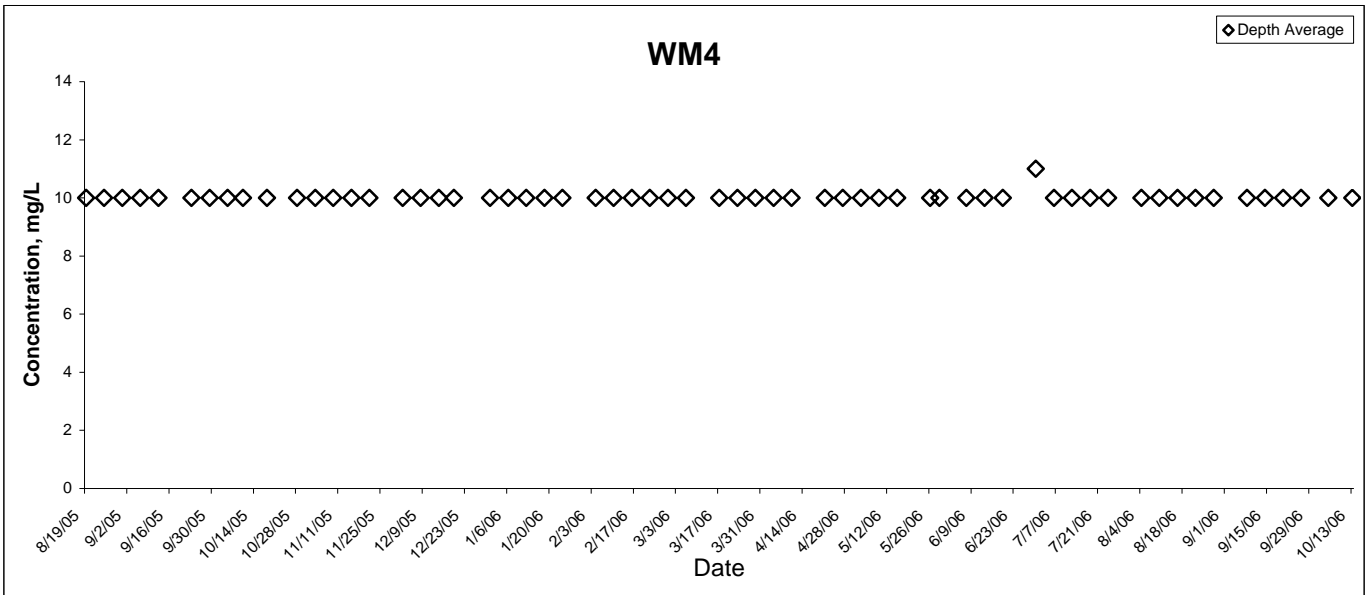


Note: All results were below the detection limit of 1.0mg/L.

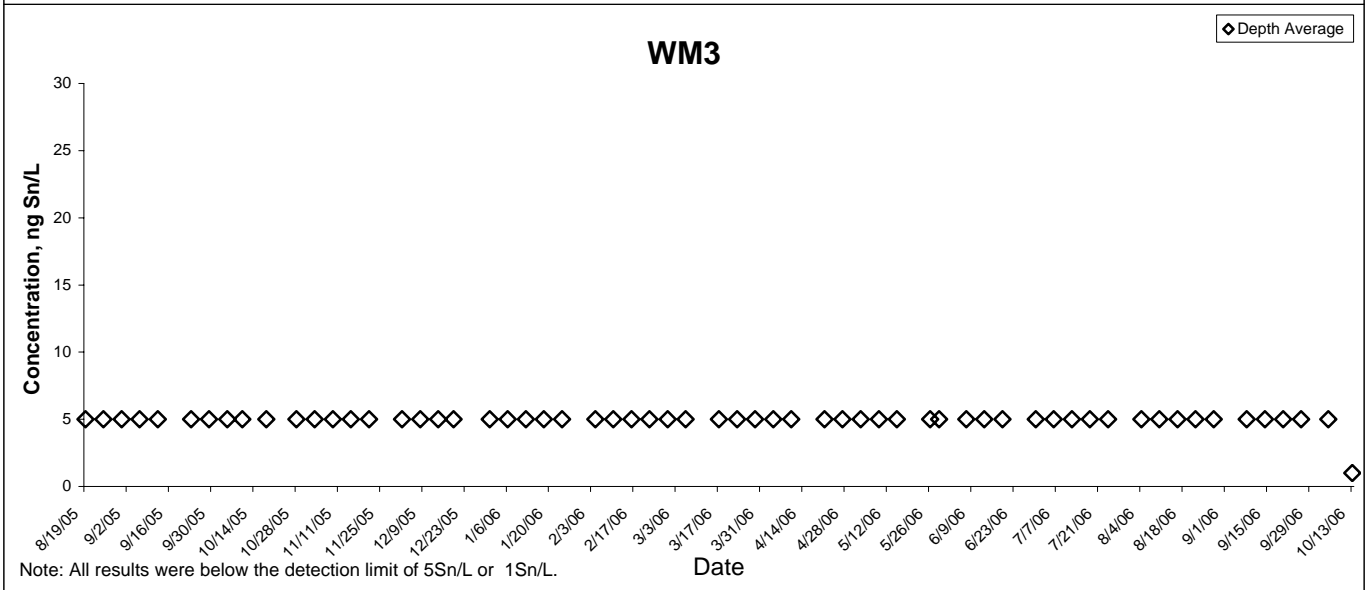
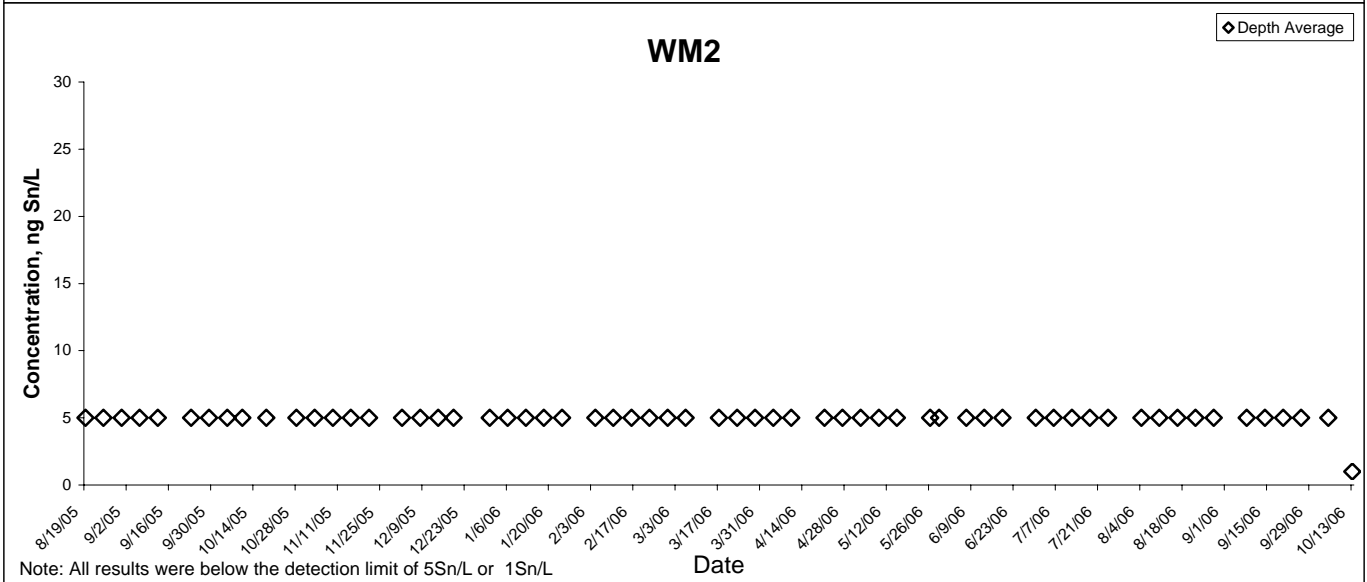
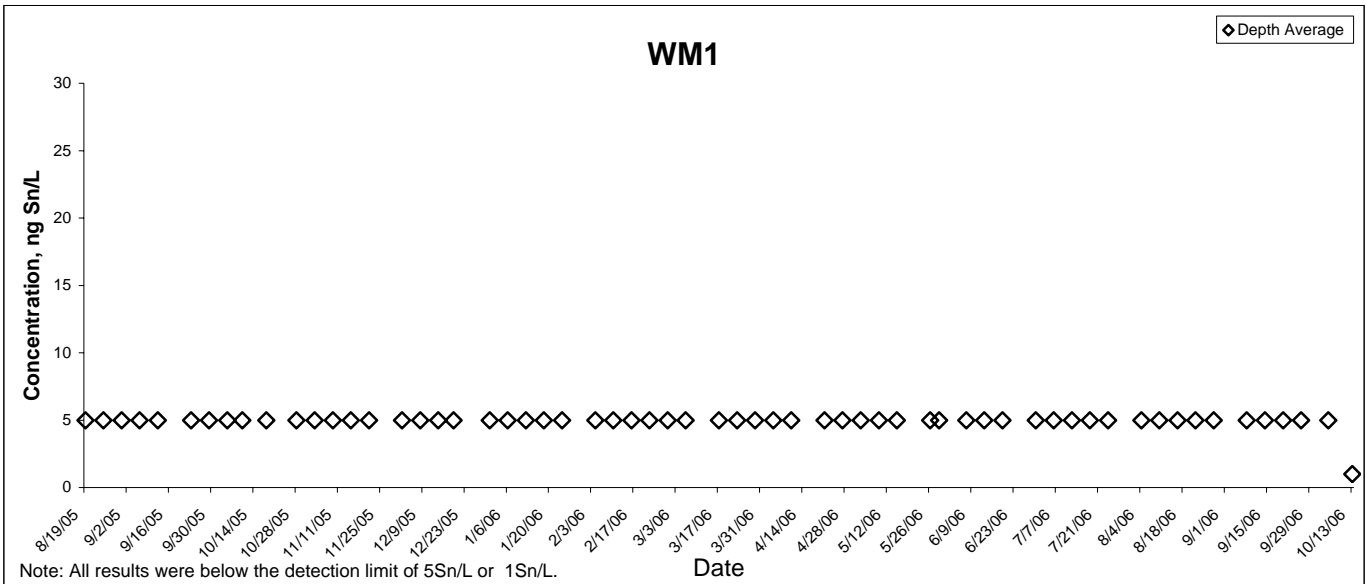
# Zinc



# Zinc



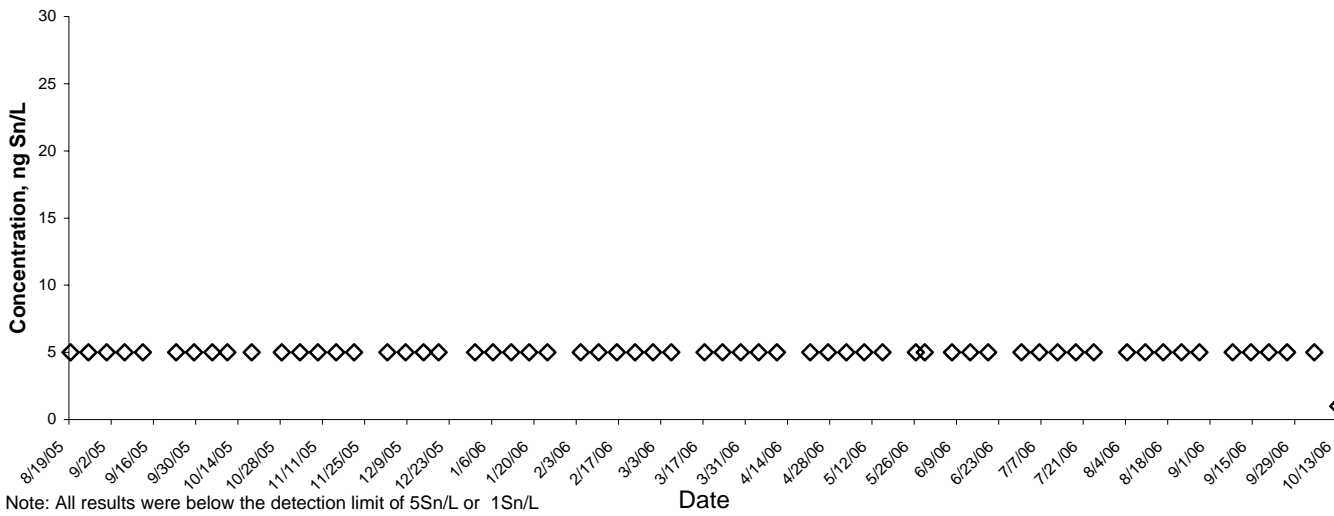
# TBT



# TBT

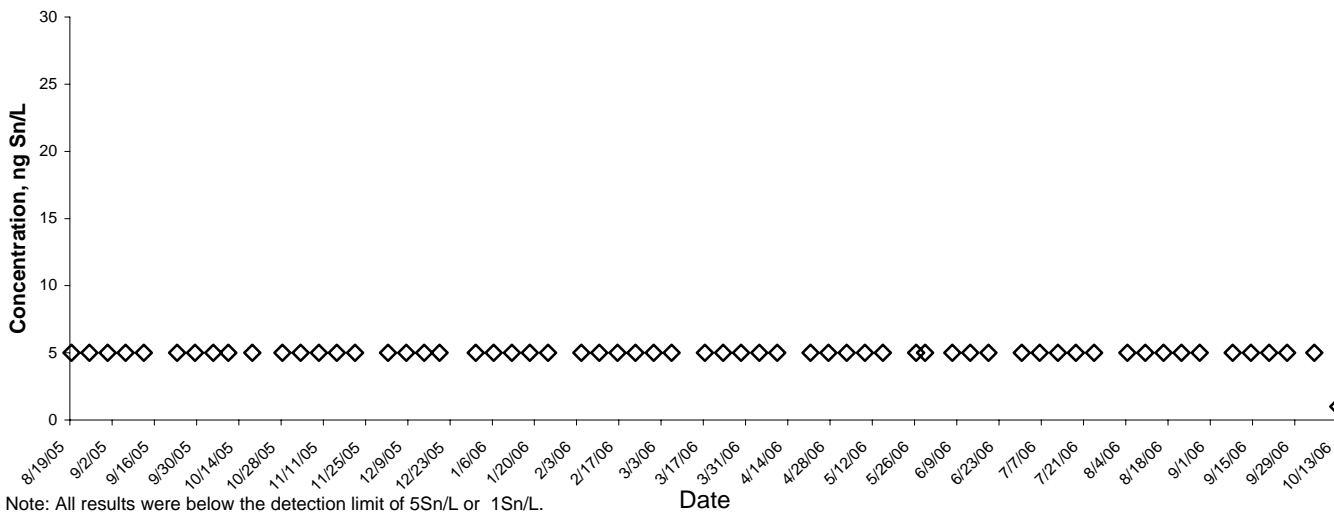
## WM4

◆ Depth Average

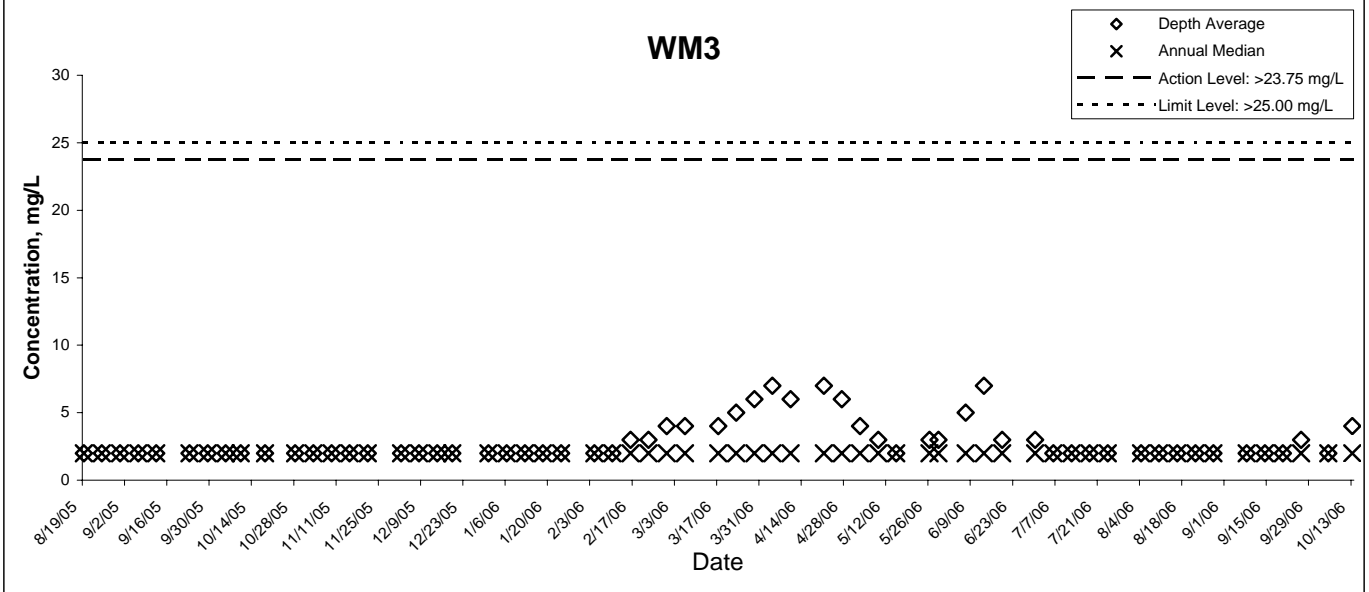
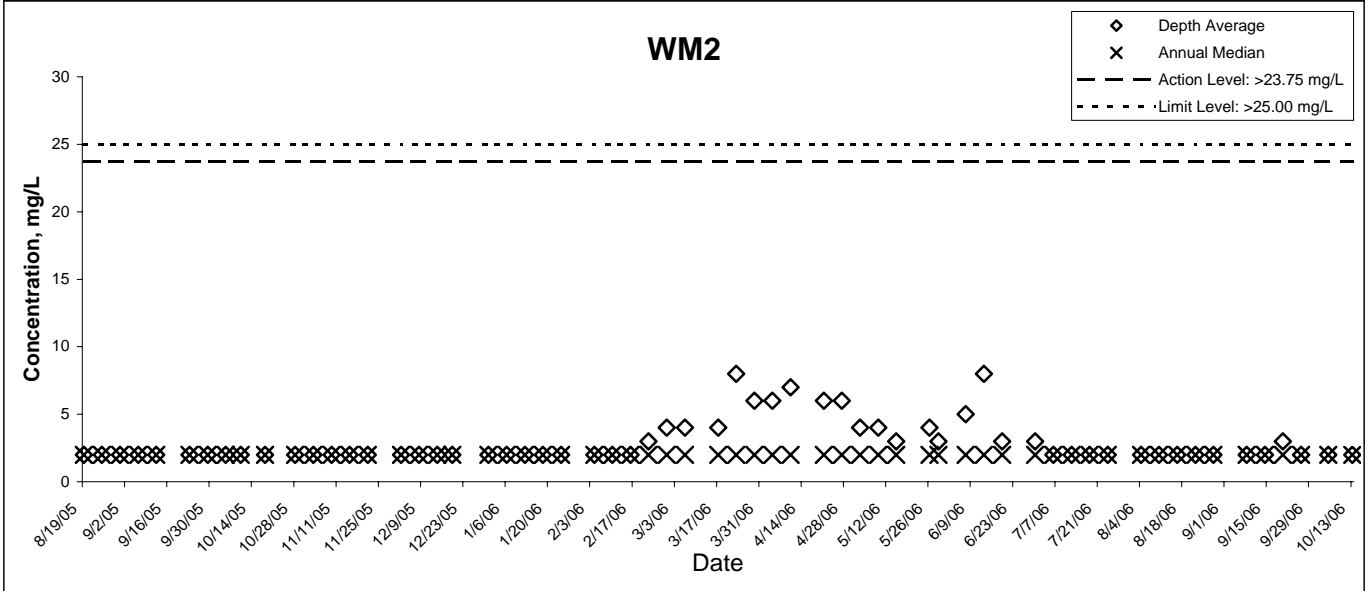
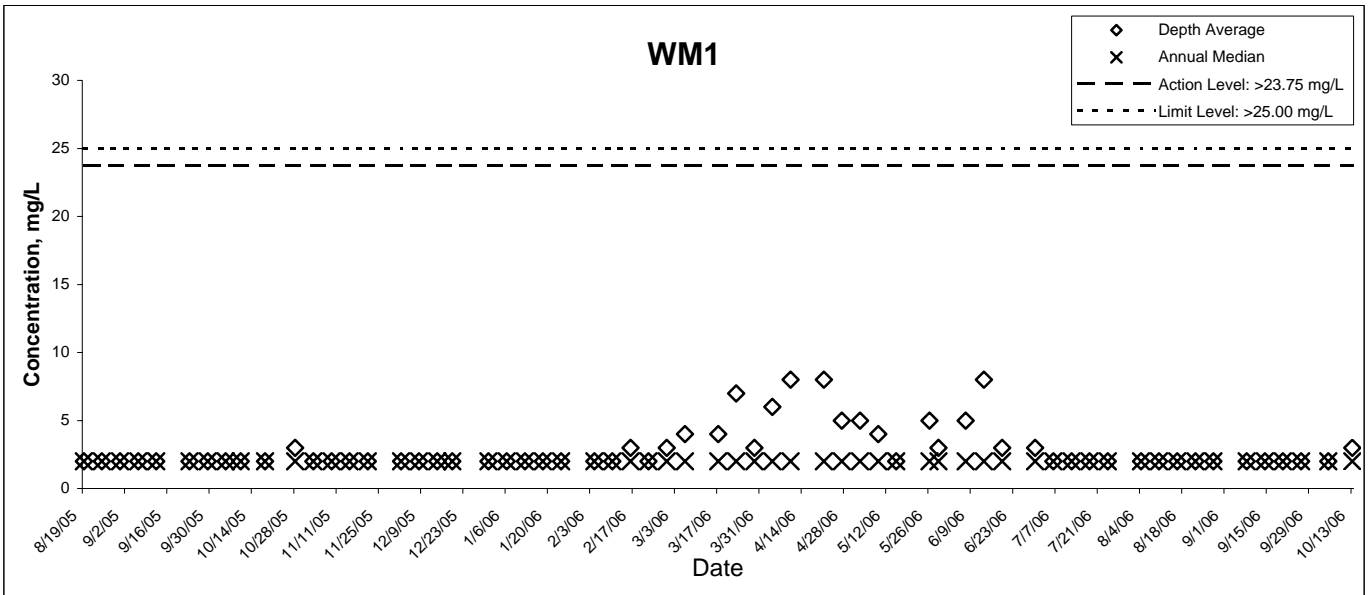


## WM5

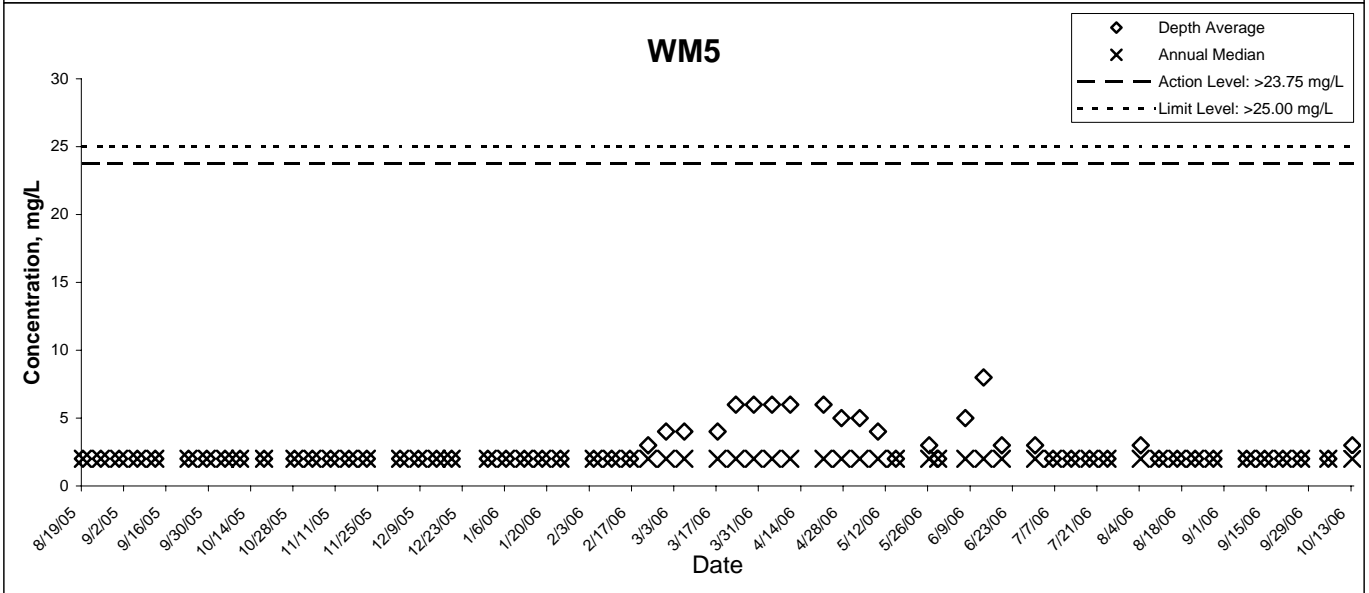
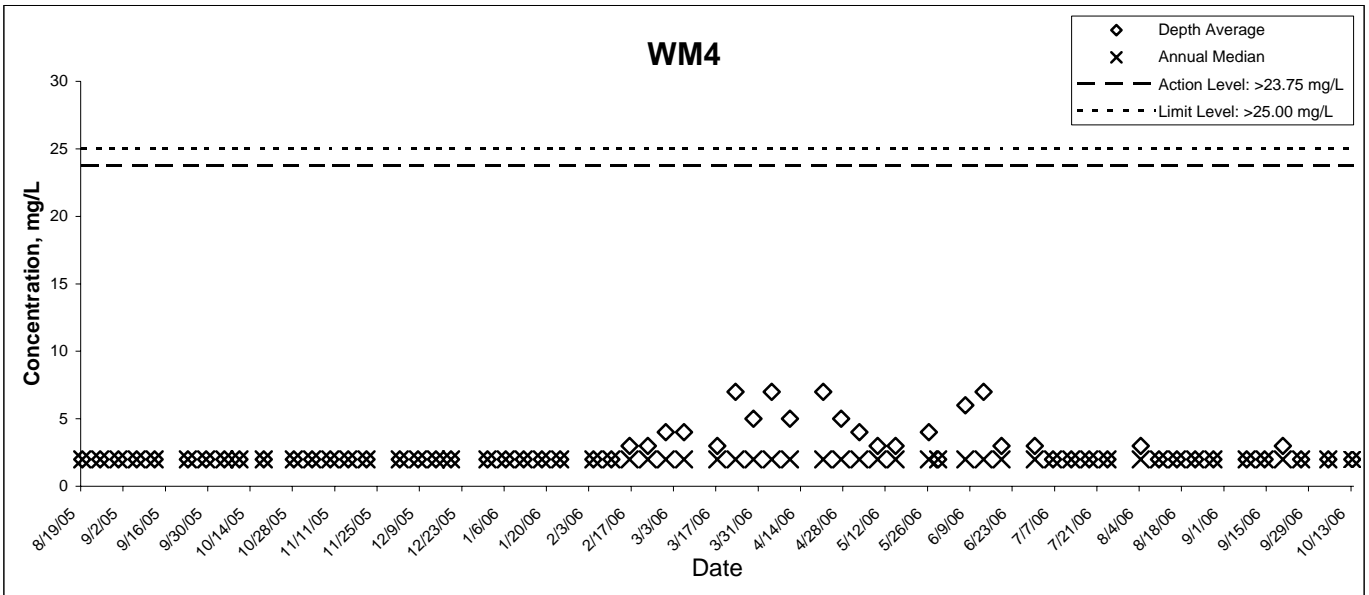
◆ Depth Average



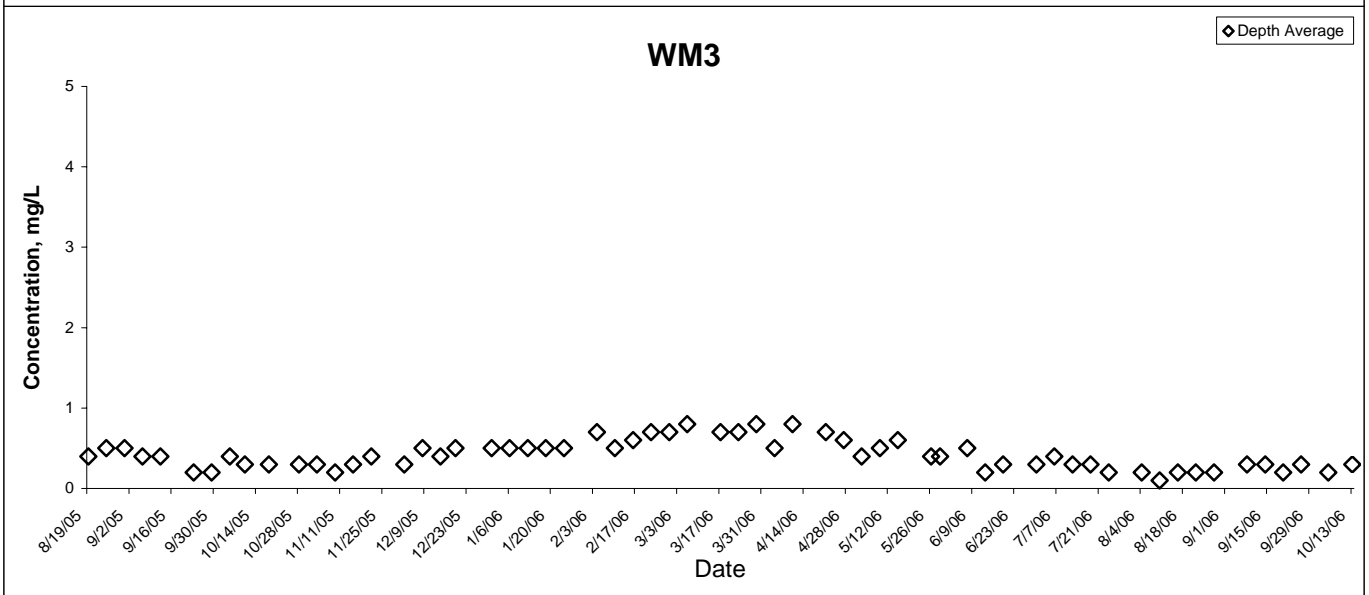
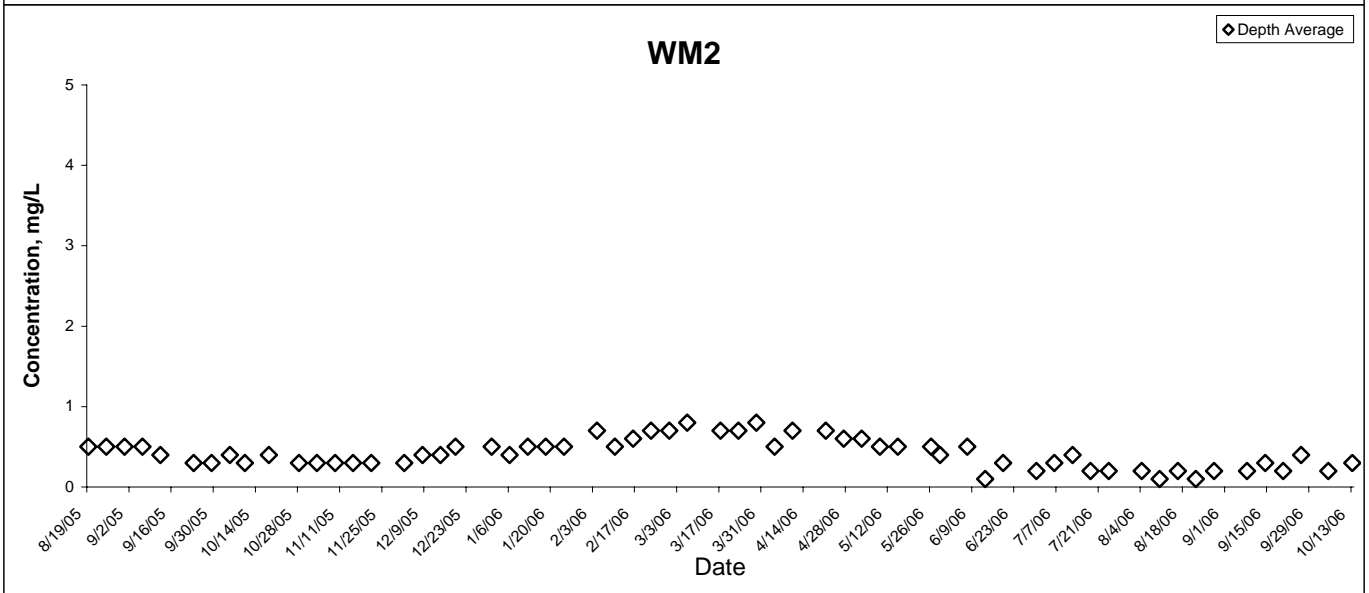
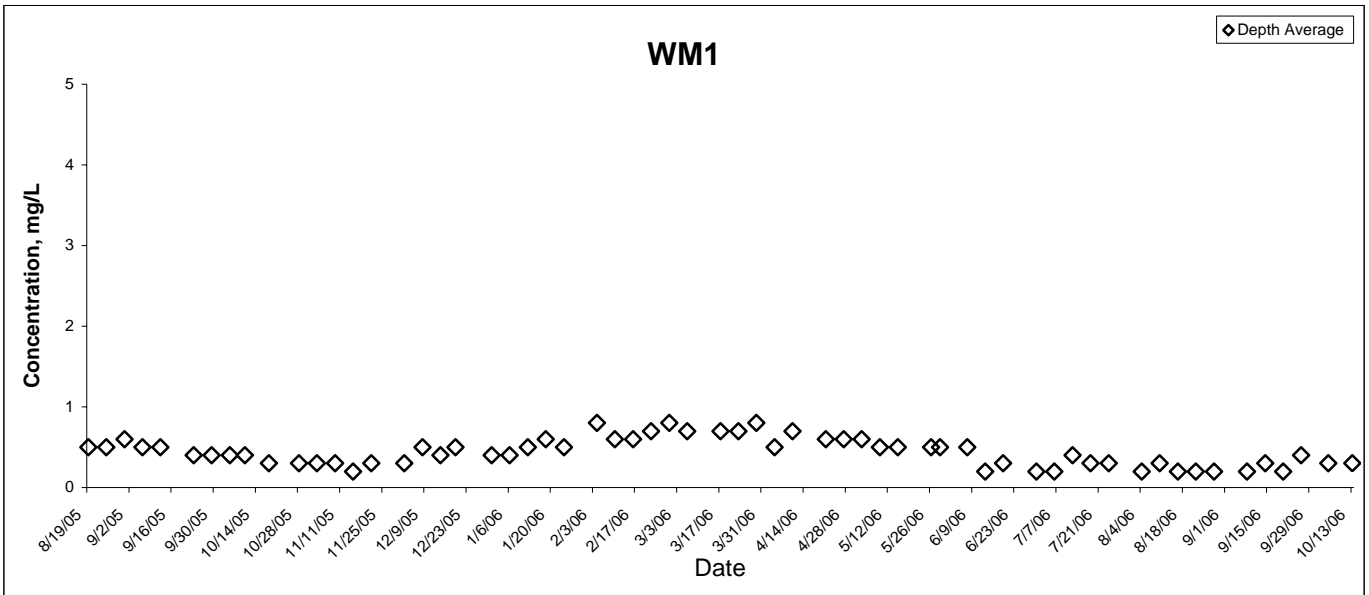
# Suspended Solids



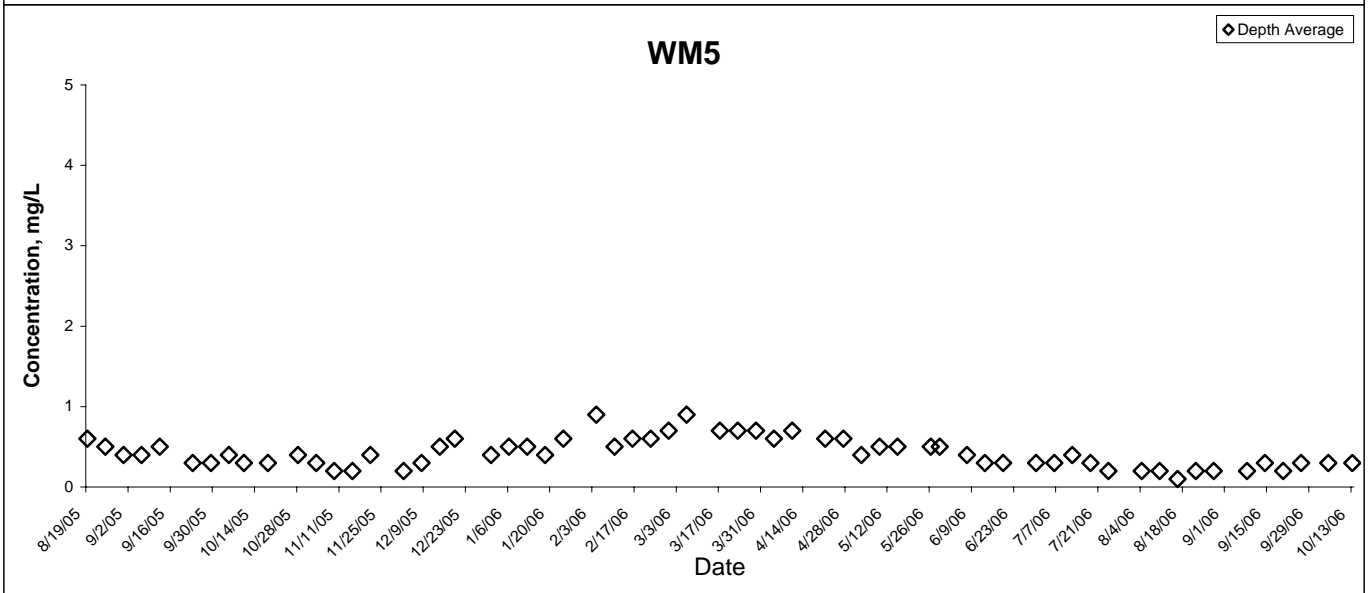
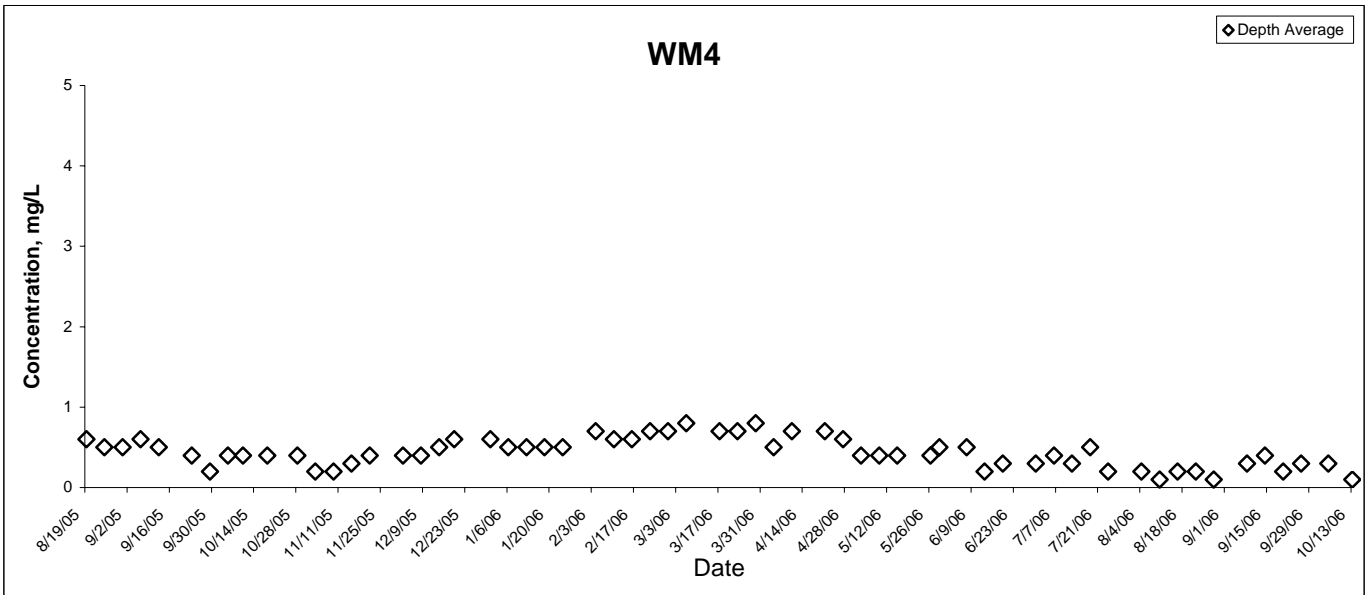
## Suspended Solids



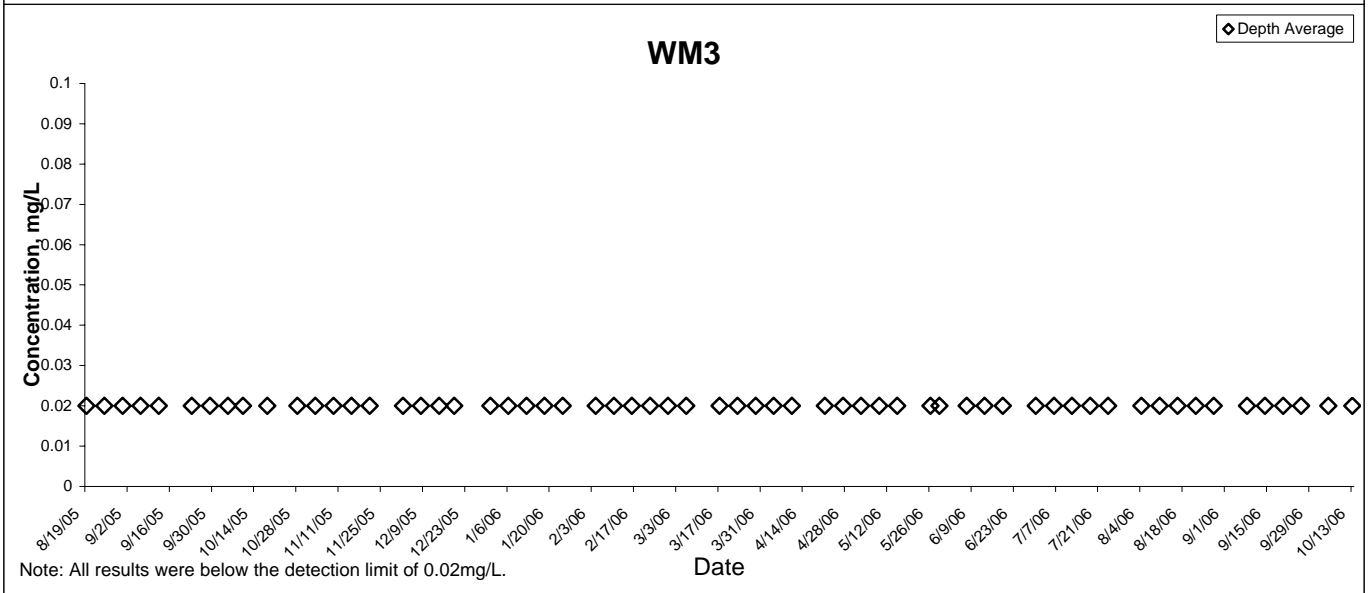
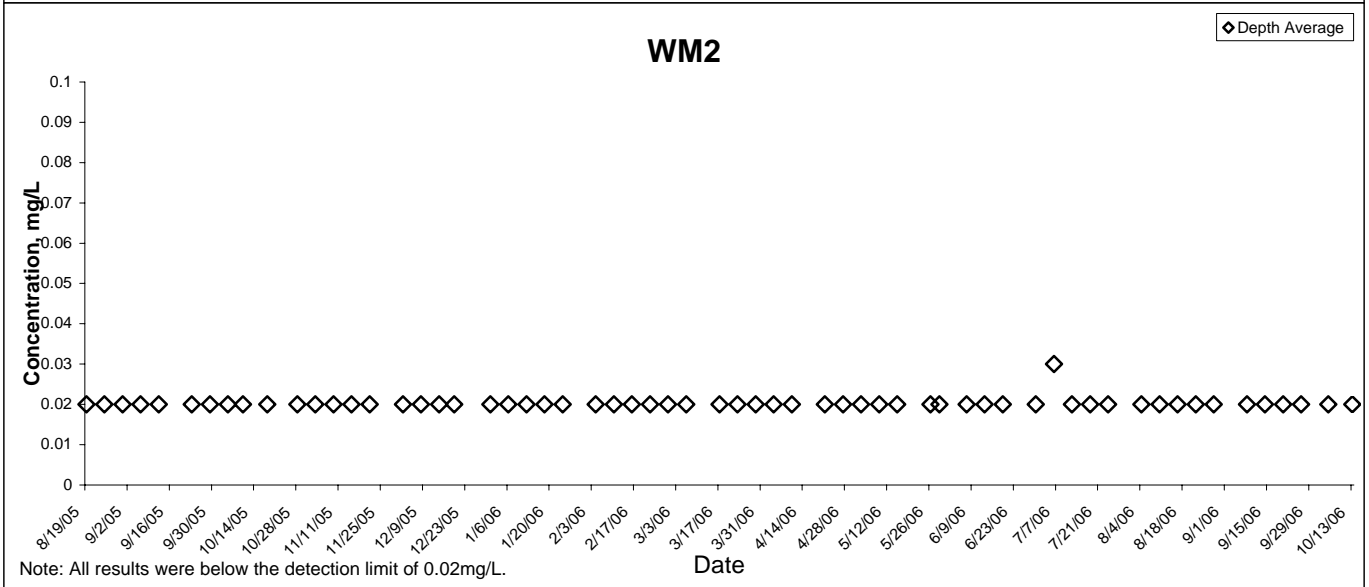
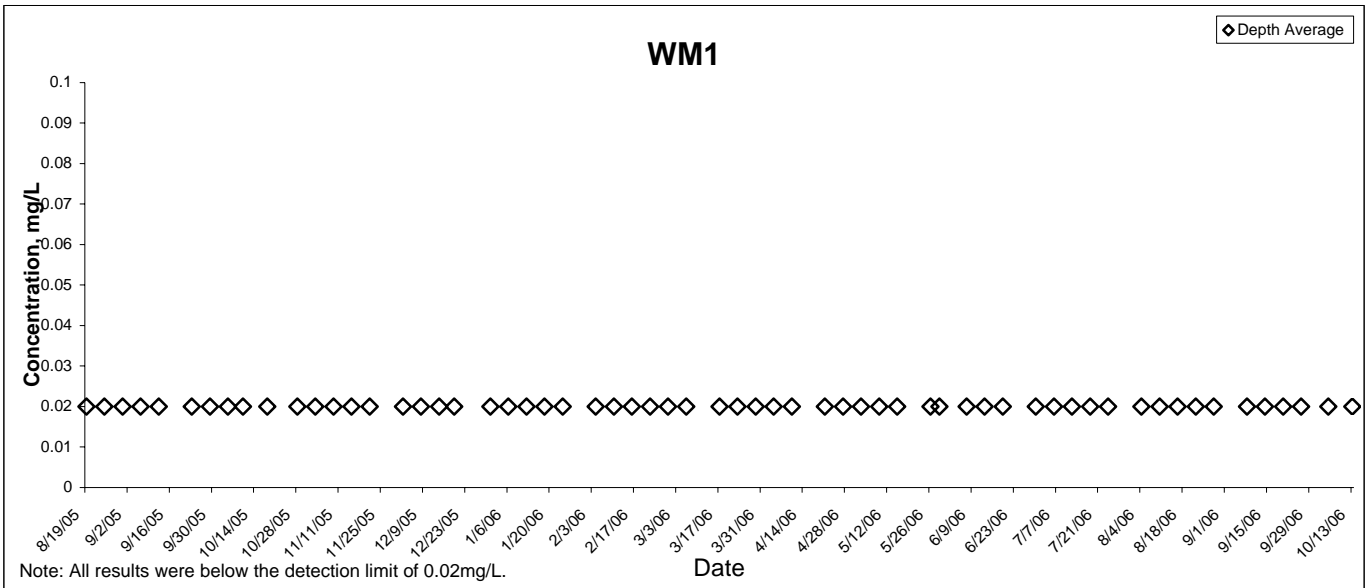
# Total Nitrogen



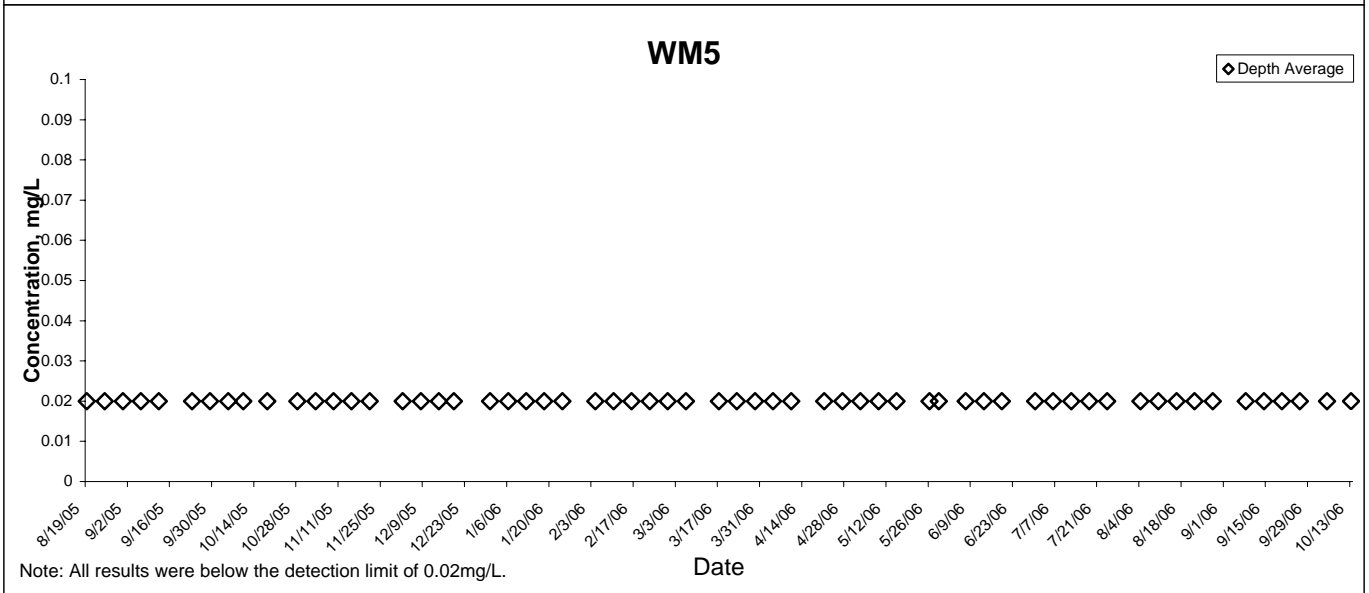
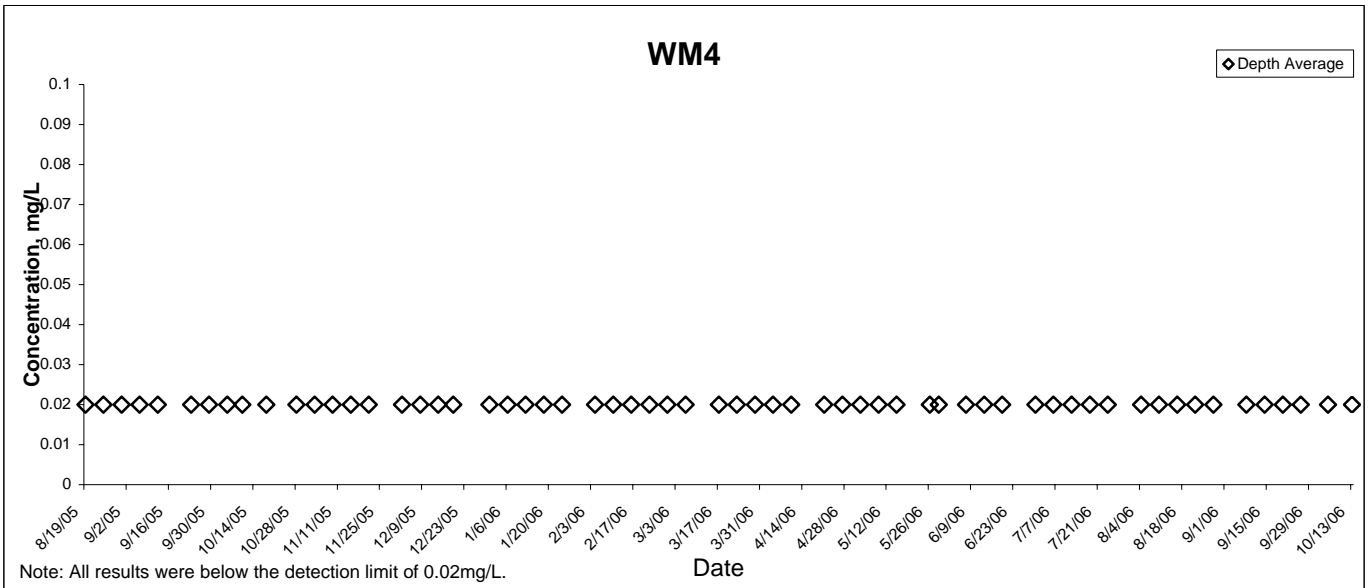
# Total Nitrogen



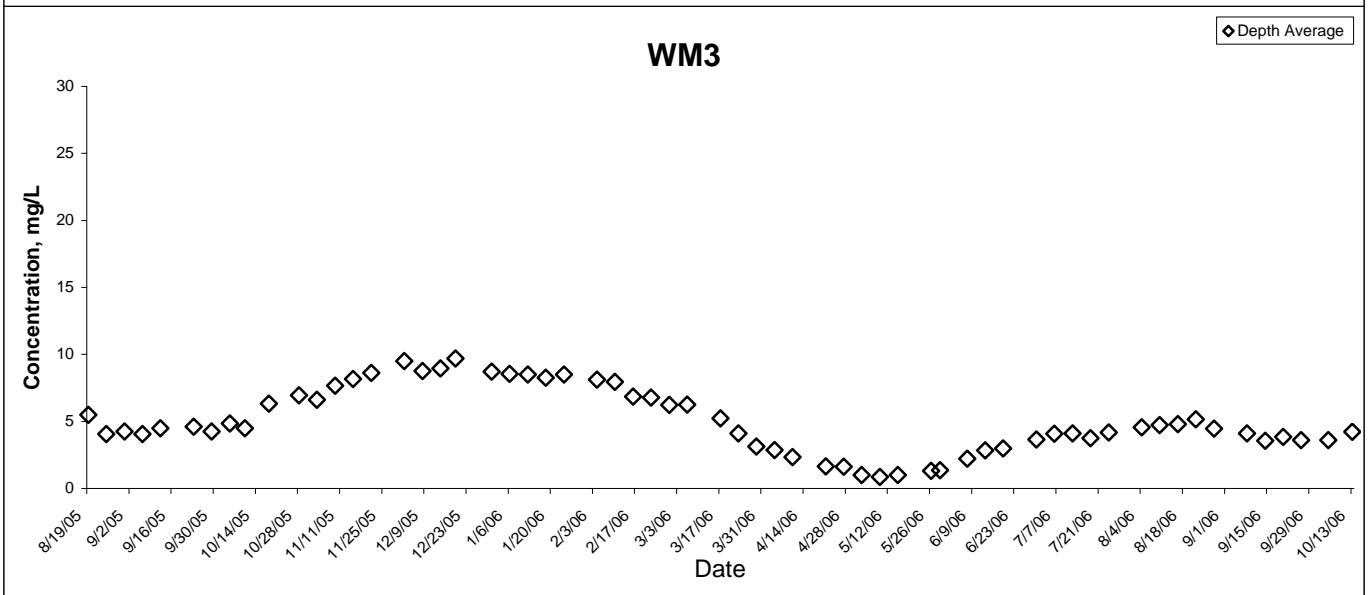
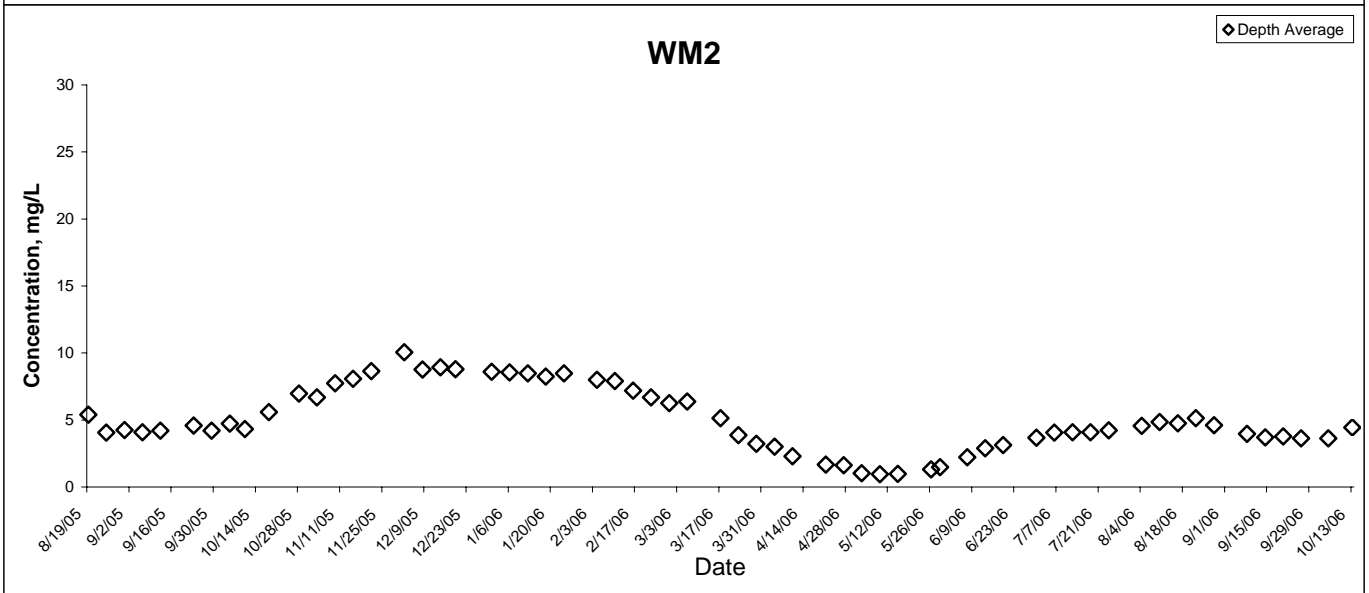
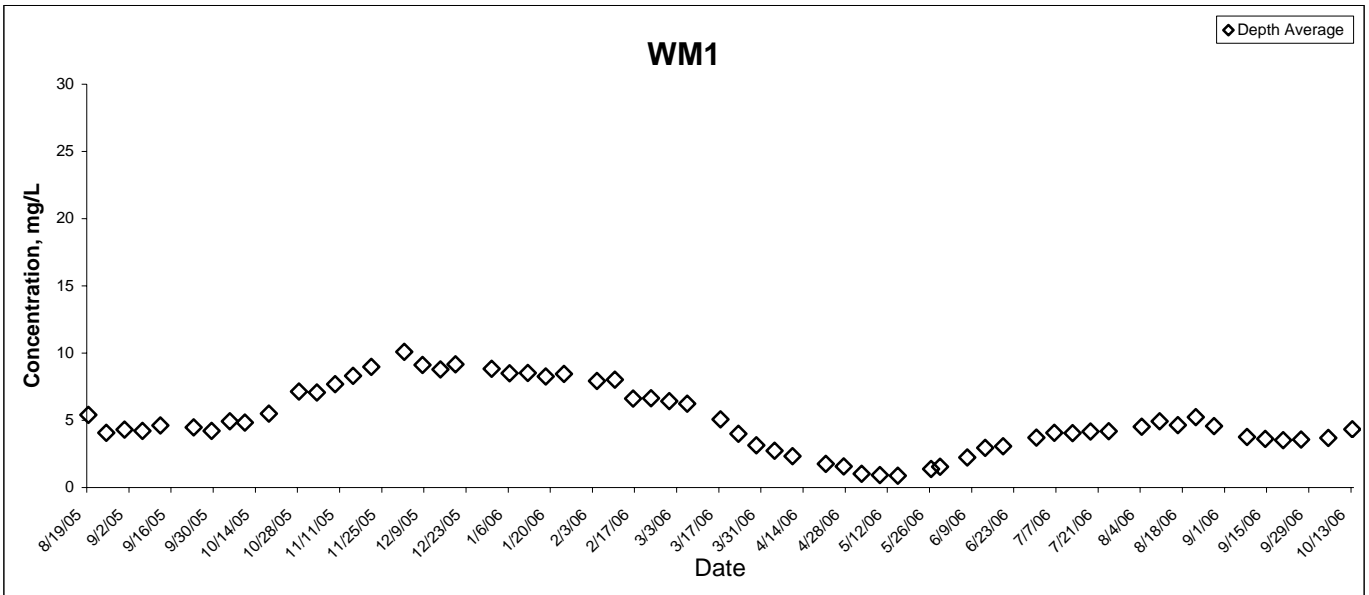
# Total Phosphorous



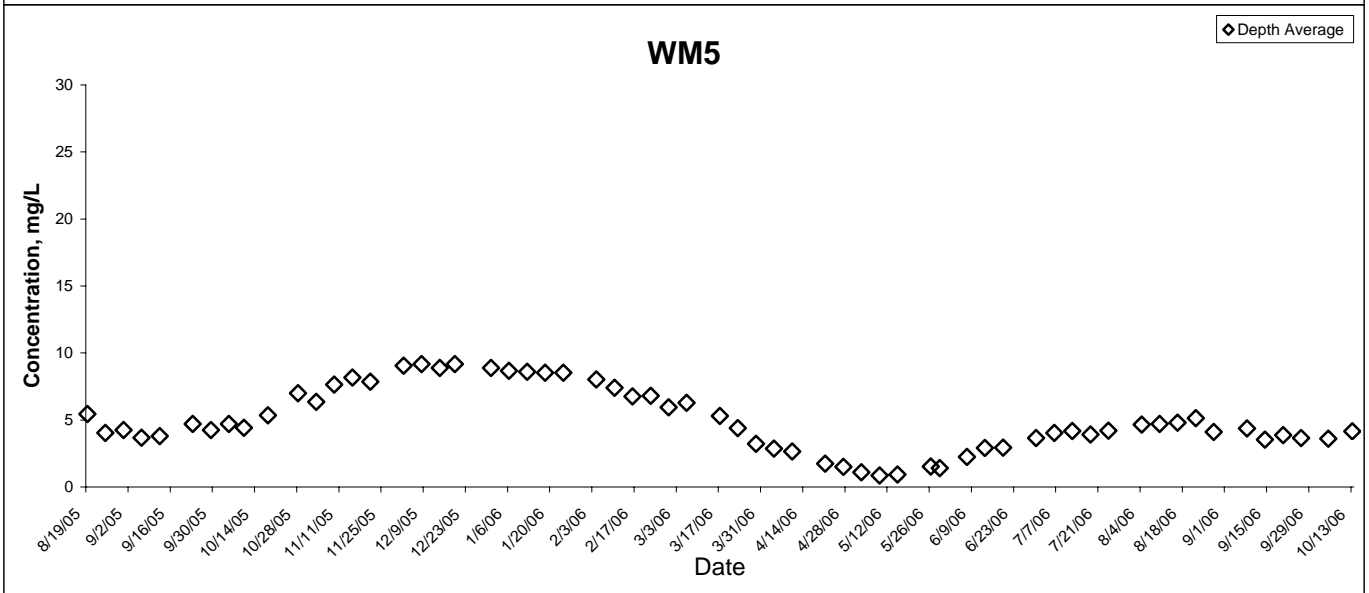
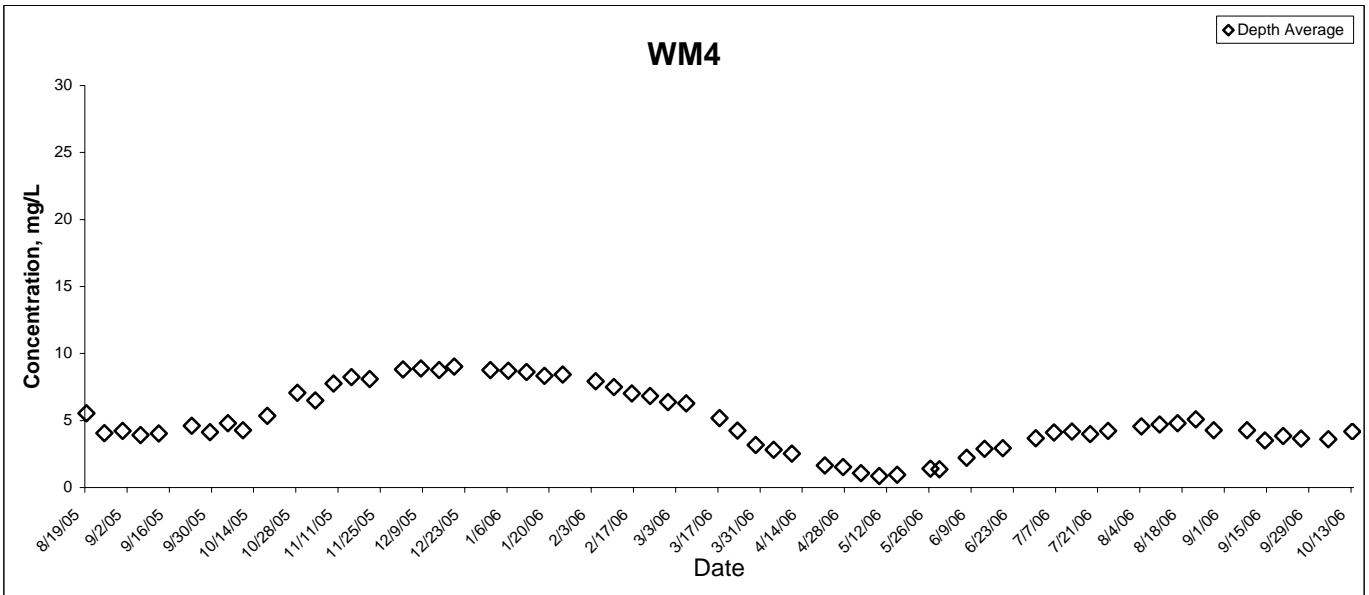
# Total Phosphorous



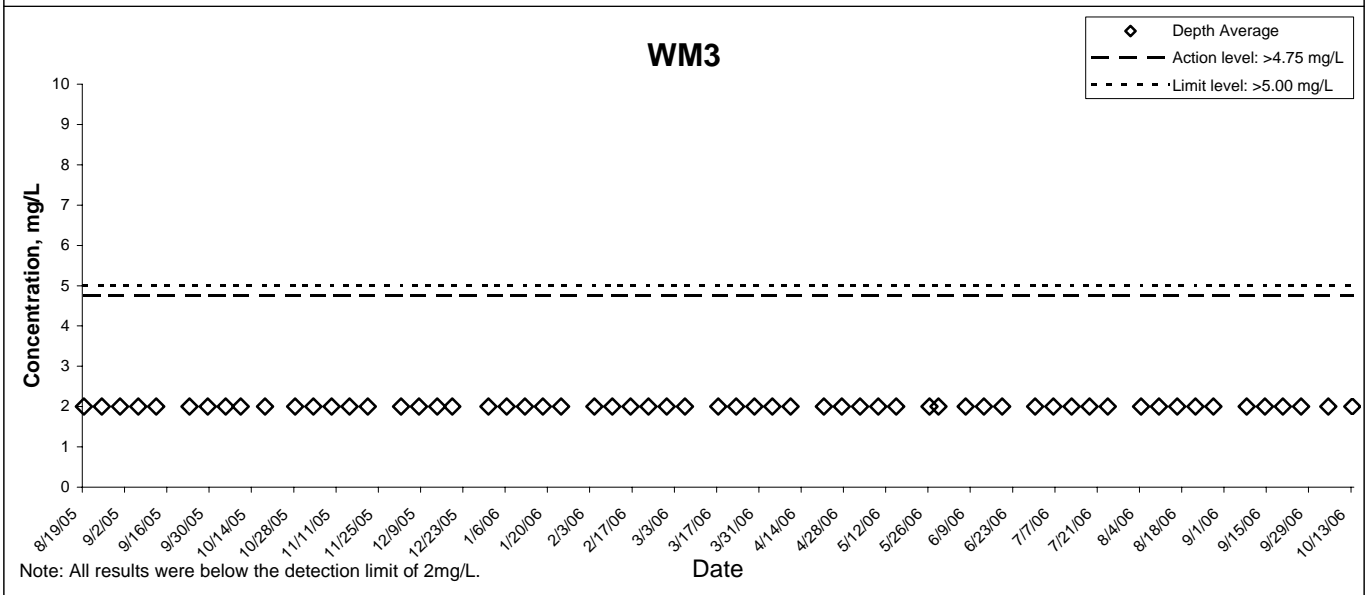
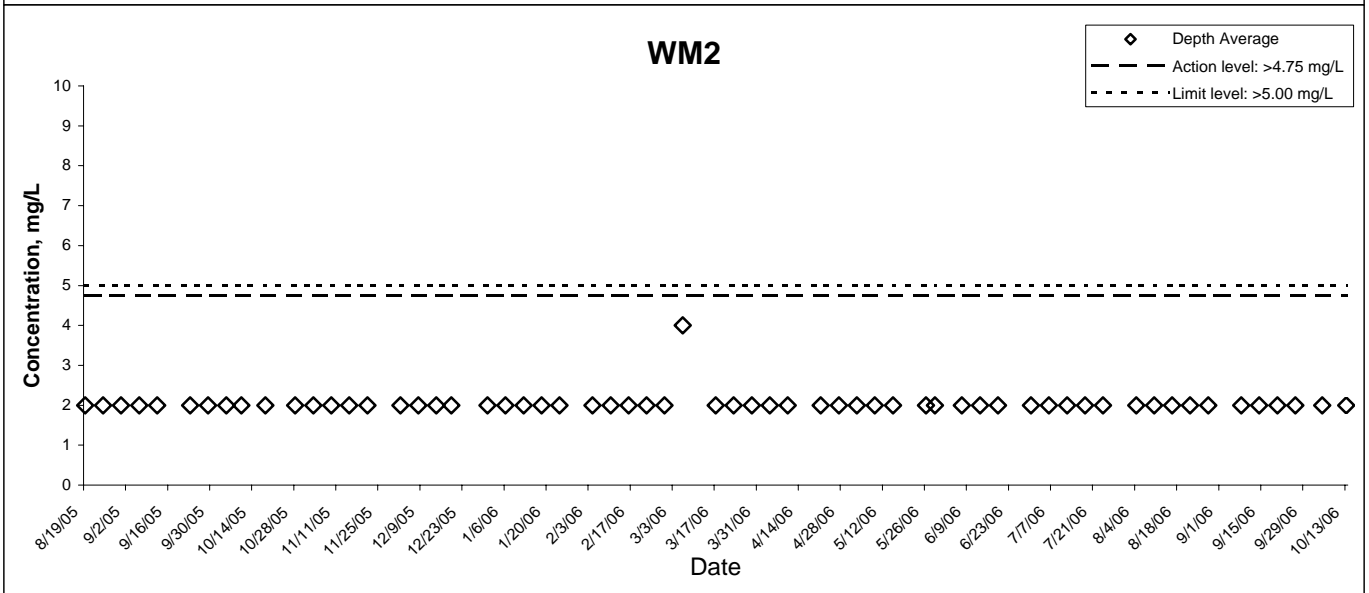
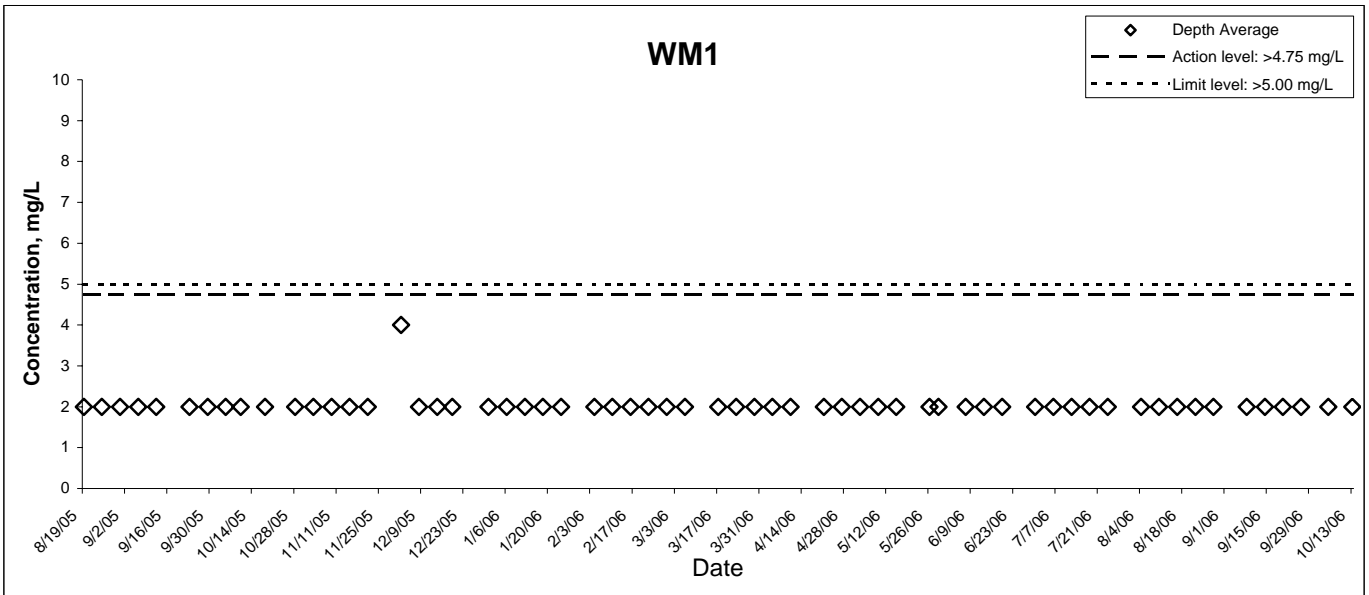
# Silica



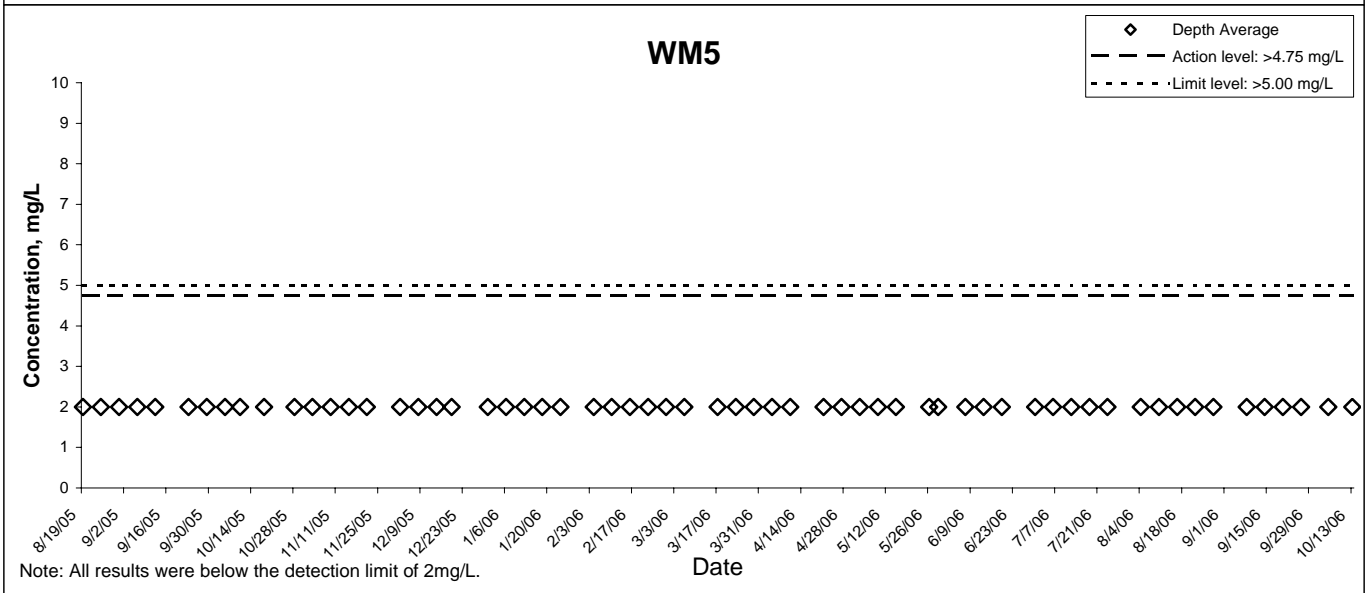
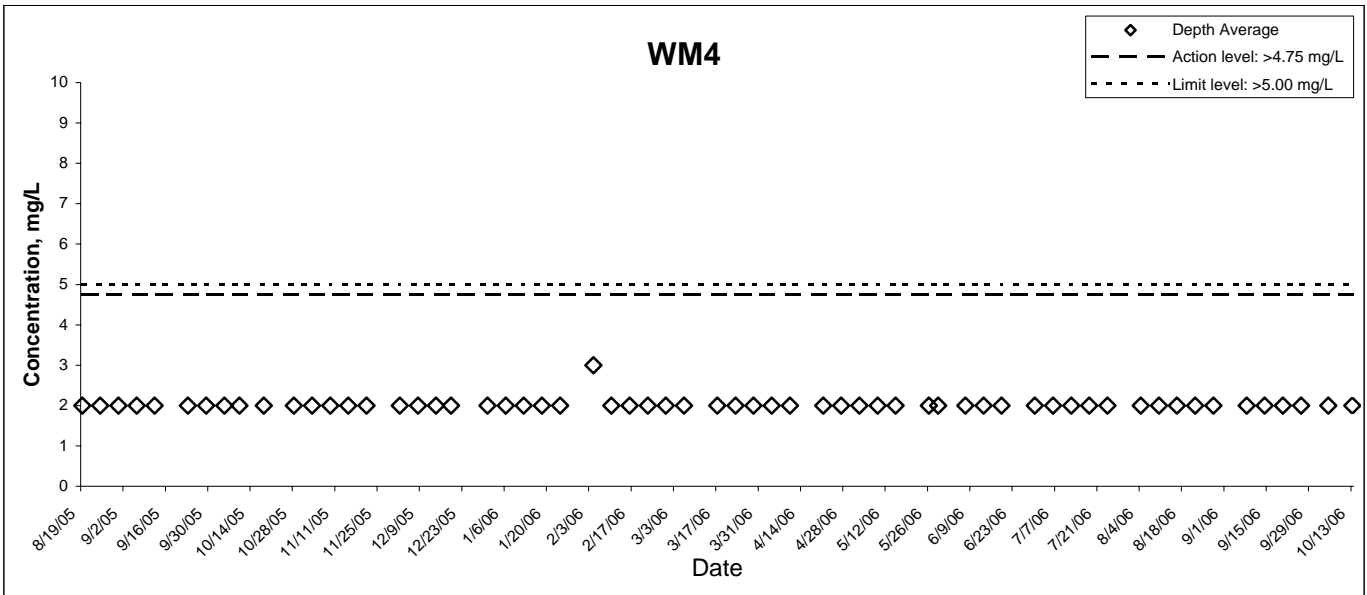
# Silica



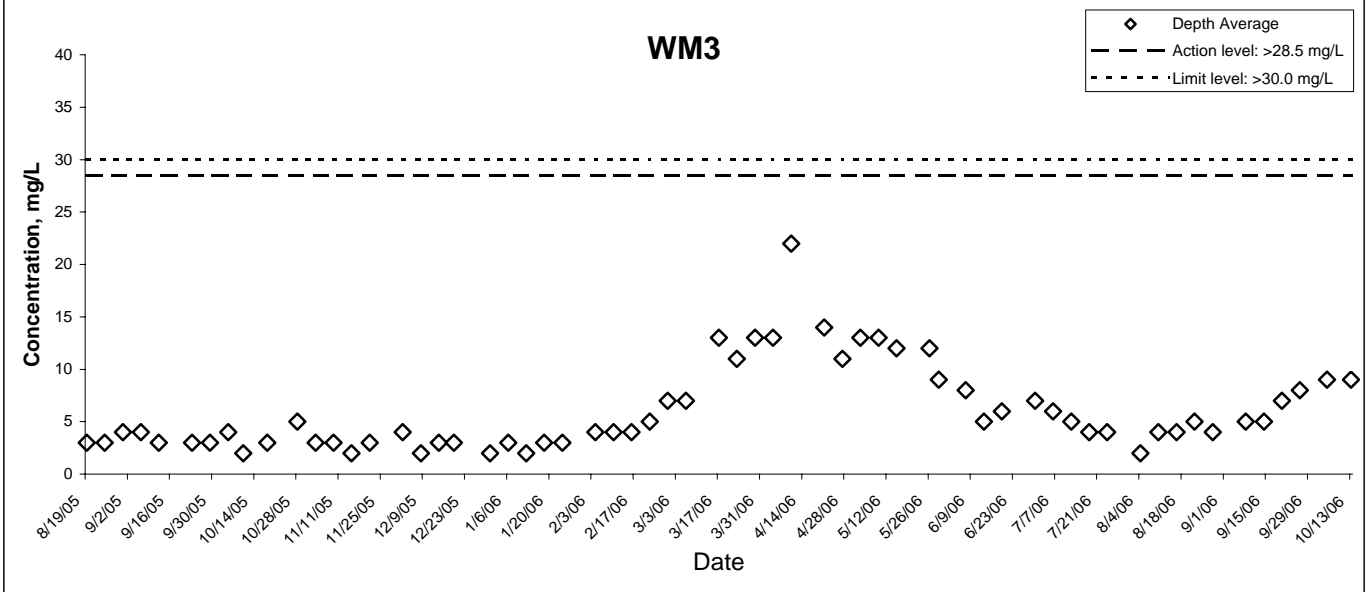
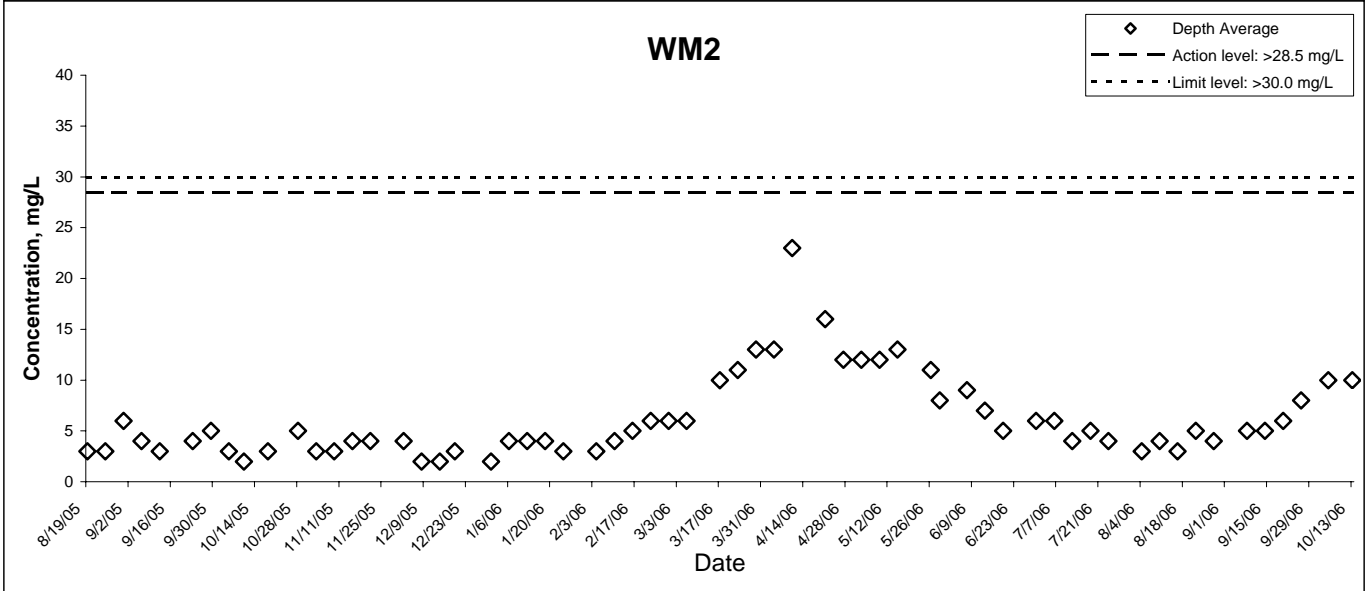
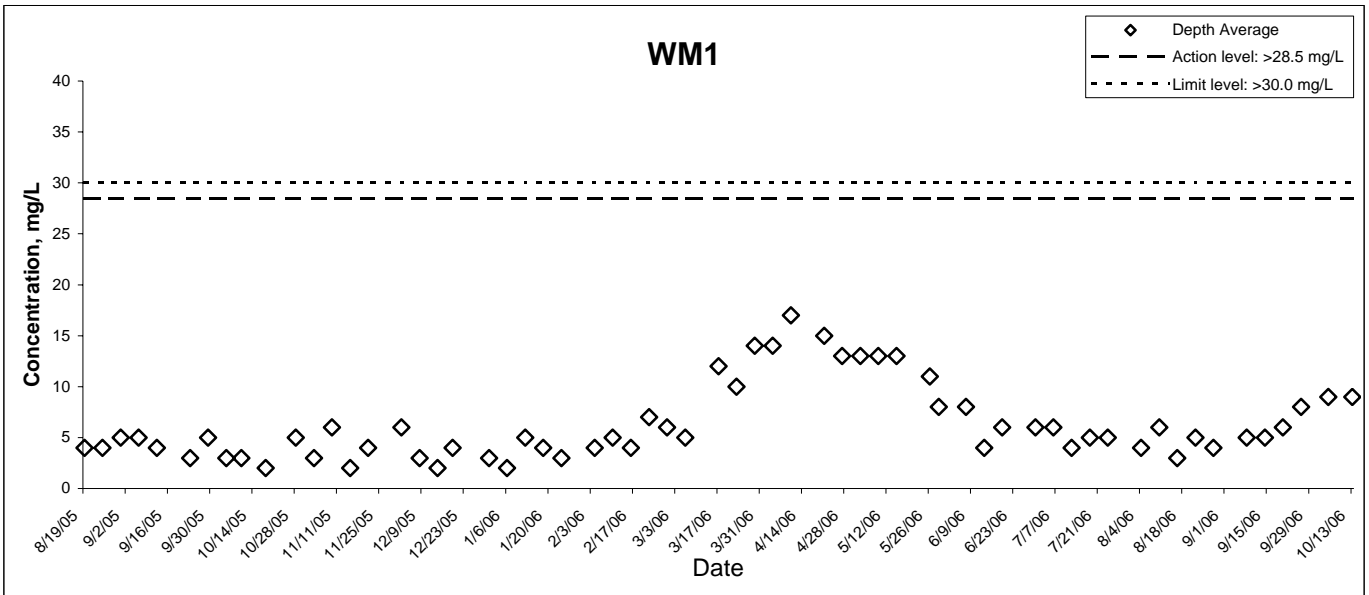
## 5-day BOD



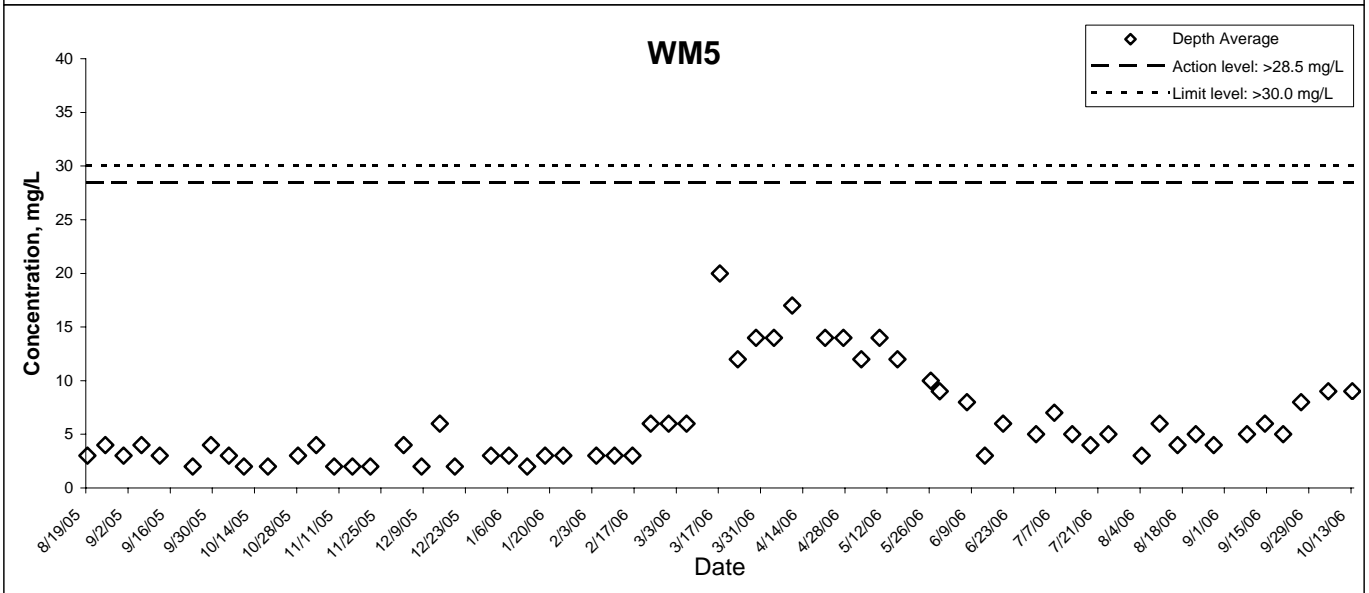
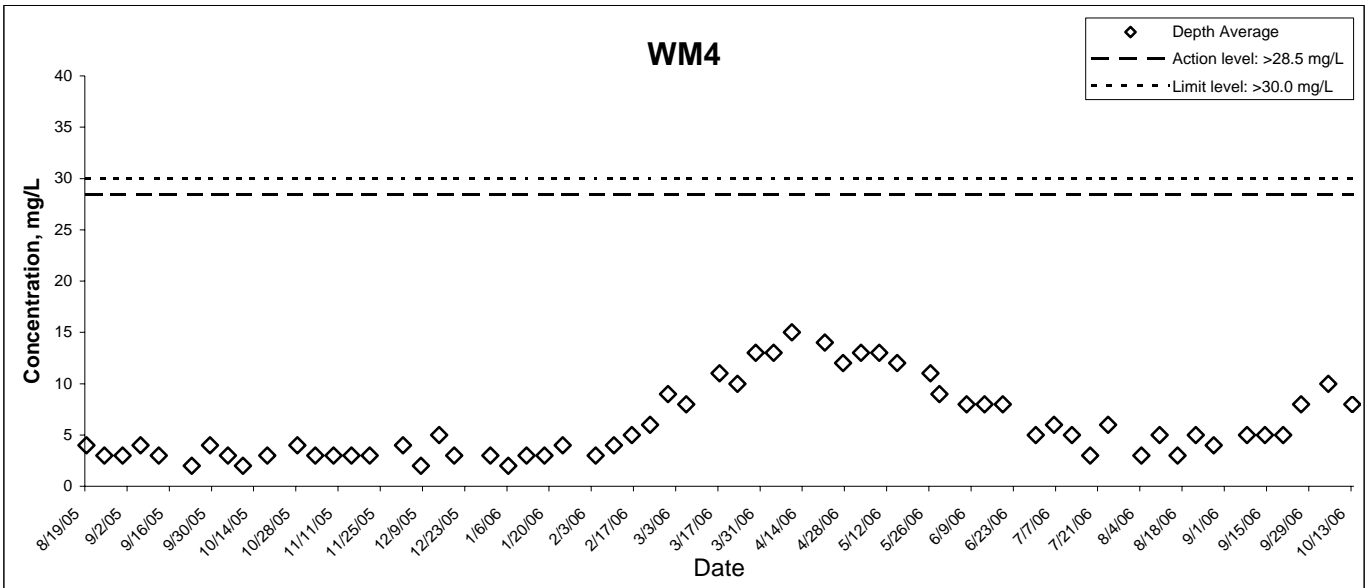
## 5-day BOD



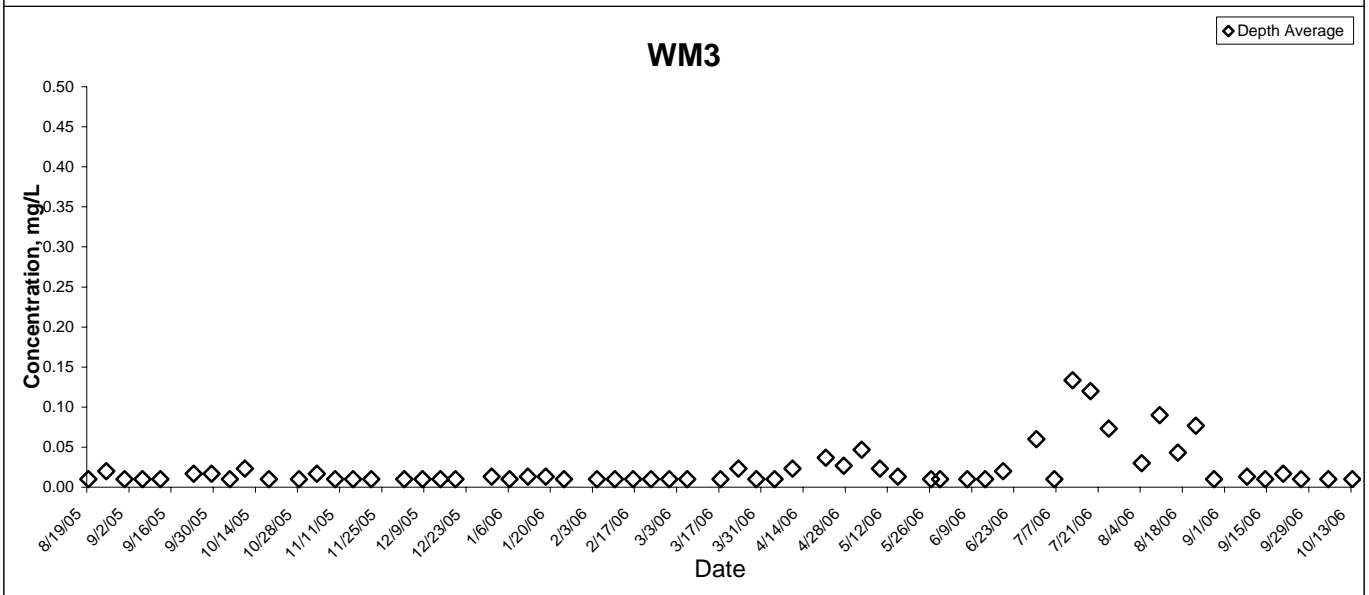
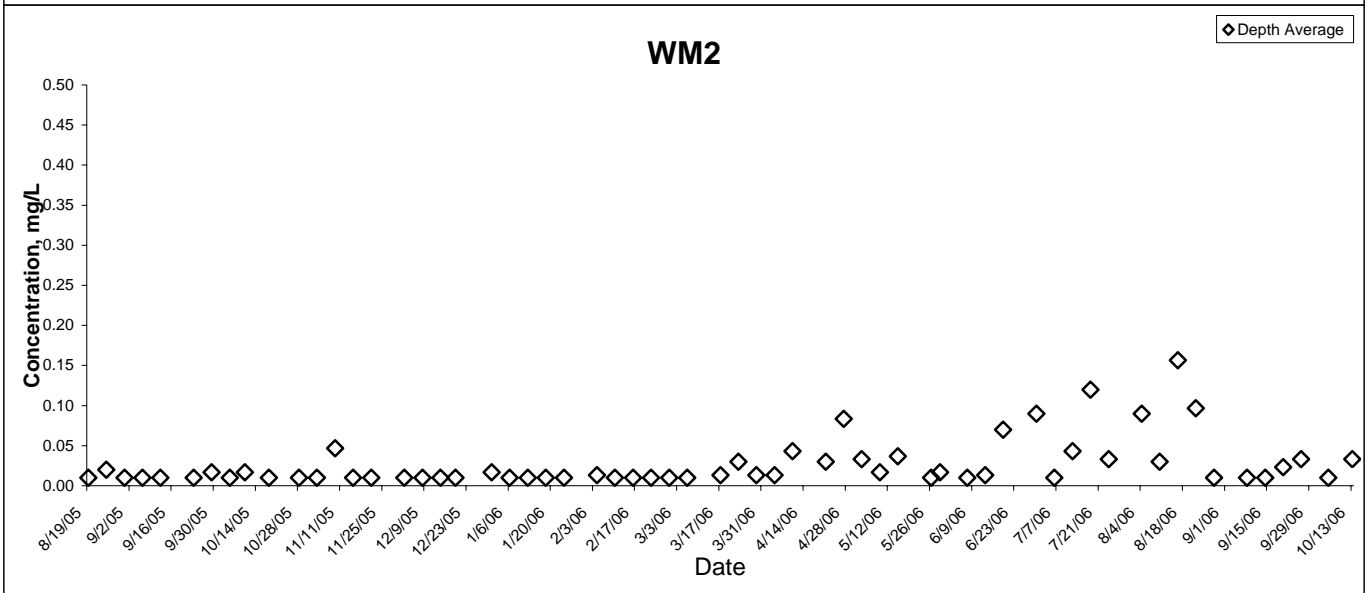
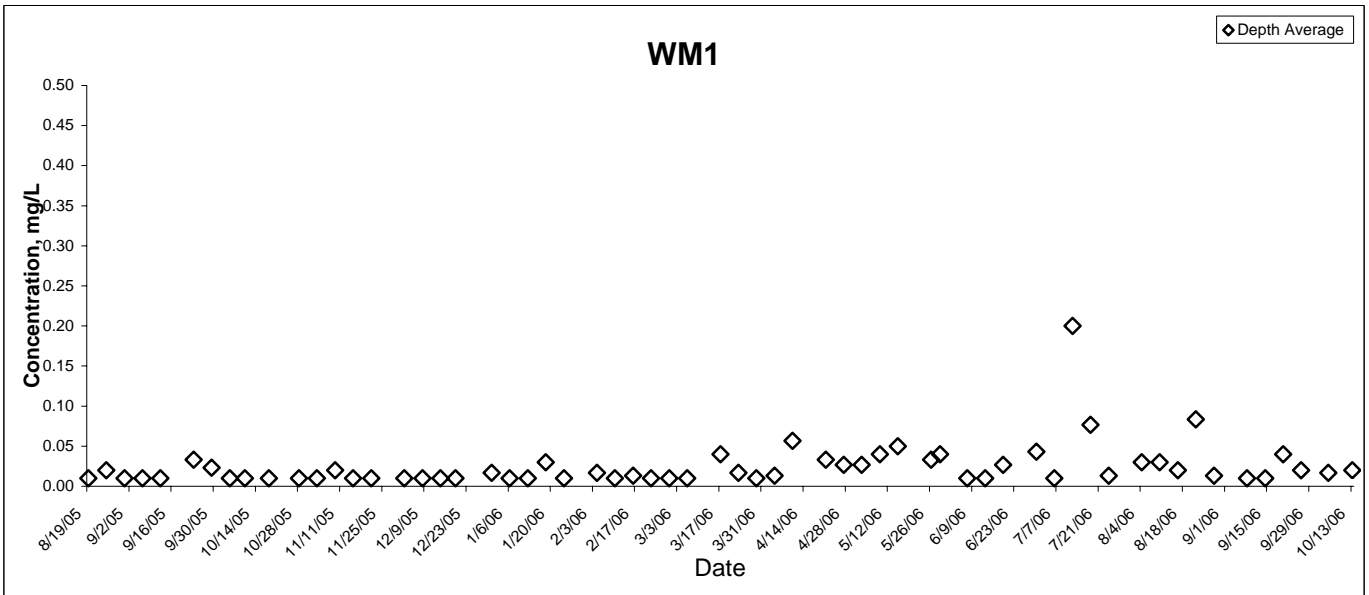
# Chemical Oxygen Demand



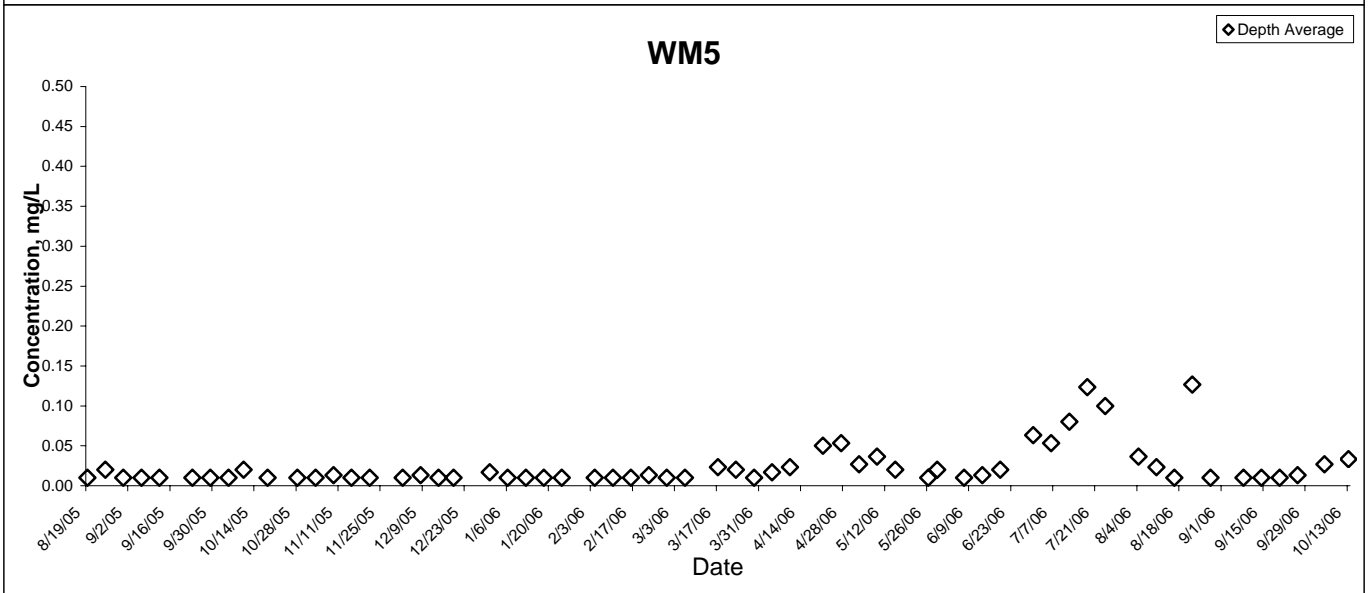
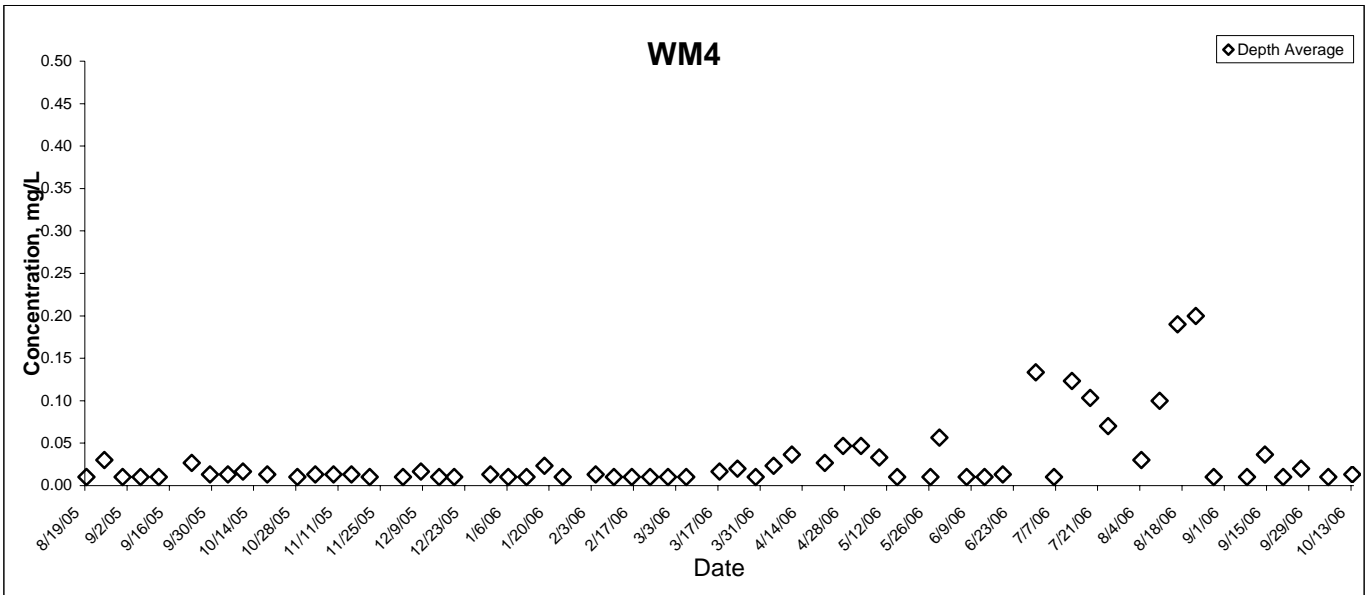
# Chemical Oxygen Demand



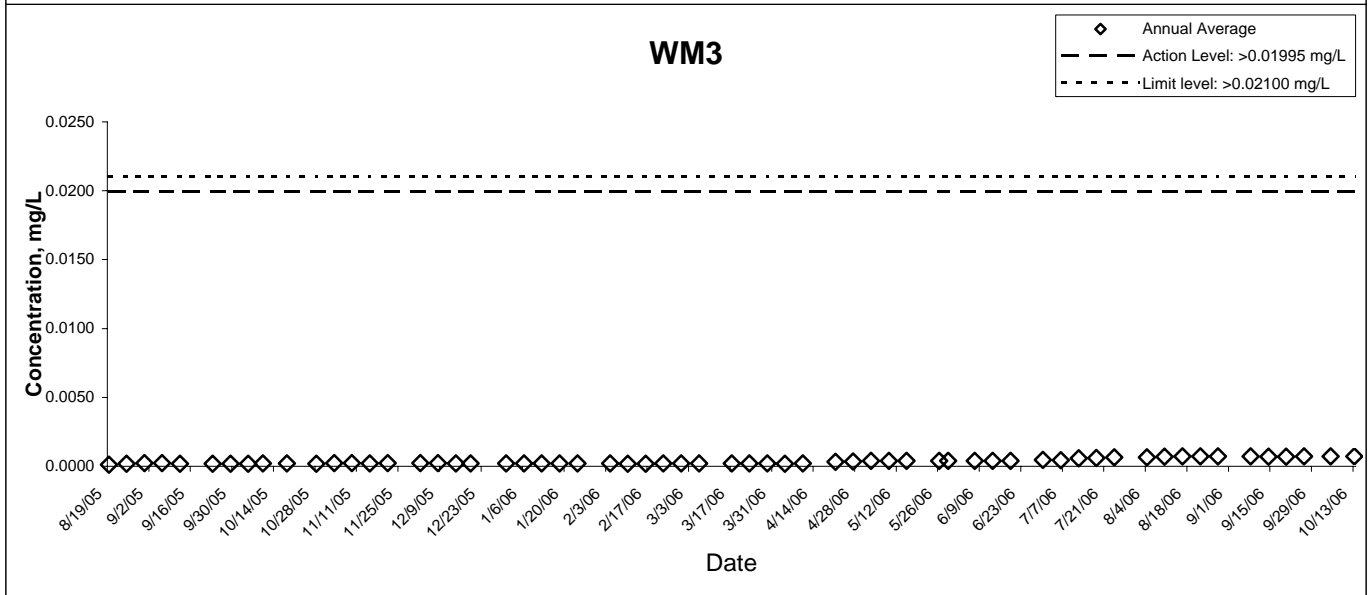
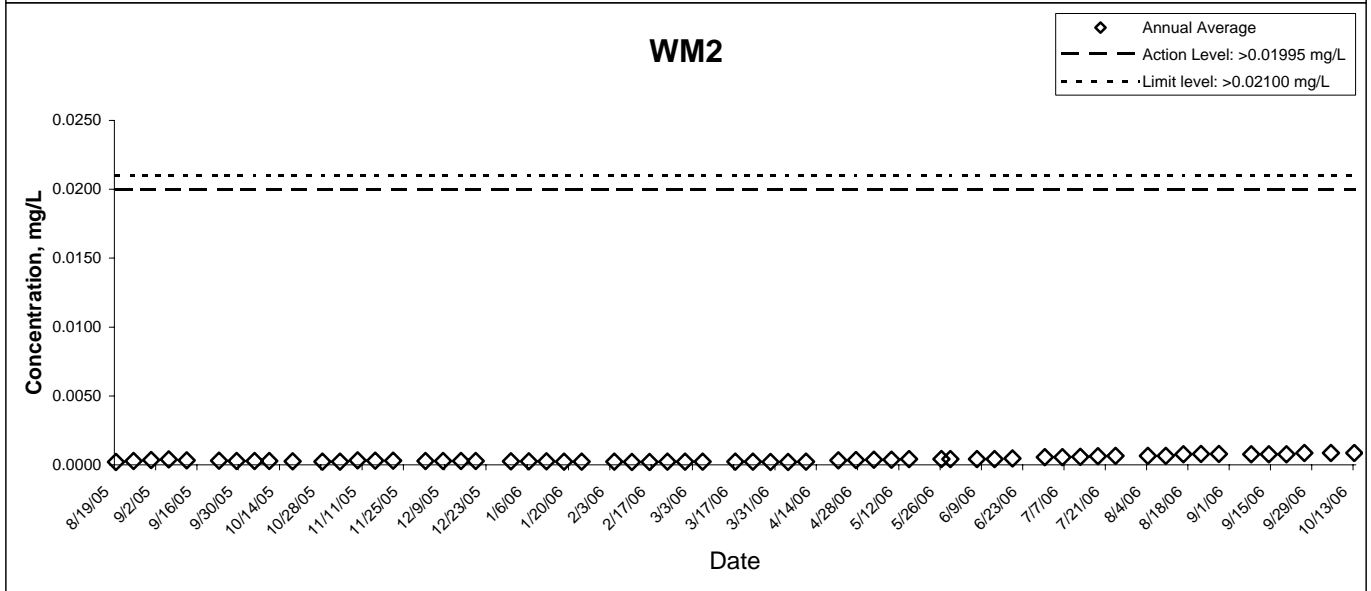
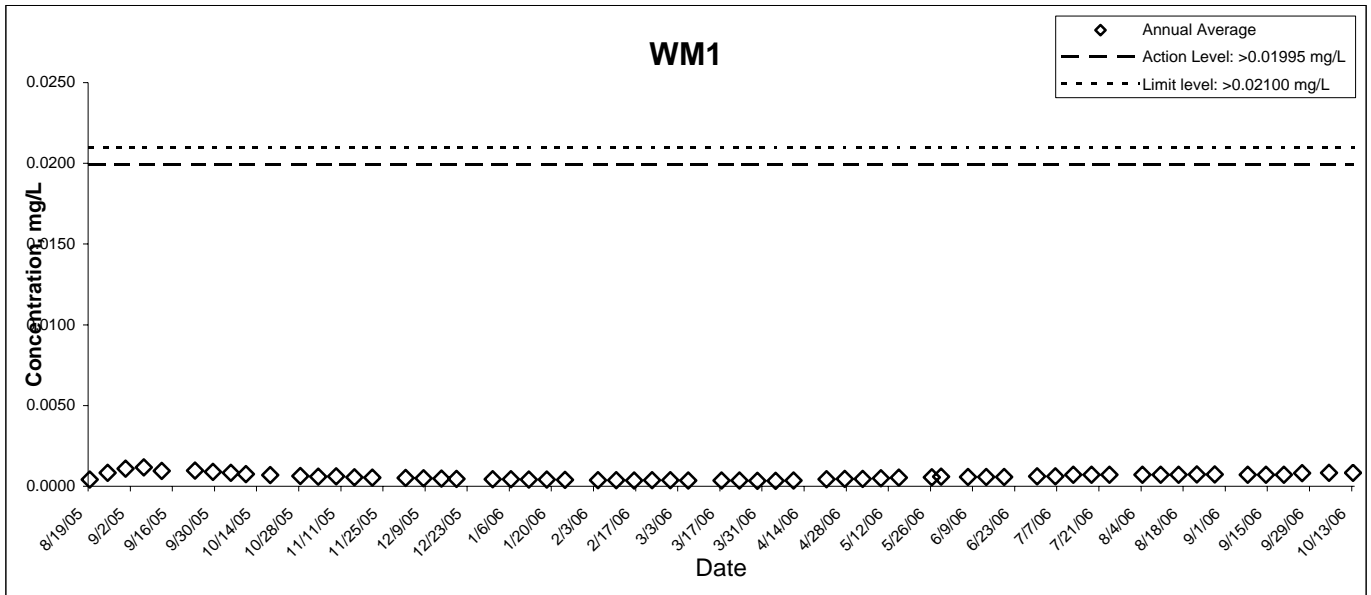
# Ammonia Nitrogen



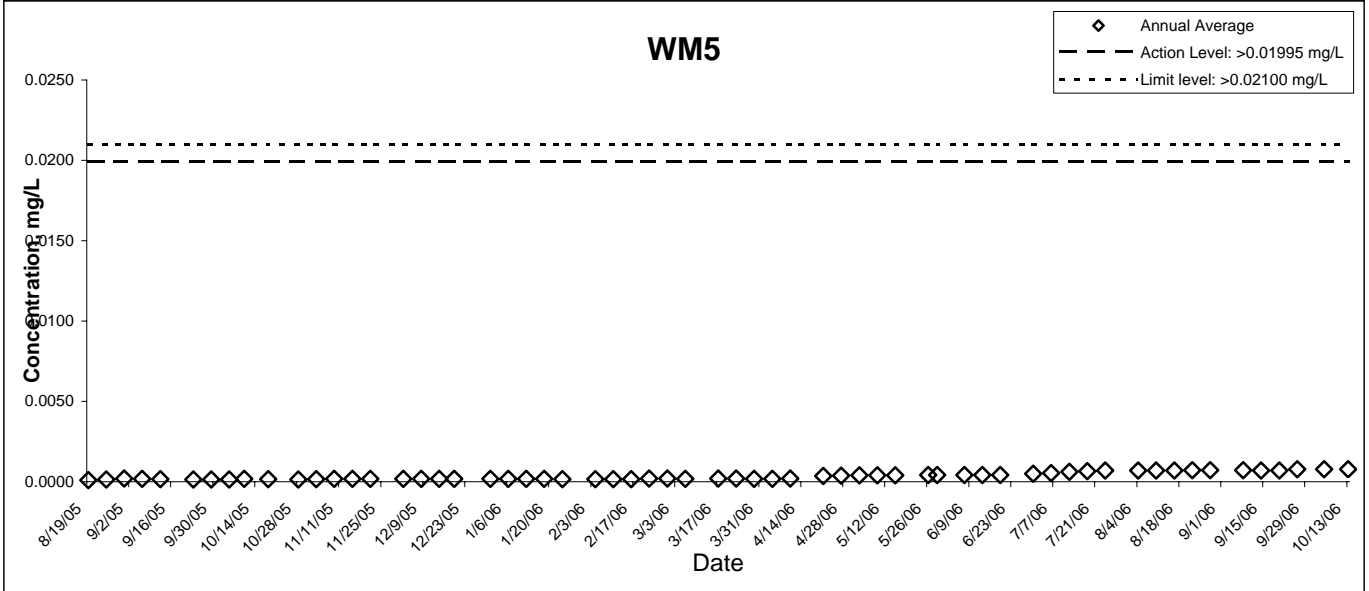
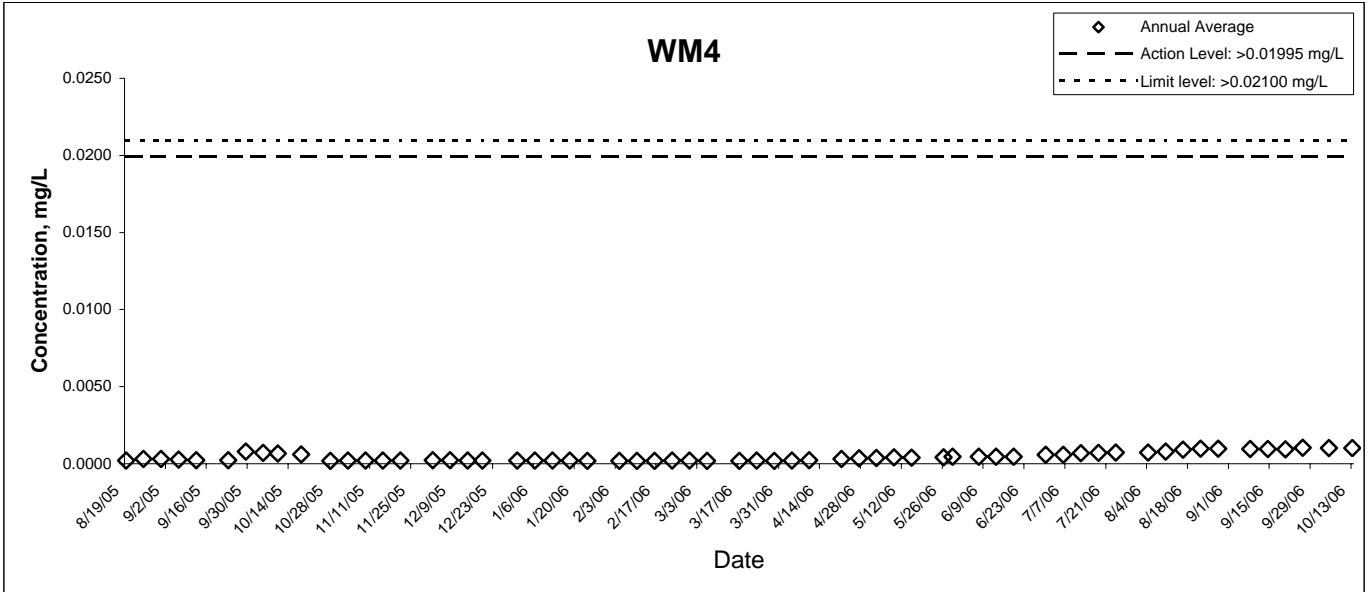
# Ammonia Nitrogen



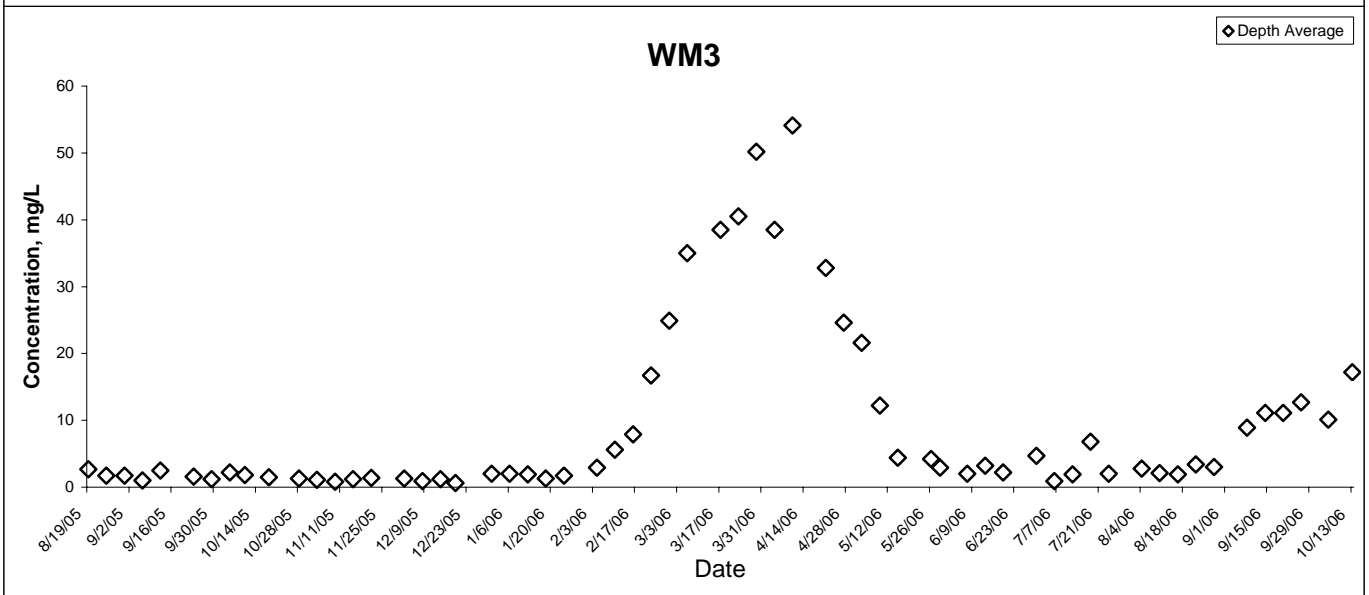
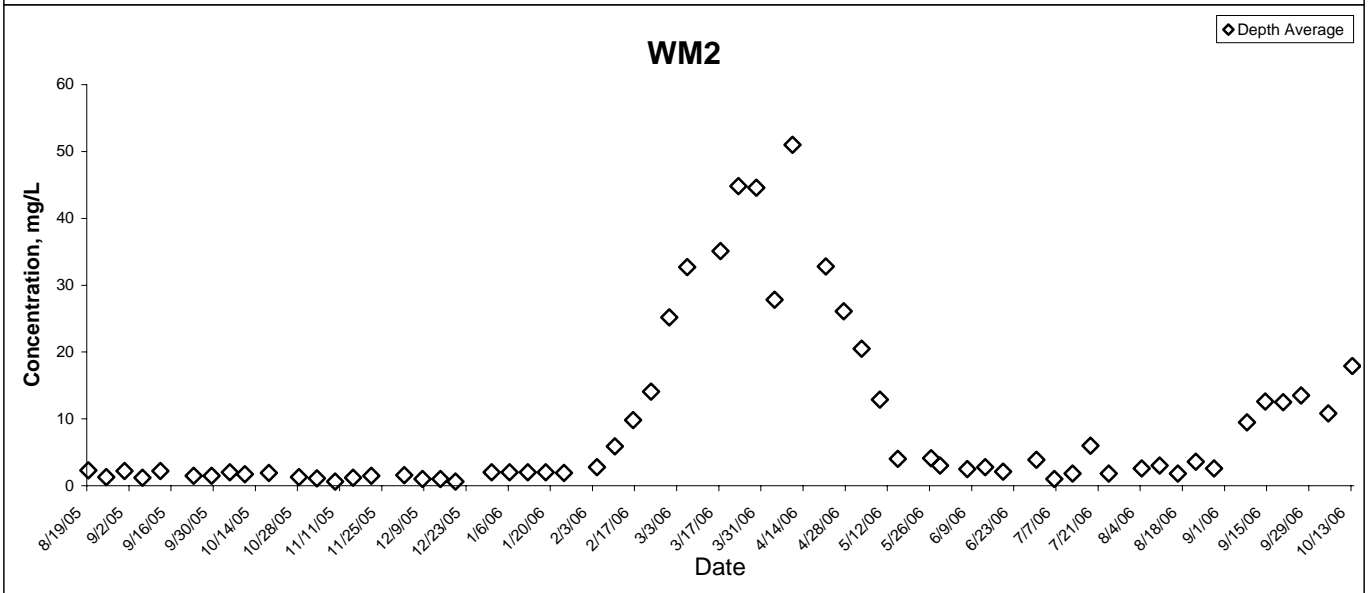
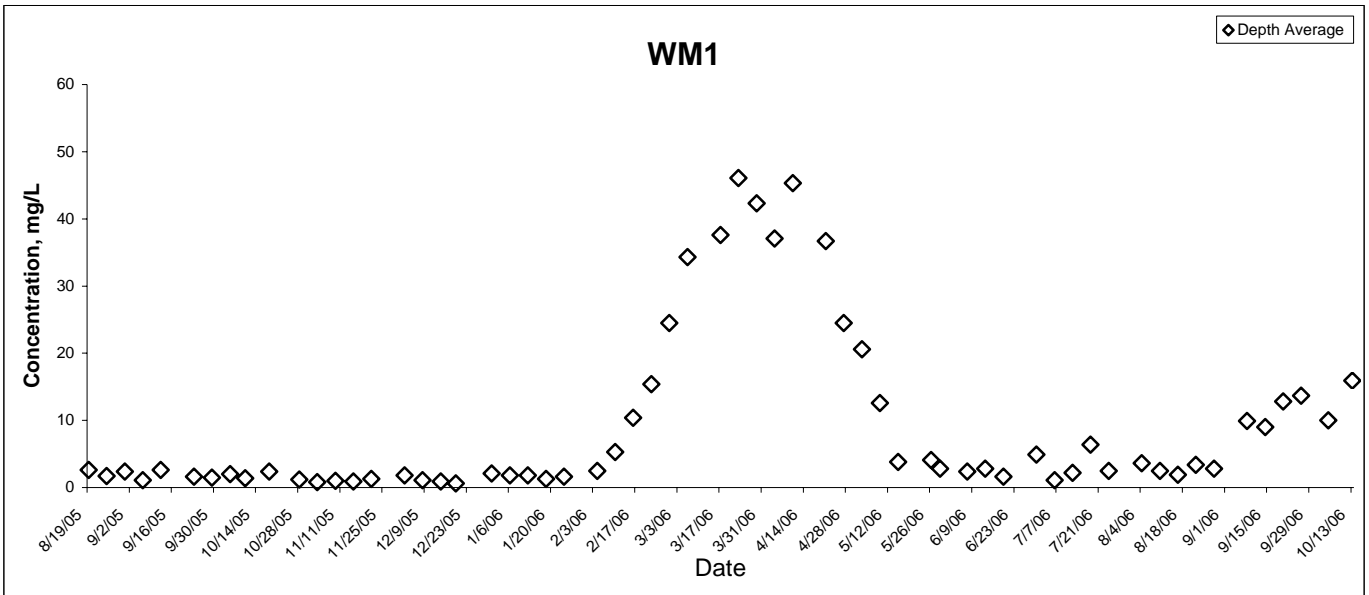
## Unionised Nitrogen (Annual Average)



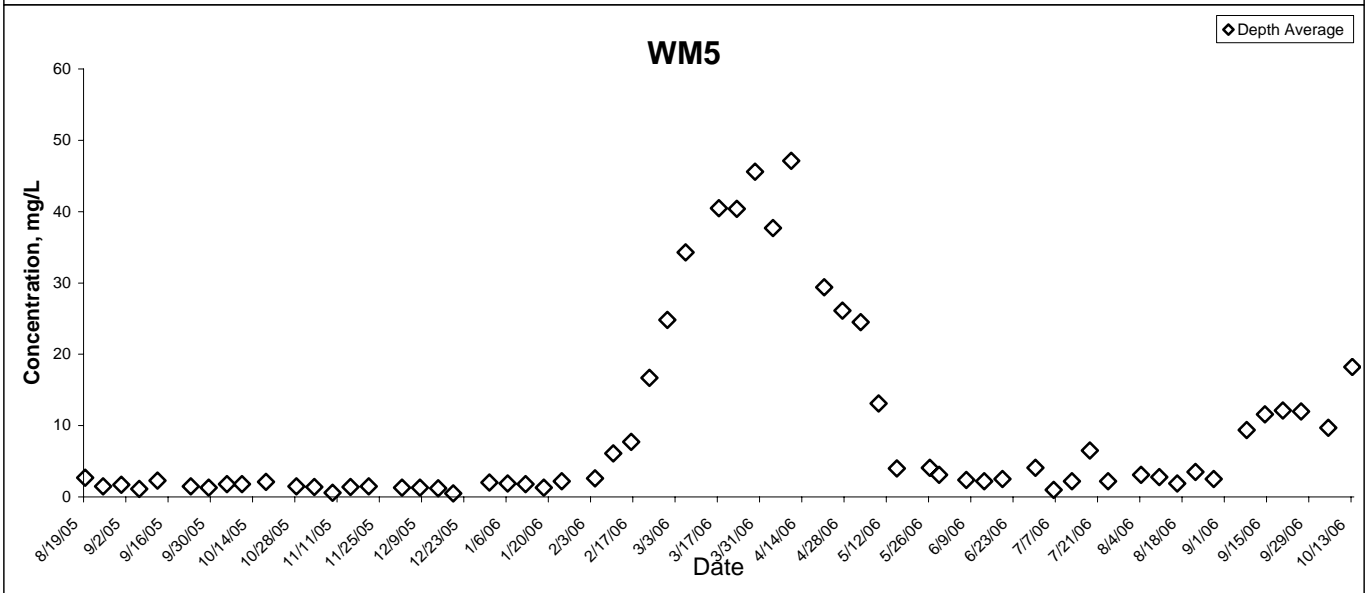
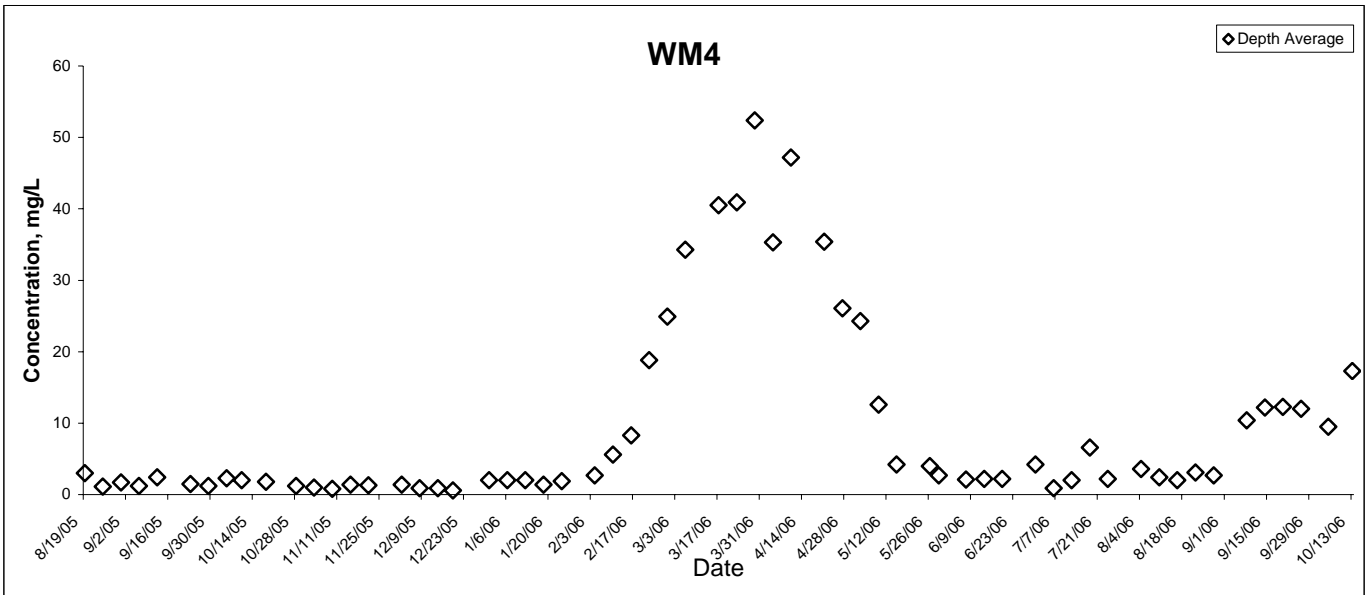
## Unionised Nitrogen (Annual Average)



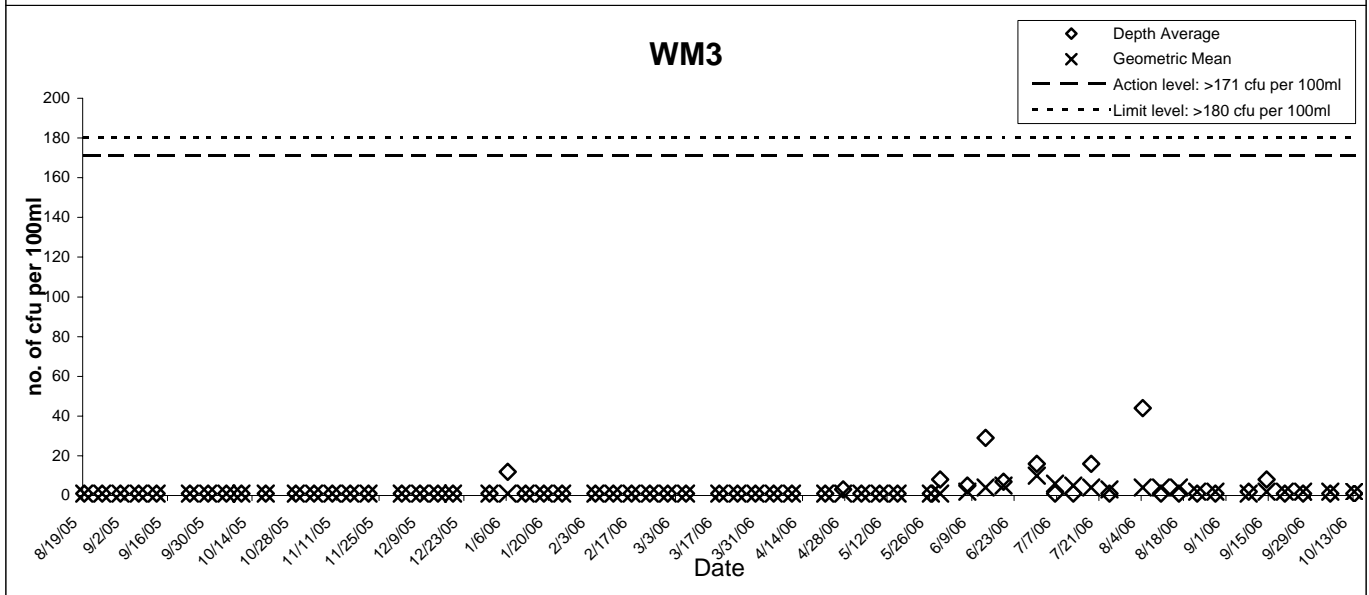
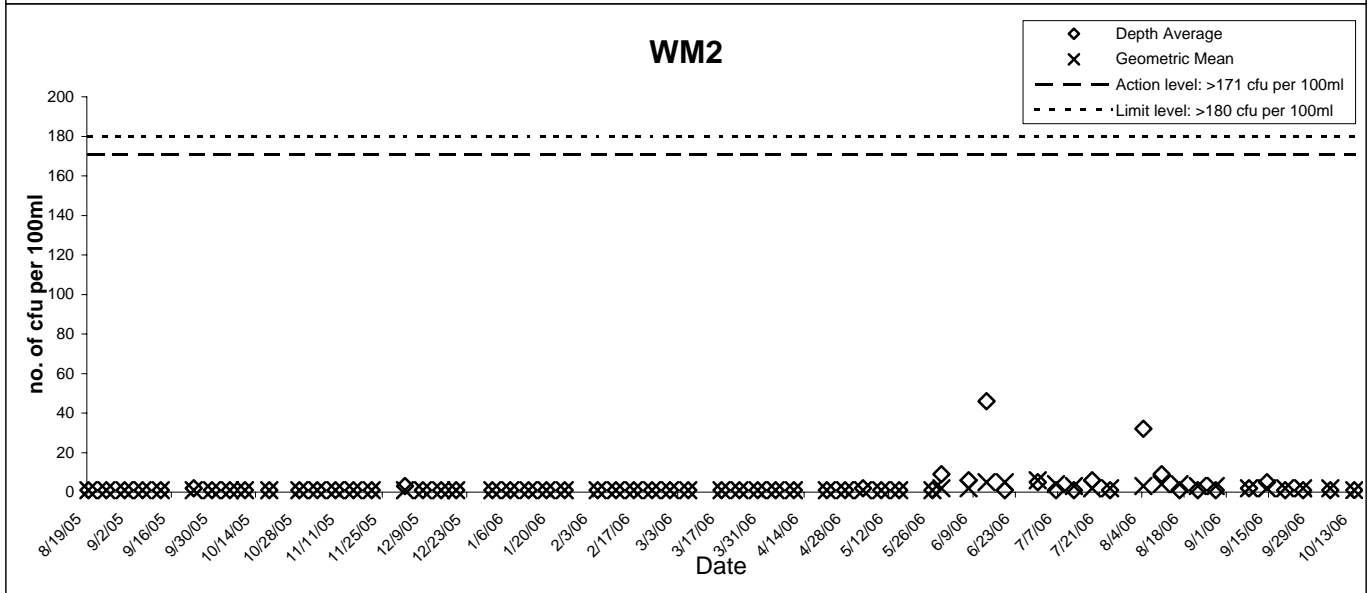
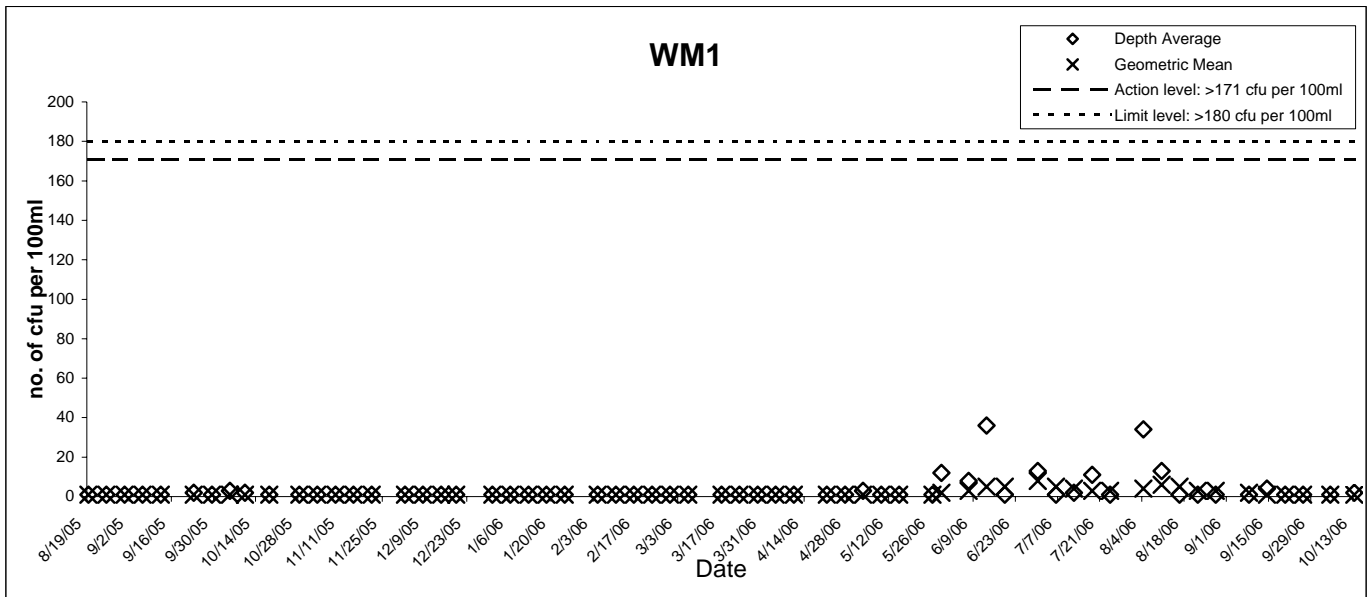
# Chlorophyll-a



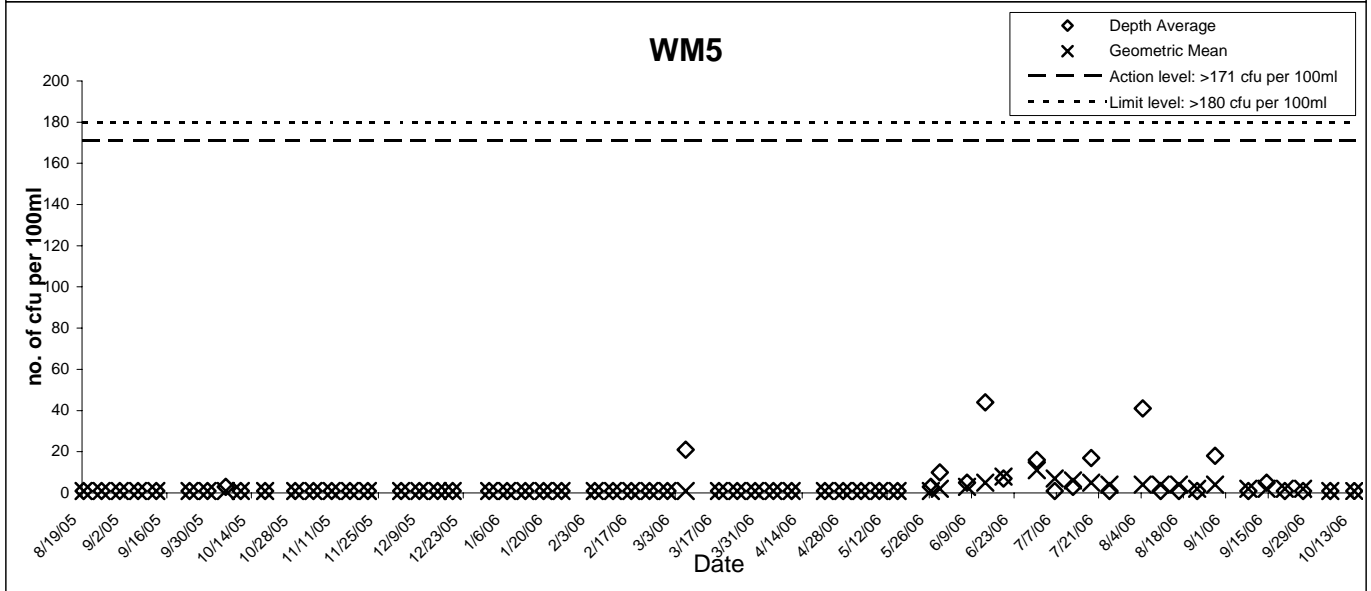
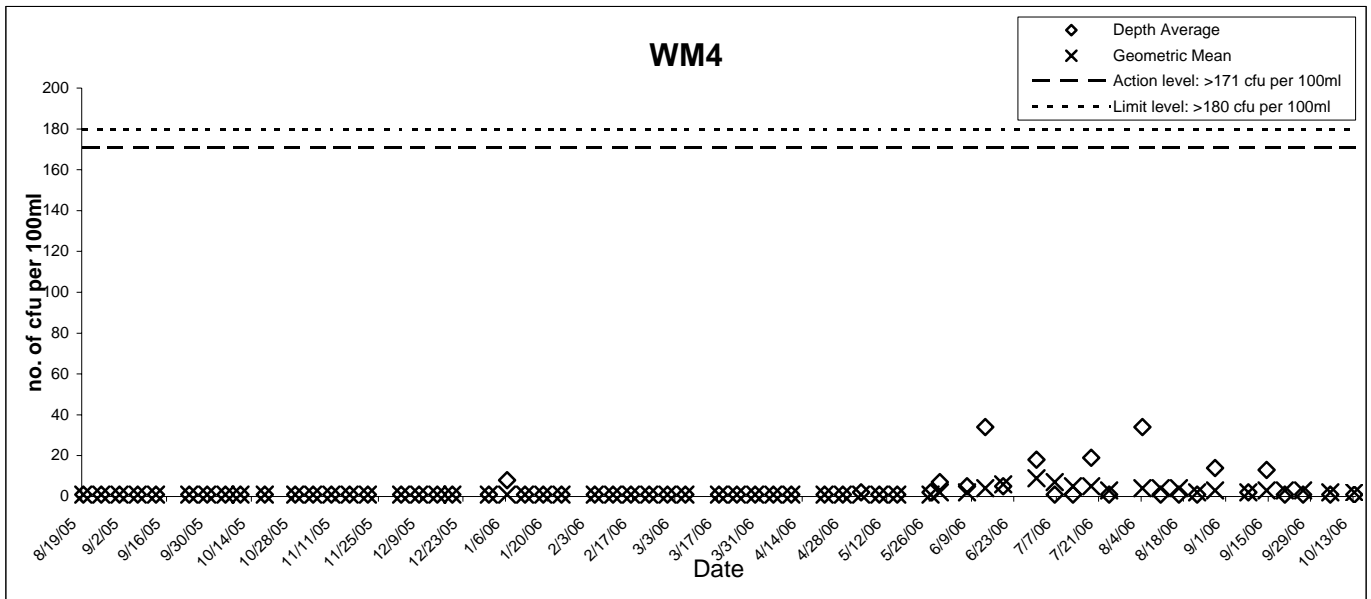
# Chlorophyll-a



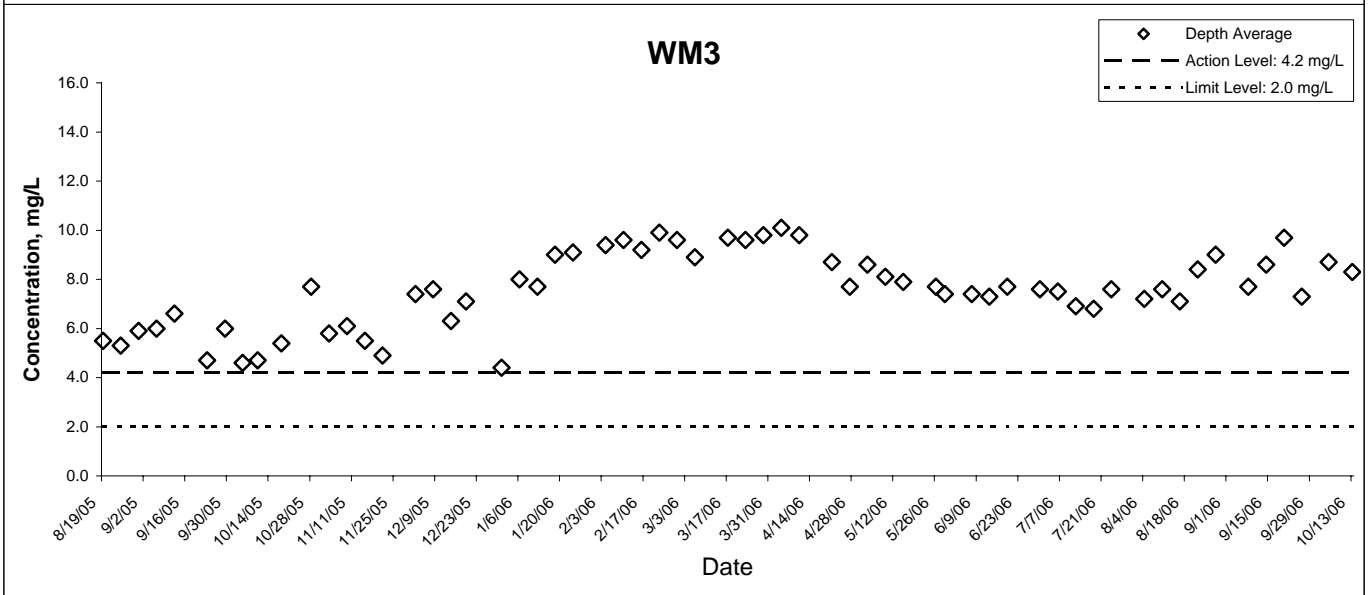
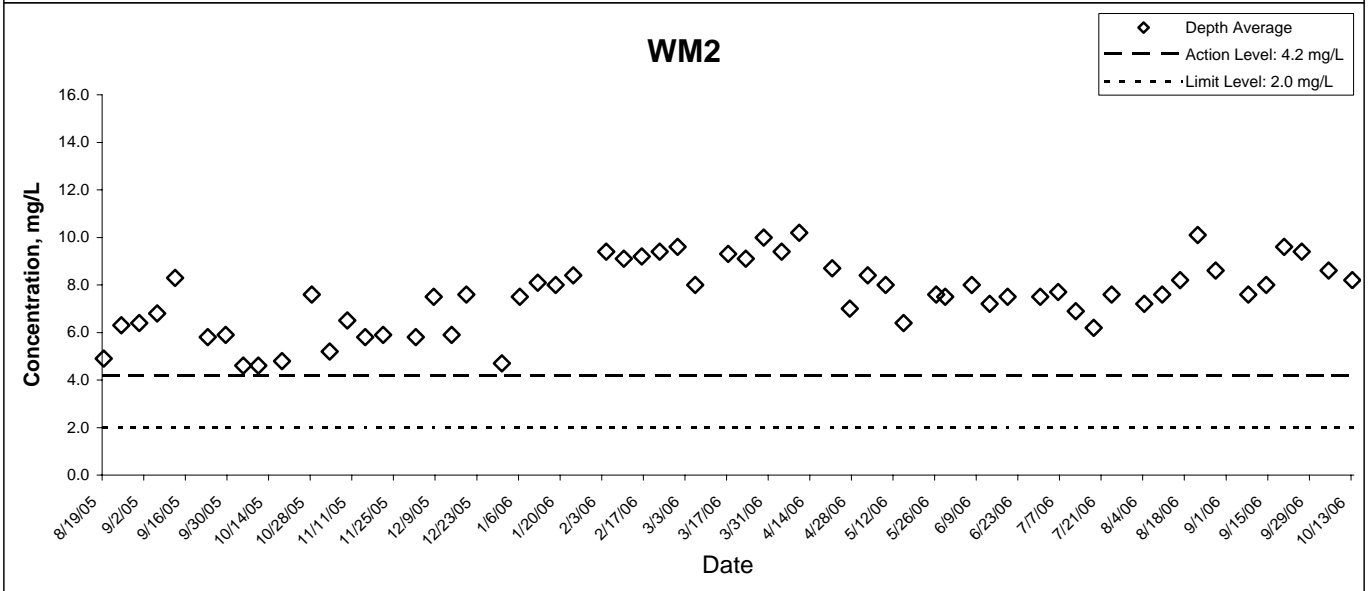
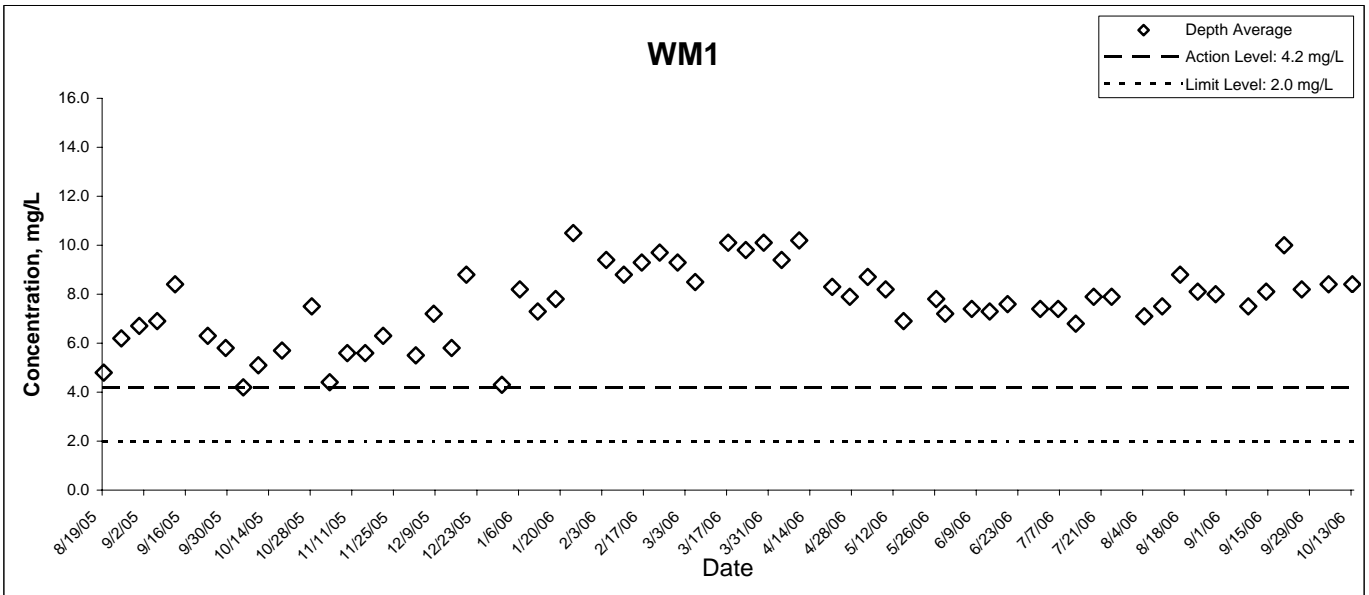
# E.coli



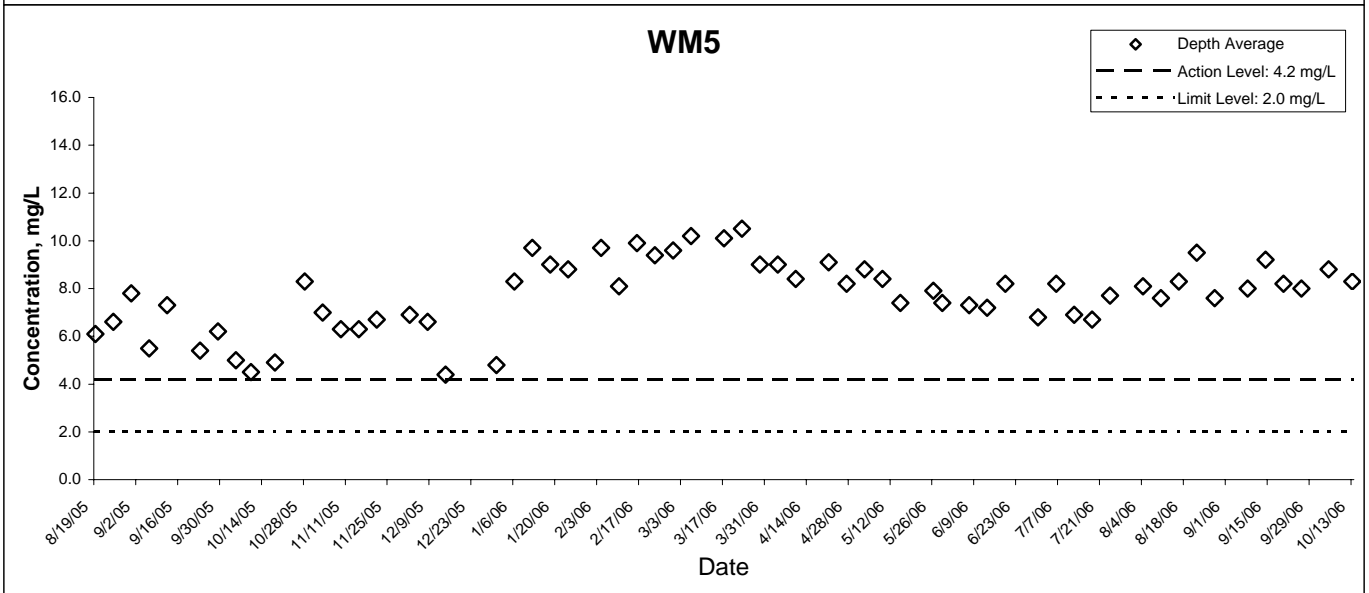
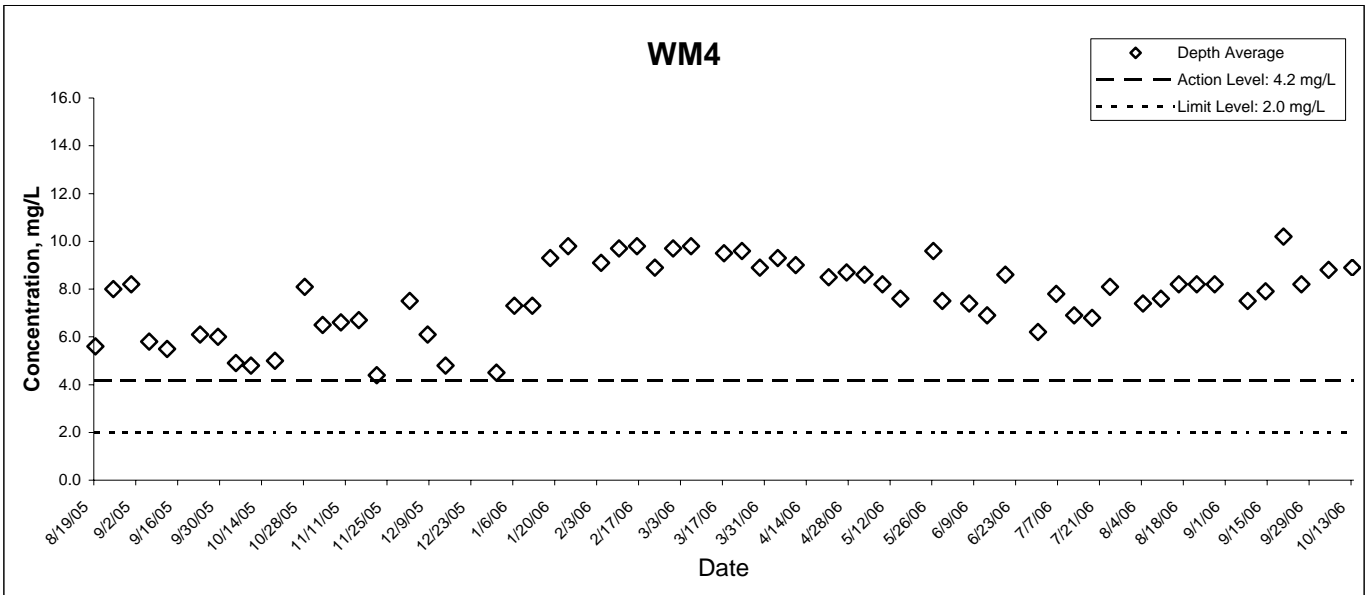
# E.coli



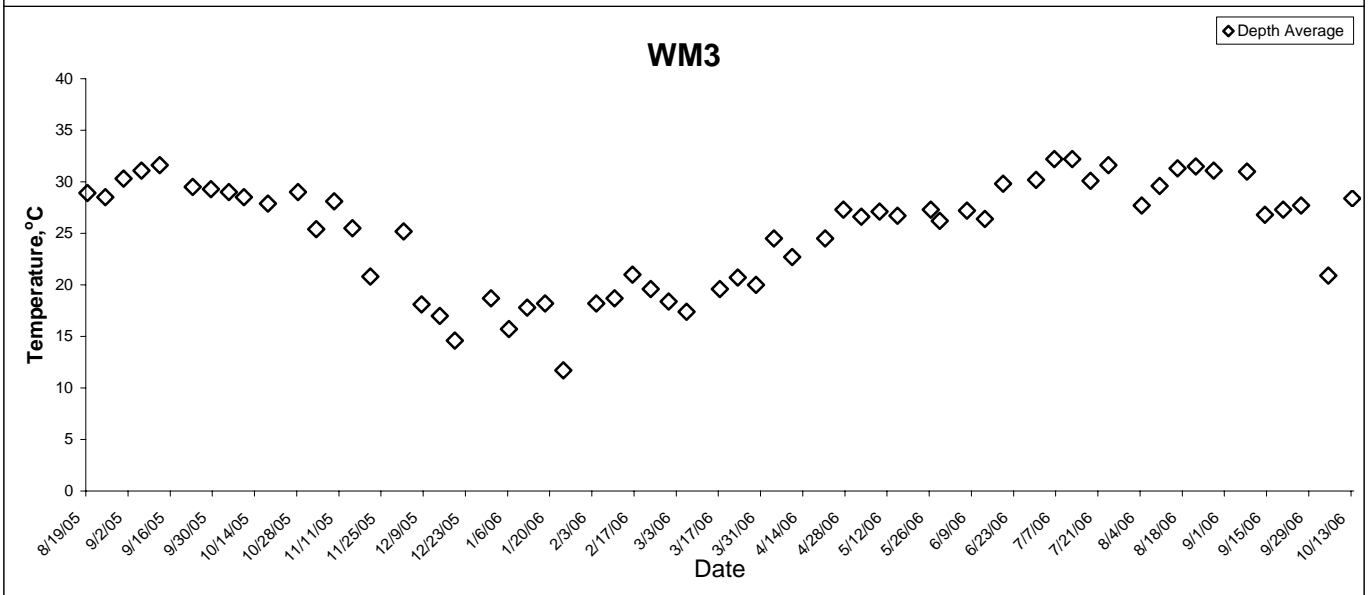
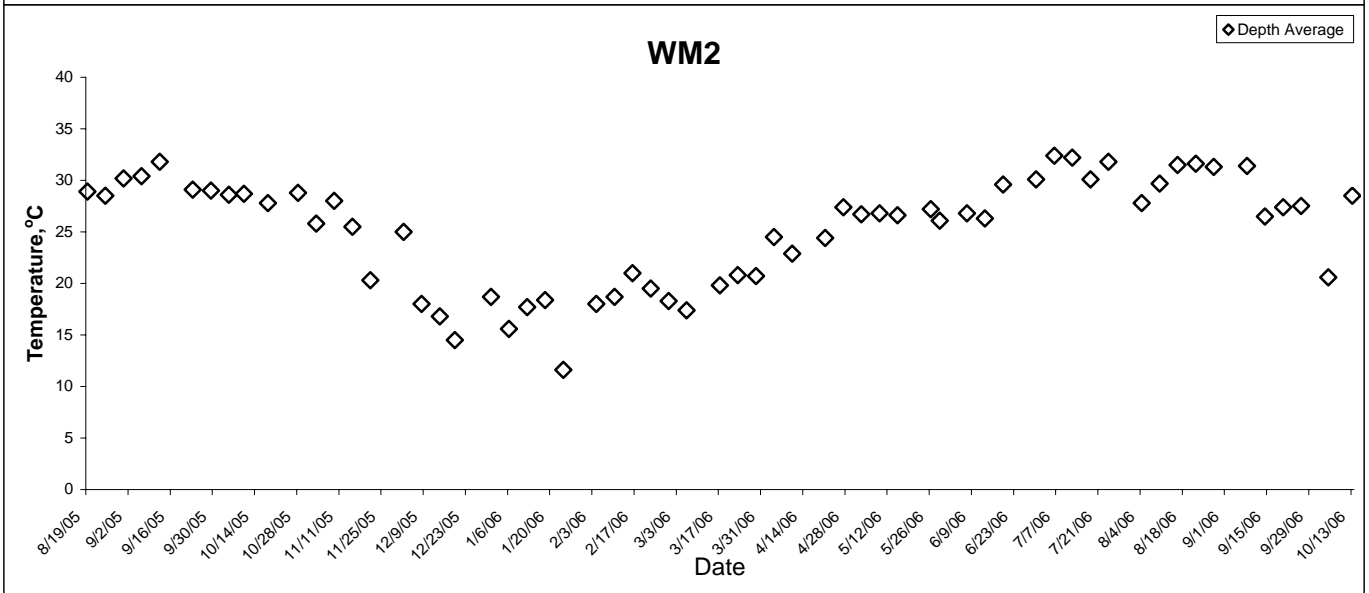
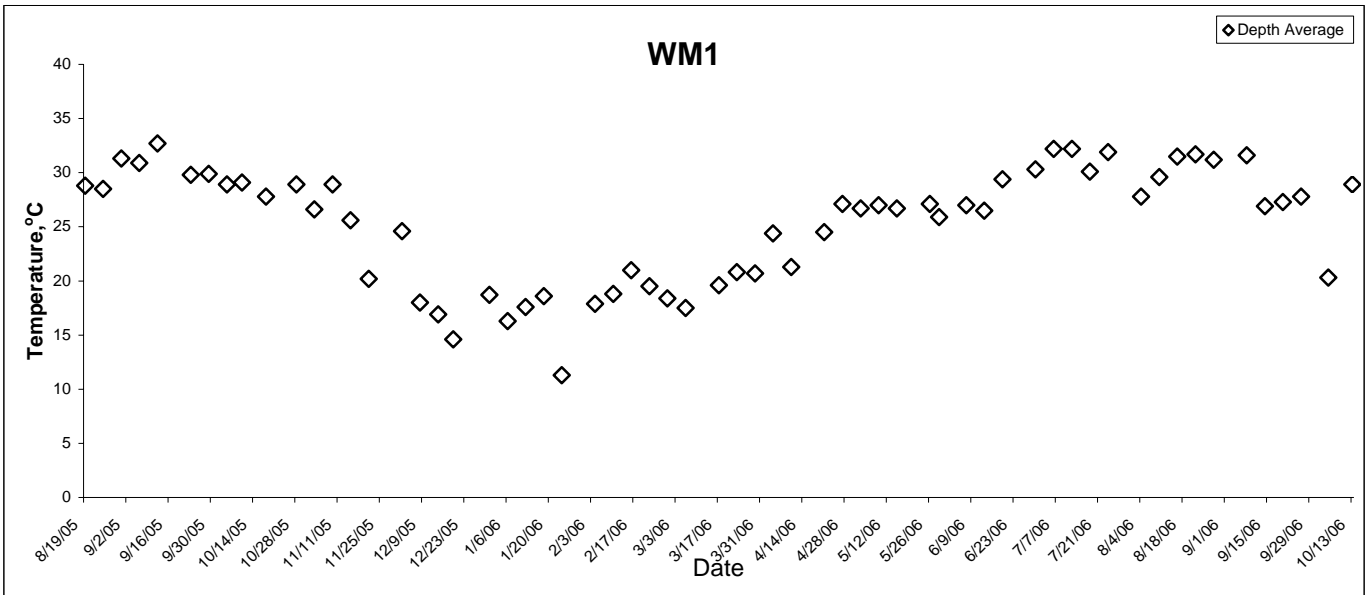
## Dissoved Oxygen



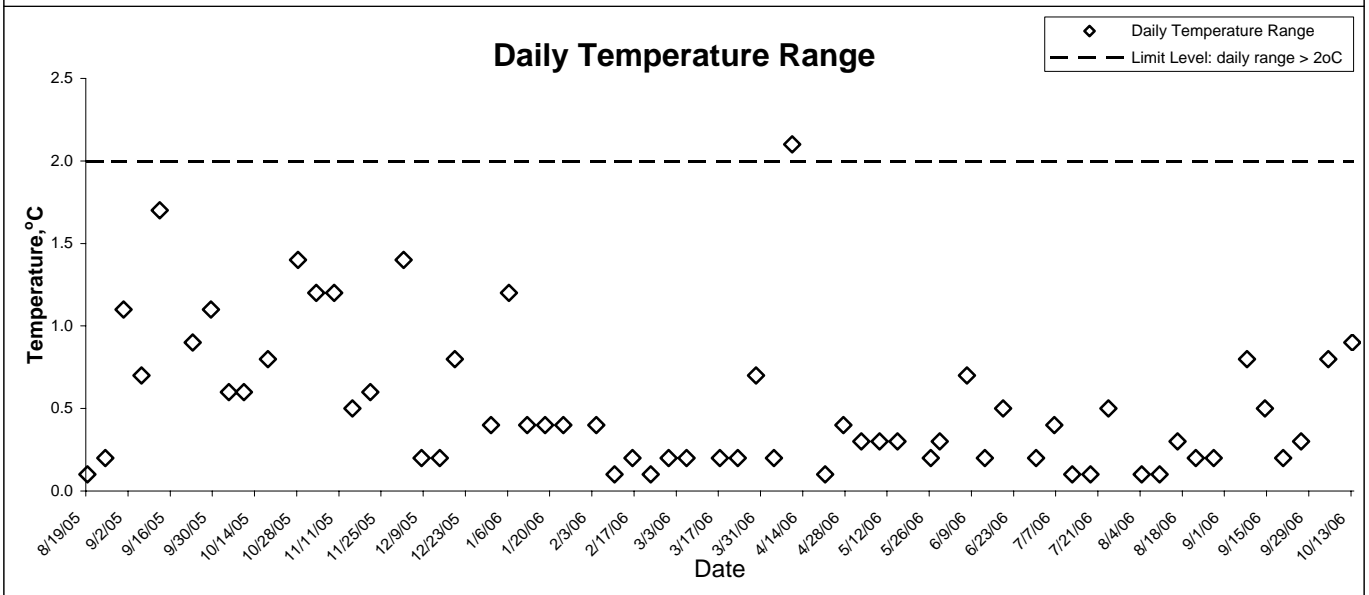
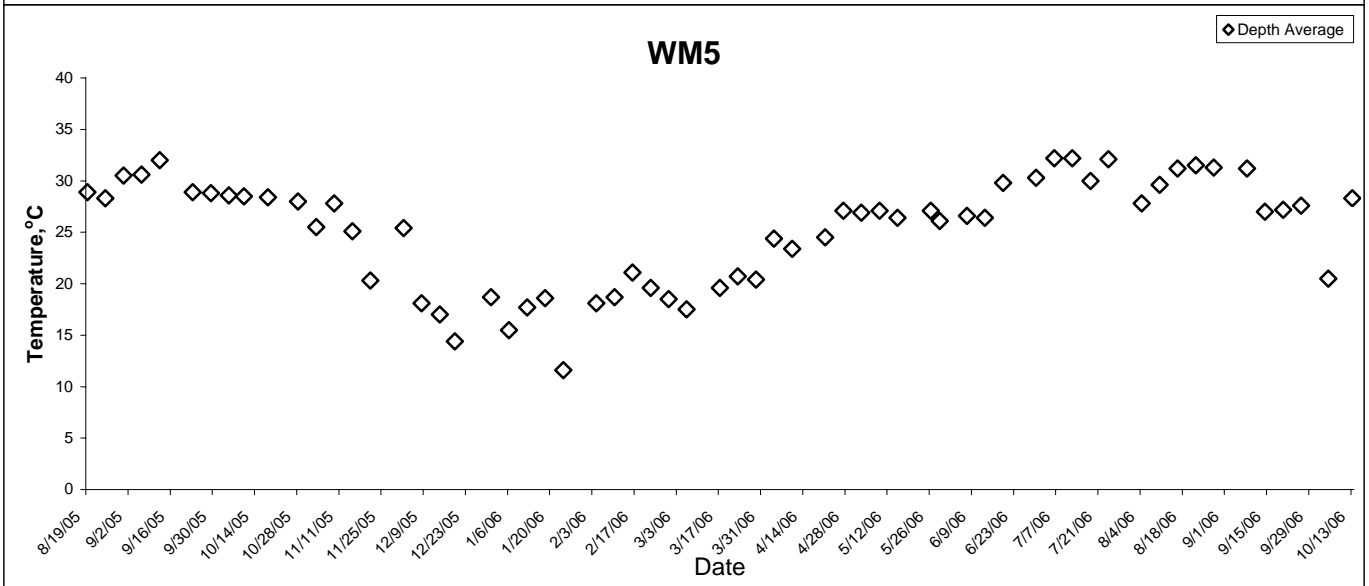
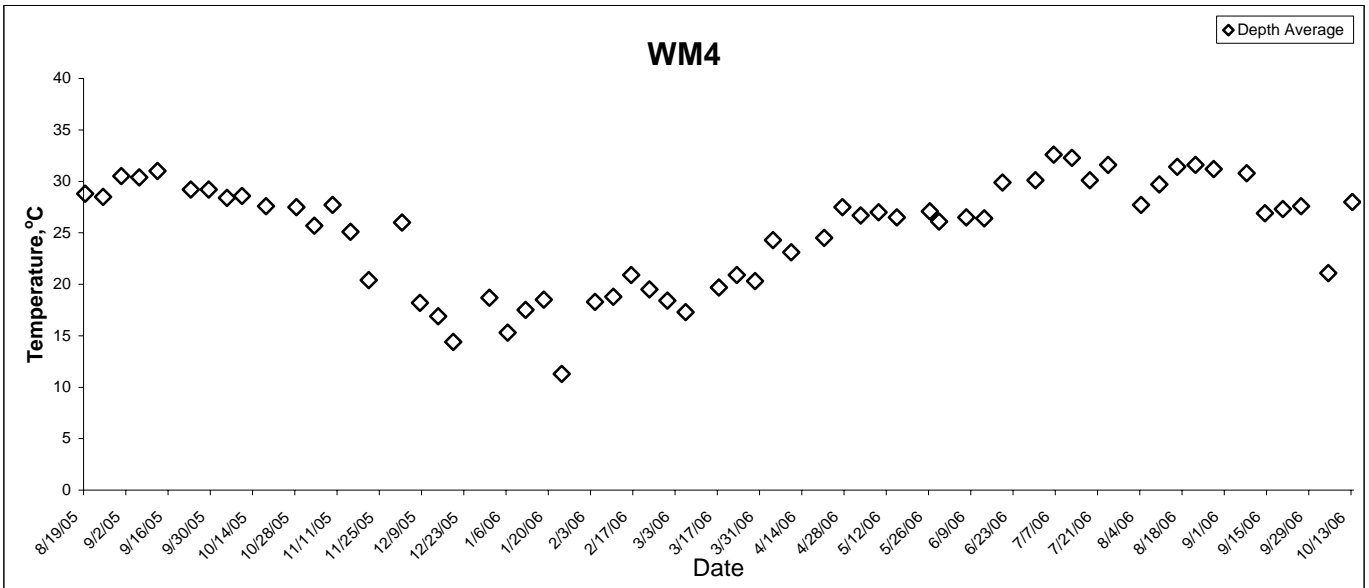
## Dissoved Oxygen



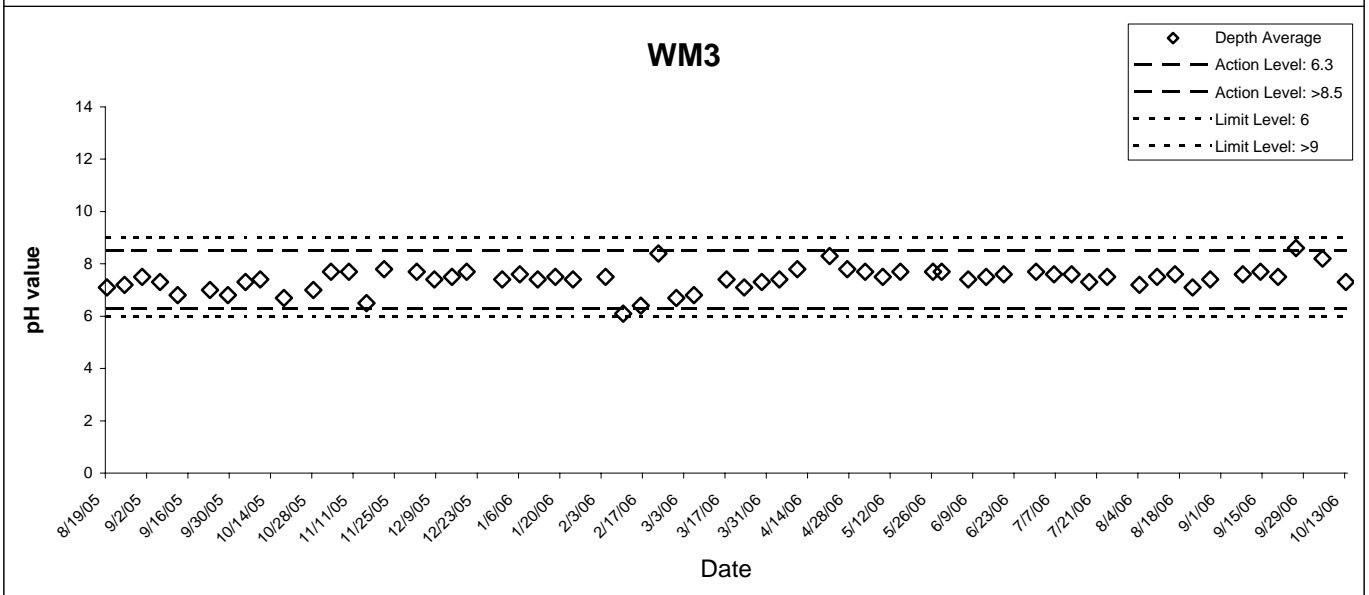
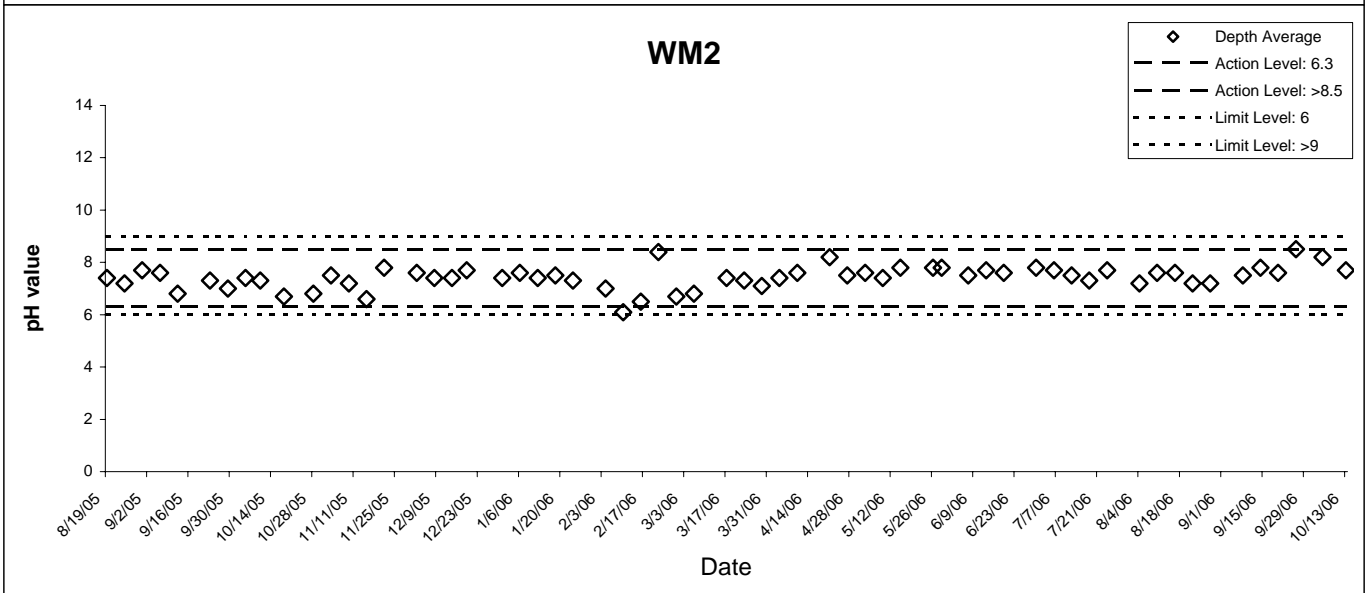
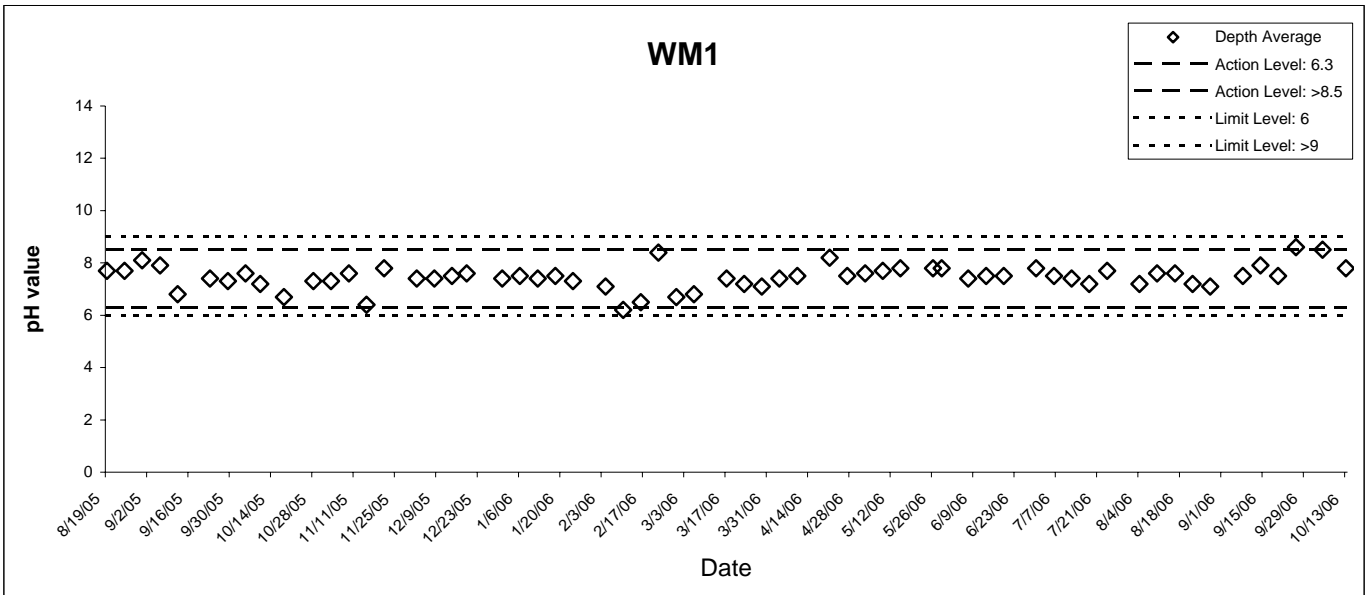
# Temperature



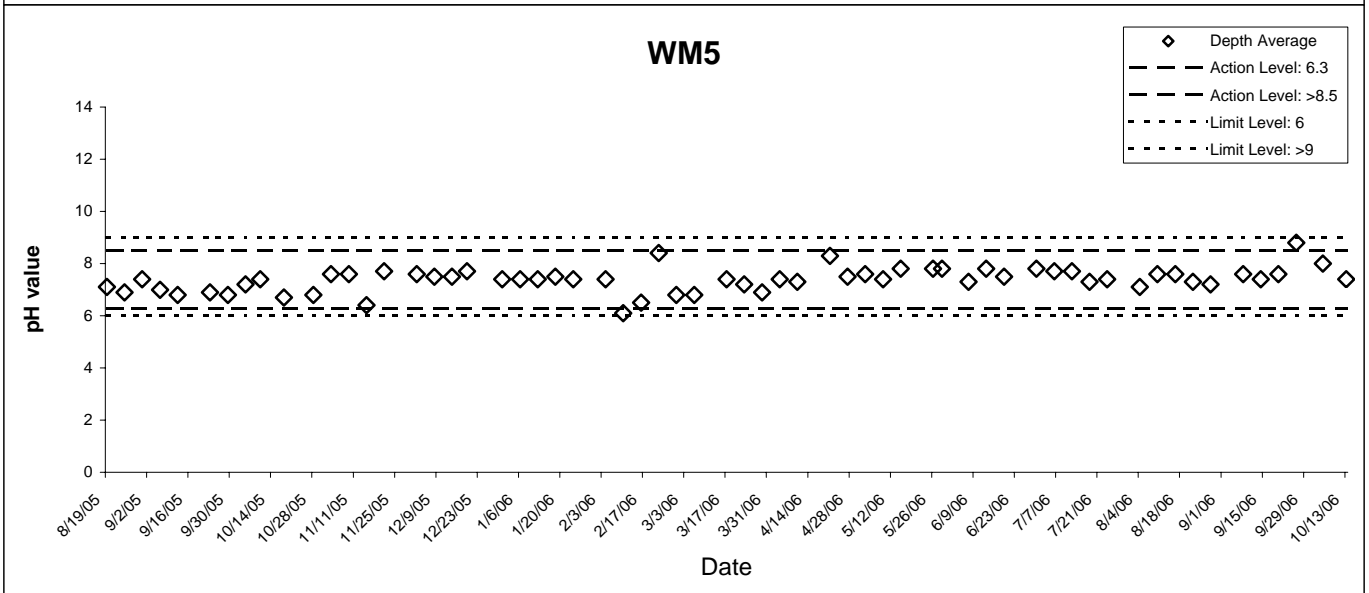
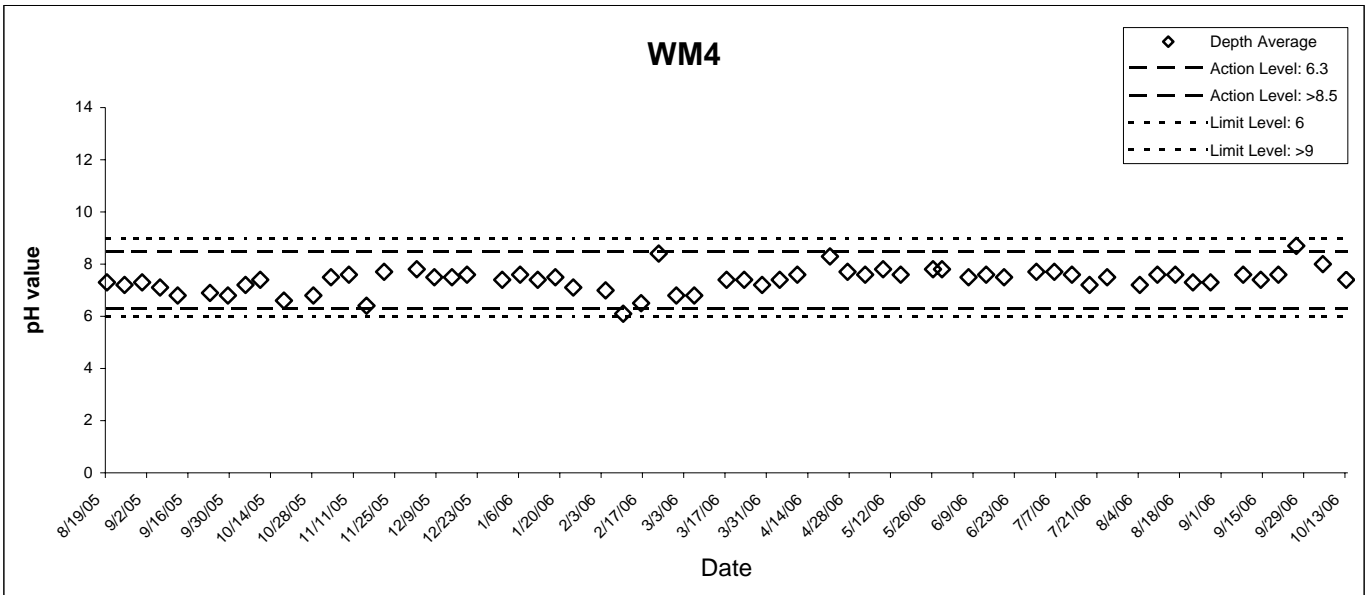
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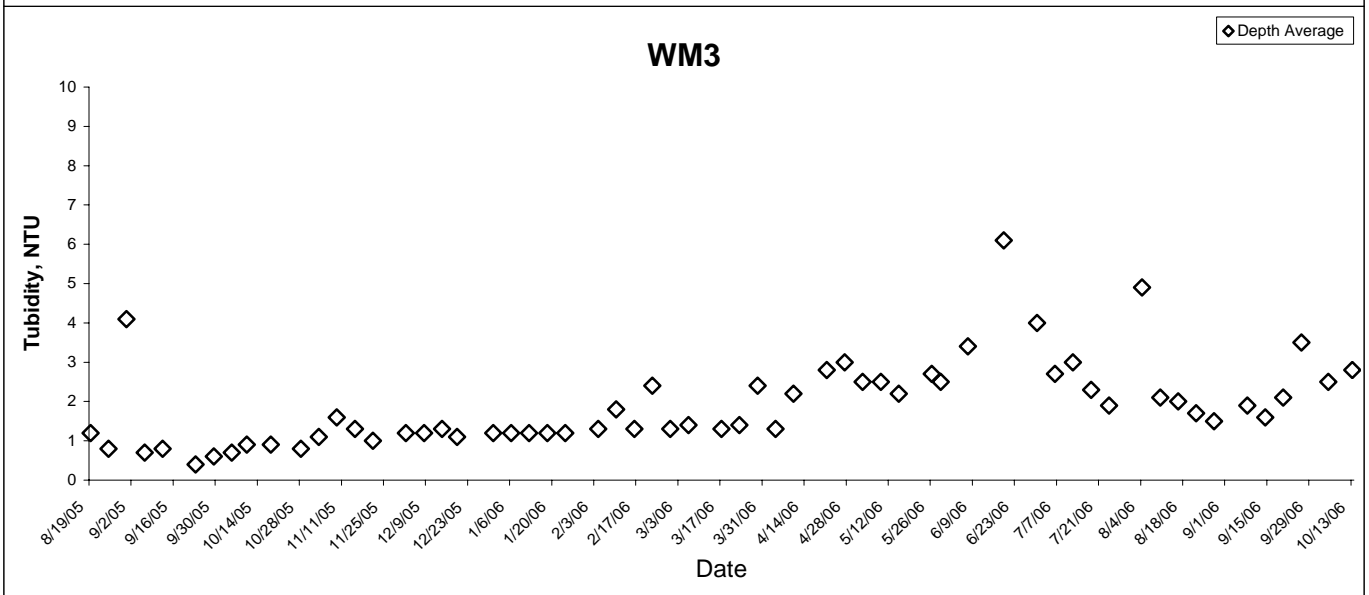
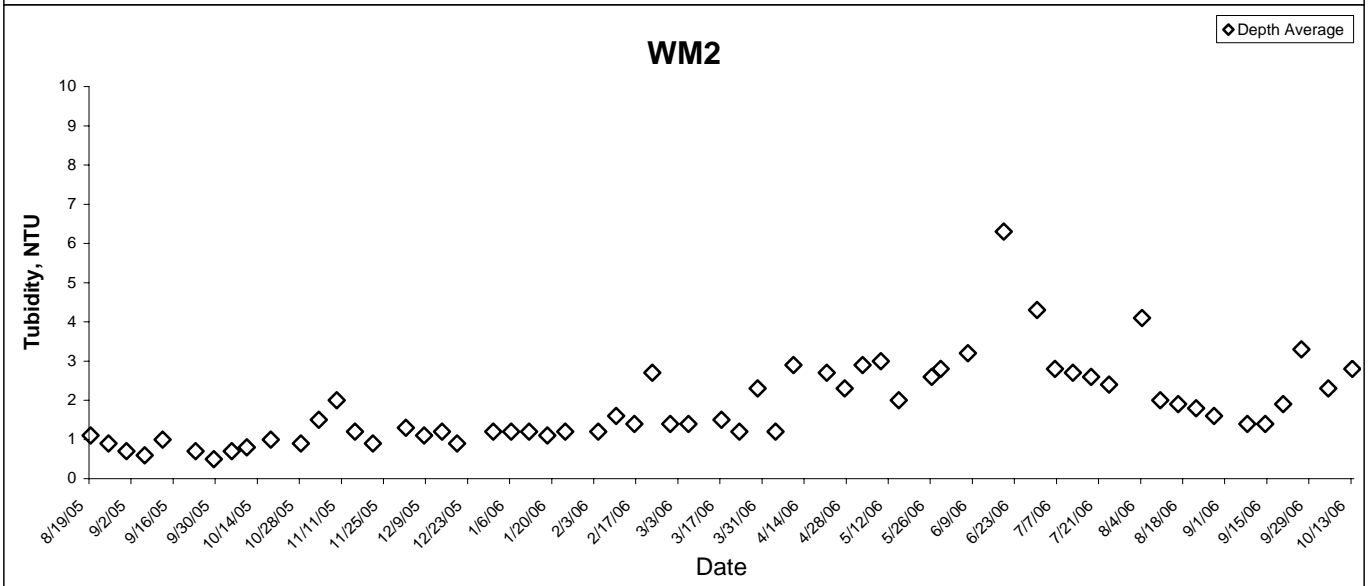
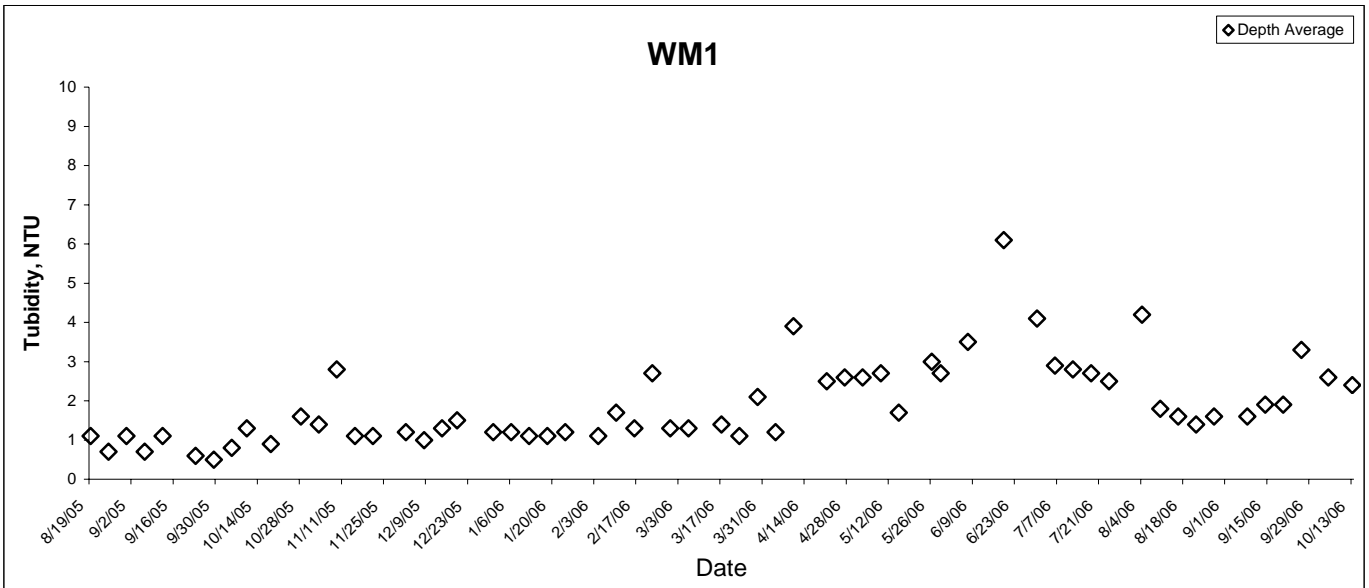
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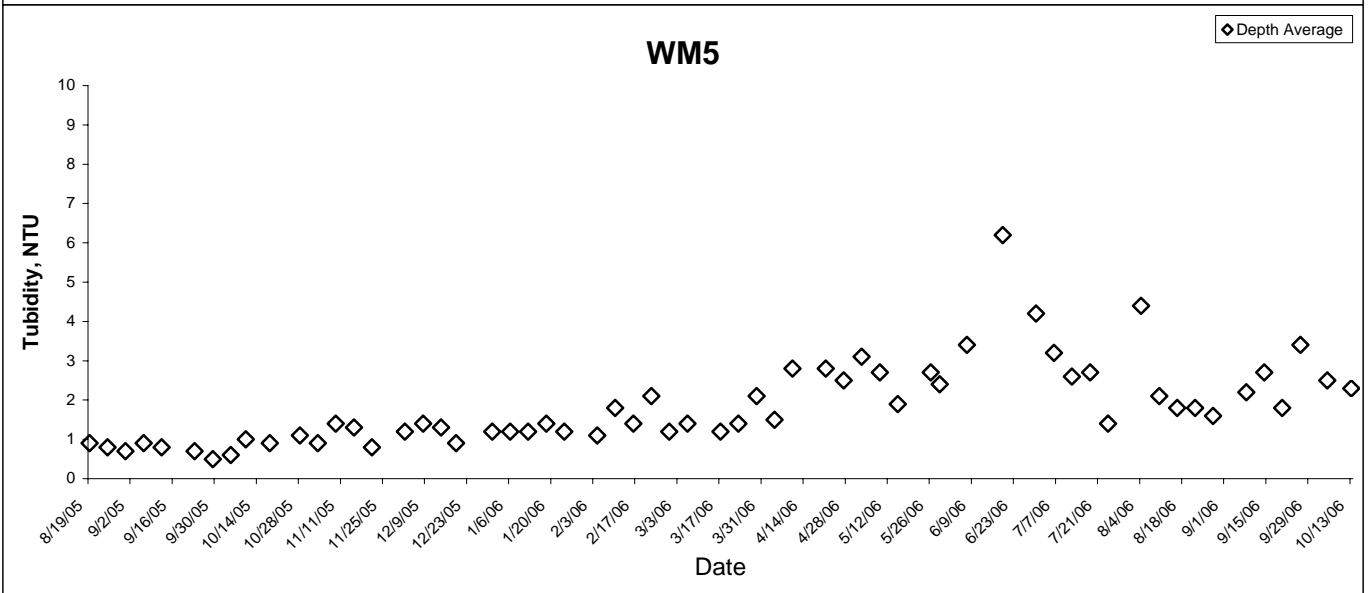
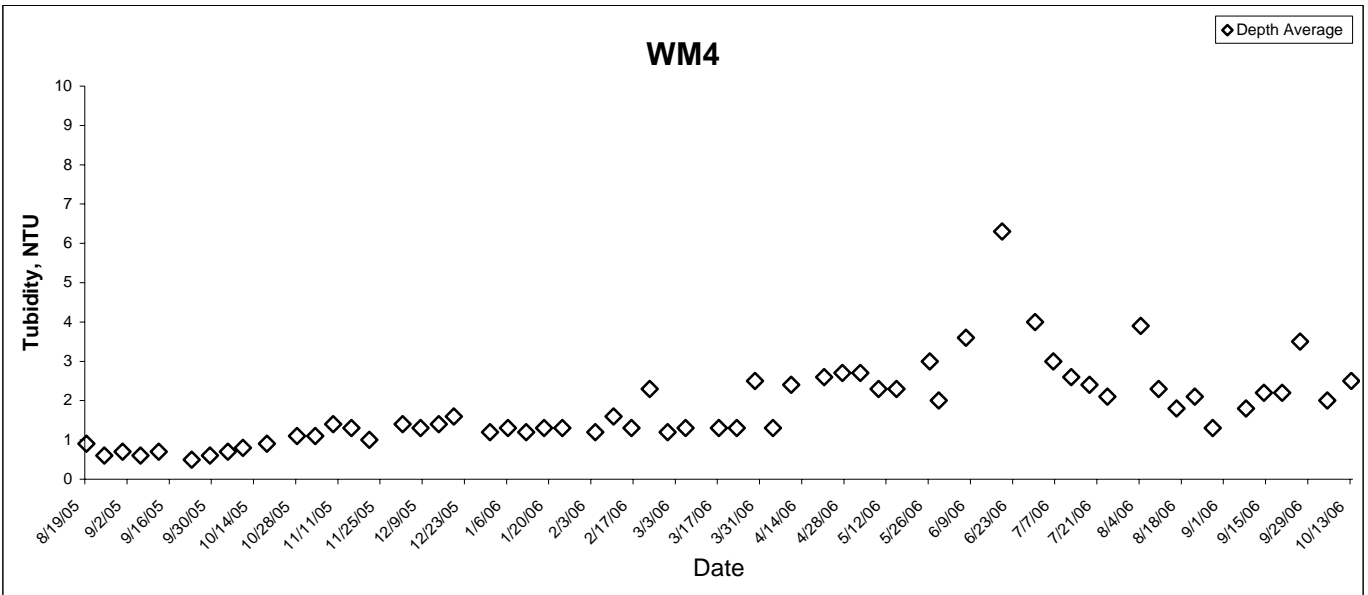
# pH



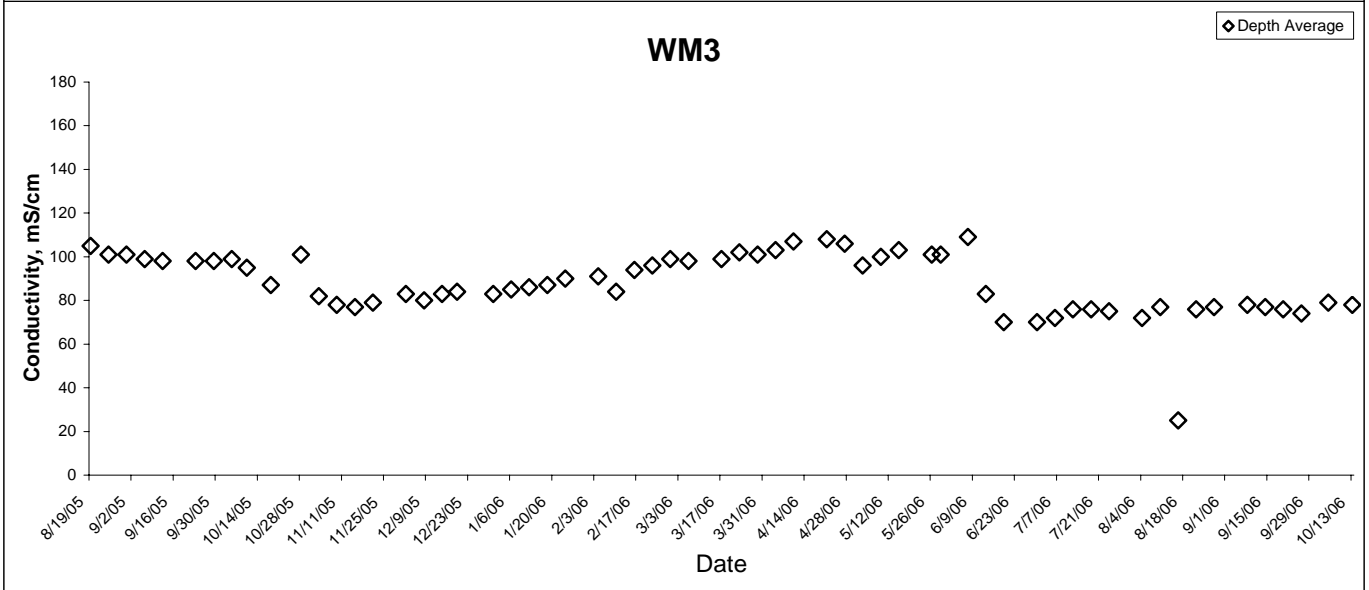
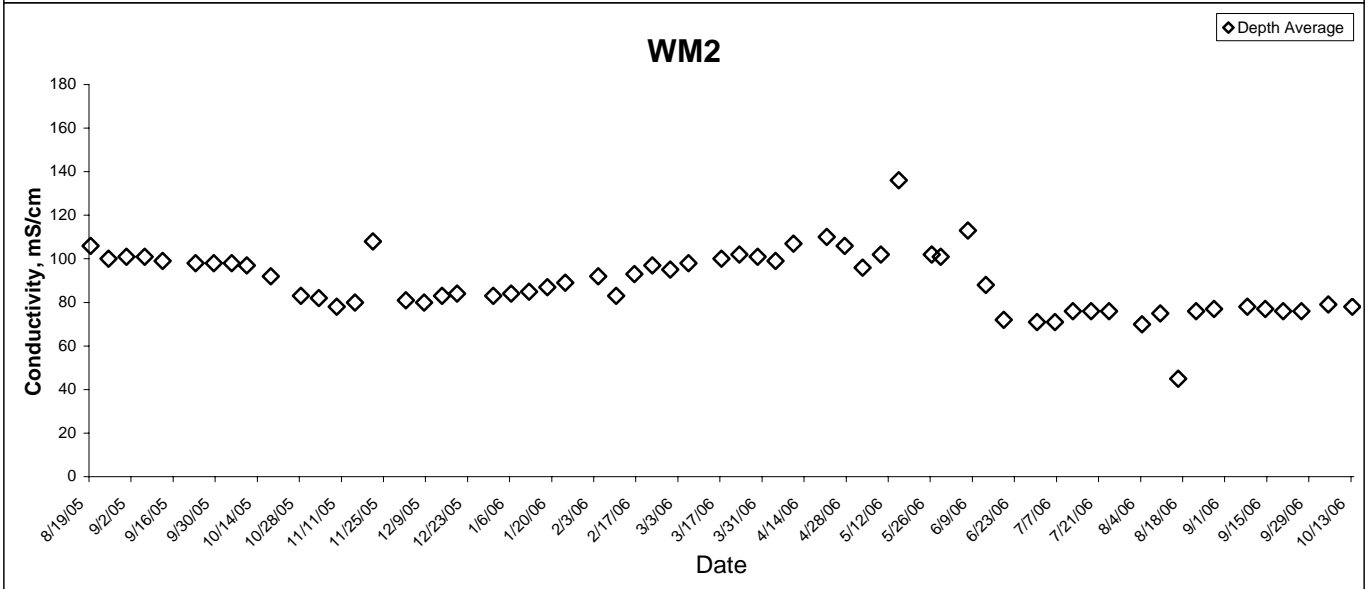
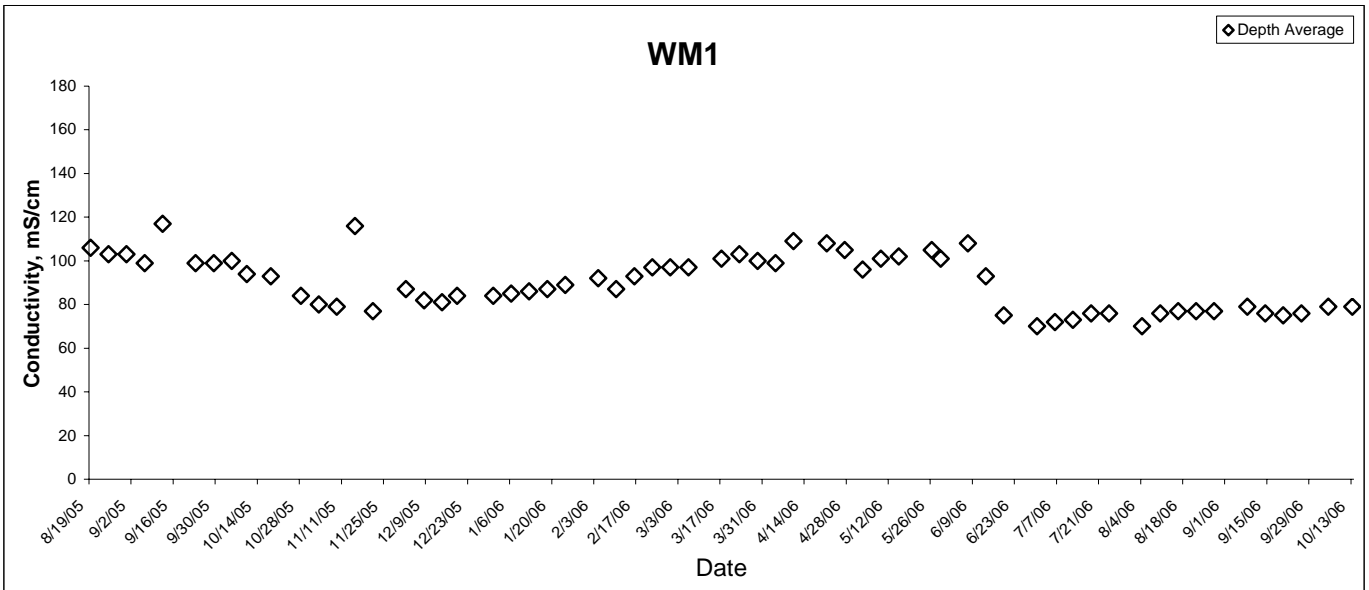
# Turbidity



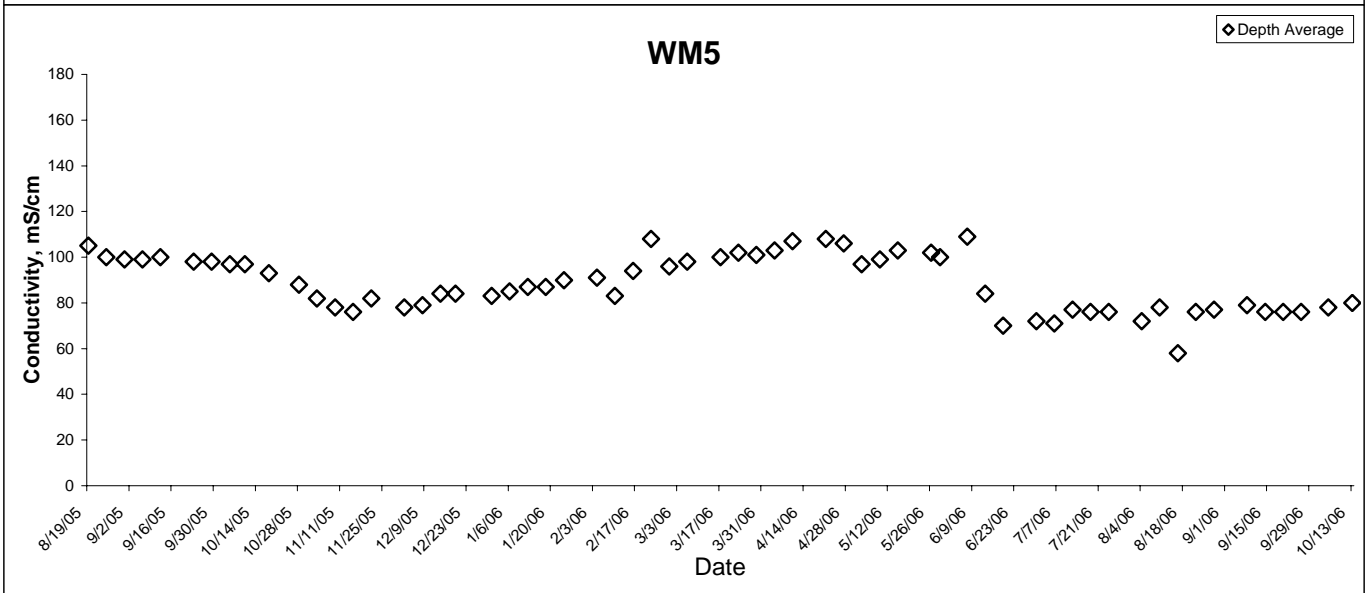
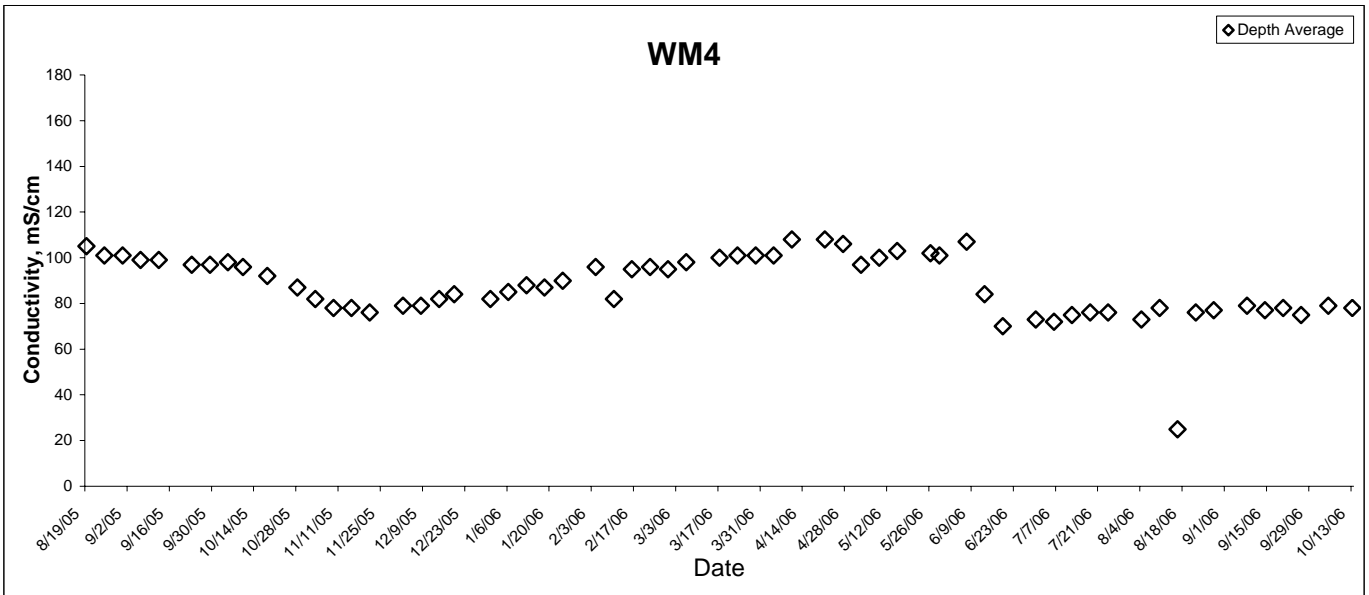
# Turbidity



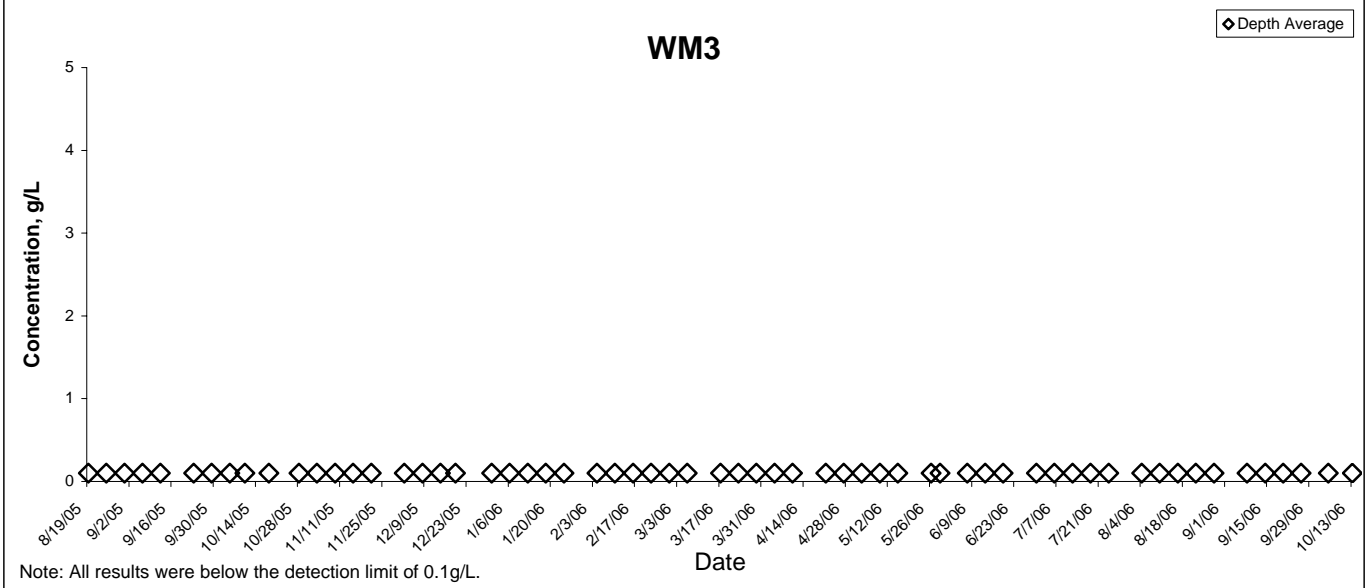
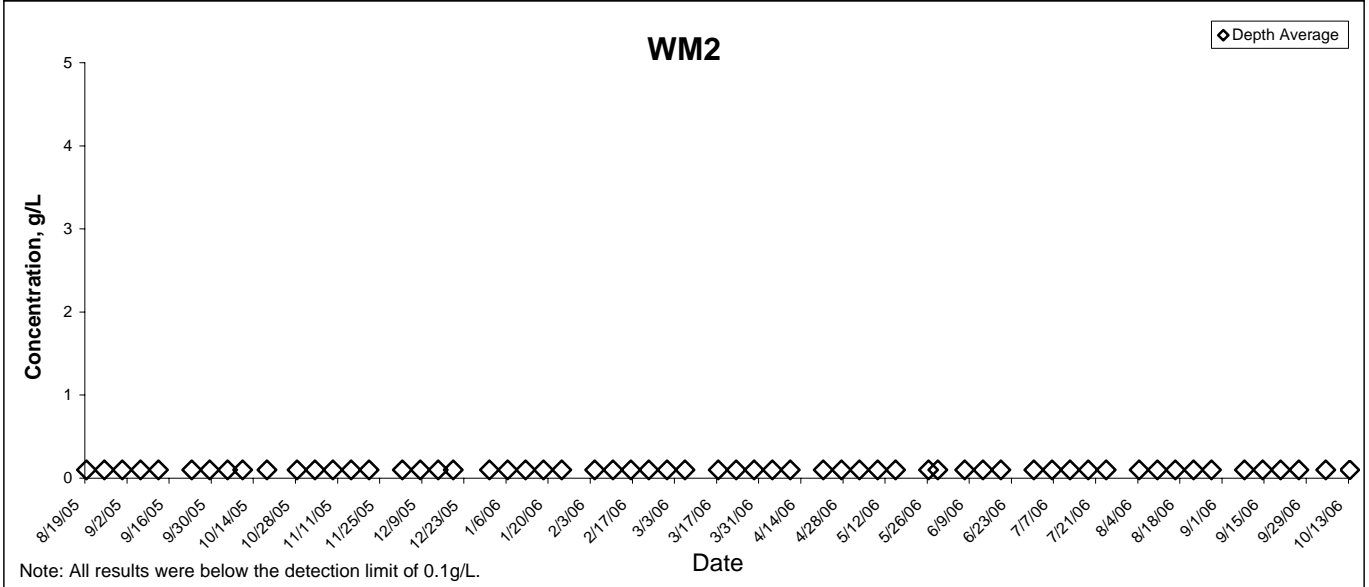
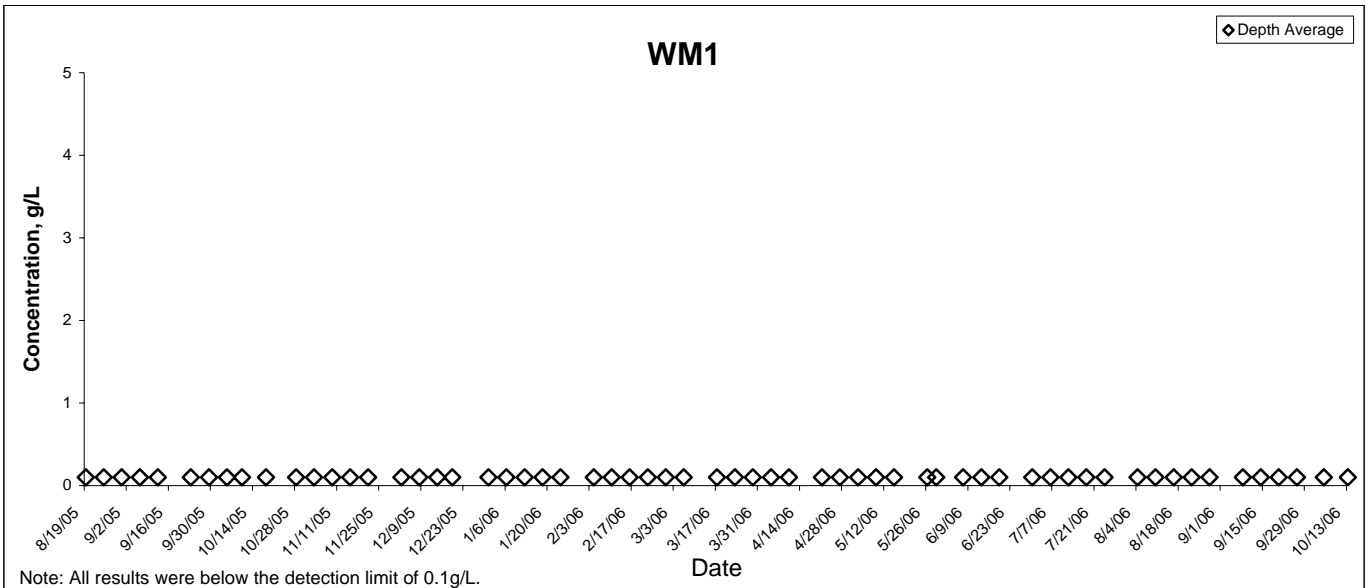
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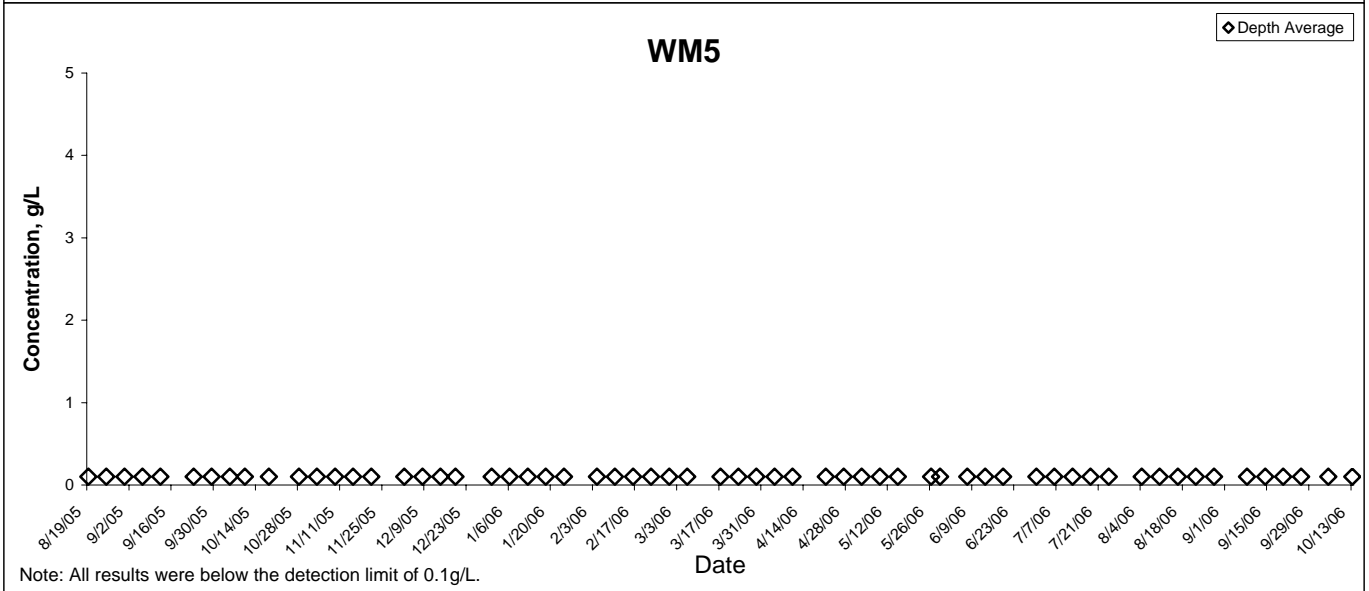
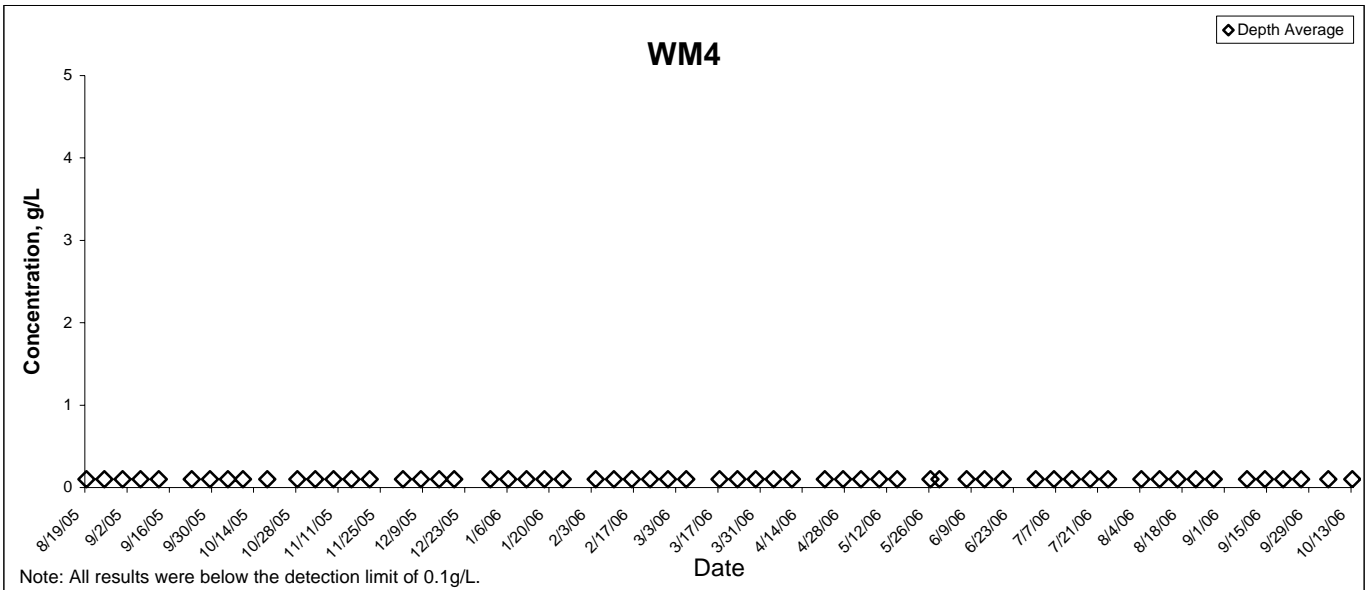
## Conductivity



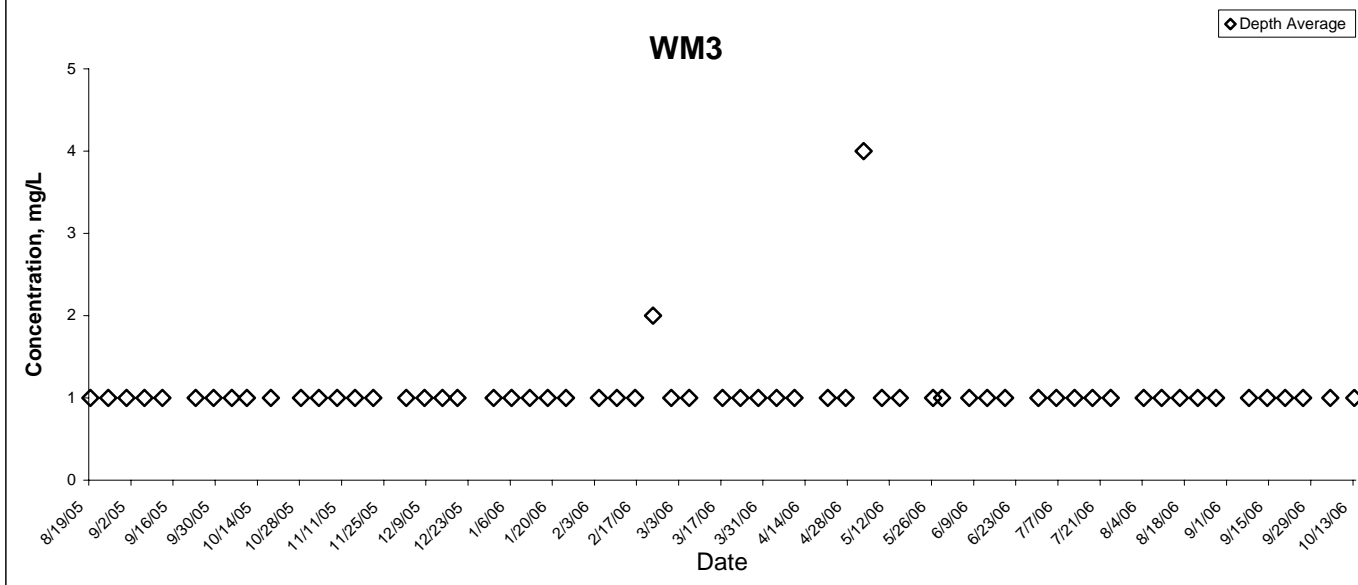
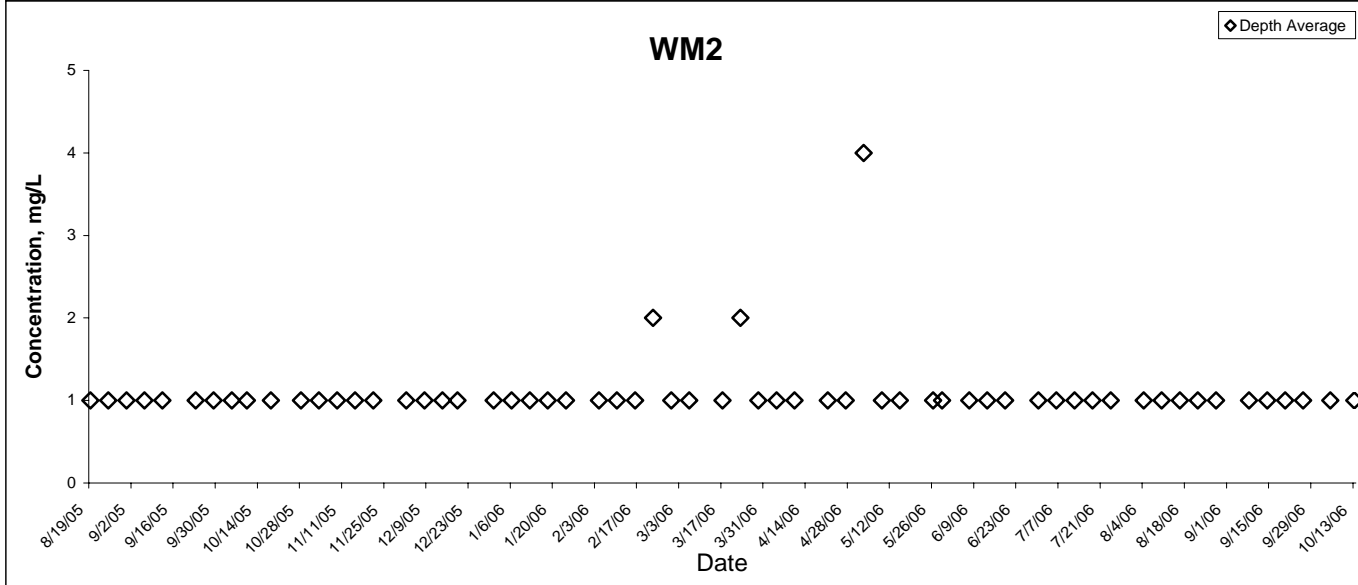
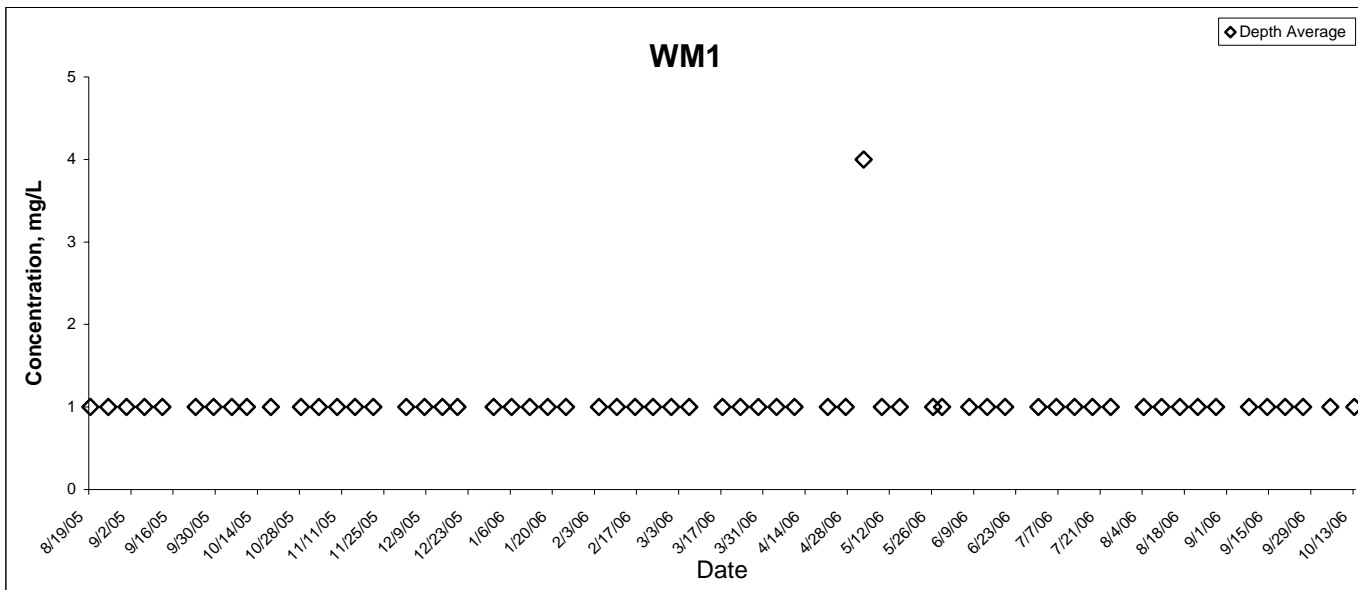
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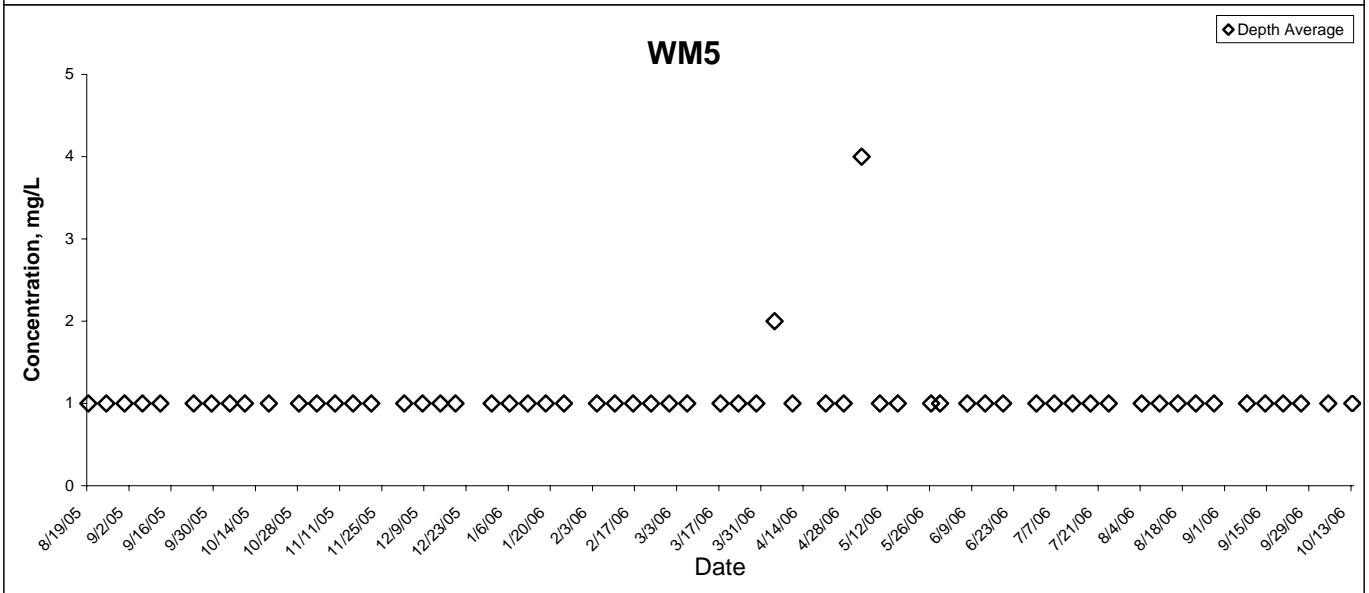
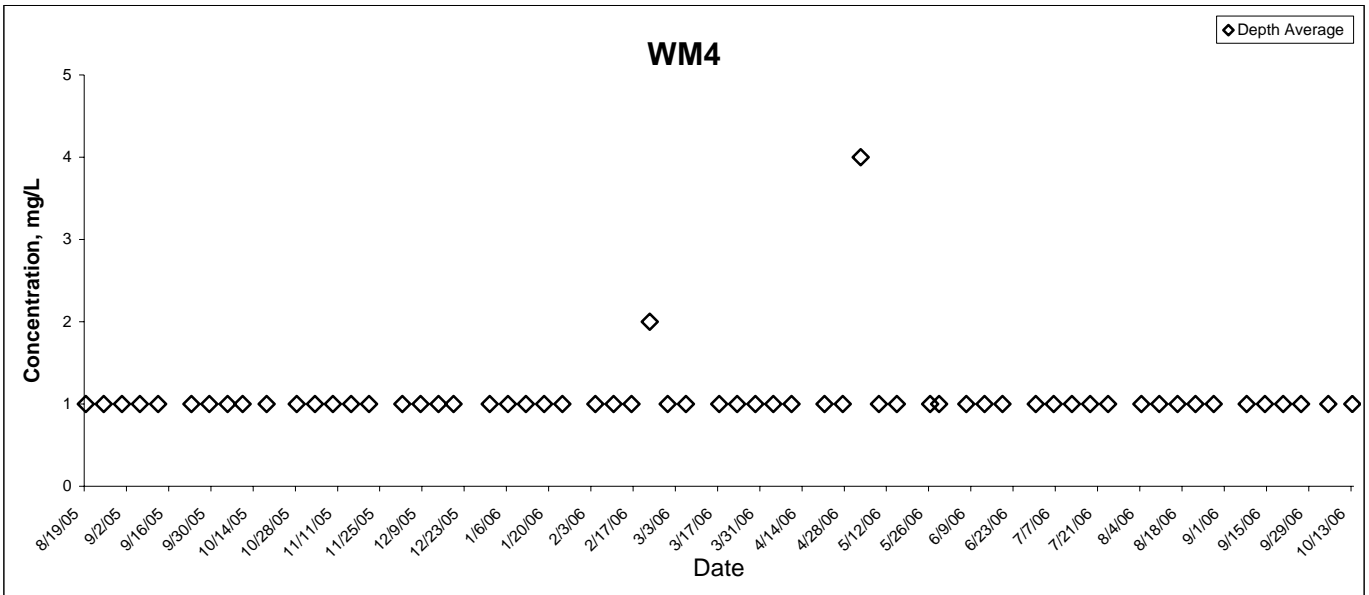
# Salinity



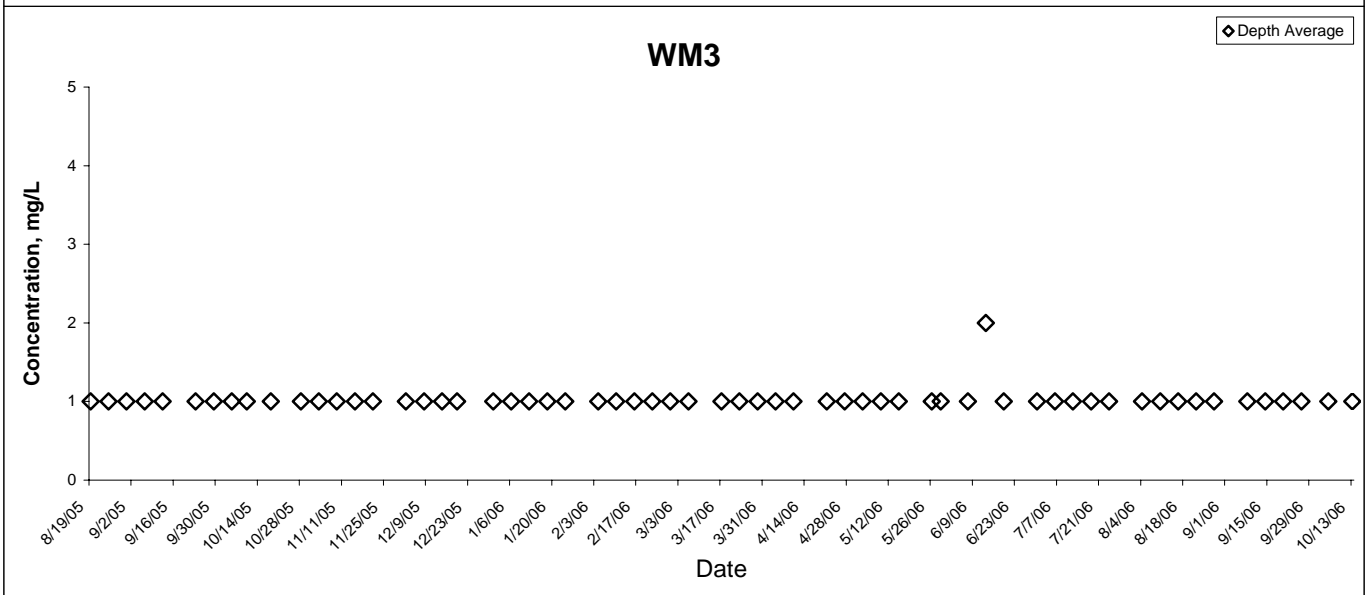
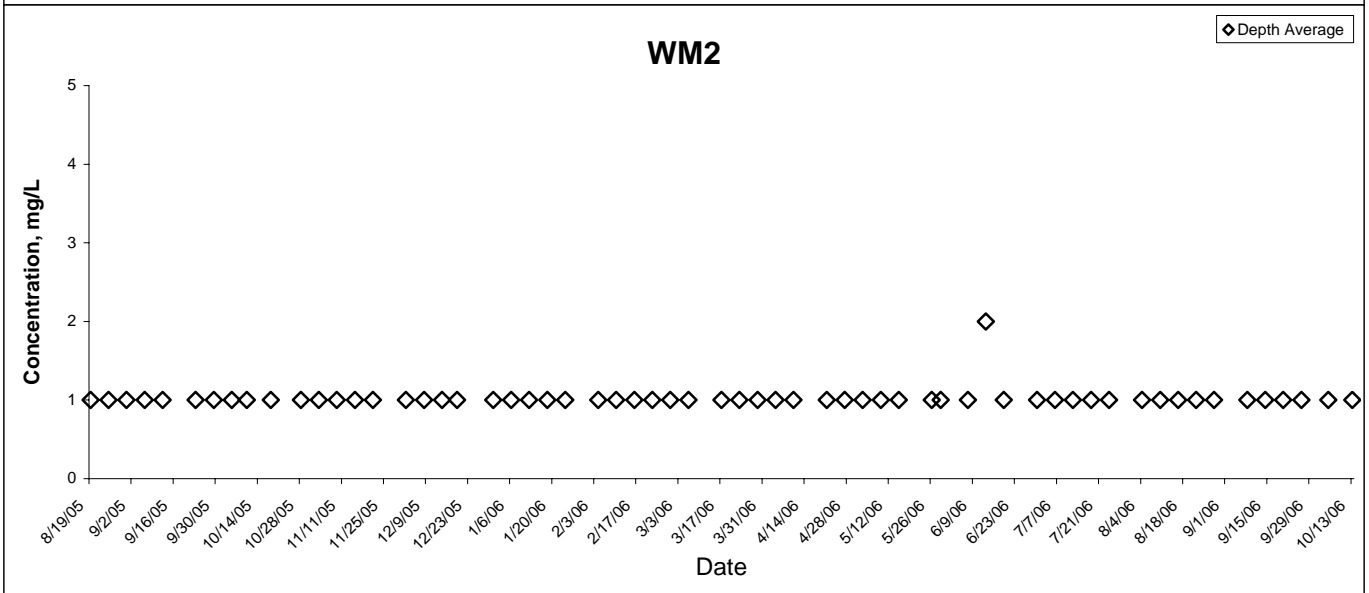
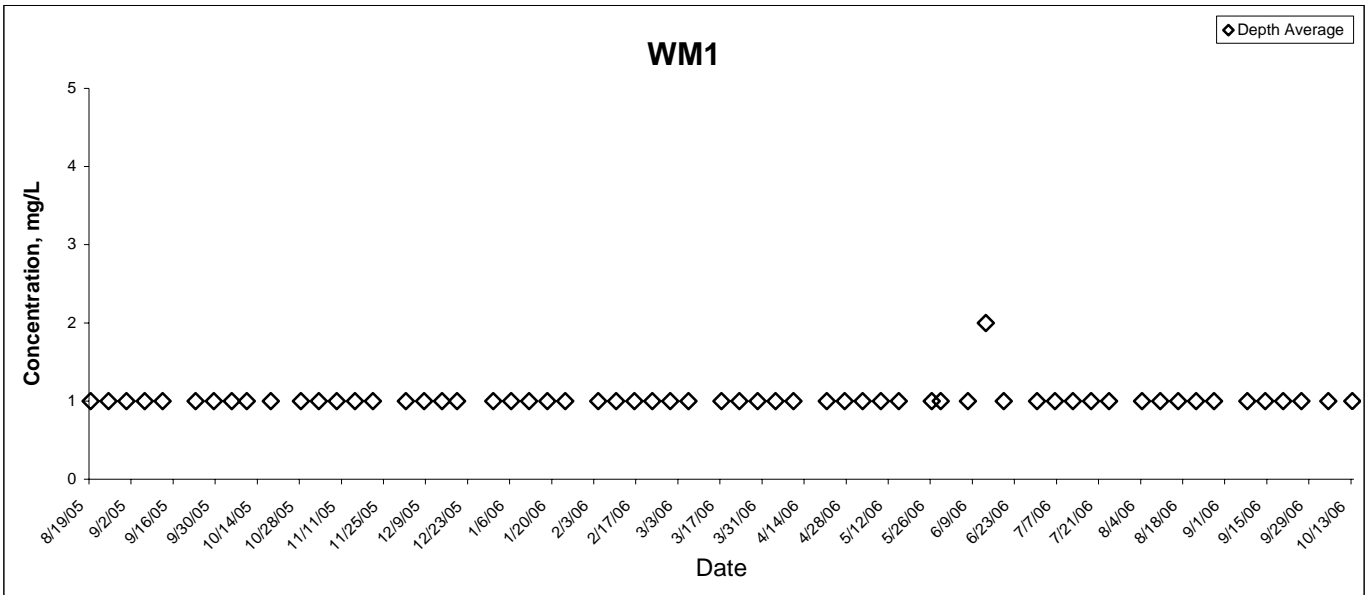
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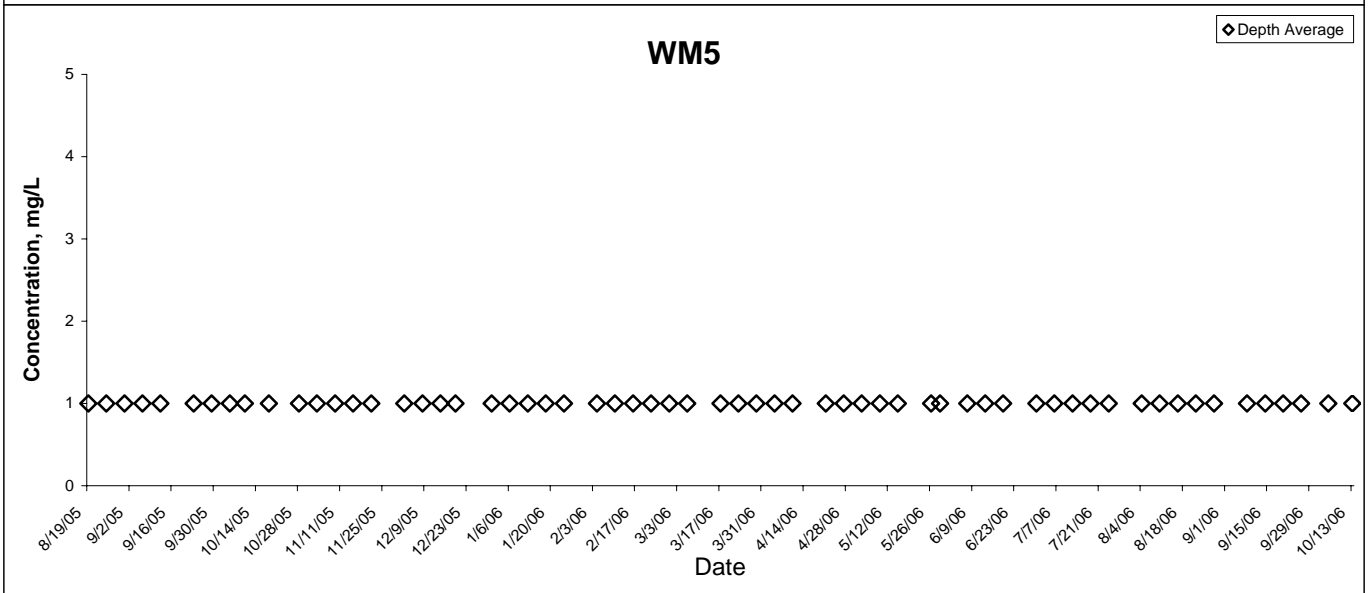
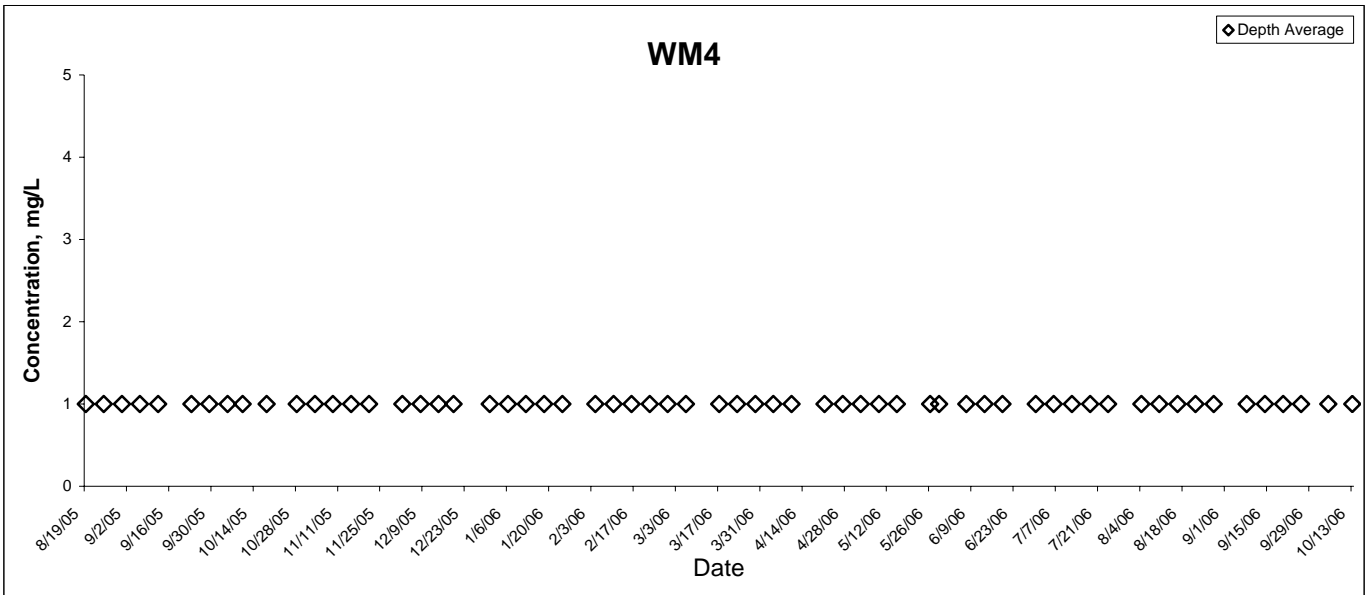
# Copper



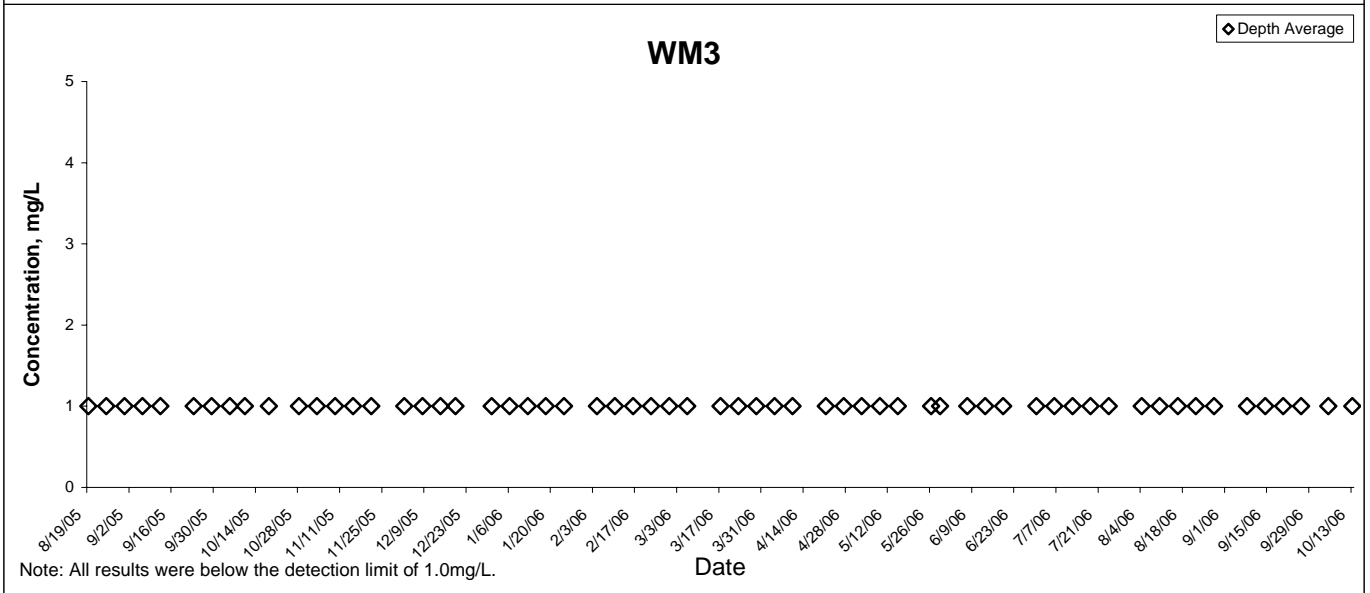
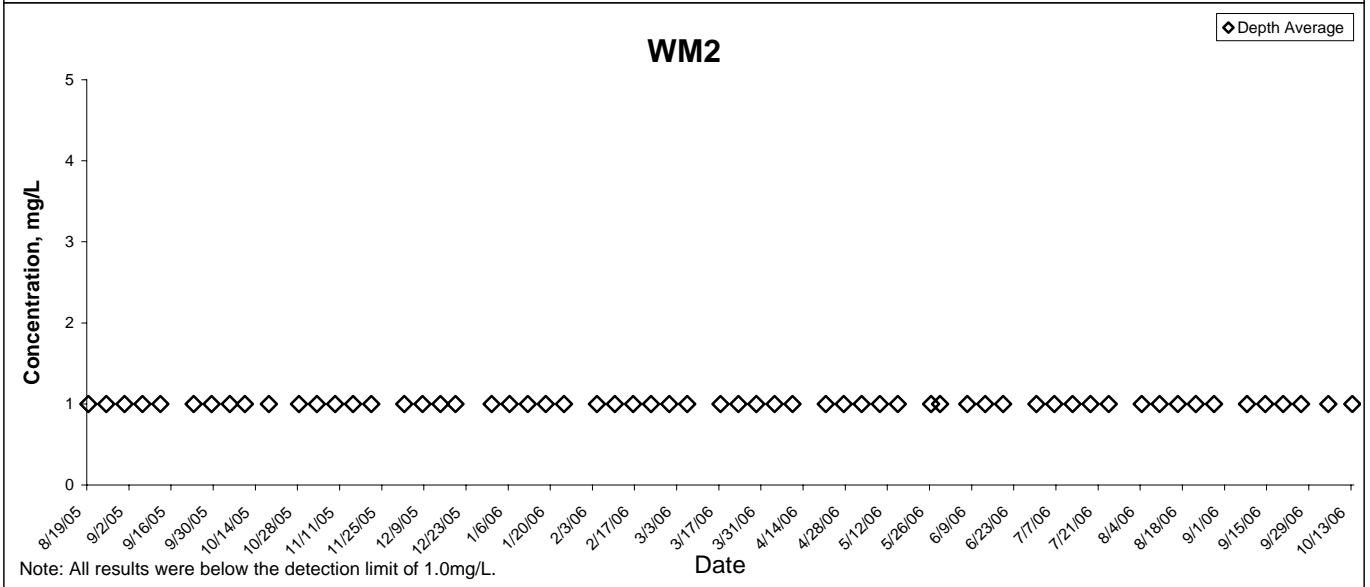
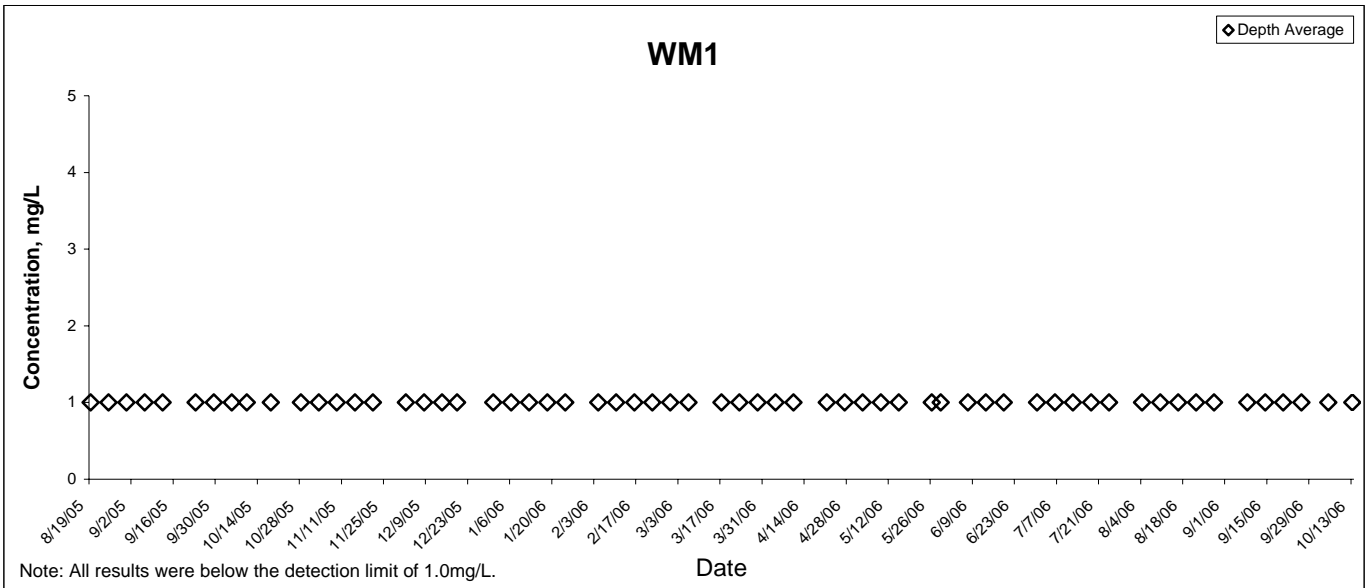
# Chromium



# Chromium



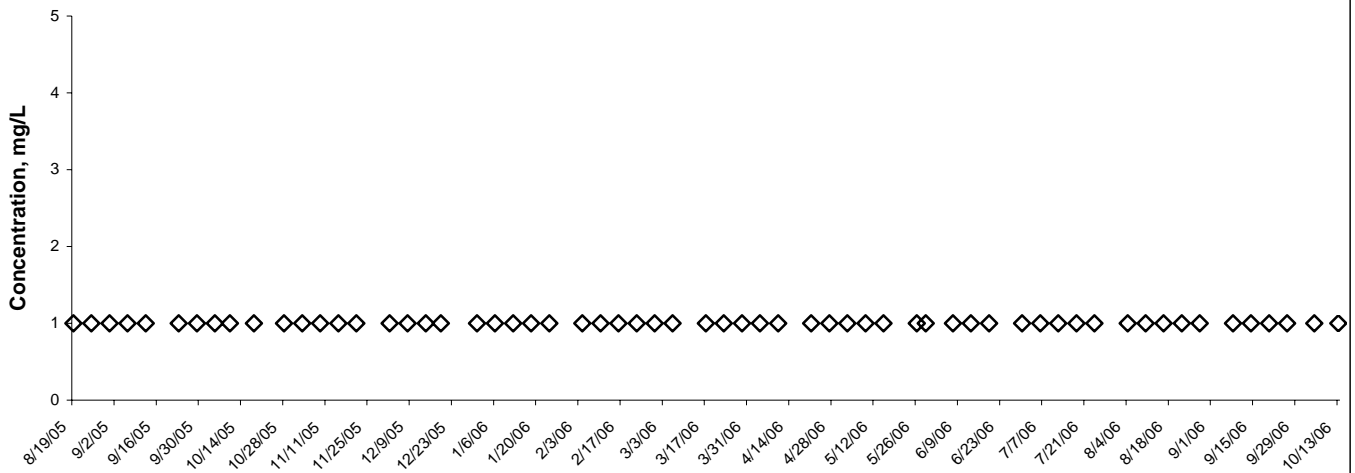
# Lead



# Lead

## WM4

◆ Depth Average

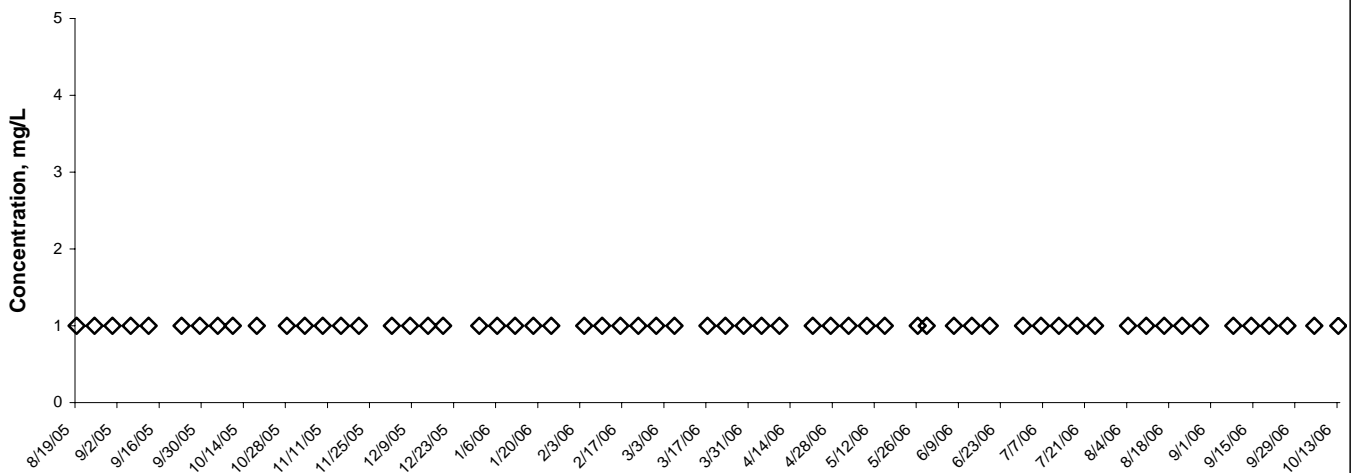


Note: All results were below the detection limit of 1.0mg/L.

Date

## WM5

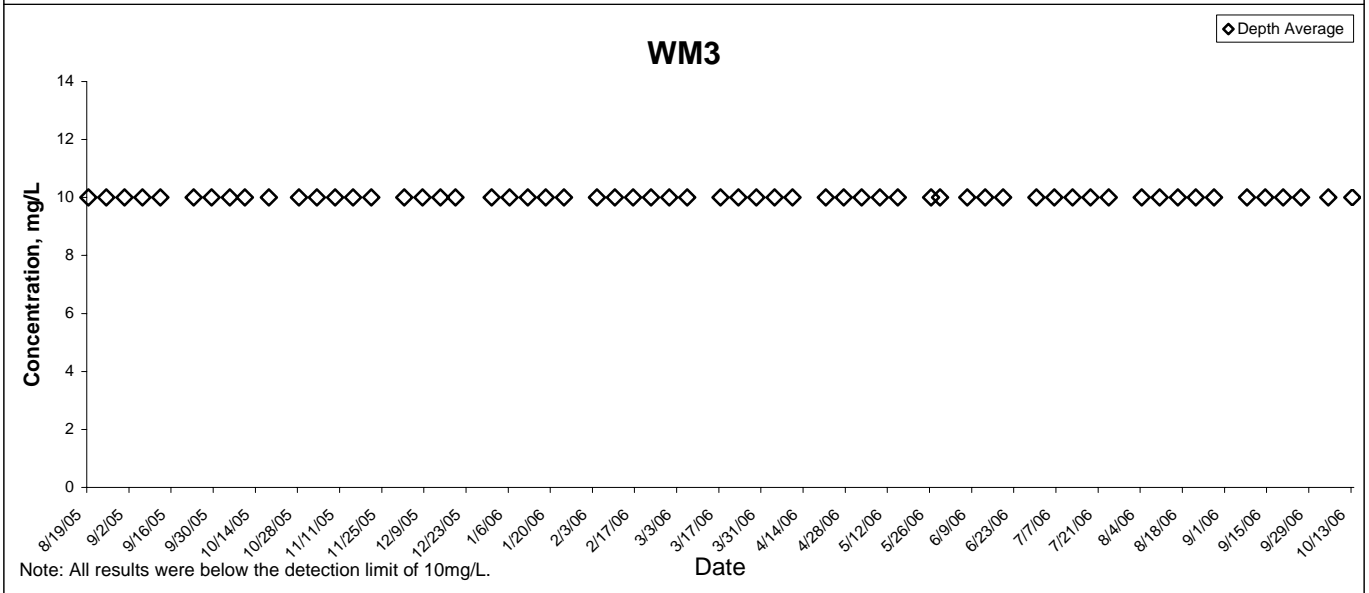
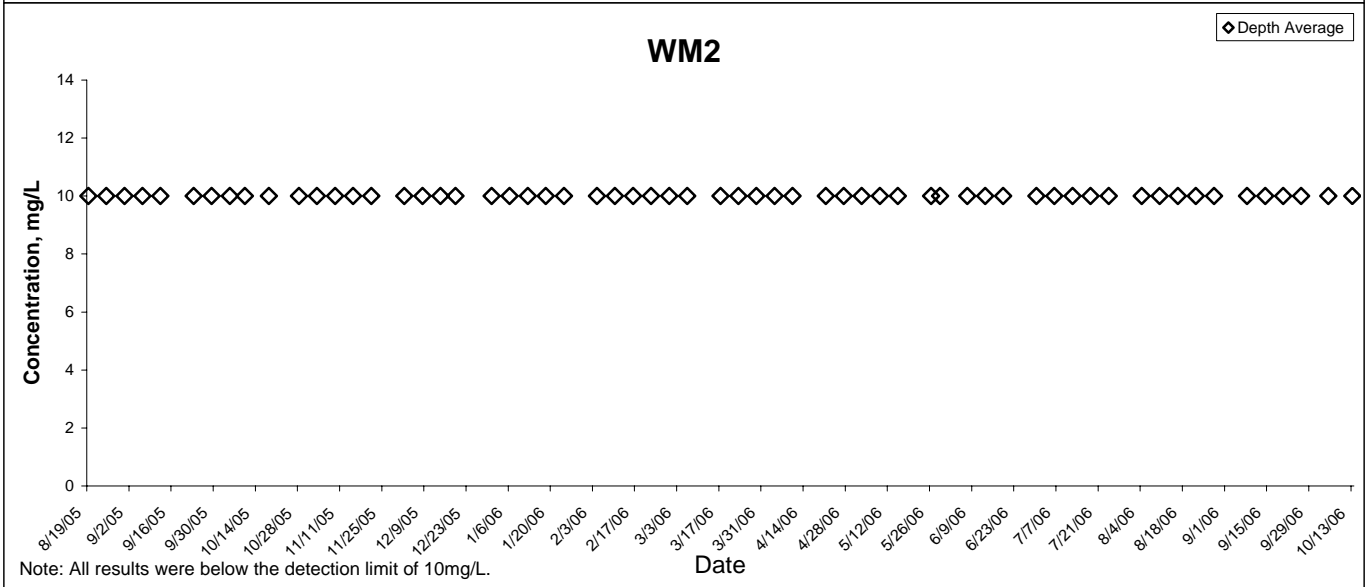
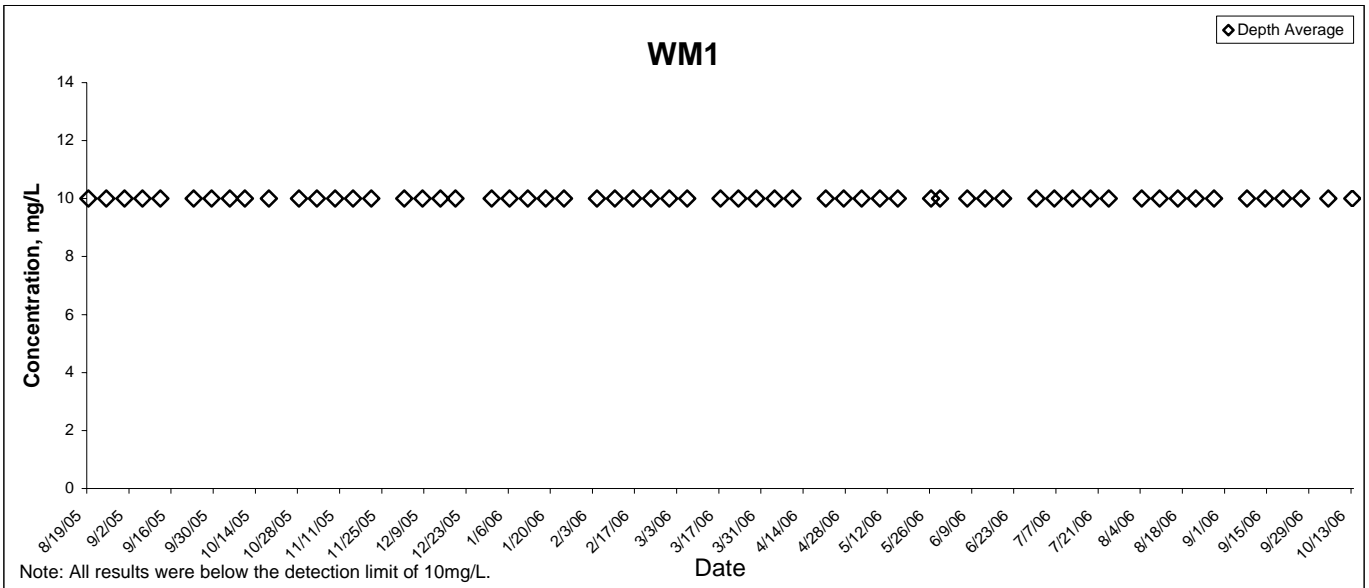
◆ Depth Average



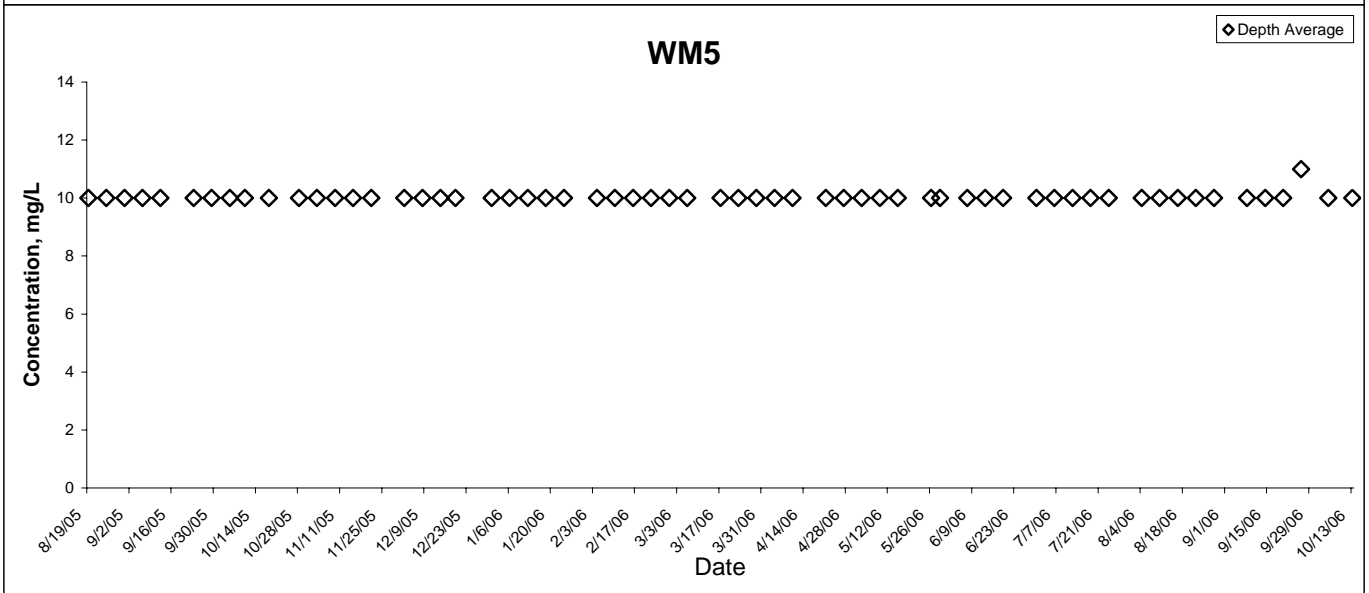
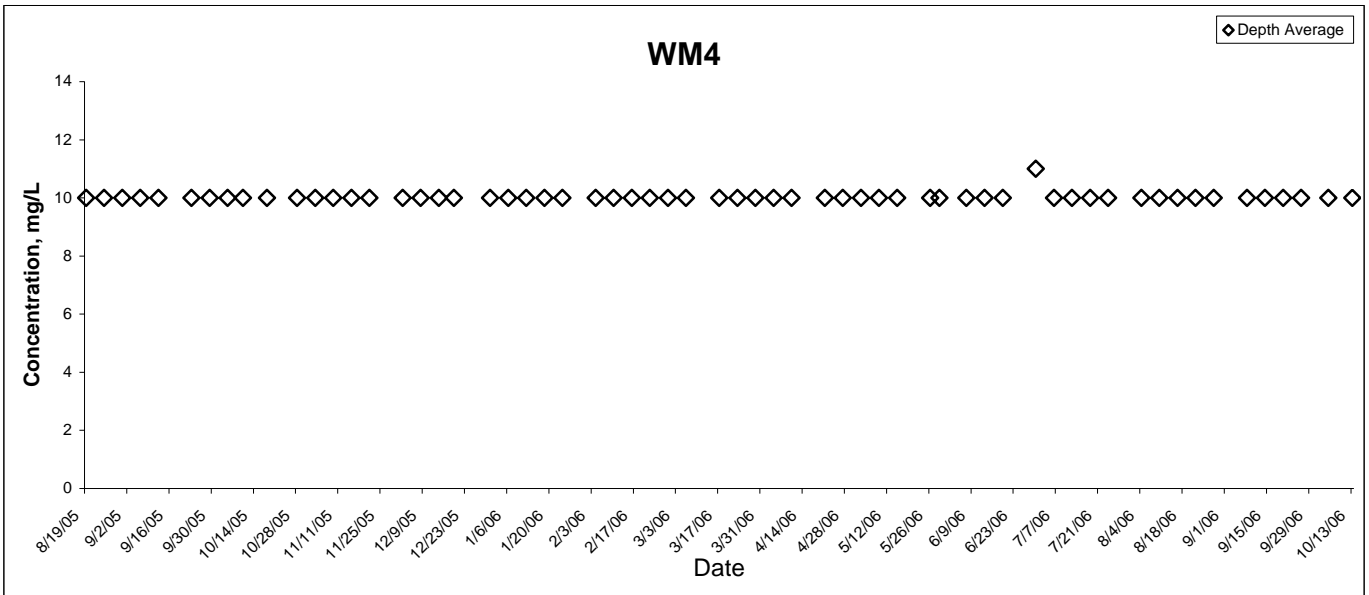
Note: All results were below the detection limit of 1.0mg/L.

Date

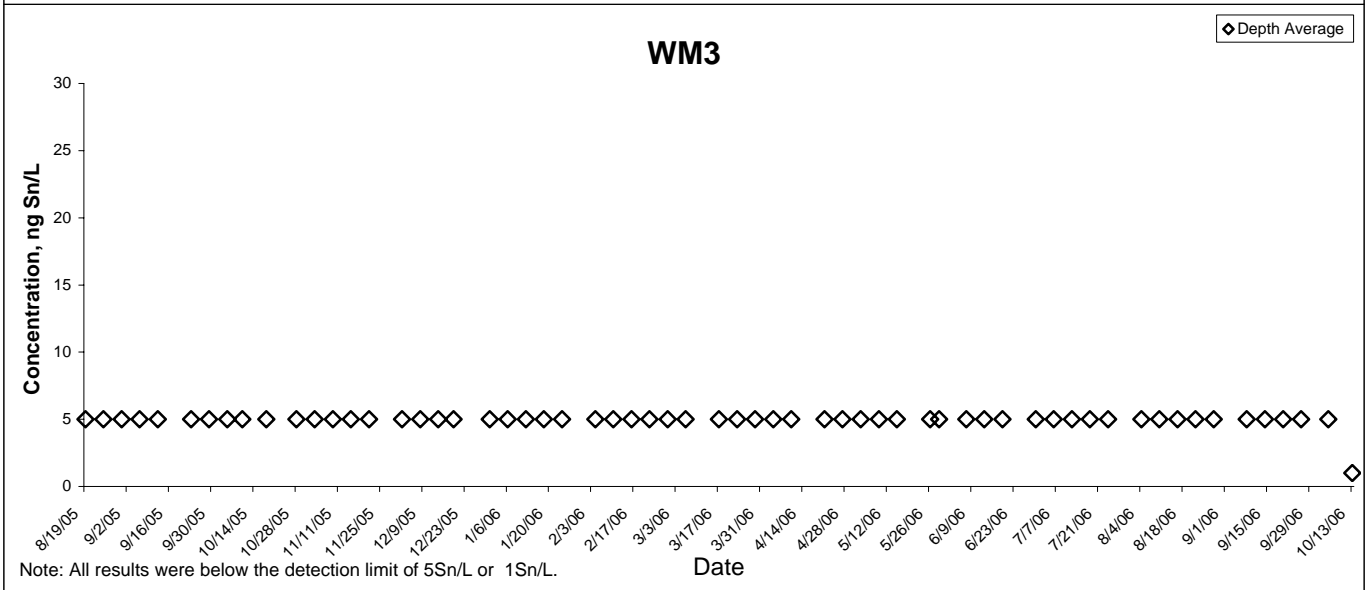
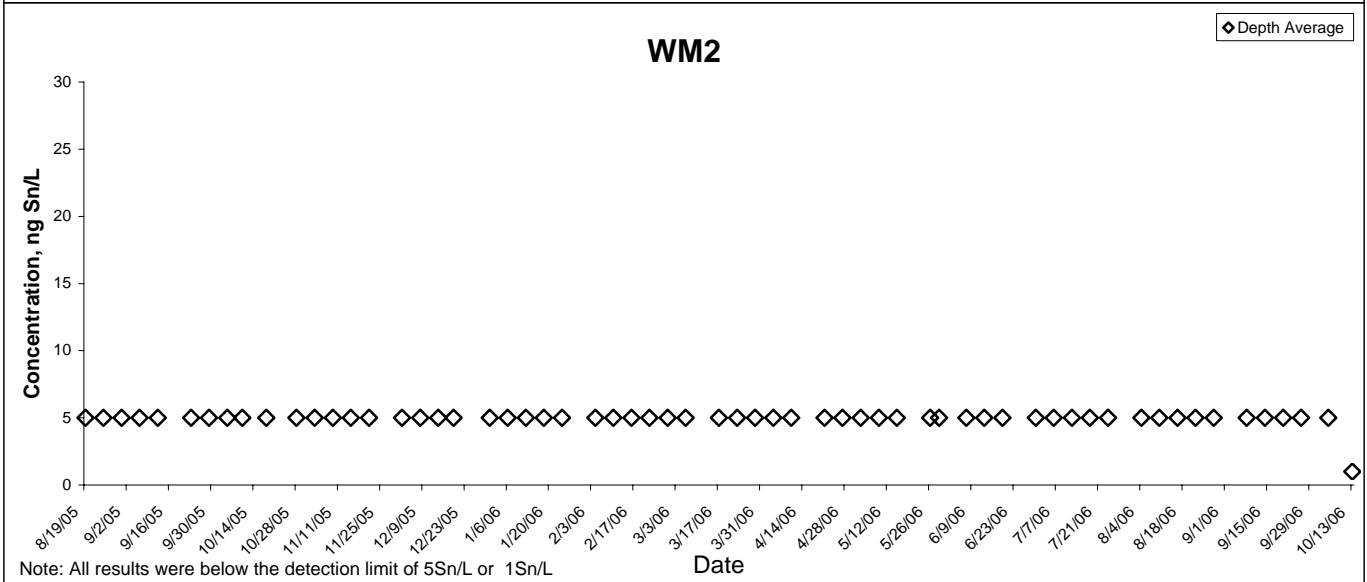
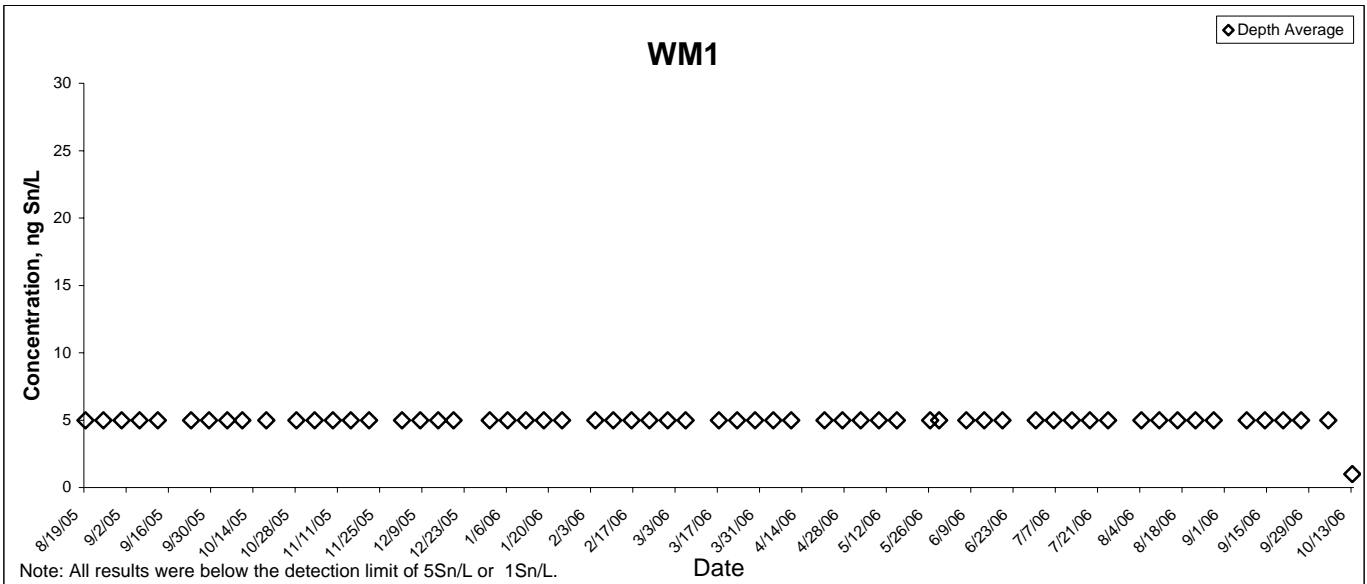
# Zinc



# Zinc



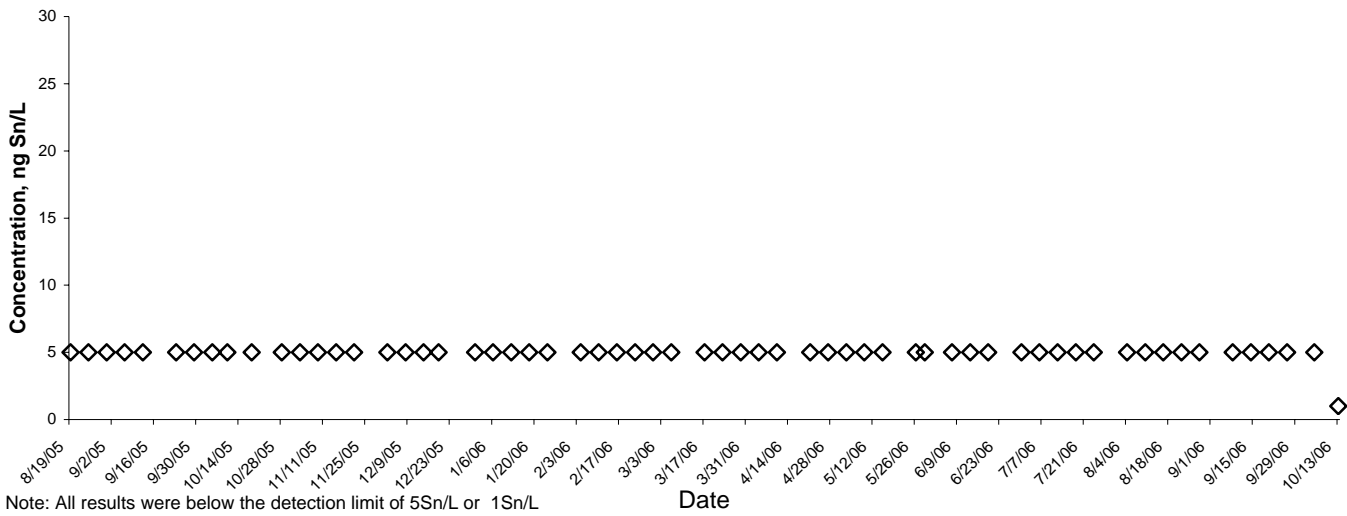
# TBT



# TBT

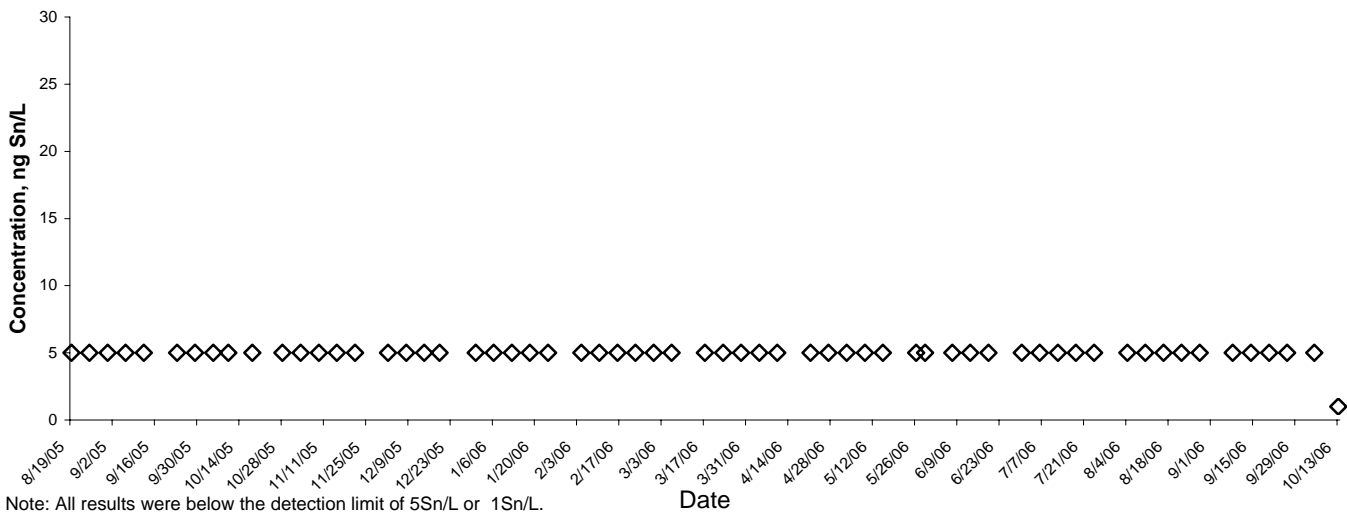
## WM4

◆ Depth Average

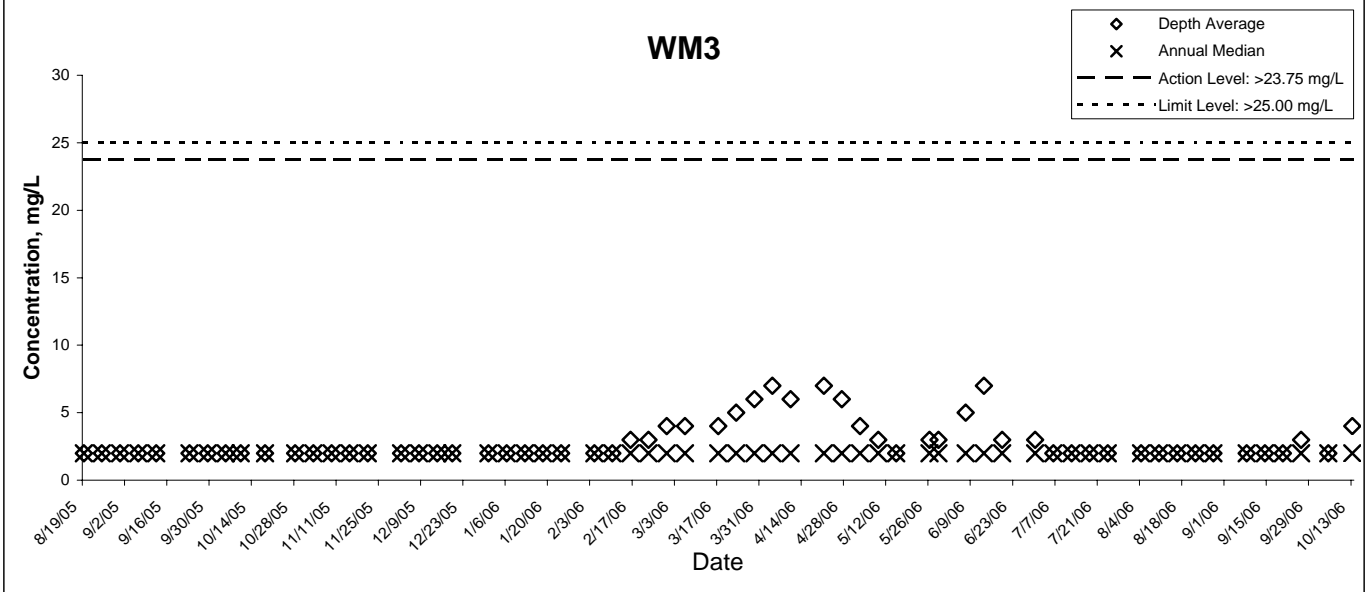
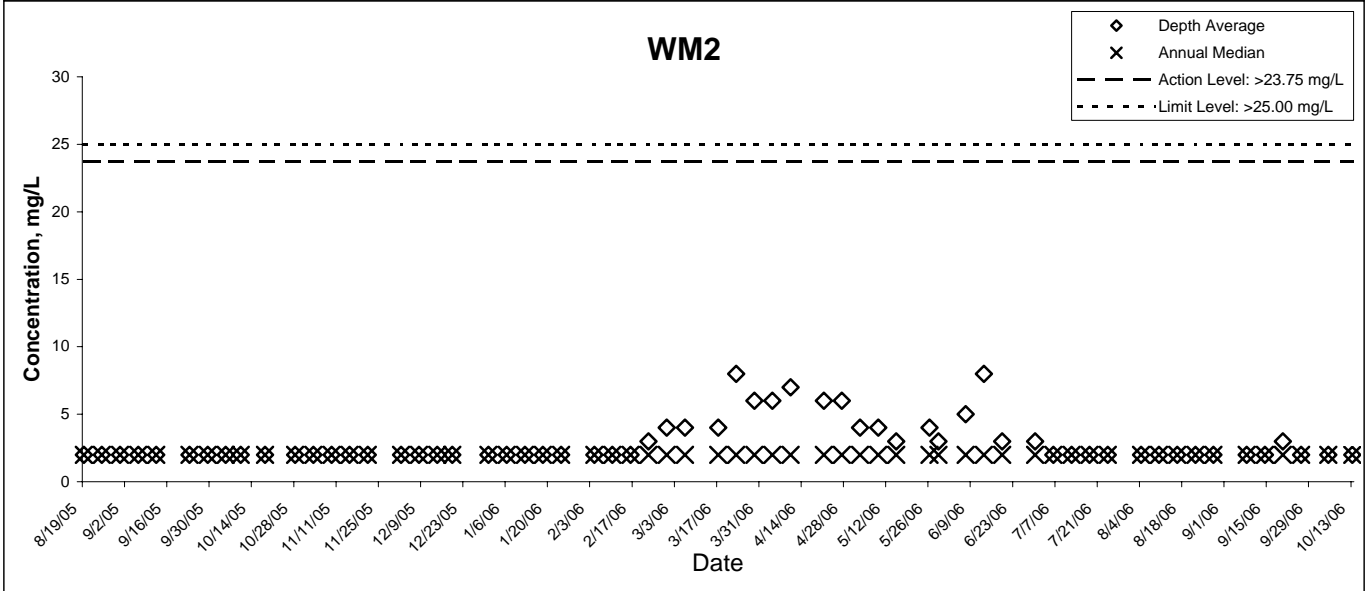
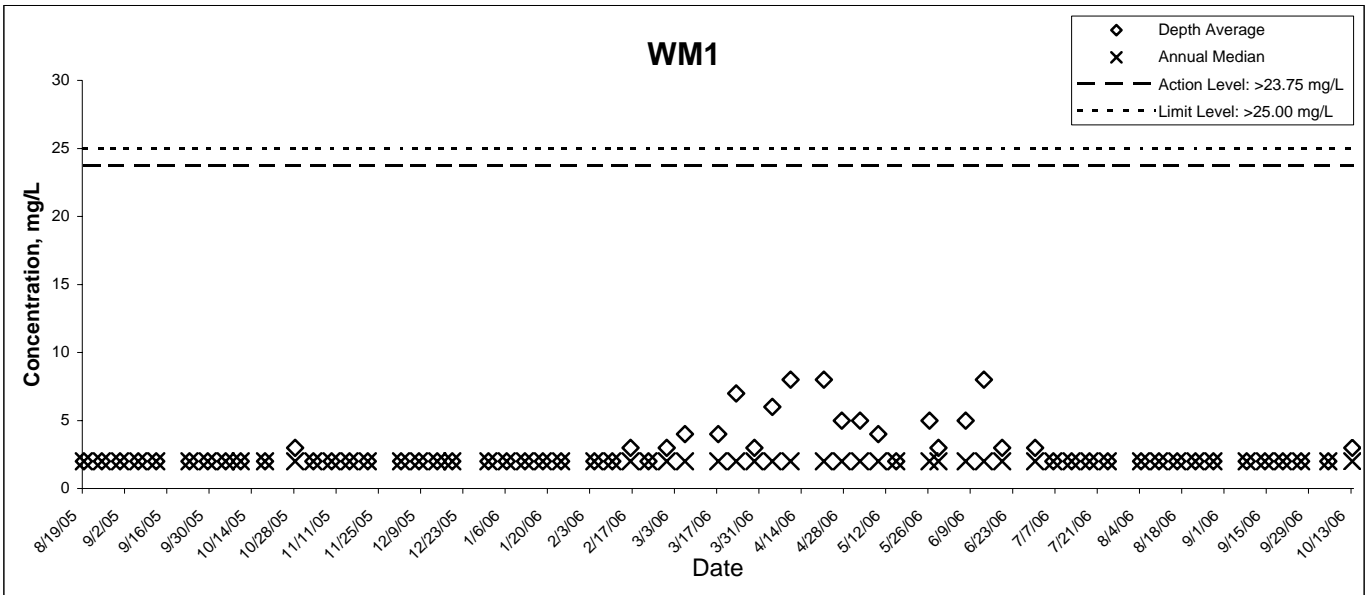


## WM5

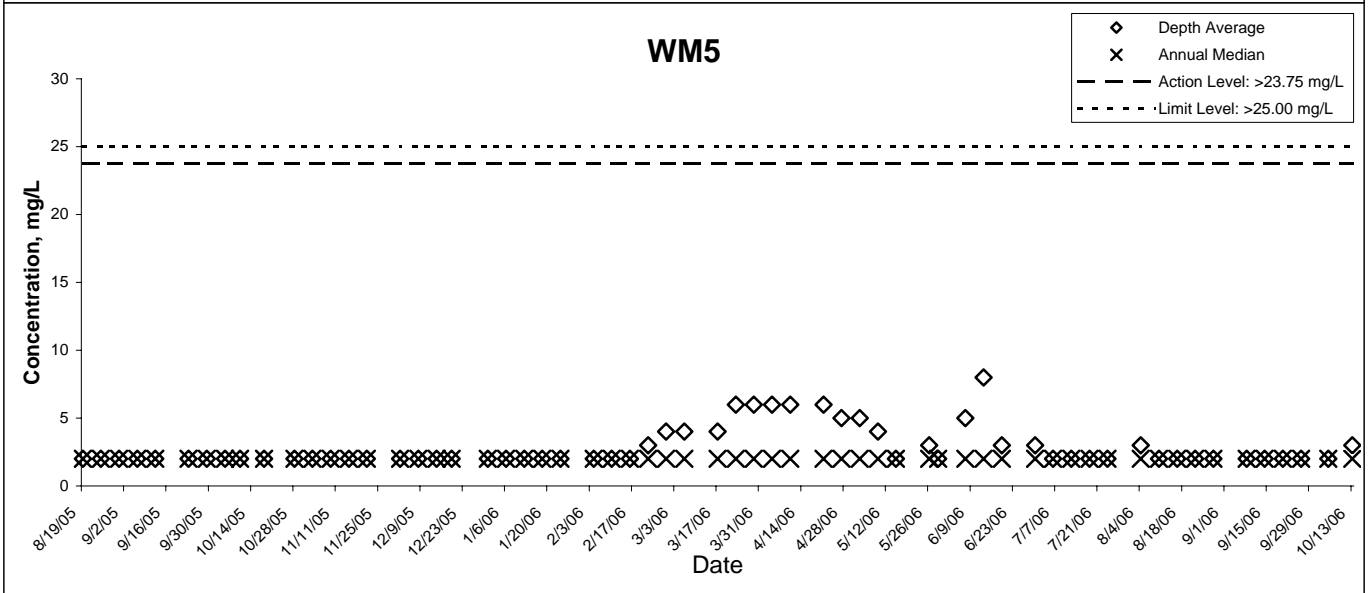
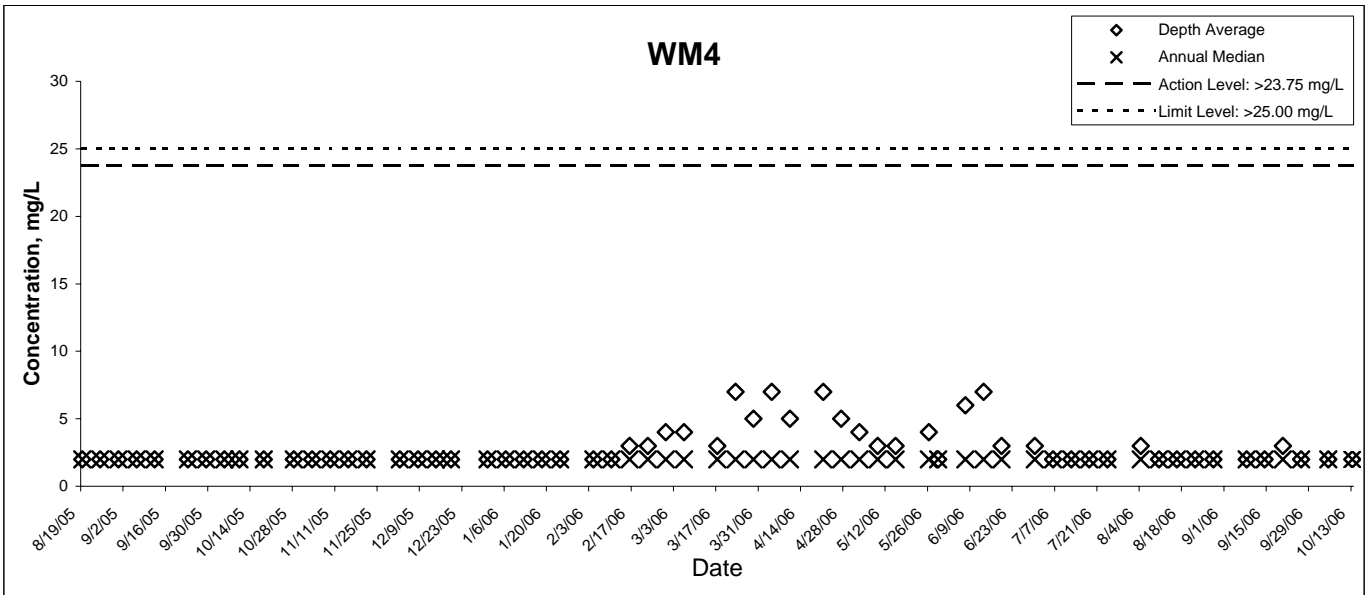
◆ Depth Average



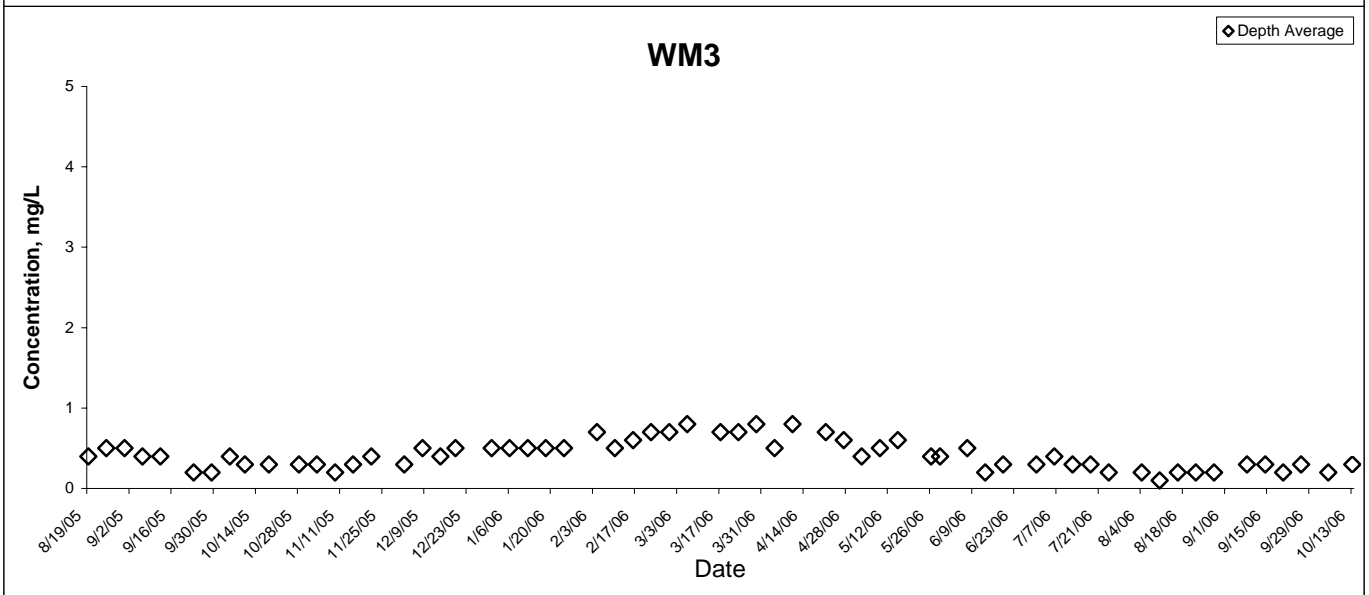
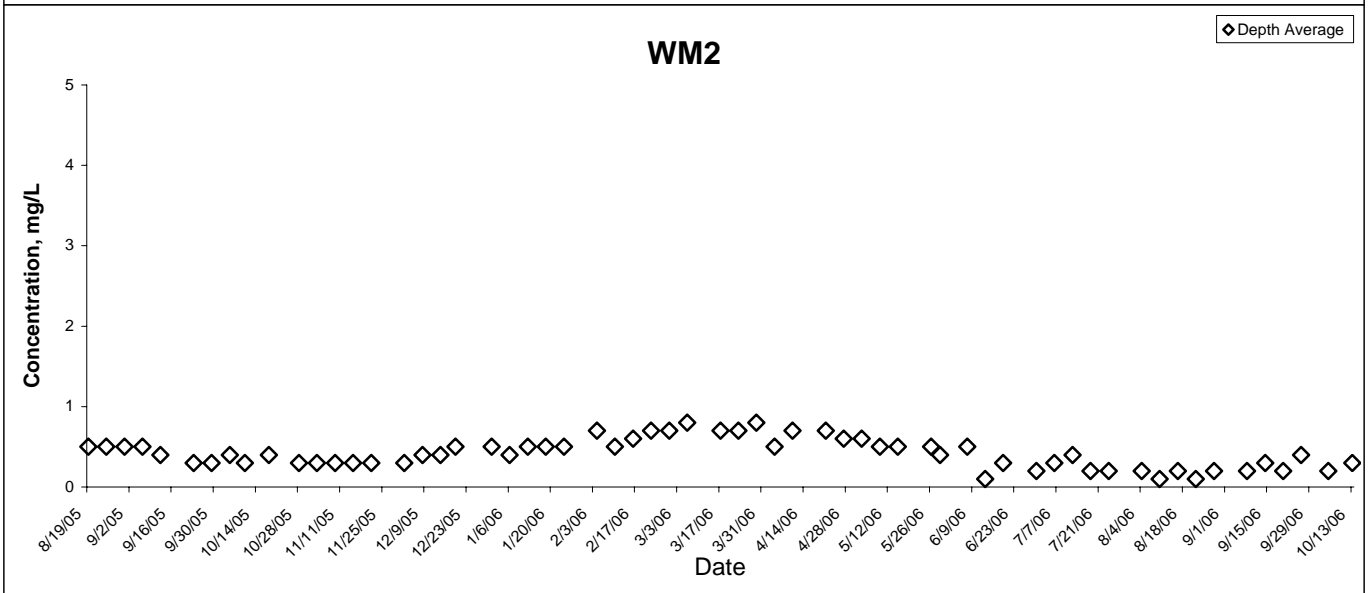
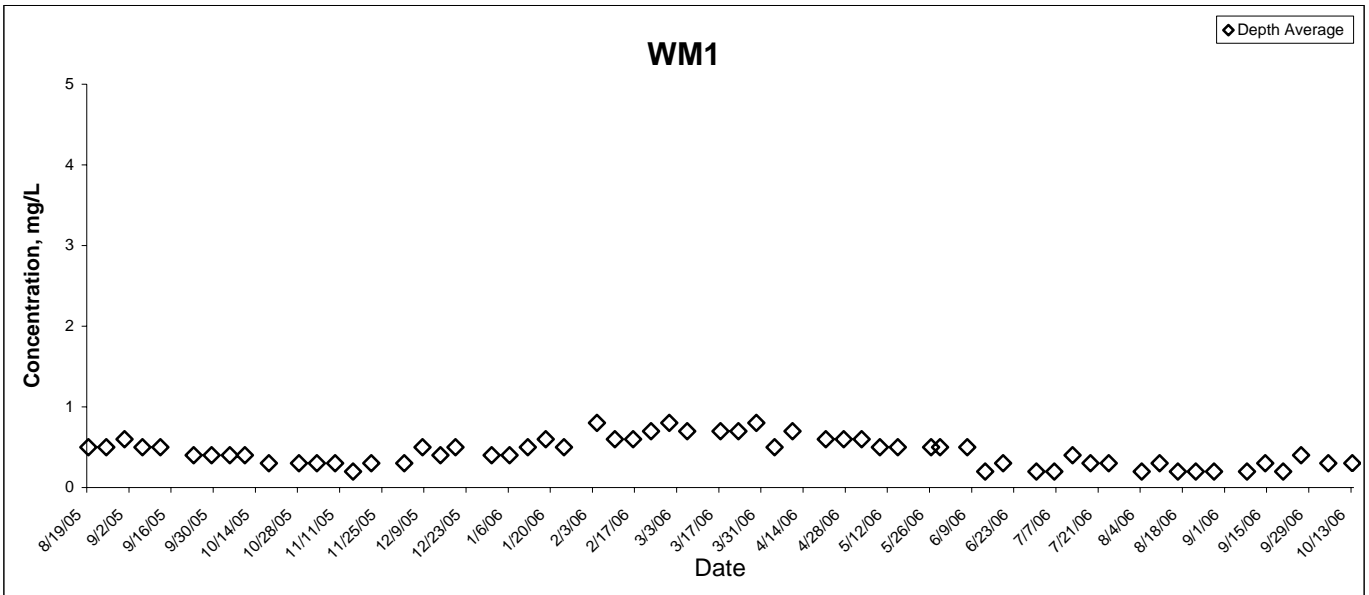
# Suspended Solids



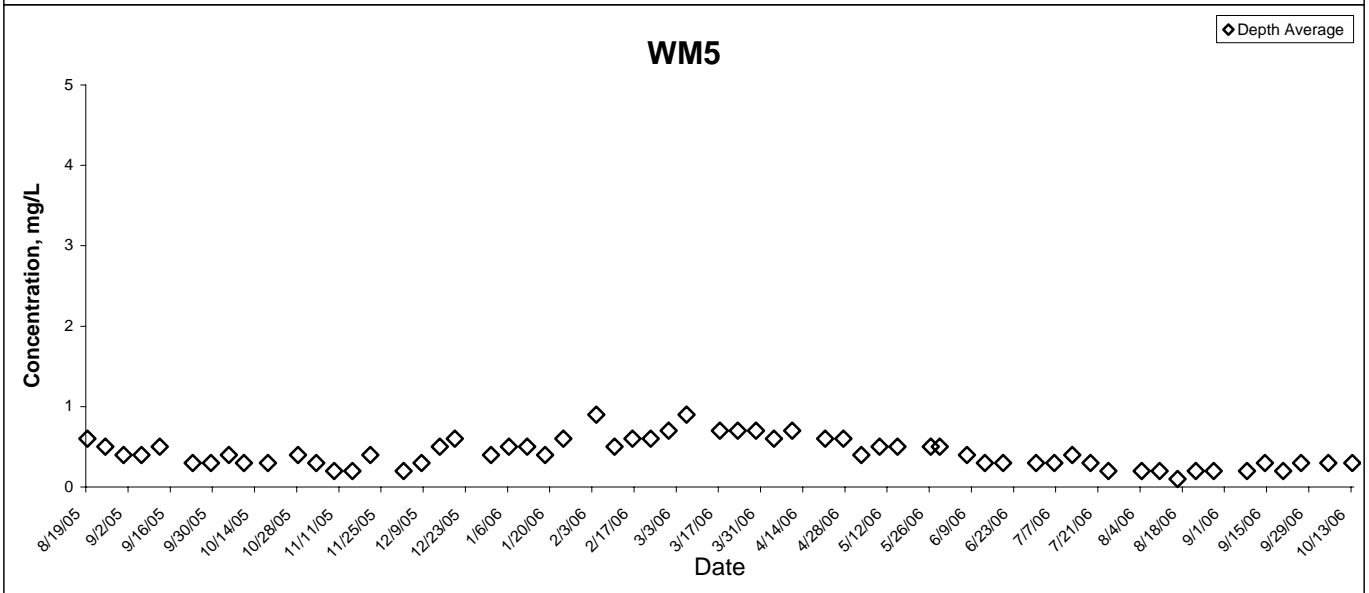
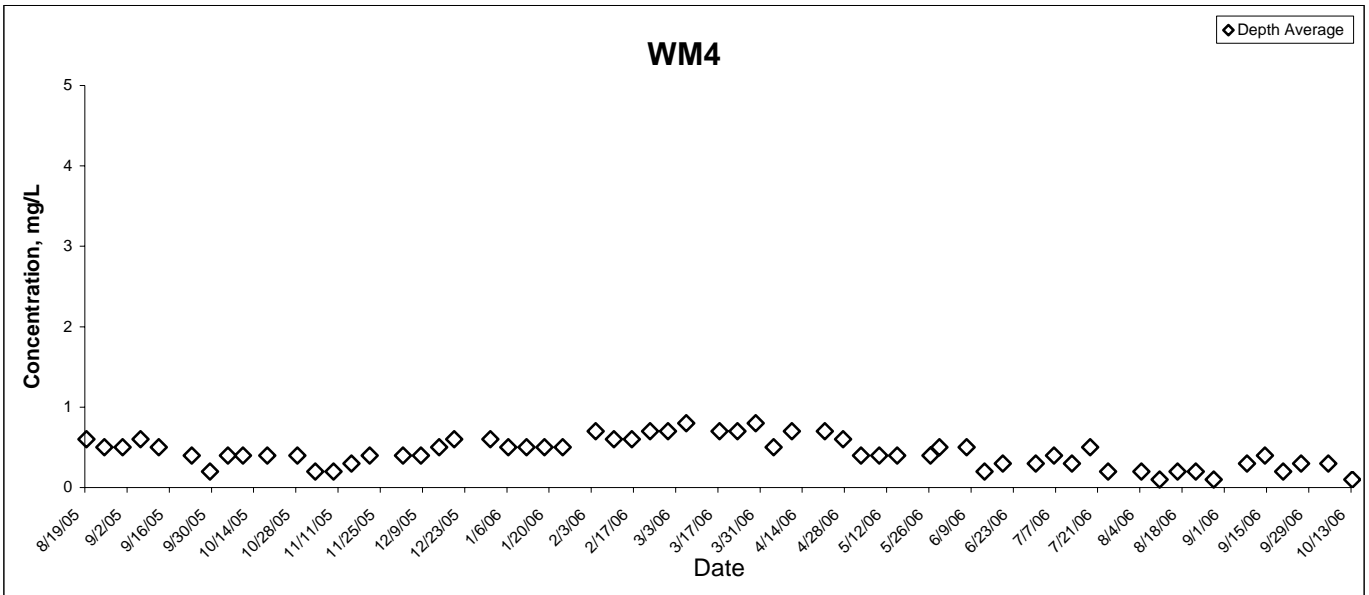
## Suspended Solids



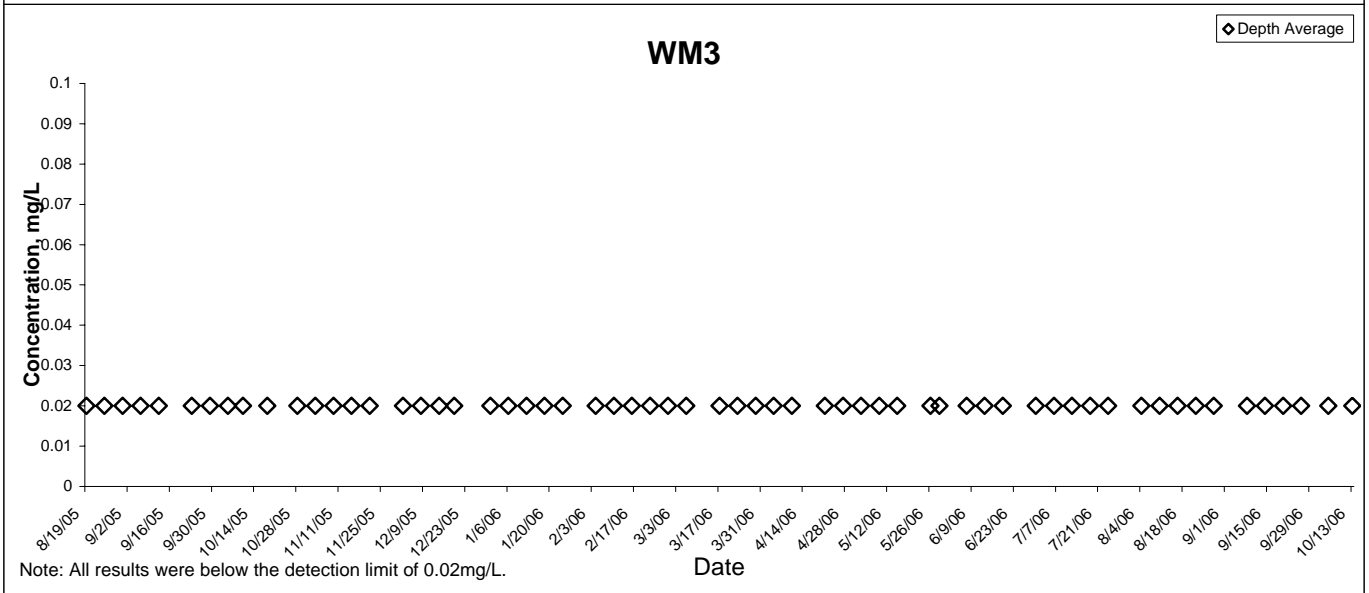
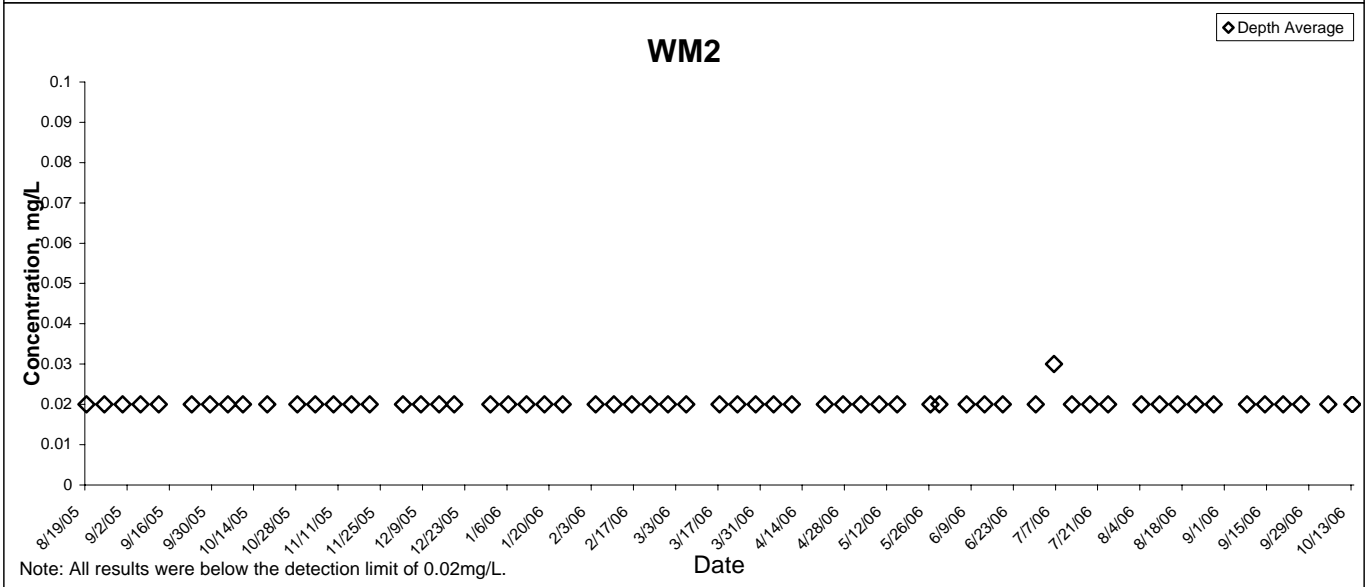
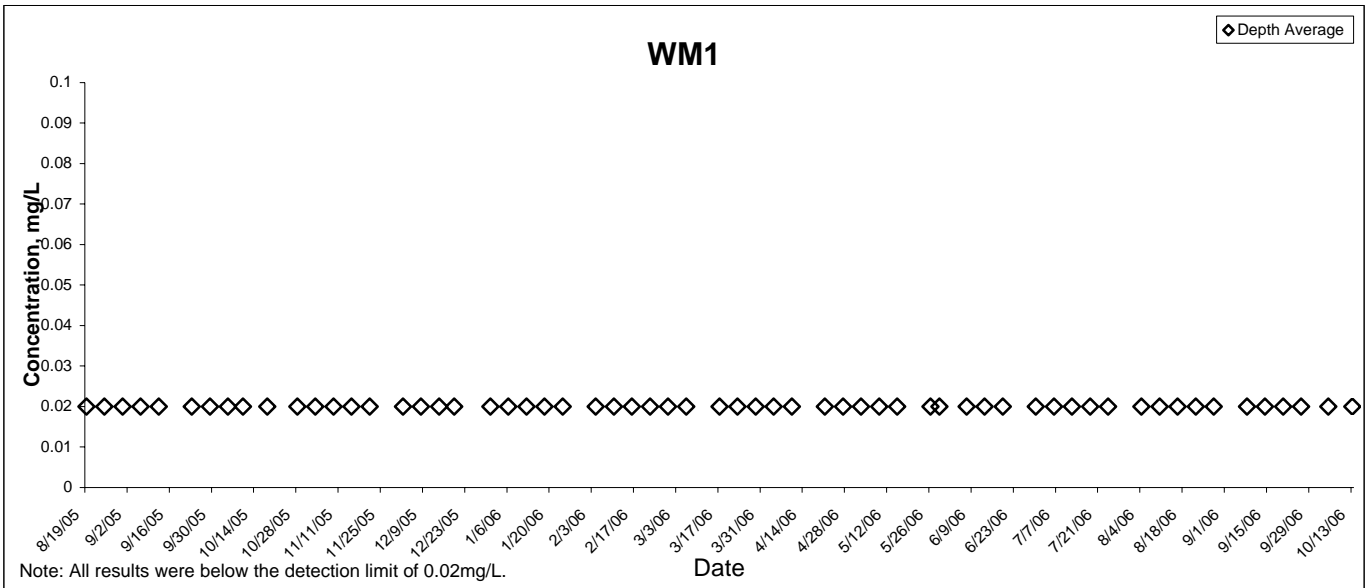
# Total Nitrogen



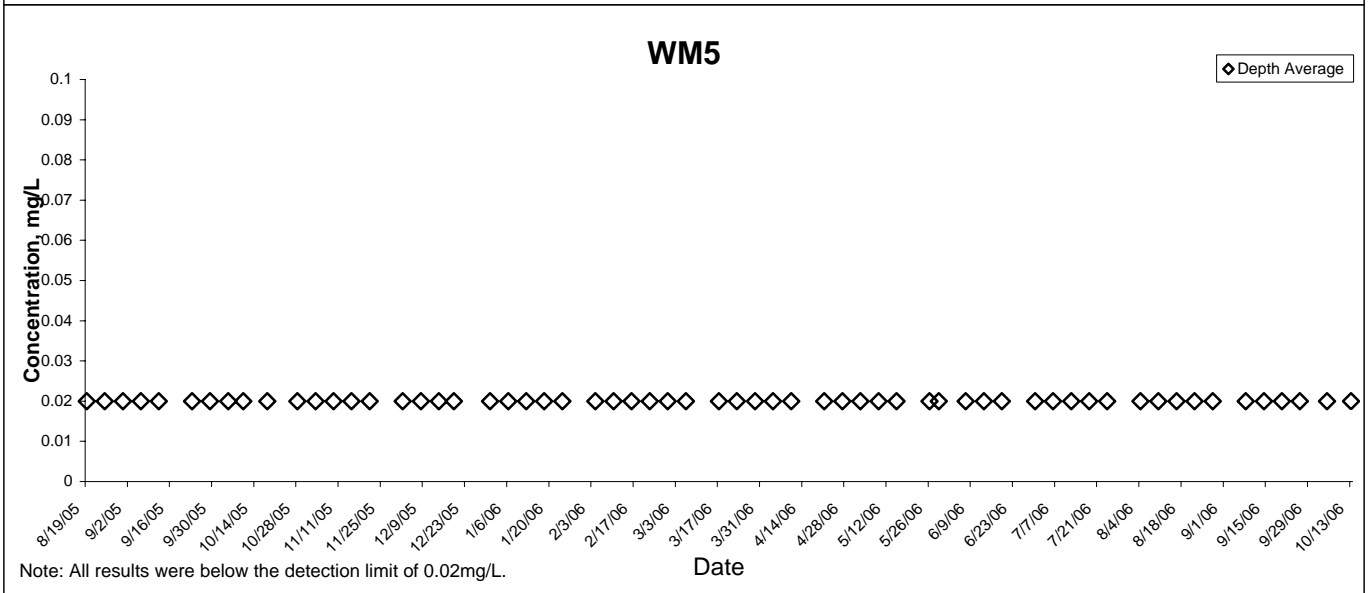
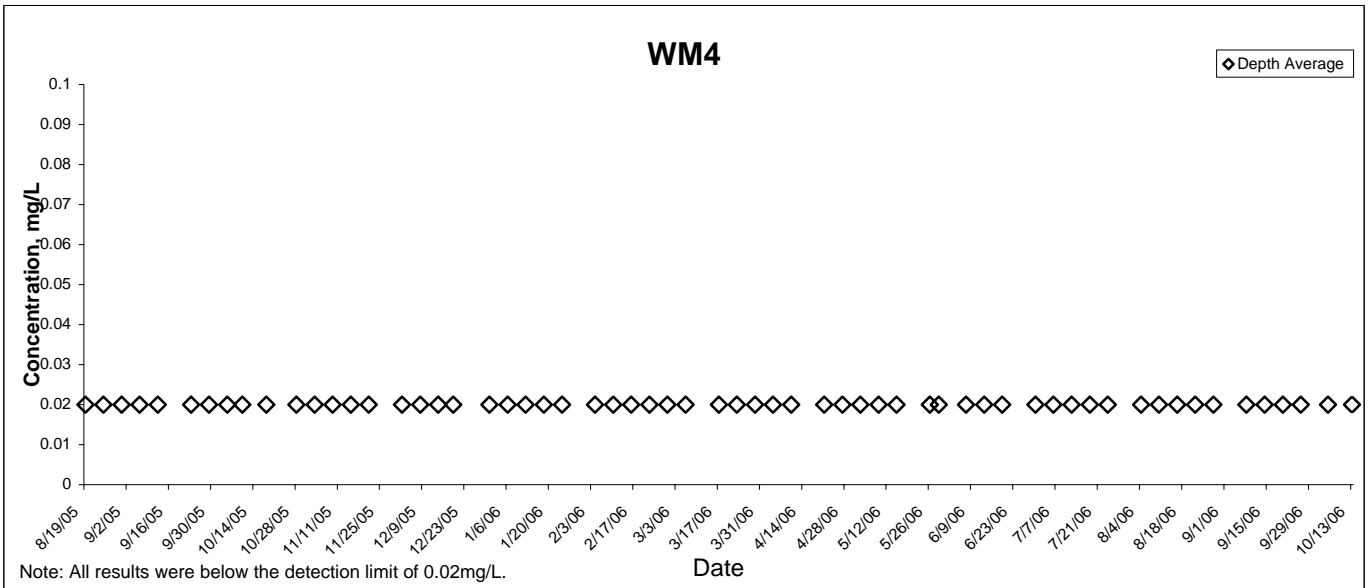
# Total Nitrogen



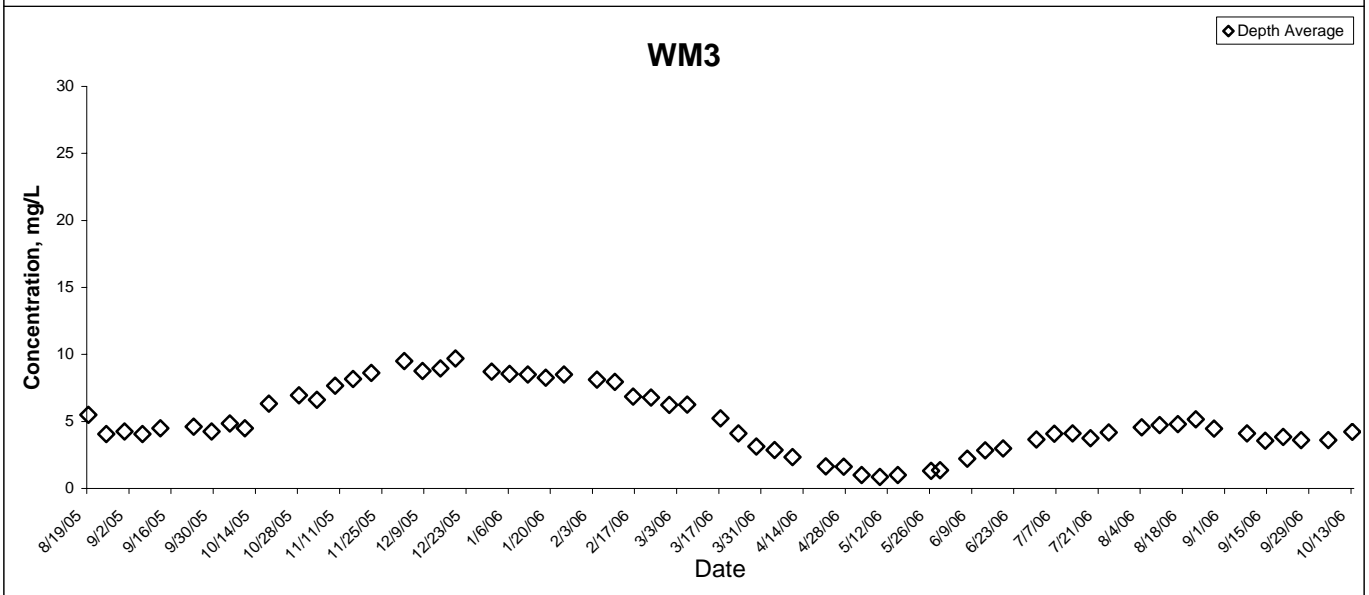
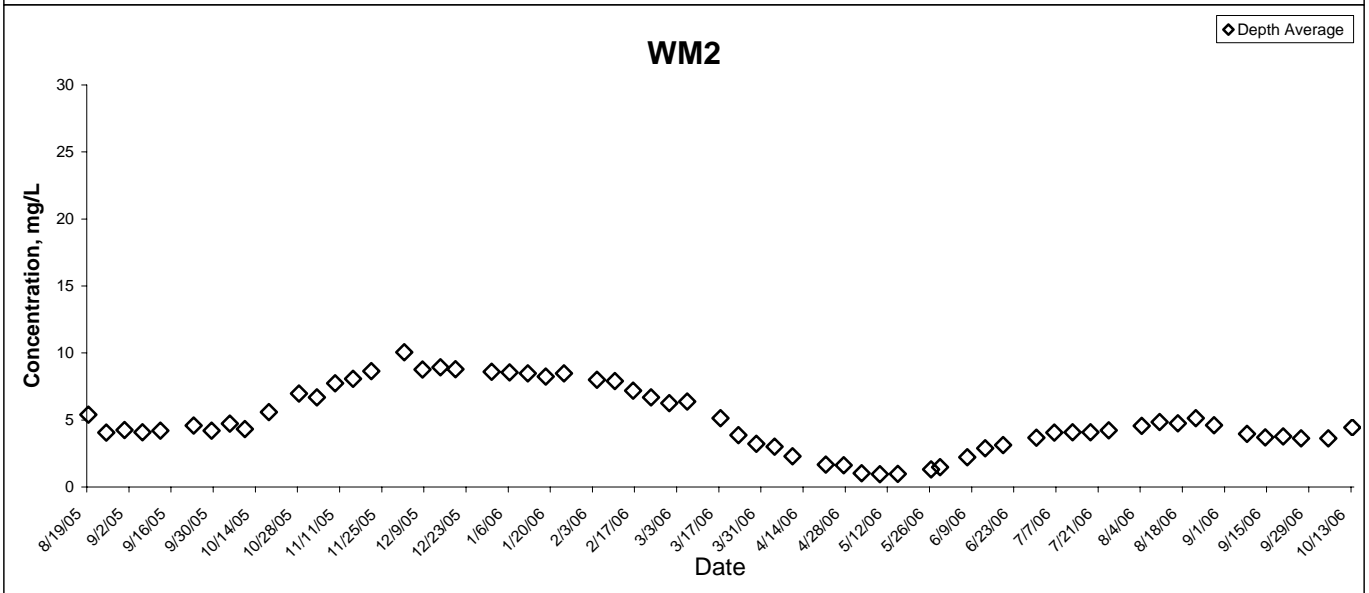
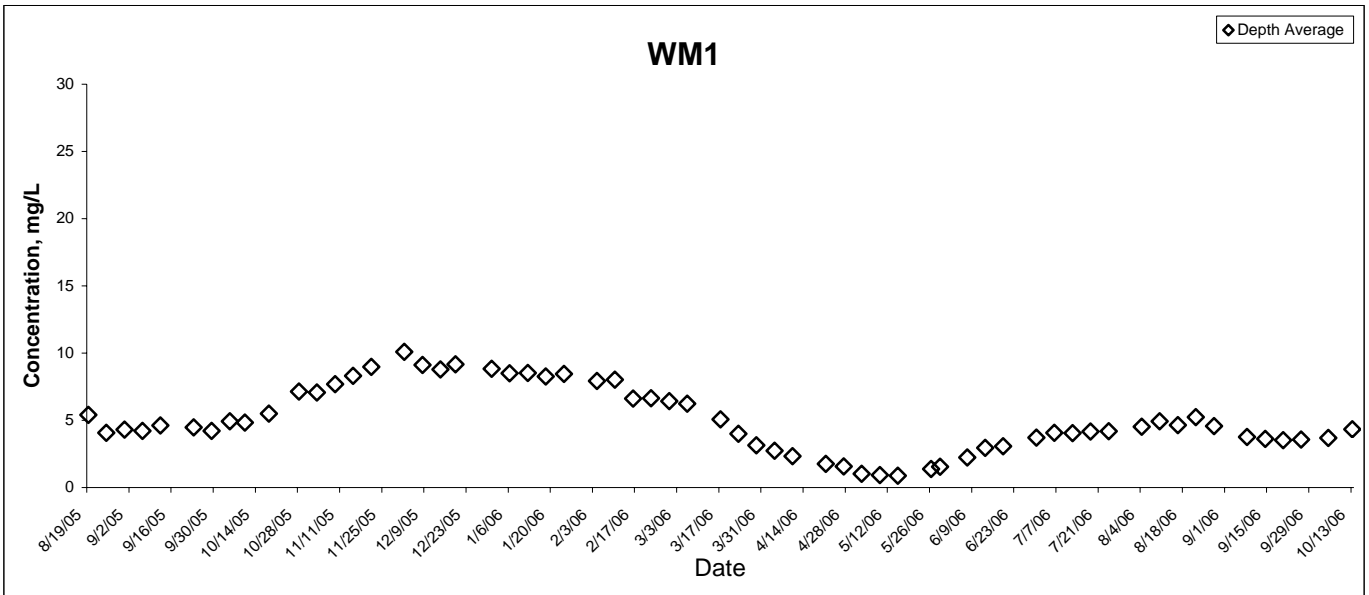
# Total Phosphorous



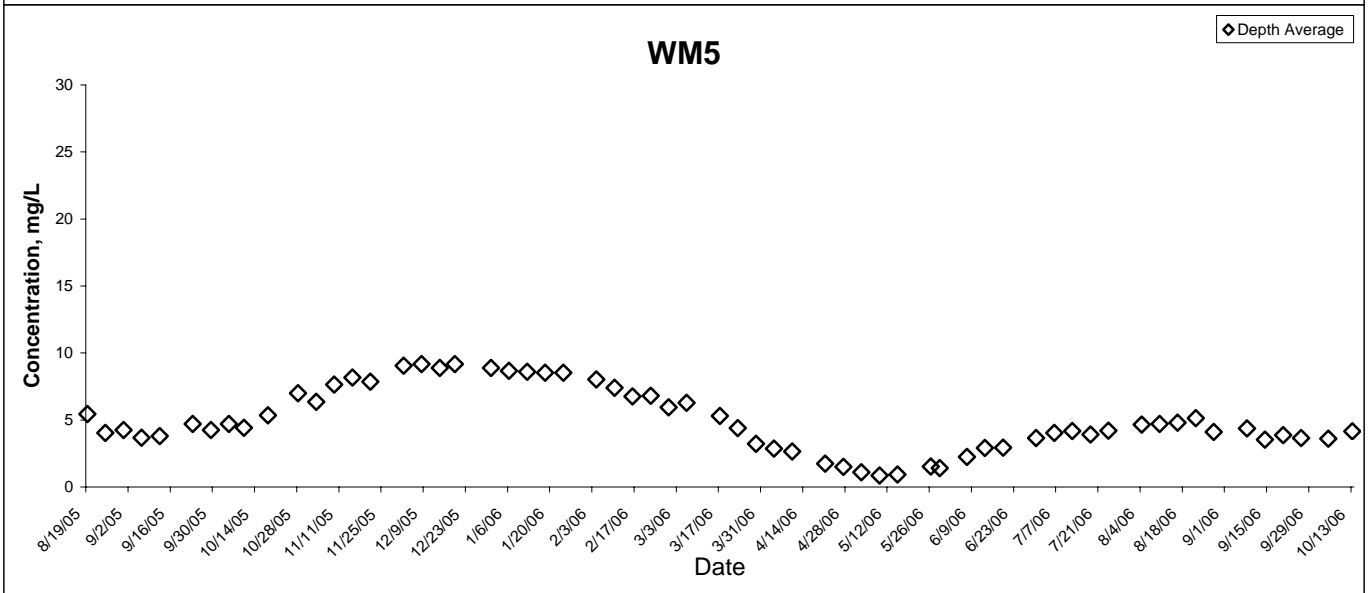
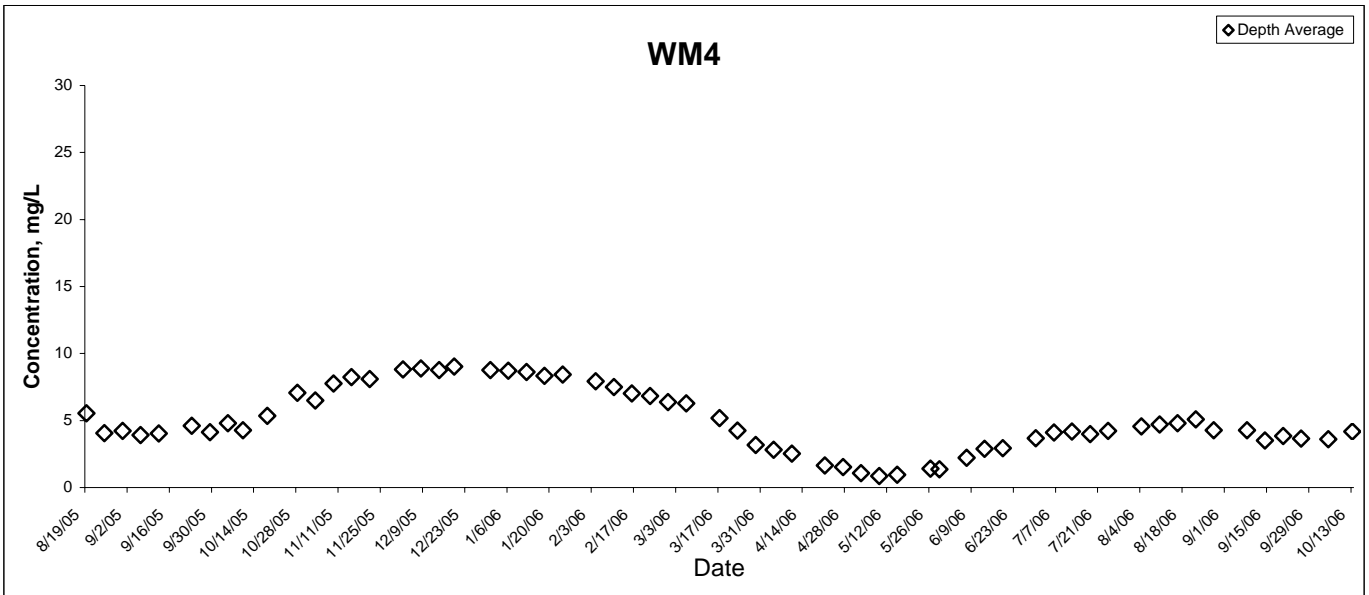
# Total Phosphorous



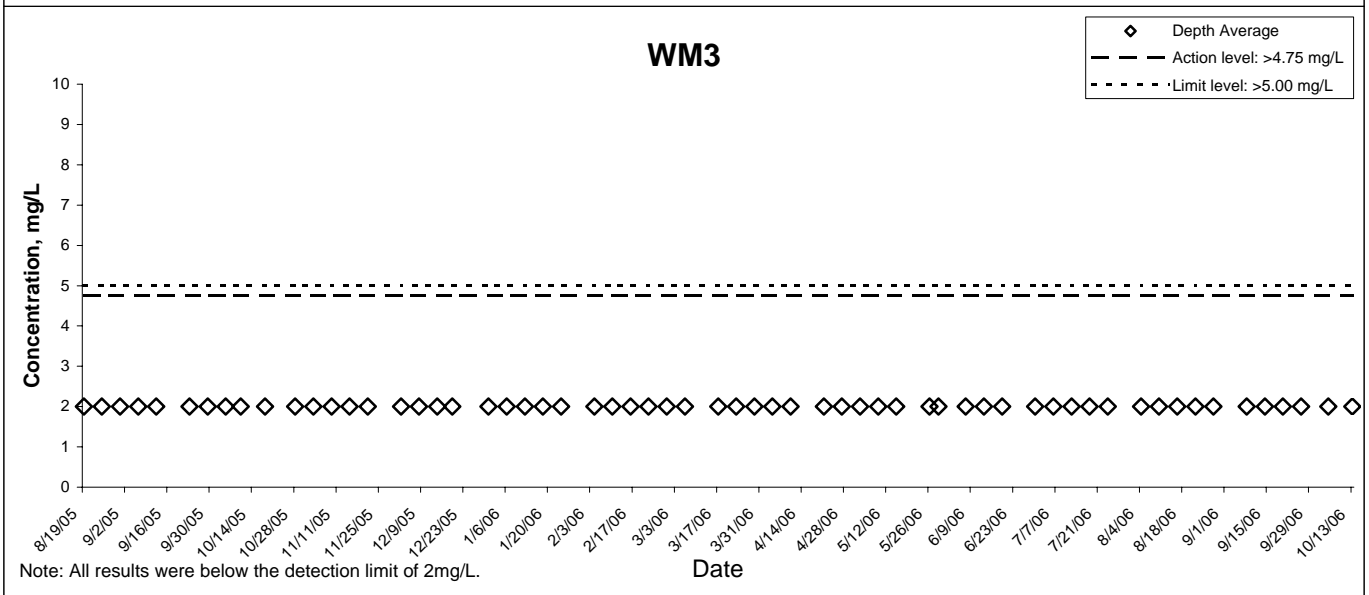
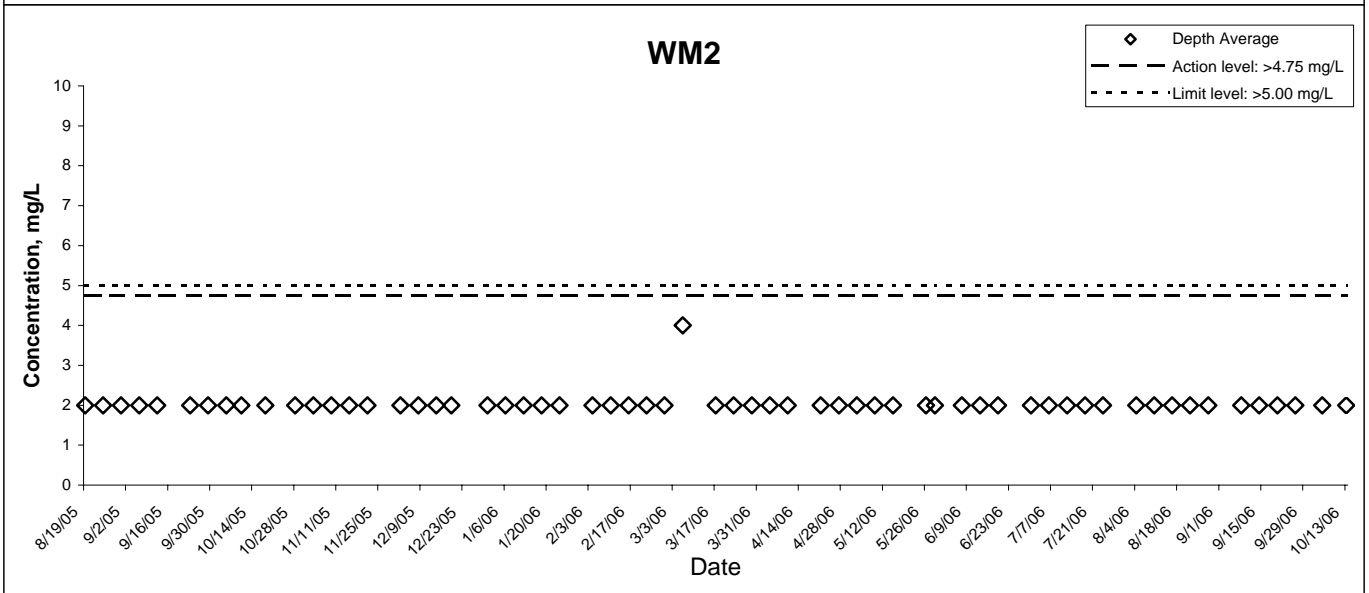
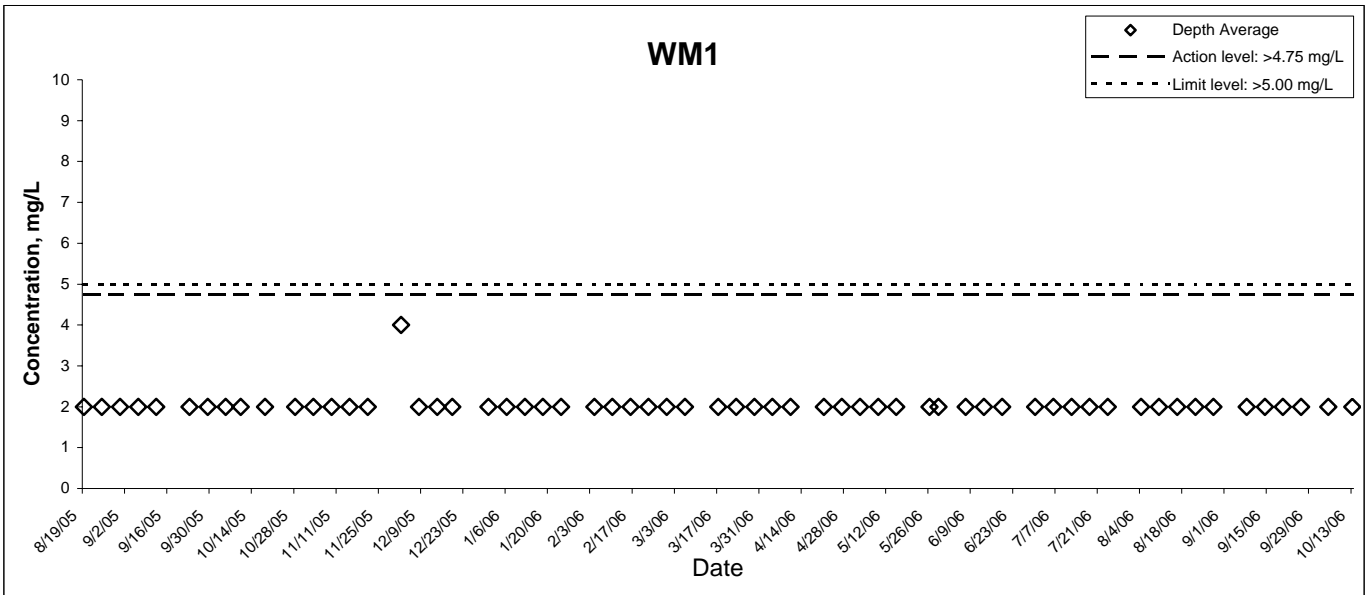
# Silica



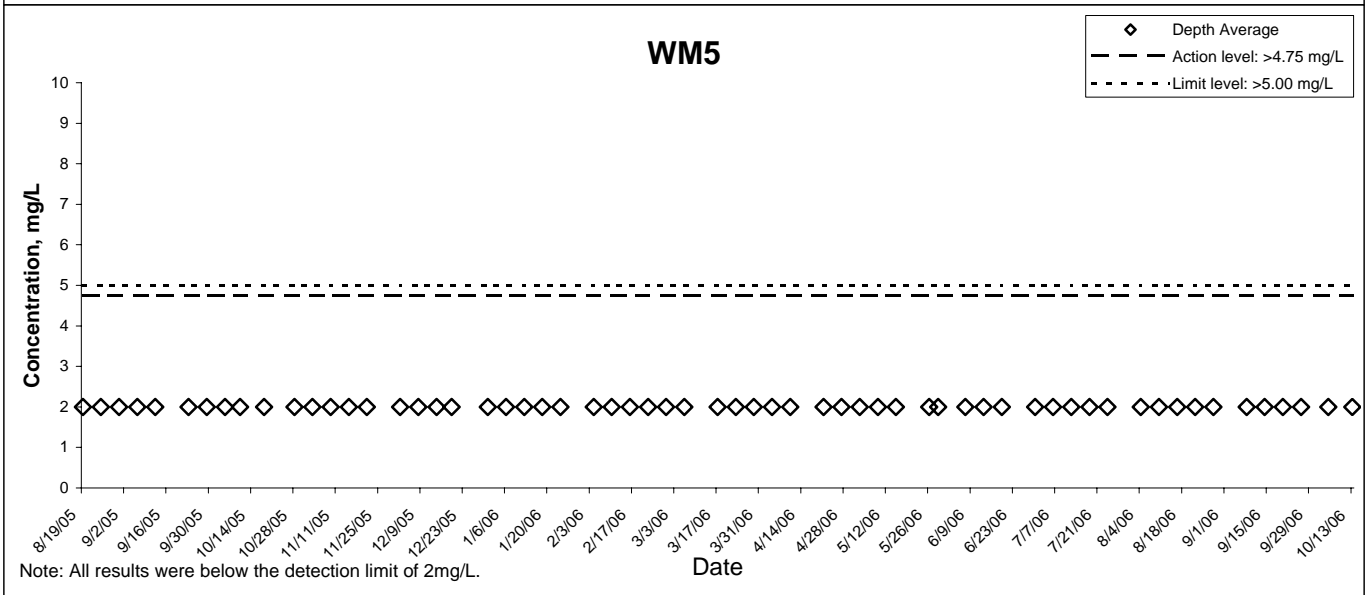
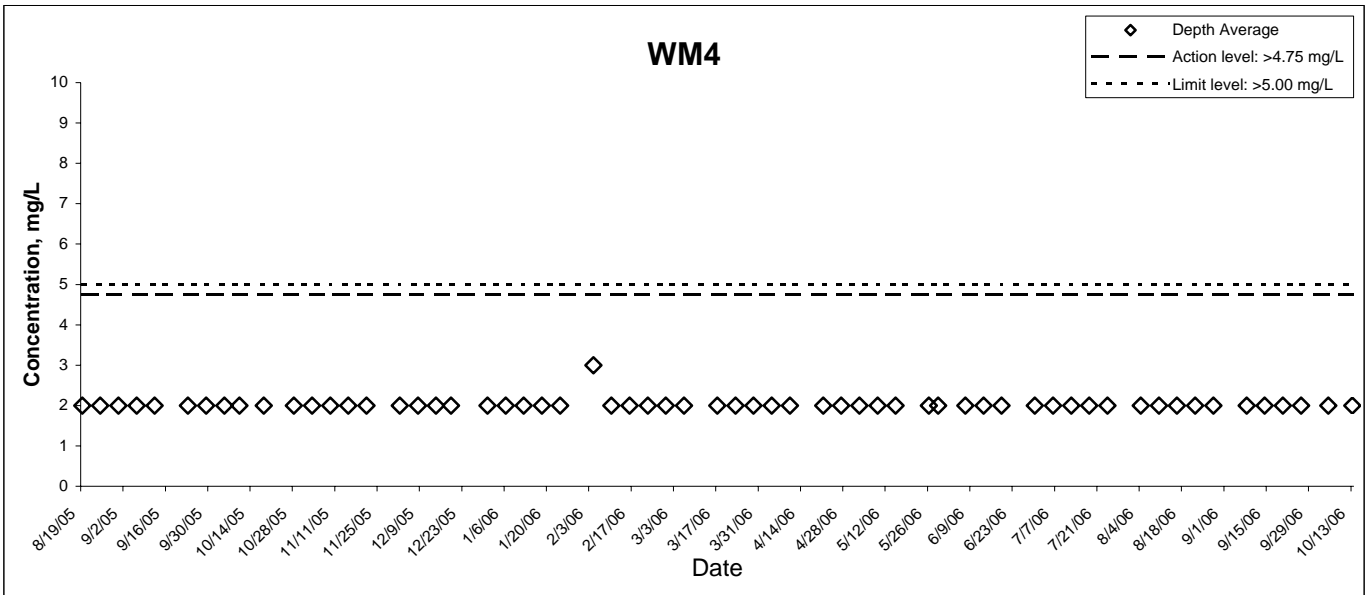
## Silica



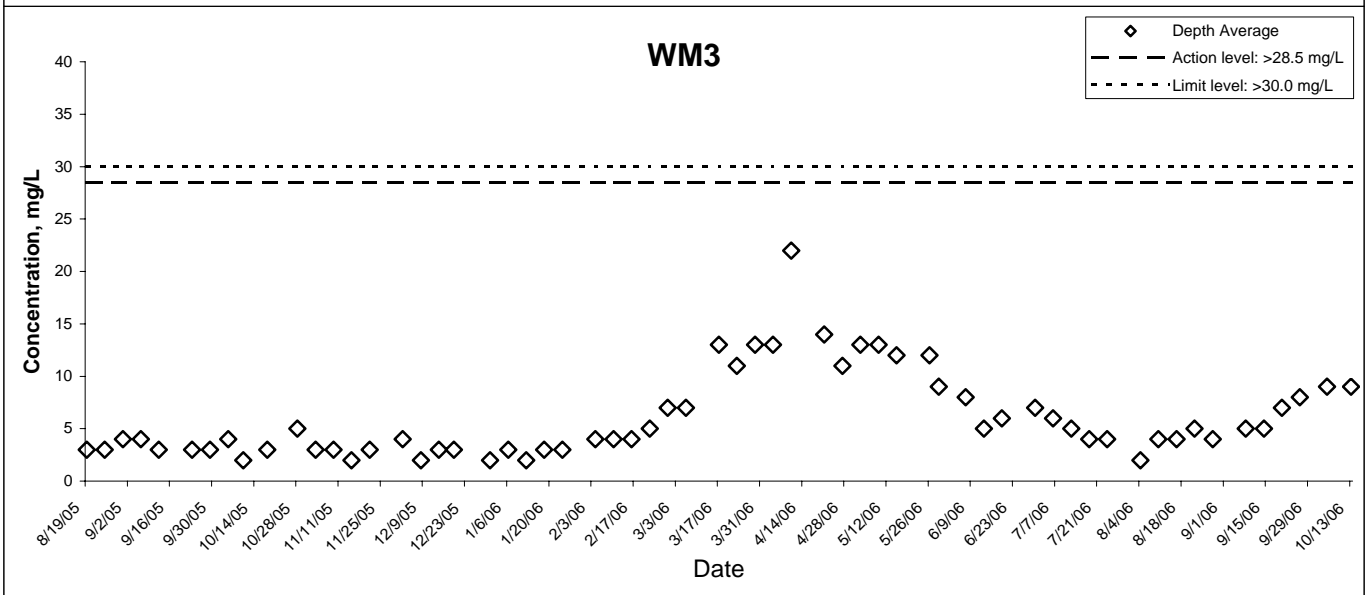
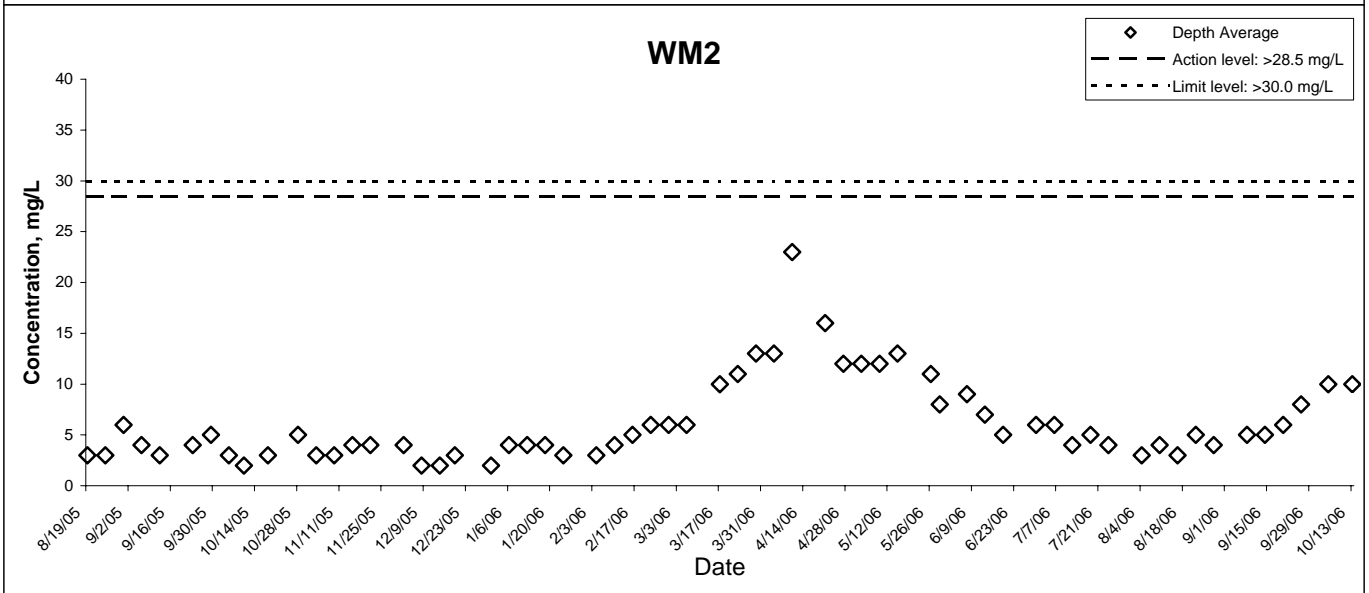
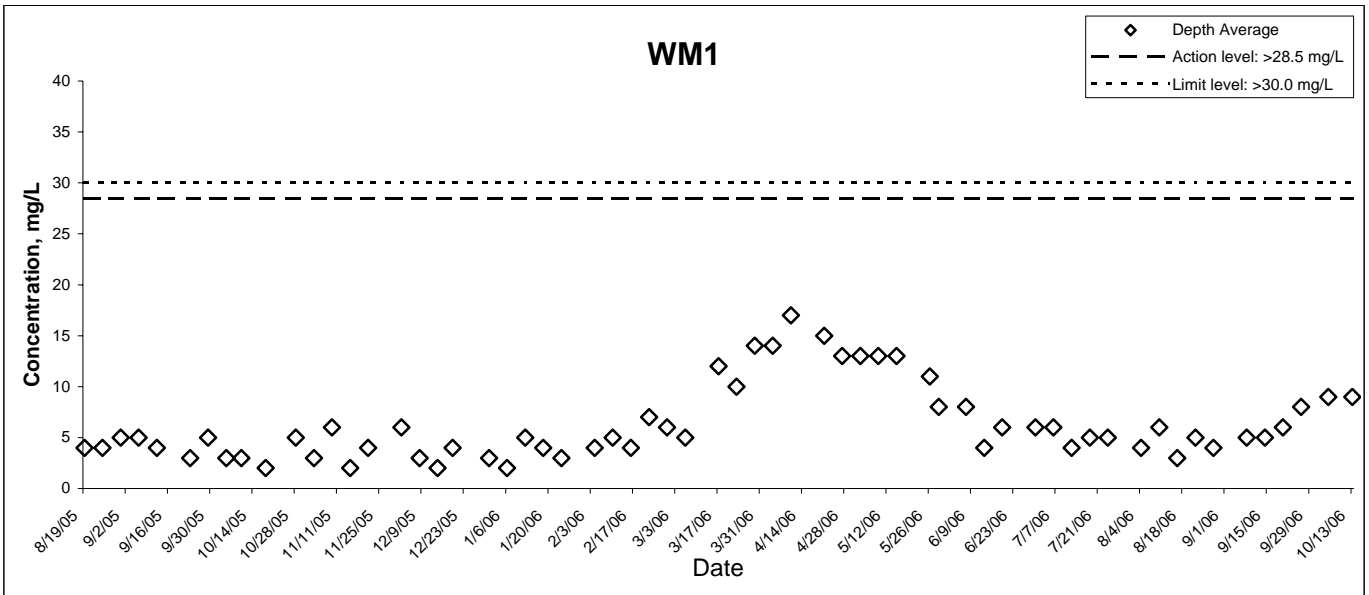
## 5-day BOD



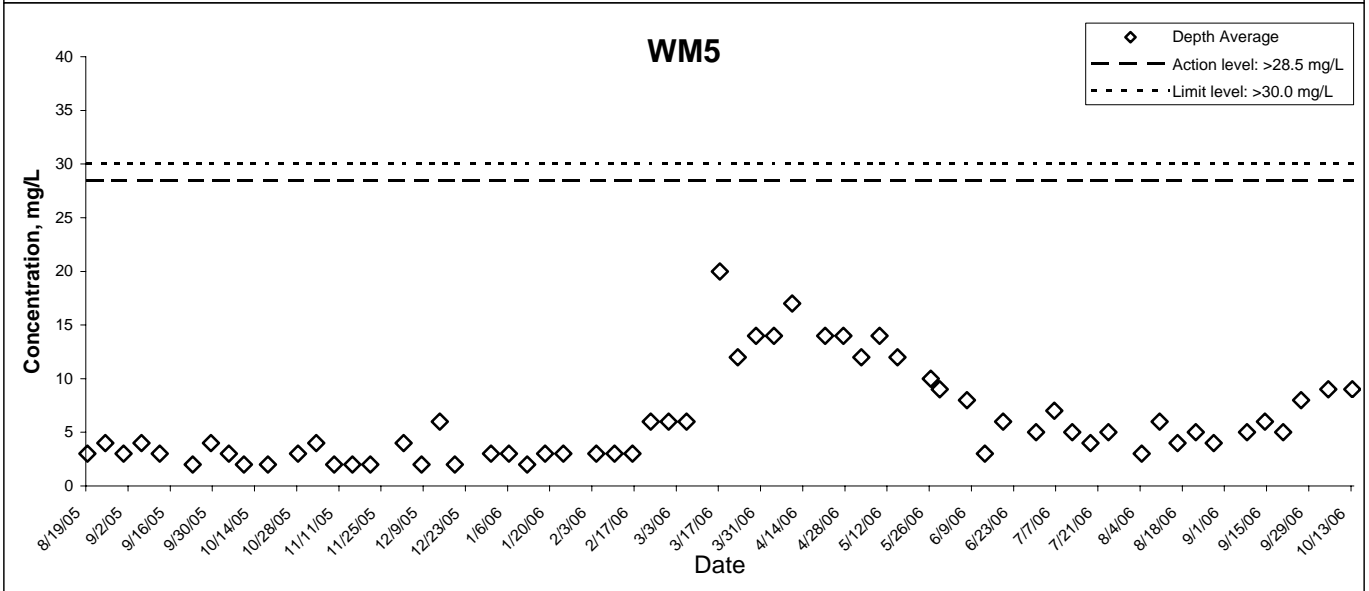
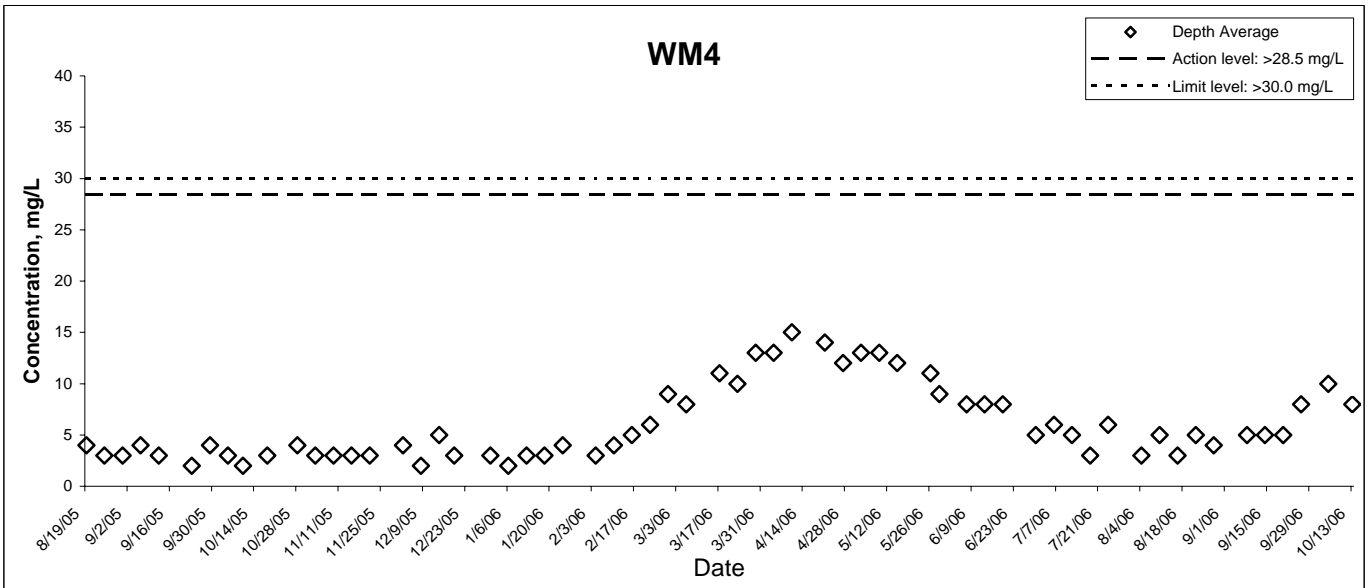
## 5-day BOD



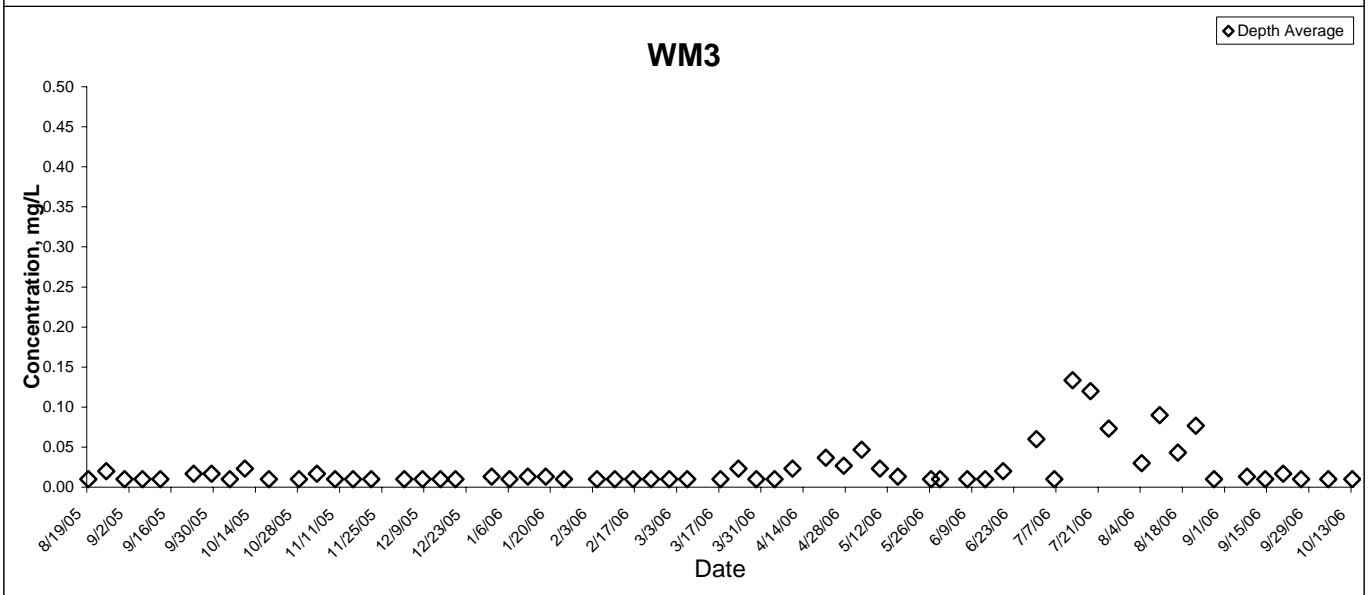
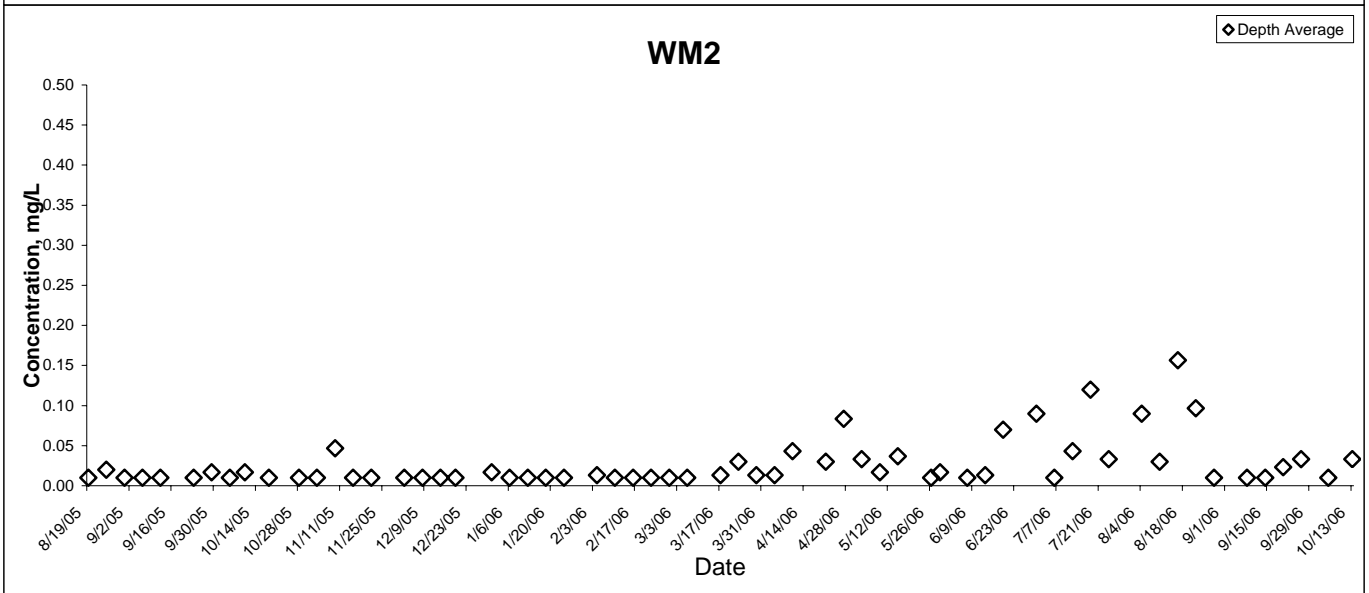
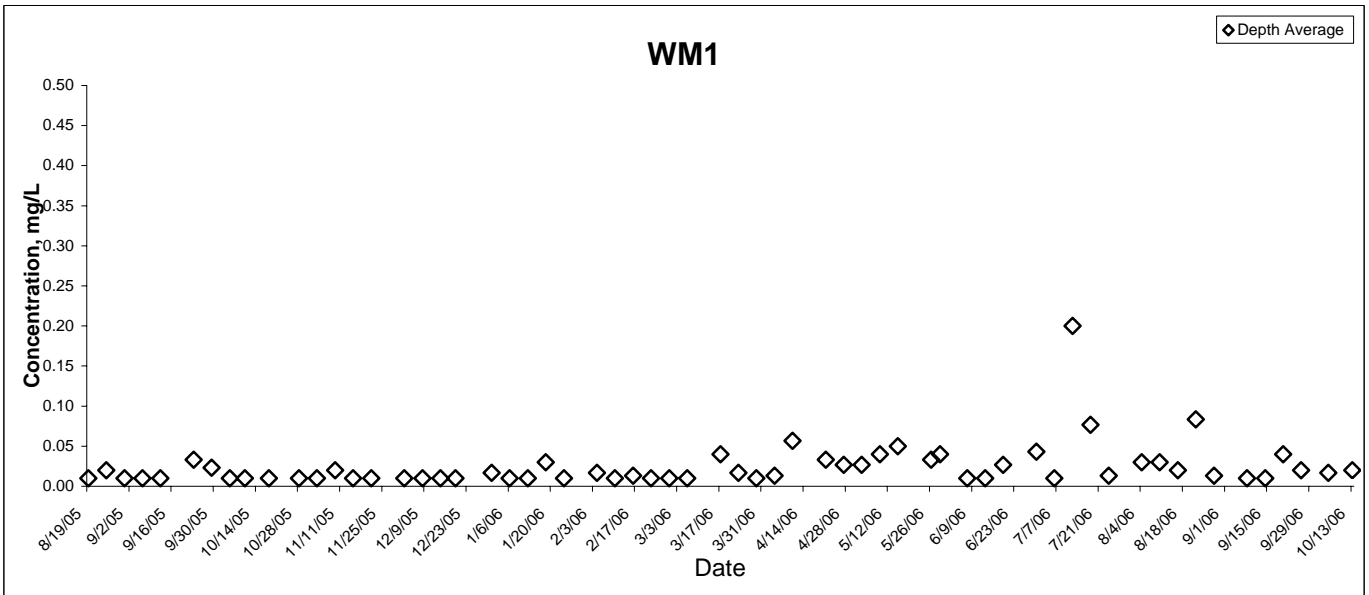
# Chemical Oxygen Demand



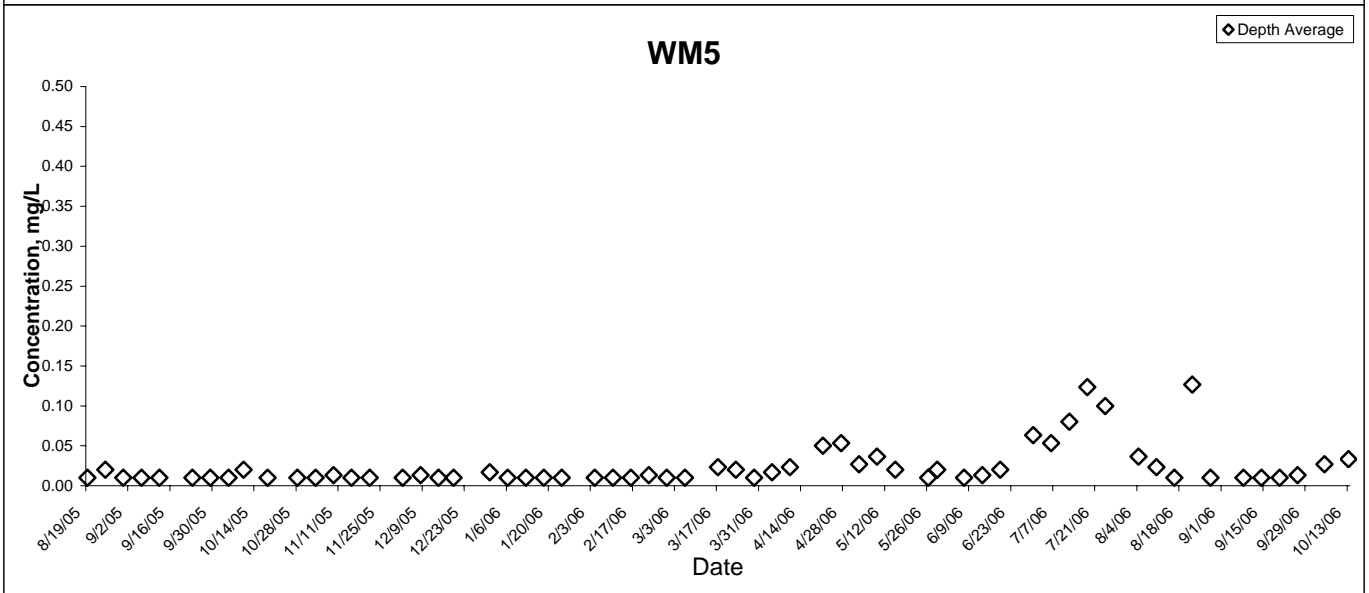
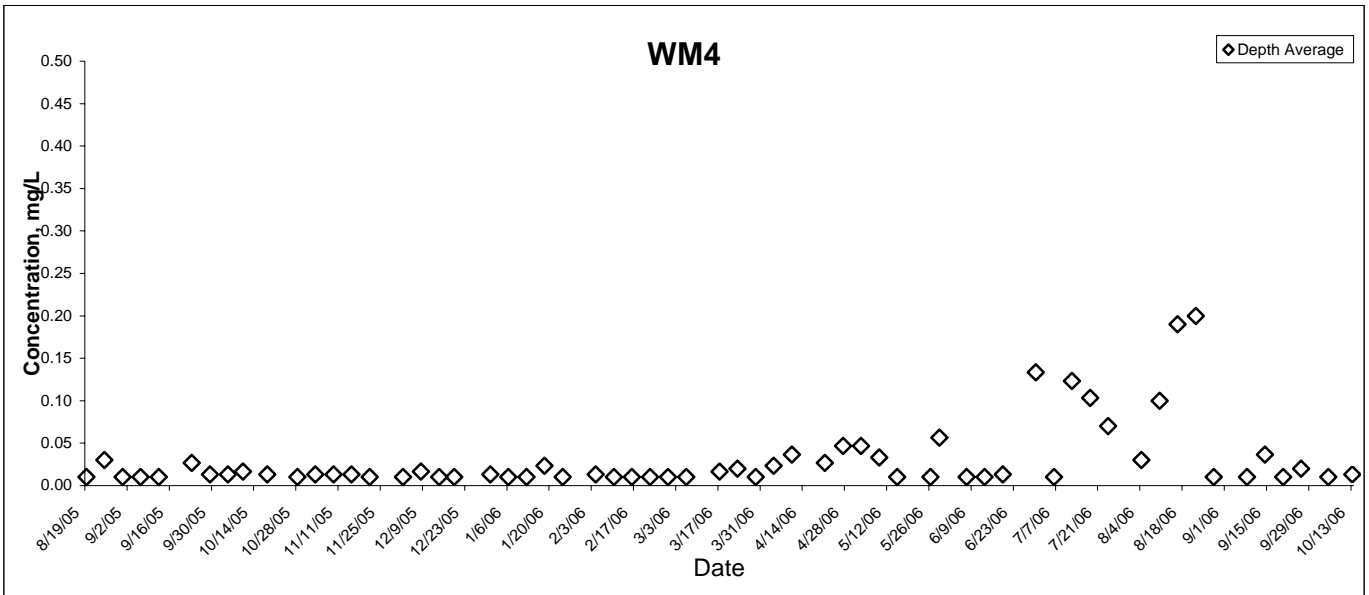
# Chemical Oxygen Demand



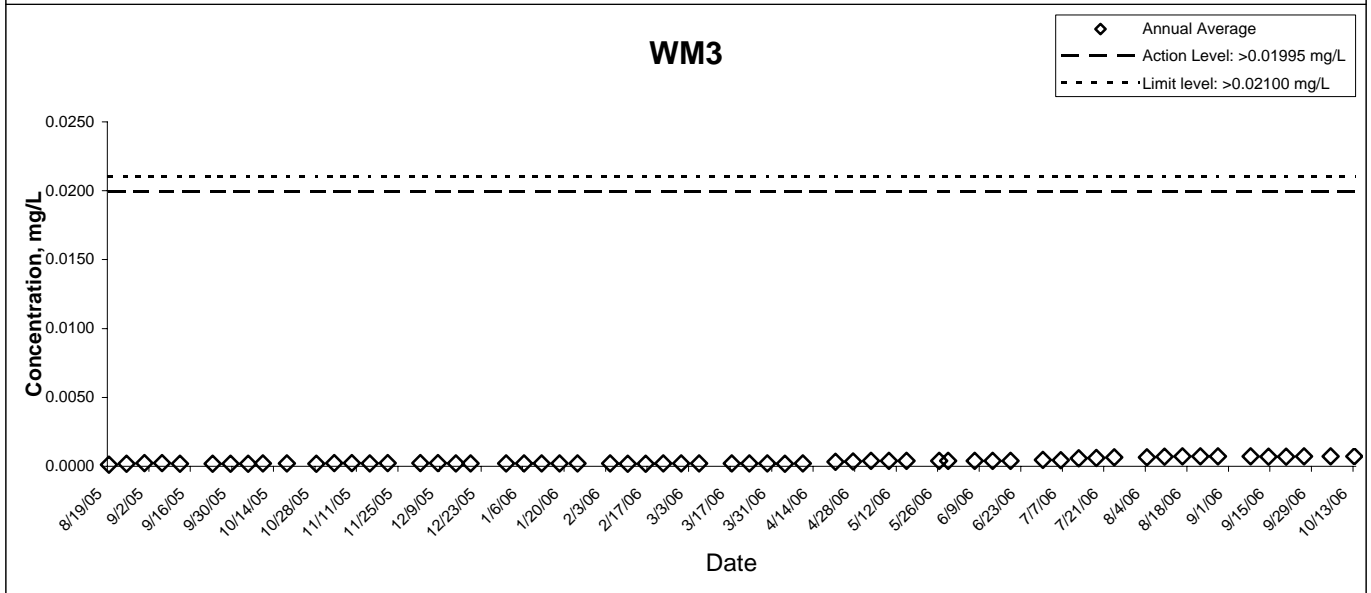
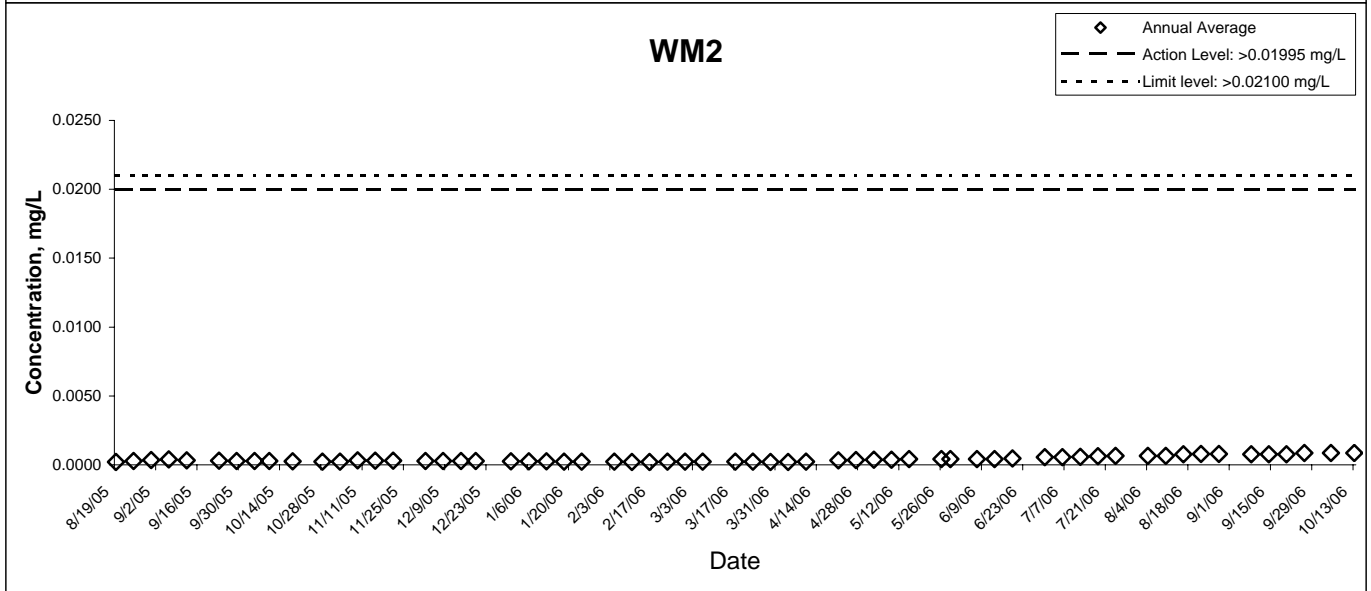
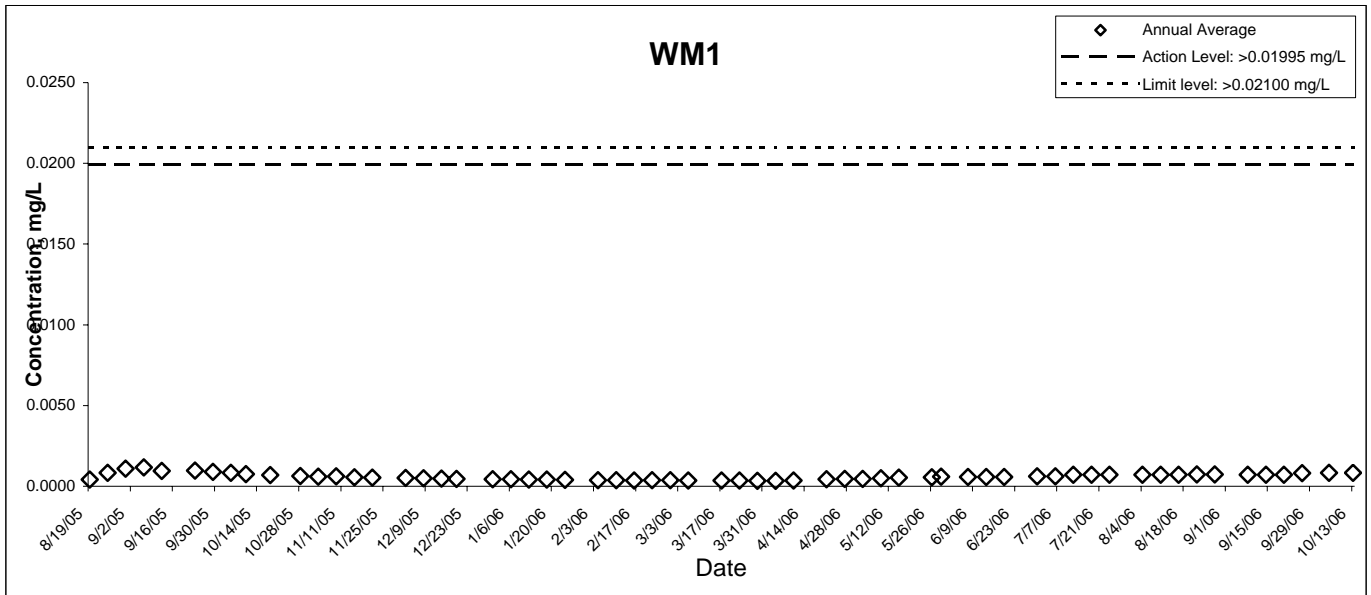
# Ammonia Nitrogen



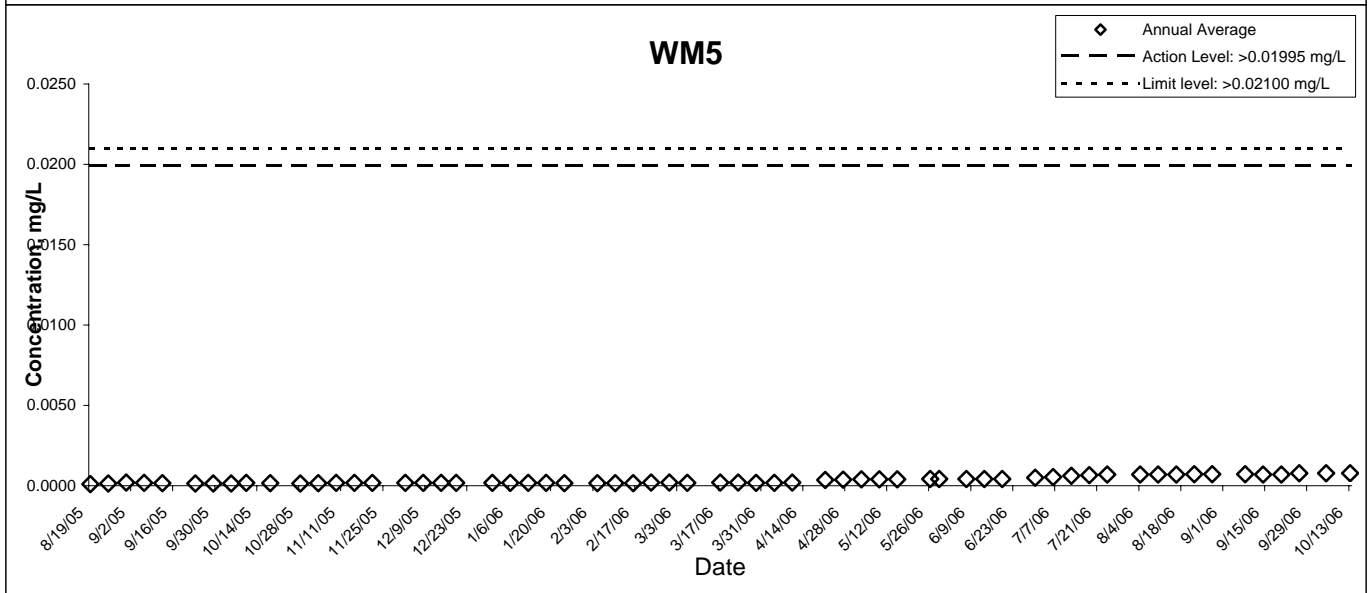
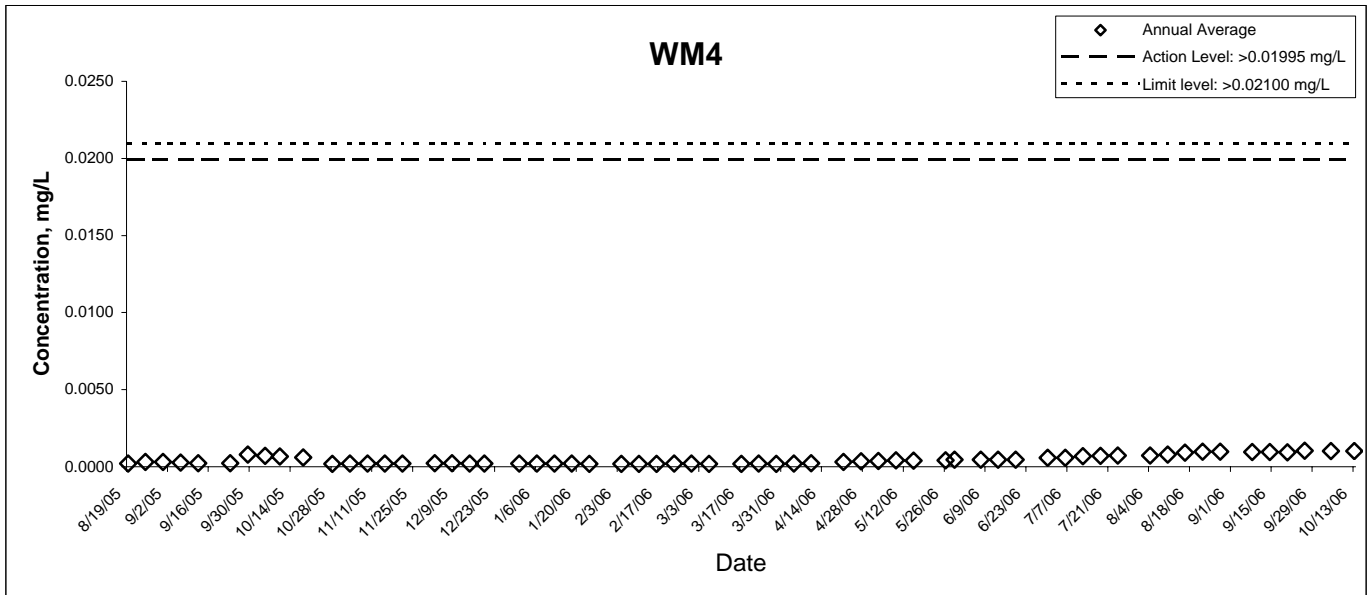
# Ammonia Nitrogen



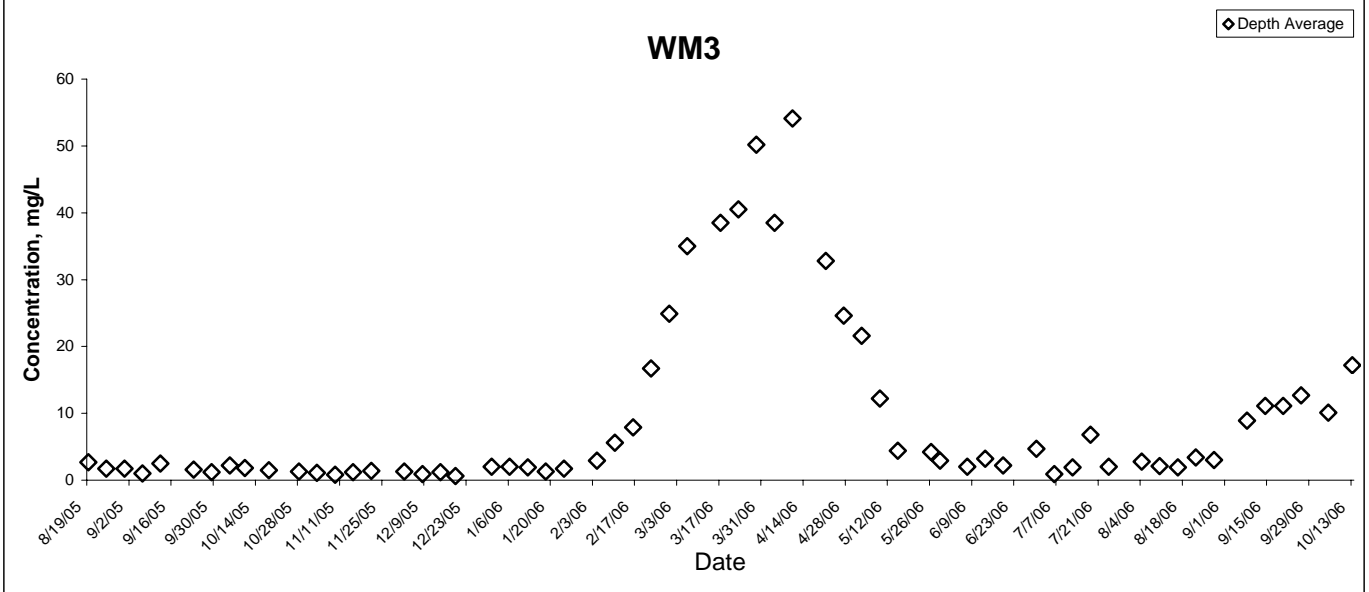
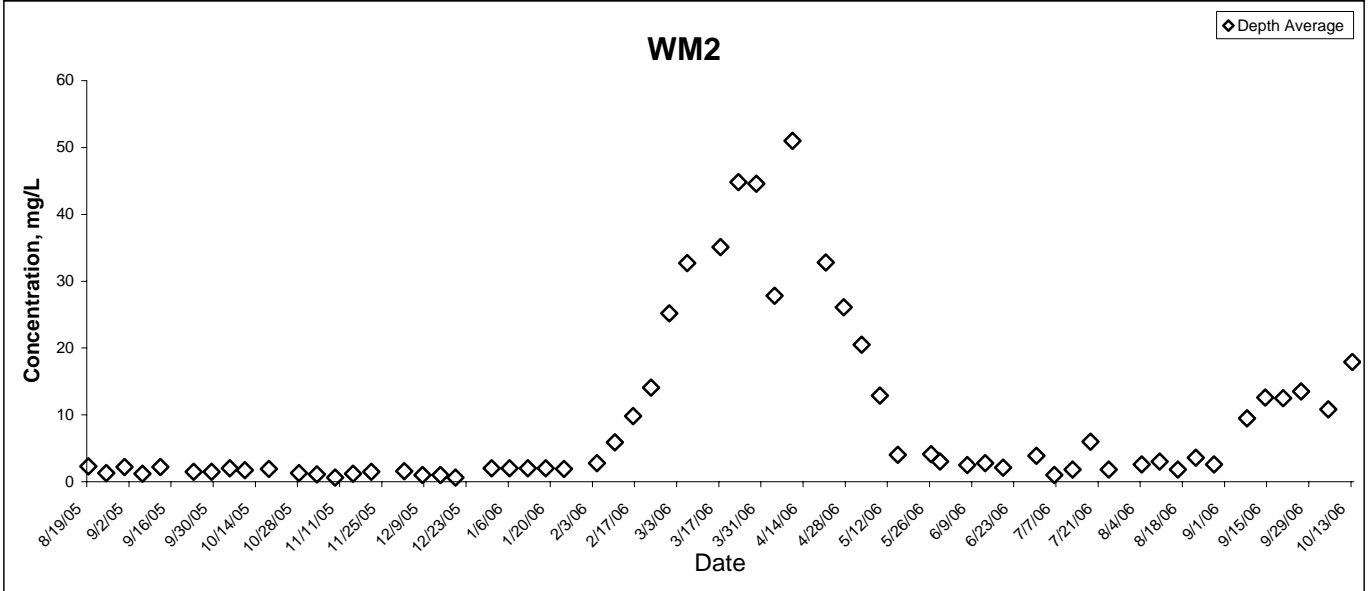
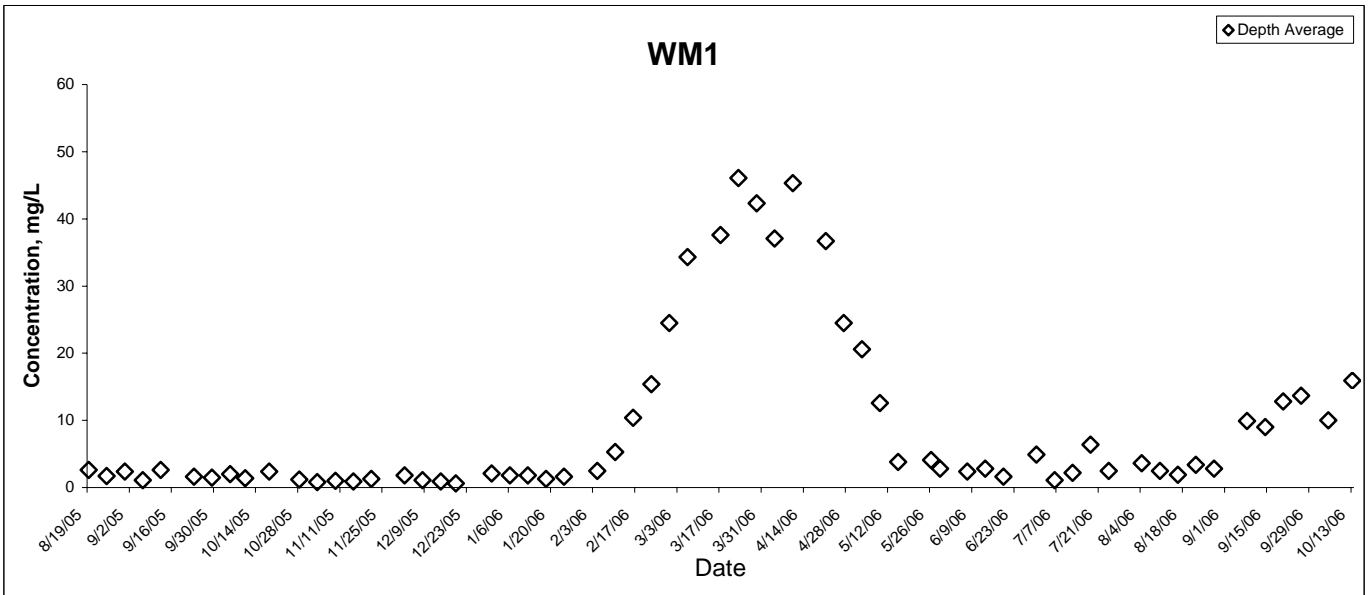
## Unionised Nitrogen (Annual Average)



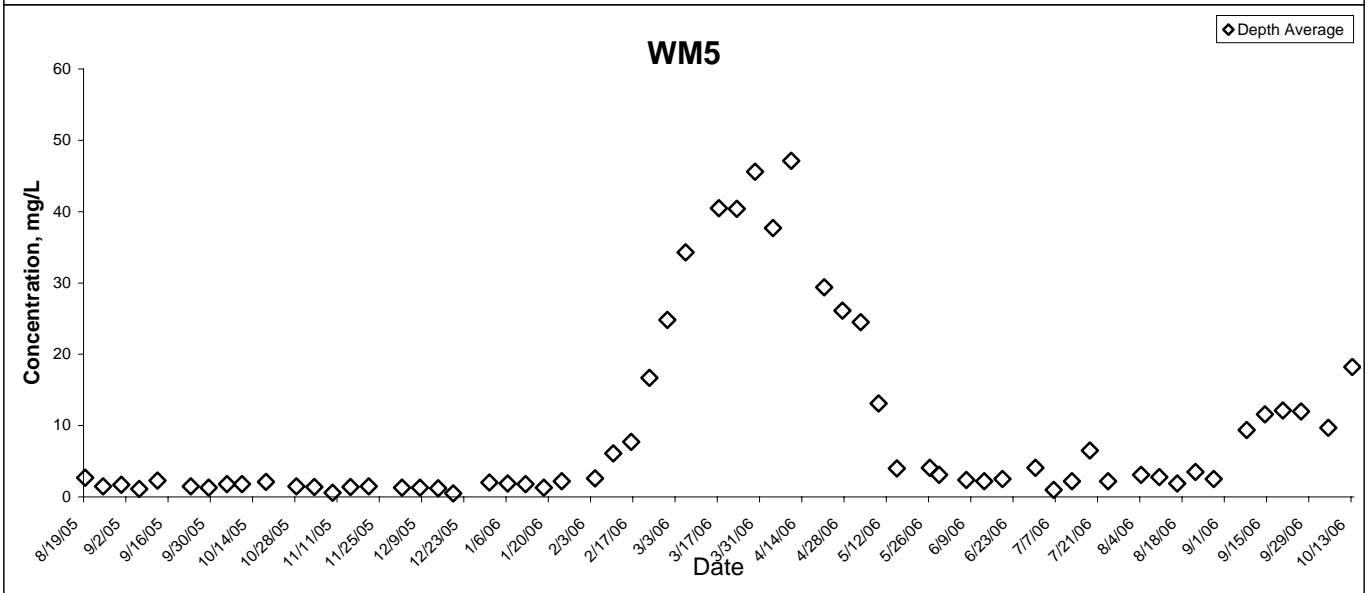
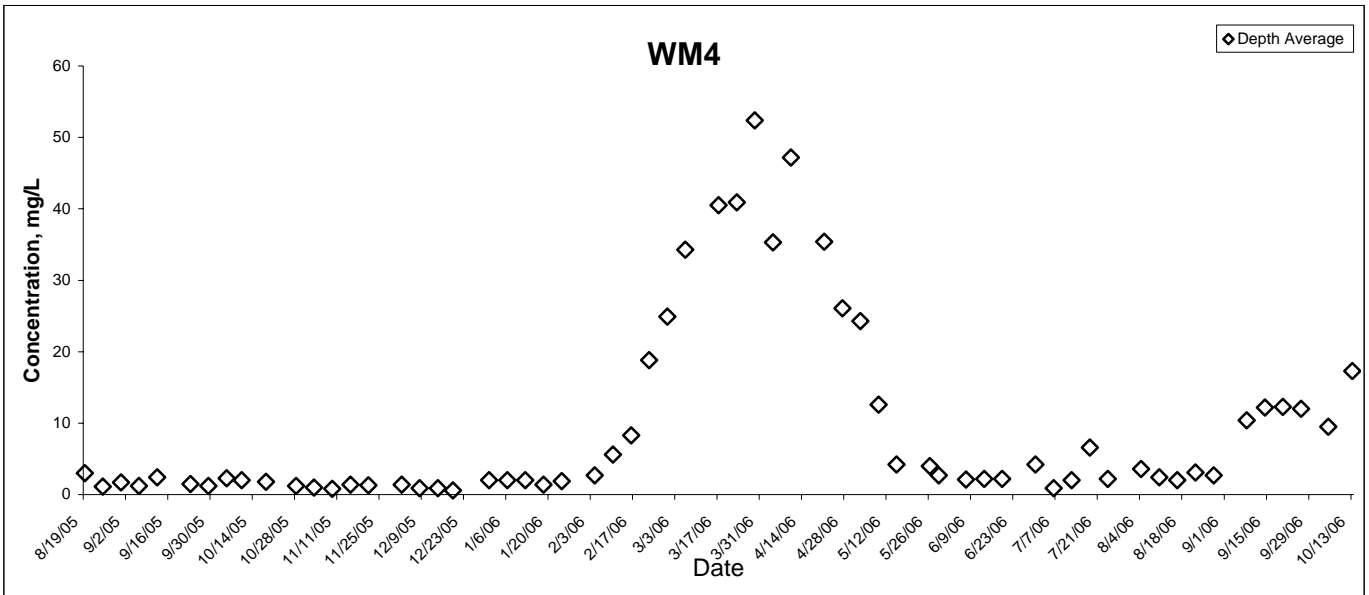
## Unionised Nitrogen (Annual Average)



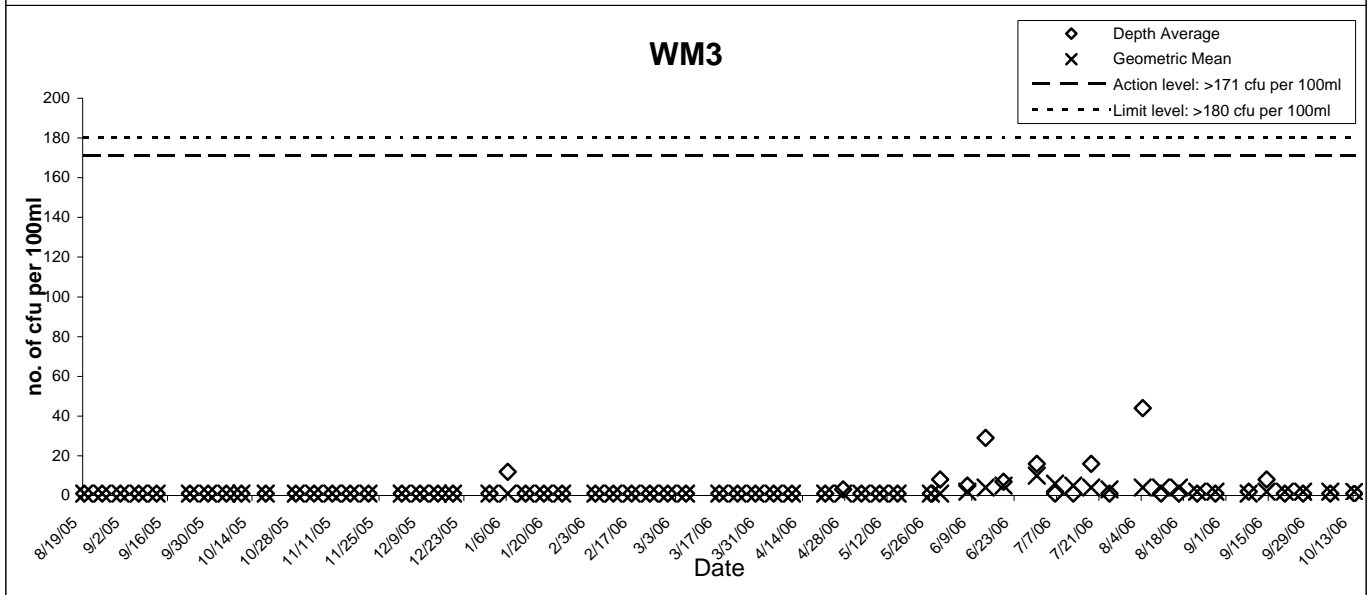
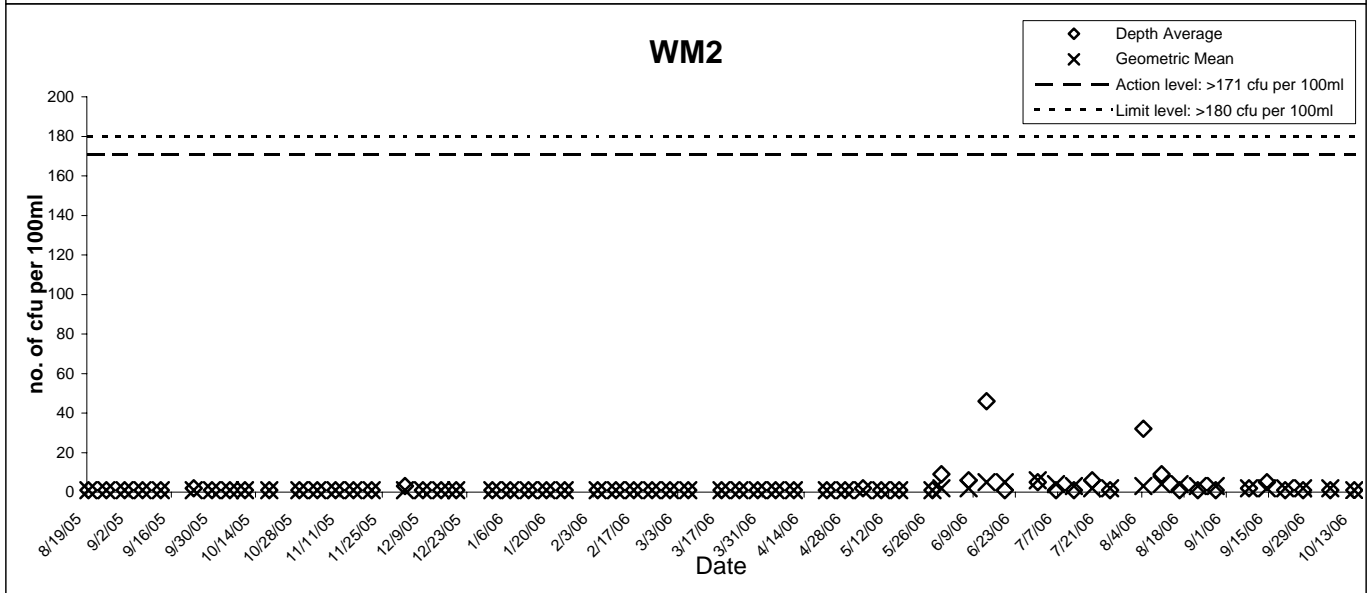
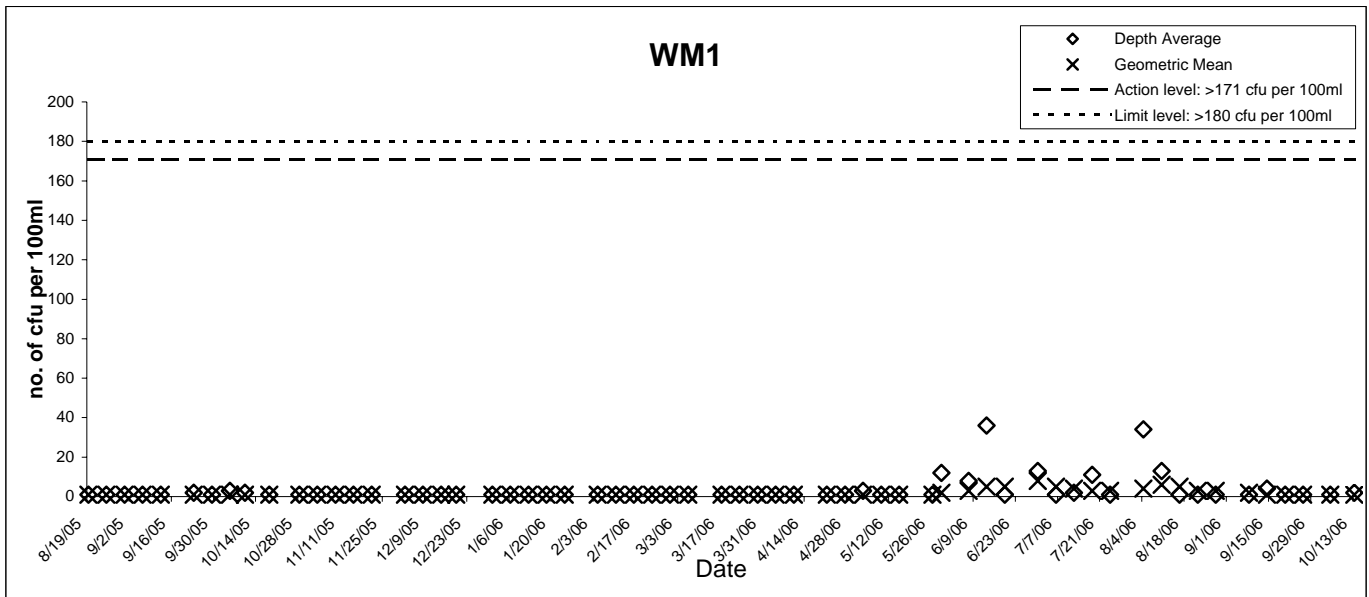
# Chlorophyll-a



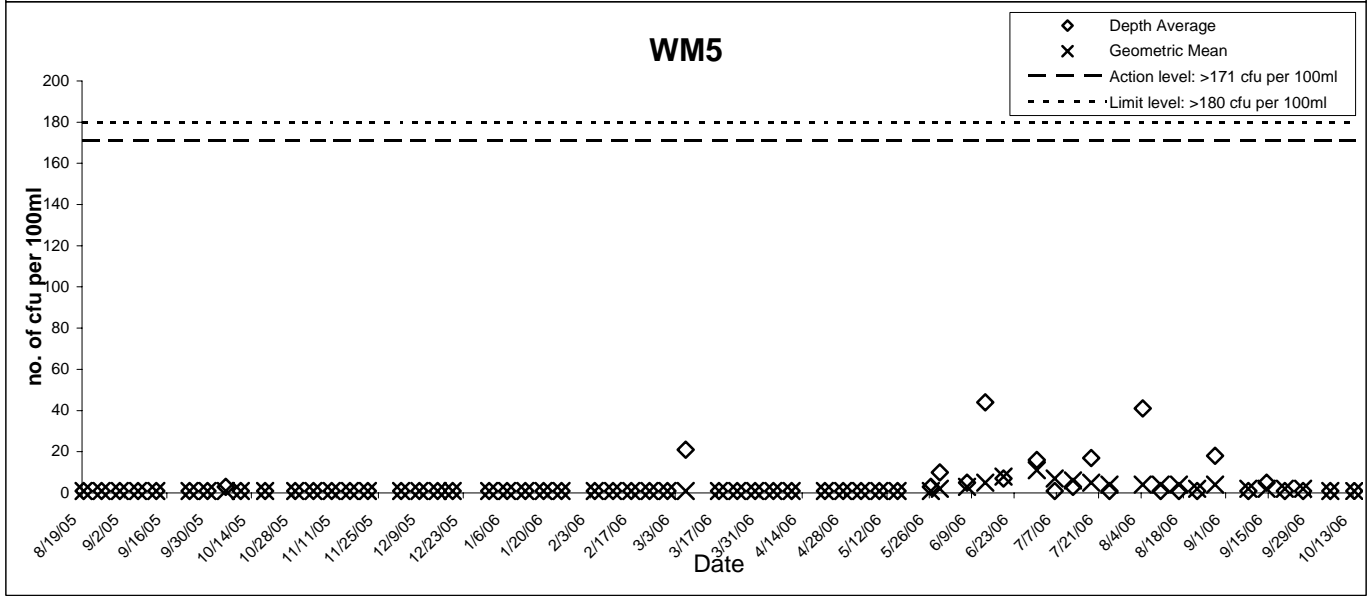
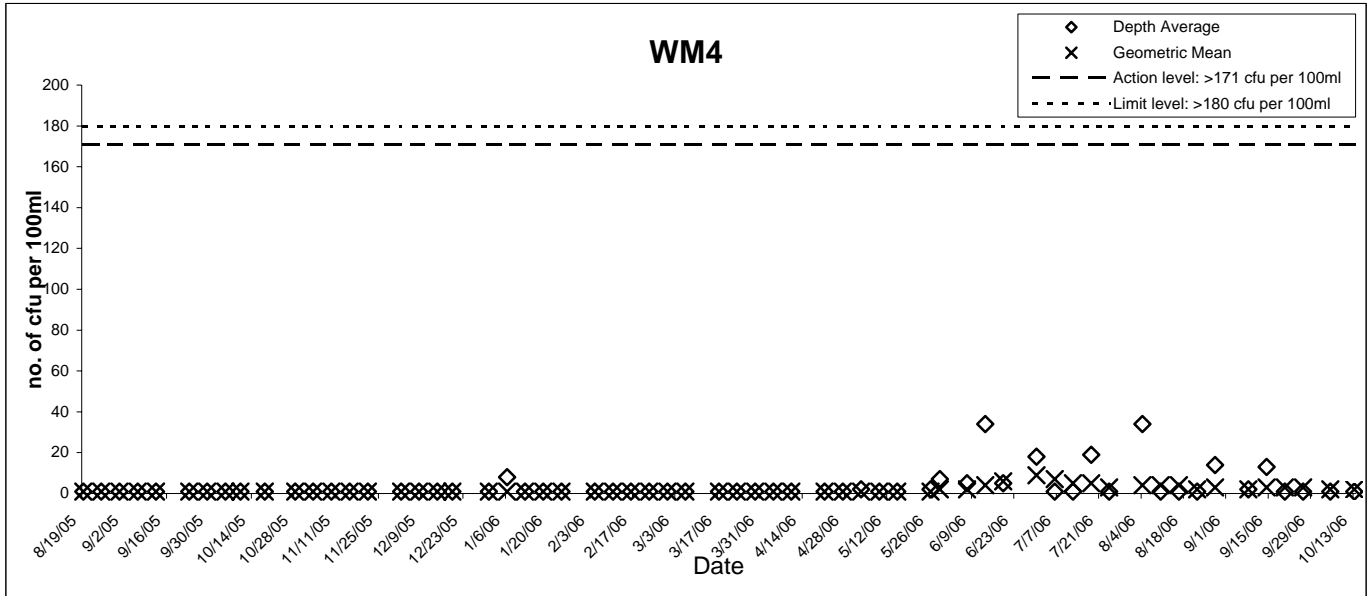
# Chlorophyll-a



# E.coli



# E.coli





CERTIFICATE OF ANALYSIS

<b>Client</b> : MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD	<b>Laboratory</b> : ALS Technichem (HK) Pty Ltd	<b>Page</b> : 1 of 8
<b>Contact</b> : MR EDDIE YANG	<b>Contact</b> : Alice Wong / Ivan Leung	<b>Work Order</b> : HK0603839
<b>Address</b> : 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<b>Address</b> : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T. Hong Kong	<b>Amendment No.</b> :
<b>E-mail</b> : eddie.yang@maunsell.aecom.com	<b>E-mail</b> : alice.wong@alsenviro.com	<b>Date received</b> : 20 Sep 2006
<b>Telephone</b> : +852 3105 8525	<b>Telephone</b> : +852 2610 1044	<b>Date of issue</b> : 29 Sep 2006
<b>Facsimile</b> : +852 2891 0305	<b>Facsimile</b> : +852 2610 2021	<b>No. of samples</b> - Received : 15
<b>Project</b> : S07105	<b>Quote number</b> : ---	<b>Analysed</b> : 15
<b>Order number</b> : ---		
<b>C-O-C number</b> : ---		
<b>Site</b> : WRC		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0603839 supersedes any previous reports with this reference. The completion date of analysis is 28 Sep 2006. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0603839 : Fifteen water samples were received in a chilled condition.  
Total Nitrogen is the sum of Total Oxidizable and Total Kjeldahl Nitrogen.  
In marine and freshwater samples, chlorophyll b will cause some interference if present.  
Project Name: EM&A for WRC at Penny's Bay.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for-
Anh Ngoc Huynh	Senior Chemist	Organics
Fung Lim Chee, Richard	General Manager	Inorganics
Leung Sai Ho, Ivan	Supervisor	Microbiology

ALS Laboratory Group

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A Campbell Brothers Limited Company

Page Number : 2 of 8  
Client : MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD  
Work Order : HK0603839



Analytical Results

Method: Analysis Description	CAS number	LOR	Units	Client Sample ID	WM 1S	WM 1M	WM 1B	WM 2S	WM 2M
				Laboratory Sample ID	HK0603839-001	HK0603839-002	HK0603839-003	HK0603839-004	HK0603839-005
Submatrix: WATER				Sample Date / Time	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]
EA/ED: Physical and Aggregate Properties									
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm		75	75	76	75	76
EA020: Salinity	---	0.1	g/L		<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L		<2	<2	2	3	2
ED/EK: Inorganic Nonmetallic Parameters									
EK053A: Silica	7631-86-9	0.01	mg/L		3.53	3.42	3.63	3.66	3.82
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		0.08	0.03	<0.01	0.05	0.01
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.2	0.2	0.2	0.2	0.2
EK062A: Total Nitrogen as N	---	0.1	mg/L		0.2	0.2	0.2	0.2	0.2
EK067A: Total Phosphorus as P	---	0.02	mg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP025: Dissolved Oxygen	---	0.1	mg/L		11.1	9.2	9.6	9.4	8.9
EP: Aggregate Organics									
EP008: Chlorophyll a	---	0.5	µg/L		13.1	12.8	12.4	12.6	13.1
EP026: Chemical Oxygen Demand	---	2	mg/L		7	6	6	6	6
EP030: Biochemical Oxygen Demand	---	2	mg/L		<2	<2	<2	<2	<2
EG: Metals and Major Cations									
EG020: Chromium	7440-47-3	1	µg/L		<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L		<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L		<10	<10	<10	<10	<10
EP-090: Organotin Compounds									
EP090: Tributyltin	58573-85-4	5	ngSn/L		<5	<5	<5	<5	<5
EP-090S: Organotin Surrogate									
EP090: Tripropyltin	---	0.1	%		101	108	106	101	107
EM: Microbiological Testing									
EM002: E. coli	---	1	CFU/100 mL		<1	<1	<1	1	1



**Analytical Results**

				Client Sample ID : WM 2B	WM 3S	WM 3M	WM 3B	WM 4S
				Laboratory Sample ID : HK0603839-006	HK0603839-007	HK0603839-008	HK0603839-009	HK0603839-010
				Sample Date / Time : [ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]
Method / Analysis Description	CAS number	LOR	Units					
<b>EA/ED: Physical and Aggregate Properties</b>								
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm	76	76	76	77	80
EA020: Salinity	---	0.1	g/L	<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L	3	3	<2	2	4
<b>ED/EK: Inorganic Nonmetallic Parameters</b>								
EK053A: Silica	7631-86-9	0.01	mg/L	3.83	3.90	3.79	3.82	3.84
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.03	<0.01	<0.01
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.3	0.2	0.3
EK062A: Total Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.3	0.2	0.3
EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP025: Dissolved Oxygen	---	0.1	mg/L	10.4	9.0	9.7	10.5	8.7
<b>EP: Aggregate Organics</b>								
EP008: Chlorophyll a	---	0.5	µg/L	11.9	10.5	11.6	11.1	12.7
EP026: Chemical Oxygen Demand	---	2	mg/L	6	6	6	6	6
EP030: Biochemical Oxygen Demand	---	2	mg/L	<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>								
EG020: Chromium	7440-47-3	1	µg/L	<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
<b>EP-090: Organotin Compounds</b>								
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>								
EP090: Tripropyltin	---	0.1	%	102	99.3	107	101	103
<b>EM: Microbiological Testing</b>								
EM002: E. coli	---	1	CFU/100 mL	<1	<1	<1	<1	<1



**Analytical Results**

				Client Sample ID : WM 4M	WM 4B	WM 5S	WM 5M	WM 5B
				Laboratory Sample ID : HK0603839-011	HK0603839-012	HK0603839-013	HK0603839-014	HK0603839-015
				Sample Date / Time : [ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]	[ 20 Sep 2006 ]
Method / Analysis Description	CAS number	LOR	Units					
<b>EA/ED: Physical and Aggregate Properties</b>								
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm	76	77	76	76	77
EA020: Salinity	---	0.1	g/L	<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L	4	2	2	3	2
<b>ED/EK: Inorganic Nonmetallic Parameters</b>								
EK053A: Silica	7631-86-9	0.01	mg/L	3.85	3.86	3.88	3.87	3.88
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	<0.01	0.01	<0.01
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.2	0.2	0.2
EK062A: Total Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.2	0.2	0.2
EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP025: Dissolved Oxygen	---	0.1	mg/L	12.8	9.0	8.5	7.4	8.8
<b>EP: Aggregate Organics</b>								
EP008: Chlorophyll a	---	0.5	µg/L	11.5	12.6	13.0	11.4	12.0
EP026: Chemical Oxygen Demand	---	2	mg/L	5	5	6	5	5
EP030: Biochemical Oxygen Demand	---	2	mg/L	<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>								
EG020: Chromium	7440-47-3	1	µg/L	<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
<b>EP-090: Organotin Compounds</b>								
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>								
EP090: Tripropyltin	---	0.1	%	104	104	102	105	102
<b>EM: Microbiological Testing</b>								
EM002: E. coli	---	1	CFU/100 mL	<1	1	<1	<1	<1



**Quality Control - Laboratory Duplicate (DUP) Results**

Matrix Type: WATER				Duplicate (DUP) Results				
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 277861)</b>								
HK0603839-001	WM 1S	EA025: Suspended Solids (SS)	---	2	mg/L	<2	3	0.0
HK0603839-011	WM 4M	EA025: Suspended Solids (SS)	---	2	mg/L	4	3	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 277862)</b>								
HK0603839-001	WM 1S	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	75	76	0.0
HK0603839-011	WM 4M	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	76	76	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 277863)</b>								
HK0603839-001	WM 1S	EA020: Salinity	---	0.1	g/L	<0.1	<0.1	0.0
HK0603839-011	WM 4M	EA020: Salinity	---	0.1	g/L	<0.1	<0.1	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 278129)</b>								
HK0603839-001	WM 1S	EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	0.0
HK0603839-010	WM 4S	EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 278820)</b>								
HK0603839-010	WM 4S	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.3	0.3	0.0
HK0603839-015	WM 5B	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.2	0.2	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 278821)</b>								
HK0603839-010	WM 4S	EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	0.0
HK0603839-015	WM 5B	EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 280069)</b>								
HK0603839-010	WM 4S	EK053A: Silica	7631-86-9	0.01	mg/L	3.84	3.46	10.4
HK0603839-015	WM 5B	EK053A: Silica	7631-86-9	0.01	mg/L	3.88	3.74	3.8
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 280419)</b>								
HK0603839-010	WM 4S	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.02	82.7
HK0603839-015	WM 5B	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0
<b>EP: Aggregate Organics (QC Lot: 281924)</b>								
HK0603839-010	WM 4S	EP008: Chlorophyll a	---	0.5	mg/m3	12.7	10.7	17.1
HK0603839-015	WM 5B	EP008: Chlorophyll a	---	0.5	mg/m3	12.0	12.4	3.3
<b>EG: Metals and Major Cations (QC Lot: 277971)</b>								
HK0603839-002	WM 1M	EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0
HK0603839-011	WM 4M	EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0



**Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results**

Matrix Type: WATER			Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results					
Method: Analysis Description	CAS number	LOR	Units	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						SCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 277861)</b>											
EA025: Suspended Solids (SS)	---	2	mg/L	<2	20 mg/L	96.0	---	85	115	---	---
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 277862)</b>											
EA010: Electrical Conductivity	---	1	µS/cm	<1	146.9 µS/cm	98.8	---	85	115	---	---
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 277863)</b>											
EA020: Salinity	---	0.1	g/L	<0.1	10 g/L	100	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 278129)</b>											
EK059A: Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	0.4 mg/L	113	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 278820)</b>											
EK061A: Total Kjeldahl Nitrogen	---	0.1	mg/L	<0.1	0.5 mg/L	114	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 278821)</b>											
EK067A: Total Phosphorus as P	---	0.1	mg/L	<0.1	0.5 mg/L	90.2	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 280069)</b>											
EK053A: Silica	7631-86-9	0.01	mg/L	<0.01	0.4 mg/L	93.3	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 280419)</b>											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.4 mg/L	93.3	---	85	115	---	---
<b>EP: Aggregate Organics (QC Lot: 279219)</b>											
EP026: Chemical Oxygen Demand	---	2	mg/L	---	500 mg/L	106	---	85	115	---	---
<b>EP: Aggregate Organics (QC Lot: 280421)</b>											
EP030: Biochemical Oxygen Demand	---	2	mg/L	---	198 mg/L	101	---	85	115	---	---
<b>EP: Aggregate Organics (QC Lot: 281824)</b>											
EP008: Chlorophyll a	---	0.1	mg/m3	<0.1	10.6 mg/m3	107	---	85	115	---	---
<b>EG: Metals and Major Cations (QC Lot: 277971)</b>											
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	90.7	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	114	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<1	100 µg/L	85.0	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	91.9	---	85	115	---	---
<b>EP-090: Organotin Compounds (QC Lot: 278045)</b>											
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	50 ngSn/L	101	---	95	105	---	---



**Quality Control - Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results**

Matrix Type: WATER

Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 278129)										
HK0603756-081	Anonymous	EK059A: Nitrite + Nitrate as N	---	1.0 mg/L	125	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 278820)										
HK0603639-001	WM 1S	EK061A: Total Kjeldahl Nitrogen as N	---	0.5 mg/L	103	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 278821)										
HK0603839-001	WM 1S	EK067A: Total Phosphorus as P	---	0.5 mg/L	88.4	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 280069)										
HK0603839-001	WM 1S	EK053A: Silica	7631-86-9	2.5 mg/L	98.5	102	75	125	3.2	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 280419)										
HK0603839-001	WM 1S	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	118	---	75	125	---	---
EG: Metals and Major Cations (QCLot: 277971)										
HK0603839-001	WM 1S	EG020: Lead	7439-92-1	100 µg/L	92.7	90.4	75	125	2.6	---
		EG020: Zinc	7440-66-6	100 µg/L	118	120	75	125	1.6	---
		EG020: Chromium	7440-47-3	100 µg/L	85.4	86.0	75	125	0.6	---
		EG029: Copper	7440-50-8	100 µg/L	93.8	95.1	75	125	1.3	---



**Surrogate Control Limits**

Submatrix Type: WATER

Method: Analysis Description	Units	Lower Limit	Upper Limit
EP-090S: Organotin Surrogate			
EP090: Tripropyltin	%	50	130



ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

<b>Client</b> : MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD	<b>Laboratory</b> : ALS Technichem (HK) Pty Ltd	<b>Page</b> : 1 of 10
<b>Contact</b> : MS LEMON LAM	<b>Contact</b> : Alice Wong / Ivan Leung	<b>Work Order</b> : HK0604095
<b>Address</b> : 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<b>Address</b> : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T. Hong Kong	<b>Amendment No.</b> :
<b>E-mail</b> : lemon.lam@maunsell.aecom.com	<b>E-mail</b> : alice.wong@alsenviro.com	<b>Date received</b> : 26 Sep 2006
<b>Telephone</b> : +852 2893 1651	<b>Telephone</b> : +852 2610 1044	<b>Date of issue</b> : 16 Oct 2006
<b>Facsimile</b> : +852 2891 0305	<b>Facsimile</b> : +852 2610 2021	<b>No. of samples</b> - Received : 15
<b>Project</b> : S07105	<b>Quote number</b> : ---	<b>Analysed</b> : 15
<b>Order number</b> : ---		
<b>C-O-C number</b> : ---		
<b>Site</b> : WRC		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0604095 supersedes any previous reports with this reference. The completion date of analysis is 30 Sep 2006. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0604095 : Fiten water samples were received in a chilled condition.  
Total Nitrogen is the sum of Total Oxidizable and Total Kjeldal Nitrogen.  
In marine and freshwater samples, chlorophyll b will cause some interference if present.  
Project Name: EM&A for WRC at Penny's Bay.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Anh Ngoc Huynh	Senior Chemist	Organics
Fung Lim Chee, Richard	General Manager	Inorganics
Leung Sai Ho, Ivan	Supervisor	Microbiology

ALS Laboratory Group

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A Campbell Dresser Limited Company

Page Number : 2 of 10  
Client : MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD  
Work Order : HK0604095



Analytical Results

Method: Analysis Description	CAS number	LOR	Units	Client Sample ID	WM 1S	WM 1M	WM 1B	WM 2S	WM 2M
				Laboratory Sample ID	HK0604095-001	HK0604095-002	HK0604095-003	HK0604095-004	HK0604095-005
Submatrix: WATER				Sample Date / Time	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]
<b>EA/ED: Physical and Aggregate Properties</b>									
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm		77	77	75	76	77
EA020: Salinity	---	0.1	g/L		<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L		3	2	<2	<2	<2
<b>ED/EK: Inorganic Nonmetallic Parameters</b>									
EK053A: Silica	7631-86-9	0.01	mg/L		3.56	3.61	3.54	3.64	3.58
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		0.03	0.01	0.02	0.01	0.02
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.4	0.3	0.4	0.4	0.3
EK062A: Total Nitrogen as N	---	0.1	mg/L		0.4	0.3	0.4	0.4	0.3
EK067A: Total Phosphorus as P	---	0.02	mg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP025: Dissolved Oxygen	---	0.1	mg/L		8.4	8.7	7.5	8.2	8.4
<b>EP: Aggregate Organics</b>									
EP008: Chlorophyll a	---	0.5	µg/L		13.2	13.7	14.1	14.1	13.1
EP026: Chemical Oxygen Demand	---	2	mg/L		9	7	9	8	7
EP030: Biochemical Oxygen Demand	---	2	mg/L		<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>									
EG020: Chromium	7440-47-3	1	µg/L		<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L		1	1	1	1	1
EG020: Lead	7439-92-1	1	µg/L		<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L		<10	<10	<10	<10	<10
<b>EP-090: Organotin Compounds</b>									
EP090: Tributyltin	56573-85-4	5	ngSn/L		<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>									
EP090S: Tripropyltin	---	0.1	%		108	103	97.0	77.7	96.9
Surrogate control limits listed at end of this report.									
<b>EM: Microbiological Testing</b>									
EM002: E. coli	---	1	CFU/100 mL		<1	<1	<1	<1	<1



**Analytical Results**

				Client Sample ID : WM 2B	WM 3S	WM 3M	WM 3B	WM 4S
				Laboratory Sample ID : HK0604095-006	HK0604095-007	HK0604095-008	HK0604095-009	HK0604095-010
				Sample Date / Time : [ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]
Method: Analysis Description	CAS number	LOR	Units					
<b>EA/ED: Physical and Aggregate Properties</b>								
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm	76	74	74	75	78
EA020: Salinity	---	0.1	g/L	<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L	<2	4	<2	<2	<2
<b>ED/EK: Inorganic Nonmetallic Parameters</b>								
EK053A: Silica	7631-86-9	0.01	mg/L	3.64	3.59	3.59	3.63	3.63
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.07	<0.01	0.01	<0.01	0.03
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.6	0.3	0.3	0.3	0.3
EK062A: Total Nitrogen as N	---	0.1	mg/L	0.6	0.3	0.3	0.3	0.3
EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	0.02
EP025: Dissolved Oxygen	---	0.1	mg/L	11.5	4.6	8.6	8.8	8.2
<b>EP: Aggregate Organics</b>								
EP008: Chlorophyll a	---	0.5	µg/L	13.4	13.4	13.2	11.5	12.6
EP026: Chemical Oxygen Demand	---	2	mg/L	8	8	8	8	9
EP030: Biochemical Oxygen Demand	---	2	mg/L	<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>								
EG020: Chromium	7440-47-3	1	µg/L	<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L	1	1	1	1	1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
<b>EP-090: Organotin Compounds</b>								
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>								
EP090: Tripropyltin	---	0.1	%	98.3	107	101	95.9	101
<b>EM: Microbiological Testing</b>								
EM002: E. coli	---	1	CFU/100 mL	<1	<1	<1	<1	<1



**Analytical Results**

				Client Sample ID : WM 4M	WM 4B	WM 5S	WM 5M	WM 5B
				Laboratory Sample ID : HK0604095-011	HK0604095-012	HK0604095-013	HK0604095-014	HK0604095-015
				Sample Date / Time : [ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]	[ 26 Sep 2006 ]
Method: Analysis Description	CAS number	LOR	Units					
<b>EA/ED: Physical and Aggregate Properties</b>								
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm	75	72	77	75	76
EA020: Salinity	---	0.1	g/L	<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L	3	<2	<2	<2	2
<b>ED/EK: Inorganic Nonmetallic Parameters</b>								
EK053A: Silica	7631-86-9	0.01	mg/L	3.68	3.68	3.72	3.67	3.56
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.01	0.01	0.02	<0.01
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.3	0.3	0.3	0.3	0.4
EK062A: Total Nitrogen as N	---	0.1	mg/L	0.3	0.3	0.3	0.3	0.4
EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	0.03
EP025: Dissolved Oxygen	---	0.1	mg/L	8.3	8.2	8.2	7.8	7.9
<b>EP: Aggregate Organics</b>								
EP008: Chlorophyll a	---	0.5	µg/L	11.5	11.9	11.7	11.4	13.0
EP026: Chemical Oxygen Demand	---	2	mg/L	8	8	8	8	8
EP030: Biochemical Oxygen Demand	---	2	mg/L	<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>								
EG020: Chromium	7440-47-3	1	µg/L	<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L	1	<1	1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	12	<10	<10
<b>EP-090: Organotin Compounds</b>								
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>								
EP090: Tripropyltin	---	0.1	%	103	106	94.9	93.2	92.5
<b>EM: Microbiological Testing</b>								
EM002: E. coli	---	1	CFU/100 mL	<1	<1	1	<1	<1



**Quality Control - Laboratory Duplicate (DUP) Results**

Matrix Type: WATER				Duplicate (DUP) Results				
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 281651)</b>								
HK0604077-001	Anonymous	EA025: Suspended Solids (SS)	---	2	mg/L	183	183	0.0
HK0604095-008	WM 3M	EA025: Suspended Solids (SS)	---	2	mg/L	<2	<2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 281672)</b>								
HK0604095-001	WM 1S	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	77	77	0.0
HK0604095-011	WM 4M	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	75	74	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 282755)</b>								
HK0604095-001	WM 1S	EA020: Salinity	---	0.1	g/L	<0.1	<0.1	0.0
HK0604095-010	WM 4S	EA020: Salinity	---	0.1	g/L	<0.1	<0.1	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281142)</b>								
HK0604094-053	Anonymous	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	33.9	35.9	5.6
HK0604095-010	WM 4S	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.3	0.3	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281143)</b>								
HK0604095-010	WM 4S	EK067A: Total Phosphorus as P	---	0.02	mg/L	0.02	<0.02	0.0
HK0604095-015	WM 5B	EK067A: Total Phosphorus as P	---	0.02	mg/L	0.03	<0.02	50.2
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281144)</b>								
HK0604095-015	WM 5B	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.4	0.3	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281145)</b>								
HK0604094-041	Anonymous	EK067A: Total Phosphorus as P	---	0.1	mg/L	3.0	3.2	6.8
HK0604106-007	Anonymous	EK067A: Total Phosphorus as P	---	0.1	mg/L	<0.1	<0.1	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281215)</b>								
HK0604095-010	WM 4S	EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	0.0
HK0604106-007	Anonymous	EK059A: Nitrite + Nitrate as N	---	0.01	mg/L	0.06	0.06	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281217)</b>								
HK0604095-015	WM 5B	EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	0.0
HK0604067-001	Anonymous	EK059A: Nitrite + Nitrate as N	---	0.01	mg/L	2.49	2.43	2.4
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281890)</b>								
HK0604095-010	WM 4S	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	0.0
HK0604095-015	WM 5B	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 281891)</b>								
HK0604106-007	Anonymous	EK055A: Ammonia as N	7664-41-7	0.1	mg/L	<0.1	<0.1	0.0
HK0604115-010	Anonymous	EK055A: Ammonia as N	7664-41-7	0.1	mg/L	0.4	0.4	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 285226)</b>								
HK0604095-010	WM 4S	EK053A: Silica	7631-86-9	0.01	mg/L	3.63	3.54	2.6
HK0604095-015	WM 5B	EK053A: Silica	7631-86-9	0.01	mg/L	3.56	3.76	5.4
<b>EP: Aggregate Organics (QC Lot: 281928)</b>								
HK0604095-001	Anonymous	EP008: Chlorophyll a	---	1.0	mg/m3	<1.0	<1.0	0.0
HK0604095-010	WM 4S	EP008: Chlorophyll a	---	0.5	mg/m3	12.6	12.8	1.6
<b>EP: Aggregate Organics (QC Lot: 281929)</b>								
HK0604095-015	WM 5B	EP008: Chlorophyll a	---	0.5	mg/m3	13.0	12.2	6.3

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Matrix Type: WATER				Duplicate (DUP) Results				
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPD (%)
<b>EG: Metals and Major Cations (QC Lot: 281523)</b>								
HK0603955-002	Anonymous	EG020: Lead	7439-92-1	1	µg/L	2	2	0.0
		EG020: Zinc	7440-66-6	10	µg/L	215	221	2.8
		EG020: Chromium	7440-47-3	1	µg/L	5	5	0.0
		EG020: Copper	7440-50-8	1	µg/L	8	9	0.0
HK0604057-004	Anonymous	EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	2	2	0.0
<b>EG: Metals and Major Cations (QC Lot: 281530)</b>								
HK0604095-010	WM 4S	EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	<10	<10	0.0
		EG020: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	1	1	0.0
HK0604106-004	Anonymous	EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	16	10	45.2
		EG020: Chromium	7440-47-3	1	µg/L	<1	<1	0.0
		EG020: Copper	7440-50-8	1	µg/L	<1	<1	0.0

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**Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results**

Matrix Type: WATER		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
Method: Analysis Description	CAS number	LOR	Units	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						SCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 281651)</b>											
EA025: Suspended Solids (SS)	---	2	mg/L	<2	20 mg/L	90.5	---	85	115	---	---
<b>EA/ED: Physical and Aggregate Properties (QCLot: 281672)</b>											
EA010: Electrical Conductivity	---	1	µS/cm	<1	146.9 µS/cm	97.2	---	85	115	---	---
<b>EA/ED: Physical and Aggregate Properties (QCLot: 282755)</b>											
EA020: Salinity	---	0.1	g/L	<0.1	10 g/L	101	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281142)</b>											
EK061A: Total Kjeldahl Nitrogen	---	0.1	mg/L	<0.1	0.5 mg/L	108	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281143)</b>											
EK067A: Total Phosphorus as P	---	0.1	mg/L	<0.1	0.5 mg/L	97.8	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281144)</b>											
EK061A: Total Kjeldahl Nitrogen	---	0.1	mg/L	<0.1	0.5 mg/L	86.3	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281145)</b>											
EK067A: Total Phosphorus as P	---	0.1	mg/L	<0.1	0.5 mg/L	98.9	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281215)</b>											
EK059A: Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	0.4 mg/L	105	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281217)</b>											
EK059A: Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	0.4 mg/L	96.6	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281890)</b>											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.4 mg/L	111	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281891)</b>											
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.4 mg/L	98.4	---	85	115	---	---
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 285226)</b>											
EK053A: Silica	7631-86-9	0.01	mg/L	<0.01	0.4 mg/L	97.1	---	85	115	---	---
<b>EP: Aggregate Organics (QCLot: 281153)</b>											
EP030: Biochemical Oxygen Demand	---	2	mg/L	---	198 mg/L	98.5	---	85	115	---	---
<b>EP: Aggregate Organics (QCLot: 281154)</b>											
EP030: Biochemical Oxygen Demand	---	2	mg/L	---	198 mg/L	86.9	---	85	115	---	---
<b>EP: Aggregate Organics (QCLot: 281928)</b>											
EP008: Chlorophyll a	---	0.1	mg/m3	<0.1	10.6 mg/m3	106	---	85	115	---	---
<b>EP: Aggregate Organics (QCLot: 281929)</b>											
EP008: Chlorophyll a	---	0.1	mg/m3	<0.1	10.63 mg/m3	105	---	85	115	---	---
<b>EP: Aggregate Organics (QCLot: 283519)</b>											
EP026: Chemical Oxygen Demand	---	2	mg/L	---	500 mg/L	92.6	---	85	115	---	---
<b>EG: Metals and Major Cations (QCLot: 281523)</b>											

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Matrix Type: WATER		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results						
Method: Analysis Description	CAS number	LOR	Units	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
						SCS	DCS	Low	High	Value	Control Limit
<b>EG: Metals and Major Cations (QCLot: 281523) - continued</b>											
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	91.9	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	89.7	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<1	100 µg/L	94.7	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	100	---	85	115	---	---
<b>EG: Metals and Major Cations (QCLot: 281530)</b>											
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	91.8	---	85	115	---	---
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	95.9	---	85	115	---	---
EG020: Chromium	7440-47-3	1	µg/L	<1	100 µg/L	95.1	---	85	115	---	---
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	100	---	85	115	---	---
<b>EP-090: Organotin Compounds (QCLot: 282848)</b>											
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	50 ngSn/L	98.4	---	95	105	---	---

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**Quality Control - Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results**

Matrix Type: WATER

Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281142)										
HK0604095-001	WM 1S	EK061A: Total Kjeldahl Nitrogen as N	---	0.5 mg/L	87.0	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281143)										
HK0604095-001	WM 1S	EK067A: Total Phosphorus as P	---	0.5 mg/L	107	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281144)										
HK0604095-011	WM 4M	EK061A: Total Kjeldahl Nitrogen as N	---	0.5 mg/L	90.0	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281145)										
HK0604095-011	WM 4M	EK067A: Total Phosphorus as P	---	0.5 mg/L	111	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281215)										
HK0604105-001	Anonymous	EK059A: Nitrite + Nitrate as N	---	1.0 mg/L	112	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281217)										
HK0604095-001	WM 1S	EK059A: Nitrite + Nitrate as N	---	1.0 mg/L	110	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281890)										
HK0604095-001	WM 1S	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	123	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 281891)										
HK0604106-001	Anonymous	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	116	---	75	125	---	---
ED/EK: Inorganic Nonmetallic Parameters (QCLot: 285226)										
HK0604095-001	WM 1S	EK053A: Silica	7631-86-9	2.5 mg/L	105	---	75	125	---	---
EP: Aggregate Organics (QCLot: 283519)										
HK0604086-001	Anonymous	EP026: Chemical Oxygen Demand	---	500 mg/L	93.6	---	75	125	---	---
EG: Metals and Major Cations (QCLot: 281523)										
HK0603955-001	Anonymous	EG020: Lead	7439-92-1	100 µg/L	78.9	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	78.0	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	95.7	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	82.1	---	75	125	---	---
EG: Metals and Major Cations (QCLot: 281530)										
HK0604095-009	WM 3B	EG020: Lead	7439-92-1	100 µg/L	91.2	---	75	125	---	---
		EG020: Zinc	7440-66-6	100 µg/L	94.4	---	75	125	---	---
		EG020: Chromium	7440-47-3	100 µg/L	95.4	---	75	125	---	---
		EG020: Copper	7440-50-8	100 µg/L	98.9	---	75	125	---	---

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**Surrogate Control Limits**

Submatrix Type: WATER

Method: Analysis Description	Units	Lower Limit	Upper Limit
EP-090S: Organotin Surrogate			
EP090: Tripropyltin	%	50	130

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ALS Laboratory Group

ANALYTICAL CHEMISTRY & TESTING SERVICES

CERTIFICATE OF ANALYSIS

<b>Client</b> : MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD	<b>Laboratory</b> : ALS Technichem (HK) Pty Ltd	<b>Page</b> : 1 of 9
<b>Contact</b> : MS LEMON LAM	<b>Contact</b> : Alice Wong / Ivan Leung	<b>Work Order</b> : HK0604444
<b>Address</b> : 11/F, TOWER 2, GRAND CENTRAL PLAZA, 138 SHATIN RURAL COMMITTEE ROAD, SHATIN, N.T. HONG KONG	<b>Address</b> : 11/F., Chung Shun Knitting Centre, 1 - 3 Wing Yip Street, Kwai Chung, N.T. Hong Kong	<b>Amendment No.</b> :
<b>E-mail</b> : lemon.lam@maunsell.aecom.com	<b>E-mail</b> : alice.wong@alsenviro.com	<b>Date received</b> : 5 Oct 2006
<b>Telephone</b> : +852 2893 1551	<b>Telephone</b> : +852 2610 1044	<b>Date of issue</b> : 13 Oct 2006
<b>Facsimile</b> : +852 2891 0305	<b>Facsimile</b> : +852 2610 2021	<b>No. of samples</b> - Received : 15
<b>Project</b> : S07105	<b>Quote number</b> : ---	<b>Analysed</b> : 15
<b>Order number</b> : ---		
<b>C-O-C number</b> : ---		
<b>Site</b> : WRC		

Report Comments

This report for ALS Technichem (HK) Pty Ltd work order reference HK0604444 supersedes any previous reports with this reference. The completion date of analysis is 12 Oct 2006. Results apply to sample(s) as submitted. All pages of this report have been checked and approved for release. When date(s) and/or time(s) are shown bracketed, these have been assumed by the laboratory for process purposes. Abbreviations: CAS number = Chemical Abstract Services number. LOR = Limit of reporting.

Specific comments for Work Order HK0604444 :  
 Fiteen water samples were received in a chilled condition.  
 Total Nitrogen is the sum of Total Oxidizable and Total Kjeldal Nitrogen.  
 In marine and freshwater samples, chlorophyll b will cause some interference if present.  
 Project Name: EM&A for WRC at Penny's Bay.

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This document has been electronically signed by those names that appear on this report and are the authorised signatories. Electronic signing has been carried out in compliance with procedures specified in the 'Electronic Transactions Ordinance' of Hong Kong, Chapter 553, Section 6.

Signatory	Position	Authorised results for:-
Anh Ngoc Huynh	Senior Chemist	Organics
Fung Lim Chee, Richard	General Manager	Inorganics
Leung Sai Ho, Ivan	Supervisor	Microbiology

ALS Laboratory Group

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Page Number : 2 of 9  
 Client : MAUNSELL ENVIRONMENTAL MANAGEMENT CONSULTANTS LTD  
 Work Order : HK0604444



Analytical Results

Method: Analysis Description	CAS number	LOR	Units	Client Sample ID	WM 1S	WM 1M	WM 1B	WM 2S	WM 2M		
				Laboratory Sample ID	Sample Date / Time	HK0604444-001	[ 5 Oct 2006 ]	HK0604444-002	[ 5 Oct 2006 ]	HK0604444-003	[ 5 Oct 2006 ]
Submatrix: WATER											
EA/ED: Physical and Aggregate Properties											
EA010: Electrical Conductivity @ 25°C	---	1	µS/cm		78	79	79	79	79		
EA020: Salinity	---	0.1	g/L		<0.1	<0.1	<0.1	<0.1	<0.1		
EA025: Suspended Solids (SS)	---	2	mg/L		2	3	<2	<2	3		
ED/EK: Inorganic Nonmetallic Parameters											
EK053A: Silica	7631-96-9	0.01	mg/L		3.83	3.67	3.54	3.60	3.64		
EK055A: Ammonia as N	7664-41-7	0.01	mg/L		<0.01	<0.01	0.03	<0.01	<0.01		
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L		<0.1	<0.1	<0.1	<0.1	<0.1		
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L		0.2	0.2	0.5	0.2	0.2		
EK062A: Total Nitrogen as N	---	0.1	mg/L		0.2	0.2	0.5	0.2	0.2		
EK067A: Total Phosphorus as P	---	0.02	mg/L		<0.02	<0.02	<0.02	<0.02	<0.02		
EP025: Dissolved Oxygen	---	0.1	mg/L		8.0	8.5	8.8	8.4	8.7		
EP: Aggregate Organics											
EP008: Chlorophyll a	---	0.5	µg/L		10.1	10.2	9.8	9.8	11.2		
EP026: Chemical Oxygen Demand	---	2	mg/L		9	9	10	10	11		
EP030: Biochemical Oxygen Demand	---	2	mg/L		<2	<2	<2	<2	<2		
EG: Metals and Major Cations											
EG020: Chromium	7440-47-3	1	µg/L		<1	<1	<1	<1	<1		
EG020: Copper	7440-50-8	1	µg/L		1	<1	1	1	1		
EG020: Lead	7439-92-1	1	µg/L		<1	<1	<1	<1	<1		
EG020: Zinc	7440-66-6	10	µg/L		<10	<10	<10	<10	<10		
EP-090: Organotin Compounds											
EP090: Tributyltin	56573-85-4	5	ngSn/L		<5	<5	<5	<5	<5		
EP-090S: Organotin Surrogate											
EP090: Tripropyltin	---	0.1	%		108	102	105	109	104		
EM: Microbiological Testing											
EM002: E. coli	---	1	CFU/100 mL		<1	<1	<1	<1	<1		



**Analytical Results**

				Client Sample ID : WM 2B	WM 3S	WM 3M	WM 3B	WM 4S
				Laboratory Sample ID : HK0604444-006	HK0604444-007	HK0604444-008	HK0604444-009	HK0604444-010
				Sample Date / Time : [ 5 Oct 2006 ]	[ 5 Oct 2006 ]	[ 5 Oct 2006 ]	[ 5 Oct 2006 ]	[ 5 Oct 2006 ]
Method: Analysis Description	CAS number	LOR	Units					
<b>EAVED: Physical and Aggregate Properties</b>								
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm	78	80	79	78	80
EA020: Salinity	---	0.1	g/L	<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L	2	2	<2	<2	<2
<b>ED/EK: Inorganic Nonmetallic Parameters</b>								
EK053A: Silica	7631-86-9	0.01	mg/L	3.62	3.60	3.60	3.61	3.52
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	<0.01	0.01	0.01
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.3	0.2	0.2	0.3	0.3
EK062A: Total Nitrogen as N	---	0.1	mg/L	0.3	0.2	0.2	0.3	0.3
EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP025: Dissolved Oxygen	---	0.1	mg/L	8.6	8.6	8.4	9.0	8.6
<b>EP: Aggregate Organics</b>								
EP008: Chlorophyll a	---	0.5	µg/L	11.4	10.9	10.3	9.1	9.0
EP026: Chemical Oxygen Demand	---	2	mg/L	9	9	9	8	9
EP030: Biochemical Oxygen Demand	---	2	mg/L	<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>								
EG020: Chromium	7440-47-3	1	µg/L	<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	<1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
<b>EP-090: Organotin Compounds</b>								
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>								
EP090: Tripropyltin	---	0.1	%	107	99.2	104	107	101
Surrogate control limits listed at end of this report.								
<b>EM: Microbiological Testing</b>								
EM002: E. coli	---	1	CFU/100 mL	<1	<1	<1	<1	<1



**Analytical Results**

				Client Sample ID : WM 4M	WM 4B	WM 5S	WM 5M	WM 5B
				Laboratory Sample ID : HK0604444-011	HK0604444-012	HK0604444-013	HK0604444-014	HK0604444-015
				Sample Date / Time : [ 5 Oct 2006 ]	[ 5 Oct 2006 ]	[ 5 Oct 2006 ]	[ 5 Oct 2006 ]	[ 5 Oct 2006 ]
Method: Analysis Description	CAS number	LOR	Units					
<b>EAVED: Physical and Aggregate Properties</b>								
EA010: Electrical Conductivity @ 25° C	---	1	µS/cm	79	78	78	78	78
EA020: Salinity	---	0.1	g/L	<0.1	<0.1	<0.1	<0.1	<0.1
EA025: Suspended Solids (SS)	---	2	mg/L	<2	<2	<2	<2	<2
<b>ED/EK: Inorganic Nonmetallic Parameters</b>								
EK053A: Silica	7631-86-9	0.01	mg/L	3.58	3.70	3.70	3.72	3.38
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.01	0.01	0.02	0.03	0.03
EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1
EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.2	0.3	0.2	0.3	0.3
EK062A: Total Nitrogen as N	---	0.1	mg/L	0.2	0.3	0.2	0.3	0.3
EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP025: Dissolved Oxygen	---	0.1	mg/L	8.7	9.0	9.2	8.6	8.5
<b>EP: Aggregate Organics</b>								
EP008: Chlorophyll a	---	0.5	µg/L	10.3	9.2	10.9	9.1	9.2
EP026: Chemical Oxygen Demand	---	2	mg/L	11	9	9	8	9
EP030: Biochemical Oxygen Demand	---	2	mg/L	<2	<2	<2	<2	<2
<b>EG: Metals and Major Cations</b>								
EG020: Chromium	7440-47-3	1	µg/L	<1	<1	<1	<1	<1
EG020: Copper	7440-50-8	1	µg/L	<1	<1	<1	1	<1
EG020: Lead	7439-92-1	1	µg/L	<1	<1	<1	<1	<1
EG020: Zinc	7440-66-6	10	µg/L	<10	<10	<10	<10	<10
<b>EP-090: Organotin Compounds</b>								
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	<5	<5	<5	<5
<b>EP-090S: Organotin Surrogate</b>								
EP090: Tripropyltin	---	0.1	%	106	106	96.2	97.8	95.4
Surrogate control limits listed at end of this report.								
<b>EM: Microbiological Testing</b>								
EM002: E. coli	---	1	CFU/100 mL	<1	<1	<1	<1	<1



**Quality Control - Laboratory Duplicate (DUP) Results**

Matrix Type: WATER				Duplicate (DUP) Results				
Laboratory Sample ID	Client Sample ID	Method: Analysis Description	CAS number	LOR	Units	Original Result	Duplicate Result	RPO (%)
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 286213)</b>								
HK0604444-001	WM 1S	EA025: Suspended Solids (SS)	---	2	mg/L	2	3	0.0
HK0604444-011	WM 4M	EA025: Suspended Solids (SS)	---	2	mg/L	<2	<2	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 286634)</b>								
HK0604444-001	WM 1S	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	78	78	0.0
HK0604444-011	WM 4M	EA010: Electrical Conductivity @ 25°C	---	1	µS/cm	79	78	0.0
<b>EA/ED: Physical and Aggregate Properties (QC Lot: 286642)</b>								
HK0604419-001	Anonymous	EA020: Salinity	---	1.0	g/L	50.5	51.0	1.0
HK0604444-008	WM 3M	EA020: Salinity	---	0.1	g/L	<0.1	<0.1	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 286071)</b>								
HK0604443-001	Anonymous	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	31.7	30.5	3.7
HK0604444-010	WM 4S	EK061A: Total Kjeldahl Nitrogen as N	---	0.1	mg/L	0.3	0.2	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 286072)</b>								
HK0604443-001	Anonymous	EK067A: Total Phosphorus as P	---	0.1	mg/L	3.4	3.6	4.6
HK0604444-010	WM 4S	EK067A: Total Phosphorus as P	---	0.02	mg/L	<0.02	<0.02	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 286961)</b>								
HK0604444-010	WM 4S	EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	0.0
HK0604444-015	WM 5B	EK059A: Nitrite + Nitrate as N	---	0.1	mg/L	<0.1	<0.1	0.0
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 287716)</b>								
HK0604444-010	WM 4S	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.01	<0.01	0.0
HK0604444-015	WM 5B	EK055A: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.01	80.1
<b>ED/EK: Inorganic Nonmetallic Parameters (QC Lot: 288815)</b>								
HK0604444-010	WM 4S	EK053A: Silica	7631-86-9	0.01	mg/L	3.52	3.61	2.6
HK0604444-015	WM 5B	EK053A: Silica	7631-86-9	0.01	mg/L	3.38	3.49	3.3
<b>EP: Aggregate Organics (QC Lot: 286581)</b>								
HK0604363-002	Anonymous	EP026: Chemical Oxygen Demand	---	2	mg/L	7	8	13.3
HK0604424-001	Anonymous	EP026: Chemical Oxygen Demand	---	2	mg/L	<2	<2	0.0
<b>EP: Aggregate Organics (QC Lot: 286582)</b>								
HK0604417-002	Anonymous	EP026: Chemical Oxygen Demand	---	2	mg/L	136	152	11.1
HK0604471-002	Anonymous	EP026: Chemical Oxygen Demand	---	2	mg/L	<2	<2	0.0
<b>EP: Aggregate Organics (QC Lot: 289125)</b>								
HK0604444-010	WM 4S	EP008: Chlorophyll a	---	0.5	mg/m3	9.0	9.6	6.3
HK0604444-015	WM 5B	EP008: Chlorophyll a	---	0.5	mg/m3	9.2	9.3	1.4
<b>EG: Metals and Major Cations (QC Lot: 286560)</b>								
HK0604461-001	Anonymous	EG020: Lead	7439-92-1	1	µg/L	7	6	0.0
		EG020: Chromium	7440-47-3	1	µg/L	4	5	0.0
		EG020: Copper	7440-50-8	1	µg/L	9	10	0.0
		EG020: Lead	7439-92-1	1	µg/L	<1	<1	0.0
		EG020: Zinc	7440-66-6	10	µg/L	11	11	0.0
		EG020: Chromium	7440-47-3	1	µg/L	12	12	0.0
HK0604505-007	Anonymous	EG020: Copper	7440-50-8	1	µg/L	9	9	0.0

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**Quality Control - Method Blank (MB), Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results**

Method: Analysis Description		Method Blank (MB) Results			Single Control Spike (SCS) and Duplicate Control Spike (DCS) Results							
		CAS number	LOR	Units	Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
							SCS	DCS	Low	High	Value	Control Limit
<b>EA/ED: Physical and Aggregate Properties (QCLot: 286213)</b>												
EA025: Suspended Solids (SS)	---	2	mg/L	<2	20 mg/L	93.0	---	85	115	---	---	
<b>EA/ED: Physical and Aggregate Properties (QCLot: 286634)</b>												
EA010: Electrical Conductivity	---	1	µS/cm	<1	146.9 µS/cm	97.2	---	85	115	---	---	
<b>EA/ED: Physical and Aggregate Properties (QCLot: 286642)</b>												
EA020: Salinity	---	0.1	g/L	<0.1	40 g/L	104	---	85	115	---	---	
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 286071)</b>												
EK061A: Total Kjeldahl Nitrogen	---	0.1	mg/L	<0.1	0.5 mg/L	91.4	---	85	115	---	---	
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 286072)</b>												
EK067A: Total Phosphorus as P	---	0.1	mg/L	<0.1	0.5 mg/L	92.8	---	85	115	---	---	
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 286961)</b>												
EK059A: Nitrite + Nitrate as N	---	0.01	mg/L	<0.01	0.4 mg/L	88.8	---	85	115	---	---	
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 287716)</b>												
EK055A: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.4 mg/L	113	---	85	115	---	---	
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 288815)</b>												
EK053A: Silica	7631-86-9	0.01	mg/L	<0.01	0.4 mg/L	98.2	---	85	115	---	---	
<b>EP: Aggregate Organics (QCLot: 286121)</b>												
EP030: Biochemical Oxygen Demand	---	2	mg/L	---	198 mg/L	99.0	---	85	115	---	---	
<b>EP: Aggregate Organics (QCLot: 286581)</b>												
EP026: Chemical Oxygen Demand	---	2	mg/L	---	500 mg/L	106	---	85	115	---	---	
<b>EP: Aggregate Organics (QCLot: 286582)</b>												
EP026: Chemical Oxygen Demand	---	2	mg/L	---	500 mg/L	92.0	---	85	115	---	---	
<b>EP: Aggregate Organics (QCLot: 289125)</b>												
EP008: Chlorophyll a	---	0.1	mg/m3	<0.1	12.42 mg/m3	98.0	---	85	115	---	---	
<b>EG: Metals and Major Cations (QCLot: 286560)</b>												
EG020: Lead	7439-92-1	1	µg/L	<1	100 µg/L	89.4	---	85	115	---	---	
EG020: Zinc	7440-66-6	10	µg/L	<10	100 µg/L	97.9	---	85	115	---	---	
EG020: Chromium	7440-47-3	1	µg/L	<1	100 µg/L	86.8	---	85	115	---	---	
EG020: Copper	7440-50-8	1	µg/L	<1	100 µg/L	87.4	---	85	115	---	---	
<b>EP-090: Organotin Compounds (QCLot: 287412)</b>												
EP090: Tributyltin	56573-85-4	5	ngSn/L	<5	50 ngSn/L	99.3	---	95	105	---	---	



**Quality Control - Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results**

Laboratory Sample ID				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Results									
				Client Sample ID	Method: Analysis Description	CAS number	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
								MS	MSD	Low	High	Value	Control Limit
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 286071)</b>													
HK0604444-001	WM 1S	EK061A: Total Kjeldahl Nitrogen as N	---	0.5 mg/L	104	---	75	125	---	---			
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 286072)</b>													
HK0604444-001	WM 1S	EK067A: Total Phosphorus as P	---	0.5 mg/L	99.8	---	75	125	---	---			
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 286961)</b>													
HK0604549-001	Anonymous	EK059A: Nitrite + Nitrate as N	---	1.0 mg/L	84.3	---	75	125	---	---			
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 287716)</b>													
HK0604444-001	WM 1S	EK055A: Ammonia as N	7664-41-7	0.5 mg/L	106	---	75	125	---	---			
<b>ED/EK: Inorganic Nonmetallic Parameters (QCLot: 288815)</b>													
HK0604444-001	WM 1S	EK053A: Silica	7631-86-9	2.5 mg/L	92.2	---	75	125	---	---			
<b>EP: Aggregate Organics (QCLot: 286581)</b>													
HK0604363-001	Anonymous	EP026: Chemical Oxygen Demand	---	50 mg/L	103	---	75	125	---	---			
<b>EP: Aggregate Organics (QCLot: 286582)</b>													
HK0604447-001	Anonymous	EP026: Chemical Oxygen Demand	---	50 mg/L	104	---	75	125	---	---			
<b>EG: Metals and Major Cations (QCLot: 286560)</b>													
HK0604444-001	WM 1S	EG020: Lead	7439-92-1	100 µg/L	88.9	---	75	125	---	---			
		EG020: Zinc	7440-66-6	100 µg/L	93.5	---	75	125	---	---			
		EG020: Chromium	7440-47-3	100 µg/L	81.2	---	75	125	---	---			
		EG020: Copper	7440-50-8	100 µg/L	86.9	---	75	125	---	---			



**Surrogate Control Limits**

Submatrix Type: WATER

Method: Analysis Description	Units	Lower Limit	Upper Limit
EP-090S: Organotin Surrogate			
EP090: Tripropyltin	%	50	130

## Appendix G <sup>3/4</sup> Summary of Environmental Mitigation Implementation Schedule

Reference	Mitigation Measures	Status
	<i>Water Quality</i>	
EIA Report 5.11.2	<ul style="list-style-type: none"> <li>The lake shall be lined with an impermeable liner. However, as such liners may have a limited life span, beyond which the performance may deteriorates, the liner shall be replaced once the manufacturer's specified lifespan is reached.</li> </ul>	√
EIA Report 5.11.2	<ul style="list-style-type: none"> <li>Stormwater run-off from surrounding hillsides shall pass through silt traps prior to entering the artificial lake to prevent siltation. The silt traps shall be designed to have adequate capacity to retain any silt/sediment contained within the stormwater. The silt traps shall be frequently maintained/cleaned to prevent a deterioration in performance.</li> </ul>	√
EIA Report 5.11.2, EP 3.7	<ul style="list-style-type: none"> <li>Should the quality of the water in the Tai Lam Chung Reservoir deteriorate below the present levels an alternate supply of water, of a quality at least as good as that within the Tai Lam Chung Reservoir, shall be used to 'top up' the water within the lake.</li> </ul>	N/A
EIA Report 5.11.2, EP 3.8, 3.9	<ul style="list-style-type: none"> <li>If it becomes necessary to add an algicide to the lake to control algal growth, the algicide shall be biodegradable with a short half life of three days or less. During use of the algicide discharge of the lake water to the marine waters shall be prohibited, until the algicide has decayed. The algicide shall not be used during periods of heavy rainfall when overflow of the lake is possible.</li> </ul>	N/A
EIA Report 5.11.2, EP 3.6	<ul style="list-style-type: none"> <li>Stormwater from any urban/developed areas shall not be allowed to enter the lake as they may contain pollutants. Sewage effluent from the water recreation centre shall be transported to the sewerage mains for conveyance to the Siu Ho Wan STW.</li> </ul>	√
EIA Report 5.11.2, EP 3.10	<ul style="list-style-type: none"> <li>Any fuel for motorised water sports vessels shall be stored in bunded areas, of at least 110% capacity of the largest fuel storage container to prevent any accidental spills entering the lake.</li> </ul>	N/A
EIA Report 5.11.2	<ul style="list-style-type: none"> <li>Servicing of any water sports vessels shall be undertaken at suitable facilities away from the artificial lake. In the event that fuel or other petroleum products enter the lake, a suitable clean-up plan shall be implemented. The clean-up plan being devised by the operators of the water recreation centre and approved by EPD prior to the commencement of operations at the water sports centre.</li> </ul>	√
	<i>Waste</i>	
EIA Report 5.11.2	<ul style="list-style-type: none"> <li>To minimise the potential adverse impacts to aesthetics and odour impacts, the HKITP should maintain floating refuse collection initiatives at both the coast of the Theme Park and within the artificial lake of the Water Recreation Centre.</li> </ul>	√

Note:

- √ Compliance of mitigation measure
- × Non-compliance of mitigation measures
- Non-compliance but rectified
- N/A Not applicable

## Appendix H <sup>3</sup>/<sub>4</sub> Event and Action Plans

### Event and Action Plan for Water Quality

Exceedance	ETL	HKITP	IEC
Action Level			
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings.</li> <li>2. Identify the source(s) of impact (e.g. intake water).</li> <li>3. Inform HKITP and IEC.</li> <li>4. Check monitoring data, all monitoring equipment and monitoring methods; consider changes of monitoring methods.</li> <li>5. Discuss mitigation measures with HKITP and IEC.</li> <li>6. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IEC and ETL on WRC operations or any changes to the operations that may have an impact on the water quality.</li> <li>2. Rectify unacceptable practice and propose mitigation measures.</li> <li>3. Make agreement on the mitigation measures to be implemented.</li> <li>4. Implement the agreed mitigation measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with ETL and HKITP on WRC operations or any changes to the operations that may have an impact on the water quality, and discuss possible mitigation measures.</li> <li>2. Review proposals on mitigation measures by HKITP.</li> <li>3. Assess the effectiveness of the implemented mitigation measures.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Repeat in-situ measurement to confirm findings.</li> <li>2. Identify the source(s) of impact (eg intake water).</li> <li>3. Inform HKITP and IEC.</li> <li>4. Check monitoring data, all monitoring equipment and monitoring methods; consider changes of monitoring methods</li> <li>5. Discuss mitigation measures with HKITP and IEC.</li> <li>6. Ensure mitigation measures are implemented.</li> <li>7. Prepare to increase monitoring frequency to assess efficacy of remedial measures.</li> <li>8. Repeat measurement on next day of exceedance.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with IEC and ETL on WRC operations or any changes to the operations that may have an impact on the water quality.</li> <li>2. Rectify unacceptable practice and propose mitigation measures.</li> <li>3. Make agreement on the mitigation measures to be implemented.</li> <li>4. Implement the agreed mitigation measures</li> <li>5. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with HKITP and ETL on WRC operations or any changes to the operations that may have an impact on the water quality, and discuss possible mitigation measures.</li> <li>2. Review proposals on mitigation measures by HKITP.</li> <li>3. .Assess the effectiveness of the implemented mitigation measures</li> </ol>

Exceedance	ETL	HKITP	IEC
Limit Level			
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings.</li> <li>2. Identify the source(s) of impact (eg intake water).</li> <li>3. Inform HKITP and IEC.</li> <li>4. Check monitoring data, all monitoring equipment and monitoring methods; consider changes of monitoring methods</li> <li>5. Discuss mitigation measures with HKITP and IEC.</li> <li>6. Ensure mitigation measures are implemented.</li> <li>7. Increase monitoring frequency to daily until no exceedance of Limit Level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform EPD of exceedance.</li> <li>2. Discuss with IEC and ETL on WRC operations or any changes to the operations that may have an impact on the water quality.</li> <li>3. Rectify unacceptable practice and propose mitigation measures.</li> <li>4. Make agreement on the mitigation measures to be implemented.</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Assess the effectiveness of the implemented mitigation measures</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with HKITP and ETL on WRC operations or any changes to the operations that may have an impact on the water quality, and discuss possible mitigation measures.</li> <li>2. Review proposals on mitigation measures by HKITP.</li> <li>3. Assess the effectiveness of the implemented mitigation measures</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Repeat measurement to confirm findings.</li> <li>2. Identify the source(s) of impact (eg intake water).</li> <li>3. Inform HKITP and IEC.</li> <li>4. Check monitoring data, all monitoring equipment and monitoring methods; consider changes of monitoring methods</li> <li>5. Discuss mitigation measures with HKITP and IEC.</li> <li>6. Ensure mitigation measures are implemented.</li> <li>7. Increase monitoring frequency to daily until no exceedance of Limit Level for two consecutive days.</li> </ol>	<ol style="list-style-type: none"> <li>1. Inform EPD of exceedance.</li> <li>2. Discuss with IEC and ETL on WRC operations or any changes to the operations that may have an impact on the water quality.</li> <li>3. Rectify unacceptable practice and propose mitigation measures.</li> <li>4. Make agreement on the mitigation measures to be implemented.</li> <li>5. Implement the agreed mitigation measures</li> <li>6. Assess the effectiveness of the implemented mitigation measures</li> <li>7. Consider to slow down or to stop all or part of the water-based activities until no exceedance of Limit level.</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss with HKITP and ETL on WRC operations or any changes to the operations that may have an impact on the water quality, and discuss possible mitigation measures.</li> <li>2. Review proposals on mitigation measures by HKITP.</li> <li>3. Assess the effectiveness of the implemented mitigation measures</li> </ol>

