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WATER QUALITY MONITORING PLAN EVALUATION
2004-2006
WEST PASCO CLASS III LANDFILL

Prepared for:

PASCO COUNTY BOARD OF COUNTY COMMISSIONERS

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MACTEC Project 6515-04-0147.05

MACTEC

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1.0 INTRODUCTION

1.1 BACKGROUND

The West Pasco Class III Landfill is located in northwestern Pasco County on Hays Road, approximately 2 ½ miles north of State Road 52. The landfill is part of the Pasco County Solid Waste System, which also includes the Resource Recovery Facility, West Pasco Class I Landfill, West Pasco Class III Landfill, the East Pasco Transfer Station and Recycling Center, and the East Pasco Class I Landfill. The West Pasco Class III Landfill is located on an 800-acre site with the Resource Recovery Facility and the West Pasco Class I Landfill (**Figure 1**). The West Pasco Class III Landfill is permitted under Chapters 62-4 and 62-701, Florida Administrative Code (FAC).

Construction and demolition debris received at the Resource Recovery Facility is directed to the West Pasco Class III Landfill disposal units. The landfill is primarily a construction and demolition disposal unit equipped with a geosynthetic liner and leachate collection system. Collected leachate is directed to 1 of 2 underground storage tanks, referred to as Tank #1 and Tank #2, and is piped directly to the Shady Hills Advanced Wastewater Treatment Facility.

1.2 FDEP-APPROVED COMPREHENSIVE QUALITY ASSURANCE PLAN

Pasco County Environmental Laboratory (County Lab) has been collecting and analyzing samples from the groundwater monitoring system since 1995. Groundwater sampling procedures used by the County Lab, including sampling equipment decontamination, field measurements, and sample shipment adhere to the sampling protocol approved by the Florida Department of Environmental Protection (FDEP). The County Lab also completes those analytical tests for which the lab is certified. The laboratory procedures and analytical methods used at the County Lab are described in their FDEP-approved Comprehensive Quality Assurance Plan (Comp-QAP).

Pasco County also contracts for laboratory services, and currently utilizes several State-approved analytical laboratories. The use of contracted laboratories is reflected in the County Lab's FDEP-approved Comp-QAP.

1.3 MONITORING PLAN

The following are summaries of the approved water quality and leachate monitoring plan at the West Pasco Class III Landfill facility.

1.3.1 Water Quality Monitoring Plan

The initial Groundwater Monitoring Plan was submitted to and approved by FDEP in 1988. The current plan consists of periodic monitoring of 5 surficial aquifer wells, numbered 2MW-3A, 2MW-7, 2MW-8, 2MW-9, 2MW-10, and 4 Floridan Aquifer wells numbered 4MW-3A, 4MW-7, 4MW-8, and 4MW-9 **(Figure 2)**. Monitoring wells 2MW-3A and 4MW-3A are intended to be background water quality sampling locations. The remaining wells are expected to serve as detection and horizontal detection/vertical compliance wells. Of note, the surficial aquifer monitoring wells have been dry since 1995. A summary of the well construction details for the monitoring wells found at the landfill are included in **Table 1**.

The monitoring wells were sampled, and collected samples were analyzed semi-annually from March 2004 through March 2006. Measured water levels are shown on **Table 2**. As part of the requirements of the West Pasco Class III Landfill Permit No. 26255-001-SO (Permit), issued by the FDEP, analyses of samples collected from each well are to include field parameters (water levels, specific conductance, pH, dissolved oxygen, temperature, turbidity, and color) and laboratory parameters (total ammonia, chlorides, iron, mercury, nitrate, sodium, total dissolved solids (TDS), and select parameters outlined in 40 CFR Part 258, Appendix I). The data for these and other specific field and laboratory parameters are summarized on **Tables 2 through 25**.

1.3.2 Leachate Monitoring Plan

Tank #1 and Tank #2 serve as the leachate collection systems for cells of the landfill. In accordance with the Permit, the leachate tanks are to be sampled for field parameters (specific conductance, pH, dissolved oxygen, and color) and laboratory parameters (total ammonia, bicarbonate, chlorides, iron, mercury, nitrate, sodium, TDS, and select parameters listed in 40 CFR Part 258, Appendix II). The data for these and other specific field and laboratory parameters are summarized on **Tables 26 through 28**.

2.0 WATER LEVEL DATA

Groundwater elevation data was collected semi-annually during this reporting period. The semi-annual monitoring events were completed on March 9, and August 23, 2004, February 7, September 20, 2005, and March 1, 2006. These monitoring events coincided with the groundwater sampling events discussed in **Section 3.0**.

2.1 DATA TABULATION

Groundwater level measurements were tabulated for the semi-annual monitoring events completed in 2004, 2005 and first quarter of 2006. Groundwater level elevations are summarized in **Table 2**, and are shown in feet, relative to the National Geodetic Vertical Datum (NGVD) of 1929.

Groundwater level measurements were available for the 4 Floridan Aquifer monitoring wells (4M-3A, 4MW-7, 4MW-8, and 4MW-9). Groundwater level measurements were available for 2MW-8 (2004 and 2005), 2MW-9, and 2MW-10 (September 23, 2004) monitoring wells completed within the surficial aquifer. For the 2MW-3A, 2MW-7, 2MW-9, and 2MW-10 monitoring wells, groundwater level measurements were not available because these wells have been dry typically since 1995.

2.2 HYDROGRAPHS

Groundwater elevations for the Floridan Aquifer monitoring wells are depicted on an elevation vs. time graph presented as **Figure 3**.

2.3 GROUNDWATER CONTOUR MAPS

Water table contour maps for the Surficial and Floridan Aquifer are presented in **Figures 4 through 13**.

2.4 DATA INTERPRETATION

2.4.1 Groundwater Levels

Groundwater levels in the monitoring wells varied over time; however, levels changed fairly consistently across the site. Groundwater levels of the wells generally differed by 2 feet or less during individual sampling events (**Table 2 and Figure 3**). Seasonally, groundwater water levels varied by up to six feet at the site.

2.4.2 Groundwater Flow Direction

The landfill is located approximately ten miles west of the Gulf of Mexico. Although only a few data points are available, the groundwater flow direction in the Floridan Aquifer indicates a general northwesterly trend (**Figures 5, 7, 9, 11 and 13**).

2.4.3 Groundwater Gradient

The hydraulic gradient in the Floridan Aquifer was estimated based on water level data collected in September 2005 (**Table 2**). An average hydraulic gradient of 0.00076 within the Floridan Aquifer is estimated across the site. This estimate was based on calculations between 4MW-3A and 4MW-7; and 4MW-9 and 4MW-7. Floridan Aquifer gradient estimations are as follows:

Monitoring Wells	Groundwater Elevation (ft-NGVD)	Approximate Lateral Distance (ft)	Estimated Hydraulic Gradient
4MW-3A and 4MW-7	32.60 – 30.86 = 1.74	1,300	0.00133
4MW-9 and 4MW-7	31.05 – 30.86 = 0.19	1,000	0.00019
		Average	**0.00076**

ft-NGVD = in feet relative to the National Geodetic Vertical Datum of 1929

2.4.4 Groundwater Flow Velocity

Based upon published data, most sands typically have saturated hydraulic conductivities on the order of 1 to 10 feet per day (ft/day). Using the more conservative ("higher") estimate (10 ft/day), a groundwater flow velocity for the site was estimated using the following equation from Darcy's Law:

$$V = KI/\emptyset_e$$

where:

V = Velocity of groundwater flow (ft/day)
K = Estimated hydraulic conductivity (10 ft/day)
I = Observed hydraulic gradient (0.00076 unitless)
$\emptyset_e$ = Assumed effective porosity (0.30 unitless)

An average groundwater flow velocity (V) of 0.025 ft/day in the Floridan Aquifer was estimated based upon the September 2005 field data. This velocity equates to approximately nine feet per year (ft/yr) within the Floridan Aquifer.

3.0 GROUNDWATER QUALITY DATA

3.1 DATA TABULATION

Groundwater analytical results have been tabulated for the monitoring wells sampled during the sampling events completed semi-annually from 2004 through first quarter of 2006.

Individual tables (**Tables 3 through 25**) have been prepared for certain water quality parameters that were reported at the site. These parameters include the following:

- Temperature
- Turbidity
- Dissolved Oxygen
- Total Ammonia
- TDS
- Specific Conductance
- pH
- Nitrate
- Chloride
- Sodium
- Copper
- Iron
- Lead
- Chromium
- Antimony
- Arsenic
- Selenium
- Barium
- Nickel
- Thallium
- Vanadium
- Zinc
- Silver

3.2 GRAPHICAL PRESENTATIONS

Line graphs were prepared comparing levels or concentrations versus time for each of the above parameters for each well (**Figures 14 through 32**).

3.3 DATA EVALUATION

The groundwater quality data collected during the reporting period is discussed with reference to drinking water standards as established in Chapter 62-550 of the FAC, and by monitoring well, where appropriate. Chapter 62-550, FAC, provides Maximum Contaminant Levels (MCLs) for each of the Primary and Secondary Drinking Water Standards set forth in the rule. For parameters

not covered in Chapter 62-550, FAC, references are made to the Groundwater Cleanup Target Levels (GCTLs) established in Chapter 62-777, FAC. In the following sections, the results of the data are discussed with respect to the current guidelines.

3.3.1 Color

Color is a Secondary Drinking Water Standard. The MCL for color is 15 color units. No collected samples from any of the monitoring wells reportedly had colors exceeding this standard during this monitoring period.

3.3.2 Temperature

Temperature is a field parameter, and no MCL or GCTL is established. The temperatures of the samples collected from the monitoring wells ranged from 23.00°C to 25.60°C **(Table 3 and Figure 14)**.

3.3.3 Turbidity

Turbidity is a field parameter, and no MCL or GCTL is established. The turbidity in the monitoring wells ranged from below detection limits (<0.01 Nephelometric Turbidity Units (NTUs)) to 1.20 NTUs **(Table 4 and Figure 15)**.

3.3.4 Dissolved Oxygen

Dissolved oxygen is a field parameter, and no MCL or GCTL is established. Dissolved oxygen concentrations in the monitoring wells ranged from 0.19 milligrams per liter (mg/L) to 0.62 mg/L **(Table 5 and Figure 16)**.

3.3.5 Total Ammonia

The current GCTL for total ammonia is 2.8 mg/L. Total ammonia concentrations in the monitoring wells ranged from below detection limits to 2.61 mg/L; concentrations which are below the GCTL **(Table 6 and Figure 17)**.

3.3.6 Total Dissolved Solids

The current MCL for TDS, a Secondary Drinking Water Standard, is 500 mg/L. The TDS concentrations in the monitoring wells ranged from 154 mg/L to 420 mg/L throughout the reporting period; concentrations which are below the MCL (**Table 7 and Figure 18**).

3.3.7 Specific Conductance

Specific conductance is an indicator field parameter, and no MCL or GCTL is established. There are often direct correlations of specific conductance to other parameters. Specific conductance levels in the monitoring wells ranged from 266 micromhos per centimeter (µmhos/cm) to 554 µmhos/cm throughout the reporting period (**Table 8 and Figure 19**).

3.3.8 pH

The established acceptable range for pH values in drinking water is between values of 6.5 standard units (su) and 8.5 su. Outside this range, drinking water quality is considered to be too acidic or basic, respectively. The values for pH, as recorded in the field at the time of sampling, are presented in **Table 9 and Figure 20**.

During the entire monitoring period, the pH readings taken at the time of sampling of the monitoring wells ranged from 6.88 su to 7.37 su, which fall within the acceptable range.

3.3.9 Nitrate

The Primary Drinking Water Standard MCL for nitrate is 10 mg/L. The concentrations for all monitoring wells ranged from below the detection limit (<0.02 mg/L) to 0.27 mg/L during the entire monitoring period.

Nitrate results for the monitoring wells are presented in **Table 10 and Figure 21**.

3.3.10 Chlorides

The current Secondary Drinking Water Standard MCL for chloride is 250 mg/L. The maximum concentration recorded from the samples was 82.40 mg/L in monitoring well 4MW-3A during the August 2004 sampling event. Chloride analytical data are presented in **Table 11 and Figure 22.**

3.3.11 Sodium

The established Primary Drinking Water Standard MCL for sodium (160 mg/L) was not exceeded for any of the samples analyzed throughout the entire monitoring period **(Table 12 and Figure 23).** The maximum recorded value was 28.40 mg/L, recorded in the sample from monitoring well 4MW-3A during the February 2005 sampling event.

3.3.12 Copper

The established Secondary Drinking Water Standard MCL for copper (1 mg/L) was not exceeded for any of the samples analyzed throughout the entire monitoring period **(Table 13 and Figure 24).** The majority of the results were reported at or below detection levels. A maximum recorded value of 0.0013 mg/L was recorded in the sample collected from monitoring well 4MW-7 during the March 2004 sampling event.

3.3.13 Iron

The current Secondary Drinking Water Standard MCL for iron is 0.3 mg/L. The iron concentration (0.3 mg/L) exceeded the MCL in the sample collected from monitoring well 4MW-3A during the August 2004 sampling event.

Groundwater iron concentrations are presented in **Table 14 and Figure 25.**

3.3.14 Lead

The current Primary Drinking Water Standard MCL for lead is 0.015 mg/L. Lead concentrations were reported below the detection limit (<0.0018 mg/L and <0.0022 mg/L) in all the samples collected during the entire monitoring period.

Groundwater lead concentrations are presented in **Table 15**.

3.3.15 Chromium

The established Primary Drinking Water Standard MCL for chromium (0.1 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. Chromium concentrations ranged from below the detection limit (<0.00060 mg/L) to 0.00071 mg/L.

Groundwater chromium concentrations are presented in **Table 16 and Figure 26**.

3.3.16 Antimony

The established Primary Drinking Water Standard MCL for antimony (0.006 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. Antimony concentrations ranged from below the detection limit (<0.00035 mg/L and <0.00040 mg/L) to a maximum recorded value of 0.00058 mg/L.

Groundwater antimony concentrations are presented in **Table 17 and Figure 27**.

3.3.17 Arsenic

The established Primary Drinking Water Standard MCL for arsenic (0.01 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations ranged from below the detection limit (<0.0020 mg/L and <0.0028 mg/L) to 0.0038 mg/L.

Groundwater arsenic concentrations are presented in **Table 18 and Figure 28**.

3.3.18 Selenium

The established Primary Drinking Water Standard MCL for selenium (0.05 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. Selenium concentrations were reported below the detection limit ((<0.0031 mg/L and <0.0040 mg/L) in all the samples collected during the entire monitoring period.

Groundwater selenium concentrations are presented in **Table 19**.

3.3.19 Barium

The established Primary Drinking Water Standard MCL for barium (2 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations ranged from 0.0057 mg/L to 0.016 mg/L during the entire monitoring period.

Groundwater barium concentrations are presented in **Table 20 and Figure 29**.

3.3.20 Nickel

The established Primary Drinking Water Standard MCL for nickel (0.1 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations ranged from below the detection limit (<0.001 mg/L and <0.002 mg/L) to 0.0012 mg/L.

Groundwater nickel concentrations are presented in **Table 21 and Figure 30.**

3.3.21 Thallium

The established Primary Drinking Water Standard MCL for thallium (0.002 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations were below the detection limit (<0.00012 mg/L and <0.00025 mg/L).

Groundwater thallium concentrations are presented in **Table 22**.

3.3.22 Vanadium

The established GCTL for vanadium (0.049 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations ranged from below the detection limit (<0.0004 mg/L and <0.00073 mg/L) to 0.0024 mg/L.

Groundwater vanadium concentrations are presented in **Table 23 and Figure 31**.

3.3.23 Zinc

The established Secondary Drinking Water Standard MCL for zinc (5 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations ranged from below the detection limit to 0.0035 mg/L during the entire monitoring period.

Groundwater zinc concentrations are presented in **Table 24 and Figure 32**.

3.3.24 Silver

The established Secondary Drinking Water Standard MCL for silver (0.1 mg/L) was not exceeded in any of the samples analyzed throughout the entire monitoring period. The reported concentrations were below the detection limit during the entire monitoring period.

Groundwater silver concentrations are presented in **Table 25**.

3.3.25 Other Metals

Beryllium was detected in 4MW-3A (0.00018 mg/L), 4MW-7 (0.00022 mg/L), 4MW-8 (0.00019 mg/L) and 4MW-9 (0.00020 mg/L) during the August 2004 monitoring event. The detected concentrations did not exceed the beryllium Primary Drinking Water Standard MCL of 0.004 mg/L. Cobalt was detected in the sample from monitoring well 4MW-3A (0.0024 mg/L) during the September 2005 monitoring event. The detected concentration did not exceed the cobalt GCTL of

0.42 mg/L. Additionally, the maximum recorded value for mercury was detected in the sample from monitoring well 4MW-3A (0.001 mg/L) during the August 2004 monitoring event. The detected concentration did not exceed the mercury Primary Drinking Water Standard MCL of 0.002 mg/L.

3.3.26 Organic Parameters

No organic parameters tested for were detected above the method detection limit during the entire monitoring period.

4.0 LEACHATE DATA

4.1 DATA TABULATION

The County Lab collected and analyzed samples from both of the holding tanks (Tank #1 and Tank #2) on a semi-annual basis in 2004, and on a annual basis in 2005 and 2006. The parameters pH, dissolved oxygen, bicarbonate, chloride, specific conductance, ammonia nitrogen, nitrate, and total dissolved solids are tabulated in **Table 26**. Metal parameters are tabulated in **Table 27**, and organic parameters are tabulated in **Table 28**.

Note: During the March 2004 sampling event, Tank #2 was dry and was not sampled. On November 1, 2004, leachate samples were collected from Tank #2 and were analyzed for Appendix II parameters listed in 40 CFR Part 258.

4.2 DATA EVALUATION

The data collected during the reporting period is discussed with reference to hazardous waste regulatory levels defined in 40 CFR Part 261.24, where appropriate. For parameters not covered in 40 CFR Part 261.24, references are made to the MCLs established in Chapter 62-550, FAC. If neither a hazardous waste regulatory level nor MCL is established for a given parameter, reference is made to GCTLs established in Chapter 62-777, FAC. MCLs and GCTLs are used only as a reference and should not be used to evaluate contaminant concentrations of leachate. In the following sections, the results of the data are discussed with respect to the current guidelines.

4.2.1 Color

In Tank #1, the color of samples collected during August 2004, was identified as tan. In March 2005, the colors of the samples were cloudy.

In Tank #2, the color of samples collected during August 2004, was identified as tan. In March 2005, the colors of the samples were cloudy.

4.2.2 pH

The established acceptable range for pH values in drinking water is between values of 6.5 su and 8.5 su. Leachate samples collected from Tank #1 recorded pH 6.47 during March and pH 6.44 during August 2004 sampling events.

4.2.3 Dissolved Oxygen

No hazardous waste regulatory level, MCL or GCTL, is established for dissolved oxygen. Dissolved oxygen concentrations in the leachate samples ranged from 0.09 mg/L to 4 mg/L.

4.2.4 Bicarbonate

No hazardous waste regulatory level, MCL or GCTL, is established for bicarbonate. Bicarbonate concentrations in the leachate samples ranged from 290 mg/L to 4,186 mg/L.

4.2.5 Chloride

Leachate samples collected from Tank #1 (March 2004) and Tank #2 (August 2004, March 2005, and March 2006) contained chloride concentrations that exceeded the chloride Secondary Drinking Water Standard MCL of 250 mg/L. Chloride concentrations ranged from 54.8 mg/L to 567 mg/L.

4.2.6 Specific Conductance

Specific conductance is an indicator field parameter, and no hazardous waste regulatory level, MCL, or GCTL is established. Specific conductance ranged from 1,147 µmhos/cm to 3,640 µmhos/cm in Tank #1 and 3,810 µmhos/cm to 9,440 µmhos/cm in Tank #2.

4.2.7 Ammonia Nitrogen

The GCTL for ammonia (2.8 mg/L) was exceeded in the samples collected from Tank #1 and Tank #2 for the entire monitoring period.

In Tank #1, ammonia nitrogen concentrations ranged from 21.7 mg/L to 309 mg/L and in Tank #2, ammonia nitrogen concentrations ranged from 3.91 mg/L to 219 mg/L.

4.2.8 Nitrate

The Primary Drinking Water Standard MCL for nitrate was 10 mg/L. For the monitoring period, nitrate concentration in Tank #1 ranged from below detection limit (<0.03 mg/L) to 0.04 mg/L. In Tank #2, nitrate concentration ranged from below detection limit (<0.02 mg/L) to 1.28 mg/L.

4.2.9 Total Dissolved Solids

The established Secondary Drinking Water Standard MCL for TDS (500 mg/L) was exceeded in the samples collected from Tank #1 and Tank #2 throughout the entire monitoring period.

For the entire monitoring period, in Tank #1, TDS concentrations ranged from 720 mg/L to 2,344 mg/L and in Tank #2, the TDS concentrations ranged from 1,860 mg/L to 5,918 mg/L

4.2.10 Metals

Antimony concentrations in the leachate samples collected from Tank #2 were 0.0074 mg/L, 0.0690 mg/L during the August 2004, and March 2006 sampling events, which exceeded the Primary and/or Secondary Drinking Water Standard MCL for antimony (0.006 mg/L).

Arsenic concentrations in the leachate samples collected from Tank #1 were 0.084 mg/L, 0.048 mg/L, 0.073 mg/L and 0.16 mg/L during the March 2004, August 2004, March 2005, and March 2006 sampling events. In Tank #2, arsenic concentrations in the leachate samples were 0.027 mg/L, 0.03 mg/L, 0.011 mg/L, and 0.12 mg/L during the March 2004, August 2004, March 2005, and March 2006 sampling events. Above reported arsenic concentrations in Tank #1 and Tank #2 exceeded their respective Primary and/or Secondary Drinking Water Standard MCL for arsenic (0.01 mg/L).

Iron concentrations in the leachate samples collected from Tank #1 were 0.46 mg/L, 0.34 mg/L, 0.73 mg/L, and 0.42 mg/L during the March 2004, August 2004, March 2005, and March 2006

sampling events. In Tank #2, iron concentrations in leachate samples were 9.71 mg/L, 5.63 mg/L, and 1.78 mg/L during the August 2004, March 2005, and March 2006 sampling events. Above reported iron concentrations in Tank #1 and Tank #2 exceeded their respective Primary and/or Secondary Drinking Water Standard MCL for iron (0.03 mg/L).

Sodium concentration in the leachate samples collected from Tank #1 was 277 mg/L during the March 2006 sampling event. In Tank #2, sodium concentrations were 582 mg/L, 370 mg/L, and 2,330 mg/L during the August 2004, March 2005, and March 2006 sampling events. Above reported sodium concentrations exceeded their respective Primary and/or Secondary Drinking Water Standard MCL for sodium (160 mg/L).

Measurable levels of barium, beryllium, cadmium, chromium, cobalt, copper, lead, nickel, selenium, silver, thallium, tin, vanadium, and zinc were reported in one or more samples collected from the leachate collection tanks. However, none of the samples reportedly had concentrations in excess of their respective hazardous waste regulatory level, MCL, or GCTL for any of these parameters. None of the samples collected from the tanks reported concentrations of mercury above detection limits.

4.2.11 Organic Parameters

Leachate was analyzed for select parameters in 40 CFR Part 258, Appendix II, which includes parameters not included in 40 CFR Part 258, Appendix I groundwater analytic suite. A few of these parameters were reported in concentrations above their method detection limit. Additionally, 2 of these parameters, including benzene and Bis(2-ethylhexyl)phthalate, were reported in concentrations that exceed their respective GCTL or MCL.

In Tank #1, benzene concentrations in the leachate samples collected were 4.90 microgram/liter (µg/L) (March 2004), 2.10 µg/L (August 2004), 1.10 µg/L (March 2005), and 2.6 µg/L (March 2006). In Tank #2, benzene concentrations in the leachate samples collected were 1.90 µg/L (March 2004), 1.30 µg/L (March 2005), and 1.2 µg/L (March 2006). Above reported benzene concentrations in Tank #1 and Tank #2 exceeded the benzene GCTL of 1 µg/L.

Bis(2-ethylhexyl)phthalate concentrations in the leachate samples collected from Tank #2 were 8.60 µg/L (March 2004) and 8.90 µg/L (March 2005), which exceeded the Bis(2-ethylhexyl)phthalate MCL of 6 µg/L.

In Tank #1, hydrogen sulfide concentrations in the leachate samples collected were 24 mg/L, and 7.3 mg/L during the March 2004 and March 2006 sampling events. In Tank #2, hydrogen sulfide concentrations in the leachate samples collected was 31 mg/L during the March 2006 sampling event. Above reported hydrogen sulfide concentrations in Tank #1 and Tank #2 exceeded the hydrogen sulfide GCTL of 0.021 mg/L. Of note, hydrogen sulfide concentrations in the samples collected from Tank #1 (<0.54 mg/L, March 2004) and Tank #2 (<0.32 mg/L, March 2004 and March 2005), were below the laboratory detection limit. These detection limits are above the established GCTL of 0.021 mg/L; therefore, it cannot be determined if these sample concentrations exceeded the GCTL during these monitoring events.

No other organic parameters tested for had reported concentrations greater than their respective MCL or GCTL.

4.2.12 Miscellaneous Parameters

Leachate samples collected from Tank #1 and Tank #2 were analyzed for phenol and 3-4 methylphenol. Phenol concentrations were reported to be above the MDL in the leachate samples collected from Tank #1 (5.3 µg/L) and Tank #2 (5.3 µg/L) during the March 2005 sampling event. The reported phenol concentrations do not exceed the phenol GCTL of 10 µg/L.

The 3-4 methylphenol concentrations were reported to be above the MDL in the leachate samples collected from Tank #2 (25 µg/L) during the resampling event on November 2004. The reported 3-4 methylphenol concentrations did not exceed the 3-4 methylphenol GCTL of 35 µg/L.

The 1,2-Dibromo-3-chloropropane concentration was reported to be 0.021 mg/L in the leachate samples collected from Tank #1 during the March 2004 sampling event. The reported 1,2-Dibromo-3-chloropropane concentrations exceeded its respective GCTL of 0.0002 mg/L. Of note, 1,2-Dibromo-3-chloropropane concentration detection limits are above the established GCTL of 0.0002 mg/L.

5.0 GROUNDWATER MONITORING PLAN REVIEW

5.1 SAMPLING LOCATIONS

As noted, 5 shallow wells (2MW-3A, 2MW-7, 2MW-8, 2MW-9, and 2MW-10) are included in the Groundwater Monitoring Plan; however, these wells have been dry since 1995. As such, it appears that these wells do not provide useful groundwater quality data for the implementation of this plan; nevertheless, monitoring of these wells should continue, and in the event the water levels in the wells increase, sampling of the wells will be reinstated.

Based on the groundwater quality data collected at the landfill during this monitoring period, the current Groundwater Monitoring Plan appears adequate.

5.2 MONITORING FREQUENCY

The groundwater monitoring wells are currently sampled and analyzed semi-annually. This sampling frequency appears adequate, based on the estimated groundwater flow velocity presented herein (approximately nine ft/yr).

6.0 SUMMARY AND RECOMMENDATIONS

Included below is a summary of pertinent data collected during this reporting period:

Groundwater Monitoring

- Using the data available, it was estimated that the regional groundwater flow was northwesterly in the Floridan Aquifer.
- An average hydraulic gradient in the Floridan Aquifer of 0.00076 was estimated across the site (based on groundwater level data collected in September 2005).
- A groundwater flow velocity of 0.025 ft/day (9 ft/yr) was estimated using the estimated hydraulic conductivity of 10 ft/day.
- Iron concentrations recorded in monitoring well 4MW-3A exceeded the MCL during the August 2004 sampling event.
- No other exceedences of any Primary or Secondary Drinking Water Standards were reported in groundwater samples collected.

Leachate Monitoring

- pH of leachate samples collected from Tank #1 was below the established acceptable pH range for drinking water.
- The Primary Drinking Water Standard MCL for Chloride was exceeded in the leachate samples collected from Tank #1 (March 2004) and Tank #2 (August 2004, March 2005, and March 2006).
- The GCTL for ammonia was exceeded in the leachate samples collected from Tank #1 and Tank #2 for the entire monitoring period.
- The Secondary Drinking Water Standard MCL for TDS was exceeded in samples collected from leachate Tank #1 and Tank #2 for the entire monitoring period.
- Iron concentrations in the leachate samples collected from Tank #1 and Tank #2 exceeded their respective MCL for iron (0.03 mg/L) for all the sampling events.
- Arsenic concentrations in the leachate samples collected from Tank #1 and Tank #2 exceeded their respective GCTL for arsenic (0.01 mg/L) during March 2004, August 2004, March 2005 and March 2006 sampling events.
- Antimony concentrations (0.0074 mg/L, 0.0690 mg/L) in the leachate samples collected from Tank #2 exceeded their respective MCL for antimony (0.006 mg/L) during the August 2004, and March 2006 sampling events.

- Sodium concentrations exceeded their respective MCL for sodium (160 mg/L) in the leachate samples collected from Tank #1during March 2004 sampling event and in Tank#2 during the August 2004, March 2005, and March 2006 sampling events.
- Hydrogen sulfide concentrations exceeded the hydrogen sulfide GCTL of 0.021 mg/L in the leachate samples collected from Tank #1 during the March 2004 and March 2006 sampling events and in Tank #2 during March 2006 sampling event.
- Benzene concentration in the leachate samples collected from Tank #1 and Tank #2 exceeded its respective GCTL of 1 µg/L for all the sampling events except for Tank #2 during August 2004 sampling event.
- Bis(2-ethylhexyl)phthalate concentrations in the leachate samples collected from Tank #2 during the March 2004 and March 2005 sampling events exceeded its respective MCL of 6 µg/L.

Based upon the above information, MACTEC recommends the following future actions:

- When achievable, contracted analytical laboratories should be advised to at least use a method detection limit equivalent to the MCL or GCTL for all parameters tested (i.e., hydrogen sulfide, and 1,2-Dibromo-3-chloropropane).
- Based upon the laboratory data summarized herein, the current monitoring plan, which includes semi-annual groundwater sampling and analyses, appears adequate at this time.

TABLES

Table 1
Summary of Monitoring Well Construction Details
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Well Construction Date	Well #	Elevation (feet NGVD)						Monitored Aquifer	Screen/ Open Hole Length (ft)	Total Depth (ft bls)	Location		Notes
		Top of Casing	Approx. Ground Elevation	Top of Screen	Bottom of Screen	Maximum Water Level	Minimum Water Level				Northing	Easting	
4/17/1992	2MW-3A					NA	NA	Surficial	20-40	40			2"-diameter screen
2/20/1990	2MW-7	51.38	48.3	6	12	NA	NA	Surficial	7-12	12	1468153.54	317092.57	2"-diameter screen
4/12/1992	2MW-8	52.16	49.5			NA	NA	Surficial	7-12	13	1468637.26	316386.11	2"-diameter screen
2/27/1990	2MW-9	51.30	48.8	4	11	NA	NA	Surficial	5-10	11	1469123.35	317146.98	2"-diameter screen
2/27/1990	2MW-10	53.38	49.8	5	12	NA	NA	Surficial	6-11	12	1468858.05	316557.34	2"-diameter screen
4/17/1992	4MW-3A	54.00	50.6	20	40	35.40	22.40	Floridan	10-0	40			4"-diameter screen
3/2/1990	4MW-7	50.38	47.3	20	50	33.30	22.59	Floridan		50	1468153.38	317102.97	4"-diameter screen
3/2/1990	4MW-8	51.50	49.5	32	65	34.78	24.28	Floridan		65	1468626.63	316385.85	4"-diameter screen
3/2/1990	4MW-9	51.88	48.8	30	60	33.80	22.28	Floridan		60	1469122.98	317156.34	4"-diameter screen

Prepared By: RRK 6/02/06
Reviewed By: TB 8/2/06

Notes:
= Data not available
NA = Not Applicable
NGVD = National Geodetic Vertical Datum of 1929

Table 2
Summary of Groundwater Elevation Data
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8	36.41	35.66	34.75	34.54	
2MW-9		39.57			
2MW-10		39.23			
4MW-3A	35.80	34.81	34.07	32.60	29.45
4MW-7	33.75	32.98	32.06	30.86	28.00
4MW-8	35.75	34.93	33.98	32.77	29.89
4MW-9	34.24	33.28	32.48	31.05	27.99

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
All measurements in feet, relative to the National Geodetic Vertical Datum of 1929.

Table 3
Summary of Temperature Levels
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	23.80	25.10	23.30	23.72	23.44
4MW-7	23.97	25.10	23.30	23.46	23.00
4MW-8	23.64	24.80	23.20	23.38	23.47
4MW-9	23.81	25.60	23.70	23.48	23.53

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
All results in degrees Celsius.

Table 4
Summary of Turbidity Levels
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.01	0.70	0.60	0.10	0.50
4MW-7	0.30	0.20	0.20	0.10	0.90
4MW-8	0.60	0.50	0.40	0.10	0.10
4MW-9	<0.01	1.20	0.30	0.10	0.30

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
All results in Nephelometric Turbidity Units (NTUs).

Table 5
Summary of Dissolved Oxygen Levels
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.46	0.60	0.20	0.22	0.47
4MW-7	0.62	0.30	0.30	0.43	0.39
4MW-8	0.38	0.20	0.30	0.29	0.48
4MW-9	0.45	0.20	0.30	0.19	0.43

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
All results in milligrams per liter (mg/L).

Table 6
Summary of Total Ammonia Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.19	2.61	0.22	0.15	0.21
4MW-7	<0.08	<0.08	<0.08	0.05	0.20
4MW-8	<0.08	<0.08	<0.08	0.04	0.12
4MW-9	<0.08	<0.08	<0.08	0.04	0.07

Prepared By: RRK 7/26/06
Reviewed By: TTS 8/2/06

Notes:
= Well Dry/Too Low to Sample
Groundwater Cleanup Target Level (GCTL) = 2.8 mg/L (Chapter 62-777, FAC)
All results in milligrams per liter (mg/L).

Table 7
Summary of Total Dissolved Solids Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	390	404	420	230	250
4MW-7	174	176	190	192	180
4MW-8	202	200	202	154	188
4MW-9	244	260	244	214	210

Prepared By: RRK 7/26/06
Reviewed By: TJB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 500 mg/L (Chapter 62-550, FAC)
All results in milligram per liter (mg/L)

Table 8
Summary of Specific Conductance Levels
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	533	546	554	534	387
4MW-7	268	268	271	269	266
4MW-8	309	312	312	307	296
4MW-9	354	358	358	352	340

Prepared By: RRK 7/26/06
Reviewed By: TTB 8/2/06

Notes:
= Well Dry/Too Low to Sample
All results in micromhos per centimeter (umhos/cm)

Table 9
Summary of pH Levels
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	7.15	6.95	7.16	7.13	7.04
4MW-7	7.31	7.08	7.37	7.28	7.27
4MW-8	7.17	6.93	7.25	7.17	7.10
4MW-9	7.13	6.88	7.19	7.14	7.09

Prepared By: RRK 7/26/06
Reviewed By: JB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 6.5 to 8.5 standard units (Chapter 62-550, FAC)
All results in Standard Units

Table 10
Summary of Nitrate Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.03	<0.03	<0.03	<0.02	<0.02
4MW-7	<0.03	<0.03	<0.03	<0.02	<0.02
4MW-8	<0.03	<0.03	<0.03	<0.02	<0.02
4MW-9	0.27	0.20	<0.03	<0.02	0.16

Prepared By: RRK 7/26/06
Reviewed By: JJ 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 10 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 11
Summary of Chloride Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	73.70	82.40	81.70	70.50	31.50
4MW-7	9.85	9.50	11.60	18.00	13.90
4MW-8	8.23	10.30	7.96	13.20	7.53
4MW-9	19.60	17.10	21.90	24.50	20.30

Prepared By: RRK 7/26/06
Reviewed By: TJB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 250 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 12
Summary of Sodium Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	24.50	27.70	28.40	25.10	12.20
4MW-7	3.64	3.85	3.86	3.43	4.09
4MW-8	3.98	4.47	4.33	3.77	4.35
4MW-9	5.43	5.86	6.31	5.79	6.71

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 160 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 13
Summary of Copper Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.00096	<0.00058	<0.00047	<0.00047	<0.00047
4MW-7	0.0013	<0.00058	<0.00047	0.00052	<0.00047
4MW-8	0.00098	<0.00058	<0.00047	<0.00047	0.00049
4MW-9	0.00089	<0.00058	<0.00047	<0.00047	<0.00047

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 1 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 14
Summary of Iron Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.18	**0.30**	0.20	0.26	0.22
4MW-7	0.03	0.11	<0.03	0.12	0.05
4MW-8	0.03	0.10	<0.03	0.04	0.03
4MW-9	0.03	0.06	<0.03	0.03	0.03

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.3 mg/L (Chapter 62-550, FAC)
BOLD = concentration exceeds MCL
All results in milligrams per liter (mg/L)

Table 15
Summary of Lead Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.0018	<0.0018	<0.0022	<0.0022	<0.0022
4MW-7	<0.0018	<0.0018	<0.0022	<0.0022	<0.0022
4MW-8	<0.0018	<0.0018	<0.0022	<0.0022	<0.0022
4MW-9	<0.0018	<0.0018	<0.0022	<0.0022	<0.0022

Prepared By: RRK 7/26/06
Reviewed By: JB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.015 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 16
Summary of Chromium Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
4MW-7	0.00071	<0.00060	<0.00060	<0.00060	<0.00060
4MW-8	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060
4MW-9	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060

Prepared By: RRK 7/26/06
Reviewed By: JB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.1 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 17
Summary of Antimony Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.00035	0.00051	<0.00040	<0.00040	<0.00040
4MW-7	<0.00035	0.00052	<0.00040	0.00058	<0.00040
4MW-8	<0.00035	<0.00035	<0.00040	<0.00040	<0.00040
4MW-9	<0.00035	<0.00035	<0.00040	<0.00040	<0.00040

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.006 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 18
Summary of Arsenic Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.0038	<0.0020	<0.0028	<0.0028	<0.0028
4MW-7	<0.0020	<0.0020	<0.0028	<0.0028	<0.0028
4MW-8	<0.0020	<0.0020	<0.0028	<0.0028	<0.0028
4MW-9	<0.0020	<0.0020	<0.0028	<0.0028	<0.0028

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.01 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 19
Summary of Selenium Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.0040	<0.0040	<0.0031	<0.0031	<0.0031
4MW-7	<0.0040	<0.0040	<0.0031	<0.0031	<0.0031
4MW-8	<0.0040	<0.0040	<0.0031	<0.0031	<0.0031
4MW-9	<0.0040	<0.0040	<0.0031	<0.0031	<0.0031

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.05 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 20
Summary of Barium Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.016	0.015	0.016	0.015	0.012
4MW-7	0.0083	0.0062	0.0073	0.0065	0.0073
4MW-8	0.0074	0.0057	0.0066	0.0059	0.0067
4MW-9	0.0092	0.007	0.0076	0.007	0.0077

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 2 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 21
Summary of Nickel Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.002	<0.002	0.0011	0.0012	<0.001
4MW-7	<0.002	<0.002	<0.001	<0.001	<0.001
4MW-8	<0.002	<0.002	<0.001	<0.001	<0.001
4MW-9	<0.002	<0.002	<0.001	<0.001	<0.001

Prepared By: RRK 7/26/06
Reviewed By: TTS 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.1 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 22
Summary of Thallium Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.00025	<0.00025	<0.00012	<0.00012	<0.00012
4MW-7	<0.00025	<0.00025	<0.00012	<0.00012	<0.00012
4MW-8	<0.00025	<0.00025	<0.00012	<0.00012	<0.00012
4MW-9	<0.00025	<0.00025	<0.00012	<0.00012	<0.00012

Prepared By: RRK 7/26/06
Reviewed By: TTB 9/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 0.002 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 23
Summary of Vanadium Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	0.00047	<0.00040	<0.00073	<0.00073	<0.00073
4MW-7	0.0024	0.0019	0.0012	0.0011	0.0014
4MW-8	0.00054	0.0011	<0.00073	<0.00073	0.0012
4MW-9	0.00078	0.00081	<0.00073	<0.00073	<0.00073

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Groundwater Cleanup Target Level (GCTL) = 0.049 mg/L (Chapter 62-777, FAC)
All results in milligrams per liter (mg/L)

Table 24
Summary of Zinc Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.0023	<0.0023	<0.0035	<0.0035	<0.0035
4MW-7	<0.0023	<0.0023	<0.0035	<0.0035	<0.0035
4MW-8	0.0035	0.0025	<0.0035	<0.0035	<0.0035
4MW-9	0.0035	<0.0023	<0.0035	<0.0035	<0.0035

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
= Well Dry/Too Low to Sample
Maximum Contaminant Level (MCL) = 5 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 25
Summary of Silver Analytical Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Monitoring Well ID	03/09/04	08/23/04	02/07/05	09/20/05	03/01/06
2MW-3A					
2MW-7					
2MW-8					
2MW-9					
2MW-10					
4MW-3A	<0.0014	<0.0014	<0.00093	<0.00093	<0.00093
4MW-7	<0.0014	<0.0014	<0.00093	<0.00093	<0.00093
4MW-8	<0.0014	<0.0014	<0.00093	<0.00093	<0.00093
4MW-9	<0.0014	<0.0014	<0.00093	<0.00093	<0.00093

Prepared By: RRK 7/26/06
Reviewed By: TJS 8/2/06

Notes:
= Well Data Not Recorded/Available
Maximum Contaminant Level (MCL) = 0.1 mg/L (Chapter 62-550, FAC)
All results in milligrams per liter (mg/L)

Table 26
Summary of Leachate Parameter Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

pH (MCL 6.5 to 8.5 standard units)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**6.47**	**6.44**	6.80	**6.32**
Tank # 2	Dry	6.92	7.22	7.31
Dissolved Oxygen (mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.15	0.09	1.6	0.19
Tank # 2	Dry	0.8	4.0	0.11
Bicarbonate (mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	819	290	596	1,384
Tank # 2	Dry	556	1,442	4,186
Chloride (MCL 250 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**311**	54.8	95.2	213
Tank # 2	Dry	**368**	**490**	**567**
Specific Conductance (µmhos/cm)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	1,920	1,147	1,670	3,640
Tank # 2	Dry	3,810	3,830	9,440
Ammonia Nitrogen (GCTL 2.8 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**21.70**	**309**	**44.7**	**66.6**
Tank # 2	Dry	**3.91**	**219**	**186**
Nitrate (MCL 10 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.03	<0.03	0.04	0.04
Tank # 2	Dry	1.28	0.26	<0.02
Total Dissolved Solids (MCL 500 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**1,500**	**720**	**1,300**	**2,344**
Tank # 2	Dry	**2,120**	**1,860**	**5,918**

Prepared By: RRK 7/26/06
Reviewed By: TB 8/2/06

Notes:
All results in milligrams per liter (mg/L), unless otherwise noted
Bold = concentration exceeds MCL (Chapter 62-550, FAC) or GCTL (Chapter 62-777, FAC)

Table 27
Summary of Leachate Metal Parameter Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Antimony (MCL 0.006 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.00081	0.00038	0.00063	0.0011
Tank # 2	NA**	**0.0074**	0.0019	**0.069**
Arsenic (Regulatory Level 0.01 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**0.084**	**0.048**	**0.073**	**0.16**
Tank # 2	**0.027****	**0.03**	**0.011**	**0.12**
Barium (Regulatory Level 2 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.1	0.039	0.066	0.20
Tank # 2	0.039**	0.024	0.017	0.049
Beryllium (MCL 0.004 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.00012	0.00022	<0.000056	<0.000056
Tank # 2	<0.000056**	0.00022	<0.000056	<0.000056
Cadmium (Regulatory Level 0.005 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.00024	<0.00024	<0.00034	<0.00034
Tank # 2	<0.00034**	<0.00024	<0.00034	<0.00034
Chromium (MCL 0.1 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.043	0.021	0.029	0.09
Tank # 2	0.0087**	0.012	0.0021	0.06
Cobalt (GCTL 0.14 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.0036	<0.0015	<0.0016	<0.0016
Tank # 2	0.023**	0.0065	0.0075	0.015
Copper (MCL 1 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.0049	<0.00058	<0.00047	0.0017
Tank # 2	0.0014**	<0.00058	0.001	0.0049
Iron (MCL 0.3 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**0.46**	**0.34**	**0.73**	**0.42**
Tank # 2	NA**	**9.71**	**5.63**	**1.78**
Lead (Regulatory Level 0.015 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.0018	<0.0018	0.0022	<0.0022
Tank # 2	<0.0022**	<0.0018	0.0022	<0.0022
Mercury (Regulatory Level 0.002 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.0005	<0.0005	<0.0005	0.000024
Tank # 2	0.000033**	<0.0005	<0.0005	0.000017
Nickel (MCL 0.1 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.003	0.002	<0.001	0.0037
Tank # 2	0.024**	0.013	0.017	0.03
Selenium (Regulatory Level 0.05 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.0040	<0.0040	<0.0031	<0.0031
Tank # 2	<0.0031**	<0.0040	<0.0031	<0.0031

Table 27
Summary of Leachate Metal Parameter Results
2004 - 2006
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Silver (Regulatory Level 0.1 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.0014	<0.0014	<0.00093	<0.00093
Tank # 2	<0.00093**	<0.0014	<0.00093	0.0043
Sodium (MCL 160 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	123	65.7	86.6	**277**
Tank # 2	NA**	**582**	**370**	**2,330**
Thallium (MCL 0.002 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.00072	<0.00025	0.00052	<0.00012
Tank # 2	<0.00012**	<0.00025	<0.00012	<0.00012
Tin (GCTL 4.2 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.0027		<0.0019	<0.0019
Tank # 2	<0.0019**		0.0024	0.046
Vanadium (GCTL 0.049 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.0034	0.0019	0.0024	0.0074
Tank # 2	0.0082**	0.0085	0.0021	0.032
Zinc (MCL 5 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.0023	0.0053	<0.0035	0.0048
Tank # 2	0.0036**	0.0061	<0.0035	0.012

Prepared By: RRK 7/26/06
Reviewed By: TJS 8/2/06

Notes:
All results in milligrams per liter (mg/L), unless otherwise noted
Bold = concentration exceeds Hazardous Waste Regulatory Level (40 CFR Part 261.24), MCL (Chapter 62-550, FAC) or GCTL (Chapter 62-777, FAC)
= Not Analyzed
** Tank #2 was dry and was not sampled in March 2004 sampling event. In November, 2004, Leachate samples were collected analyzed for Appendix II parameters listed in 40 CFR part 258.

Table 28
Summary of Leachate Organic Parameter Results
2004 - 2005
West Pasco Class III Landfill
MACTEC Project 6515-04-0147.05

Acetone (GCTL 6300 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	10	6.9	<3.7	<3.7
Tank # 2	20**	<3.7	<3.7	<3.7
Benzene (GCTL 1 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**4.9**	**2.1**	**1.1**	**2.6**
Tank # 2	**1.9****	<0.23	**1.3**	**1.2**
Bis(2-ethylhexyl)phthalate (MCL 6 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.78		5	4.6
Tank # 2	**8.6****		**8.9**	3.3
2-Butanone (GCTL 4,200 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.29	<1.8	<1.8	<1.8
Tank # 2	11**	<1.8	<1.8	<1.8
Ethylbenzene (MCL 700 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	6.3	7.2	1.1	2.3
Tank # 2	3.6**	0.32	0.61	1.4
Hydrogen Sulfide (mg/L) (GCTL 0.021 mg/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	**24**		<0.32	**7.3**
Tank # 2	<0.54**		<0.32	**31**
Para-dichlorobenzene (MCL 75 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<1.0	<0.19	<0.77	<0.77
Tank # 2	<1.0**	<0.19	<0.77	<0.77
Toluene (MCL 1000 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	1.7	3.0	1.4	2.6
Tank # 2	9.8**	1.6	2.5	2.3
***Total Xylenes* (MCL 10,000 ug/L)**				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	6.30	2.70	1.40	2.7
Tank # 2	14**	0.89	4.10	3
Trichlorofluoromethane (GCTL 2,100 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	0.61	<0.50	<0.50	<0.50
Tank # 2	<0.50**	<0.50	<0.50	<0.50
Vinyl Chloride (Regulatory Level 1 ug/L)				
Leachate Holding Tank	**03/03/04**	**08/24/04**	**03/02/05**	**03/21/06**
Tank # 1	<0.14	<0.43	<0.43	<0.43
Tank # 2	<0.43**	<0.43	<0.43	<0.43

Prepared By: RRK 7/26/06
Reviewed By: TS 8/2/06

Notes:
All results in microgram per liter (µg/L), unless otherwise noted
Bold = concentration exceeds Hazardous Waste Regulatory Level (40 CFR Part 261.24), MCL (Chapter 62-550, FAC) or GCTL (Chapter 62-777, FAC)
= Not Analyzed

** Tank #2 was dry and was not sampled in March 2004 sampling event. In November, 2004, Leachate samples were collected from Tank #2 and were analyzed for Appendix II parameters listed on 40 CFR part 258.

FIGURES

Pasco County, Florida, 3.4 miles SSW of Shady Hills
2001 Aerial Photo from Office of Mike Wells, Pasco County Property Appraiser

Scale: Not Known
Source: http://maps.pascogov.com

Prepared by / Date: RRK 06/26/06
Checked by / Date: JJS 8/2/06

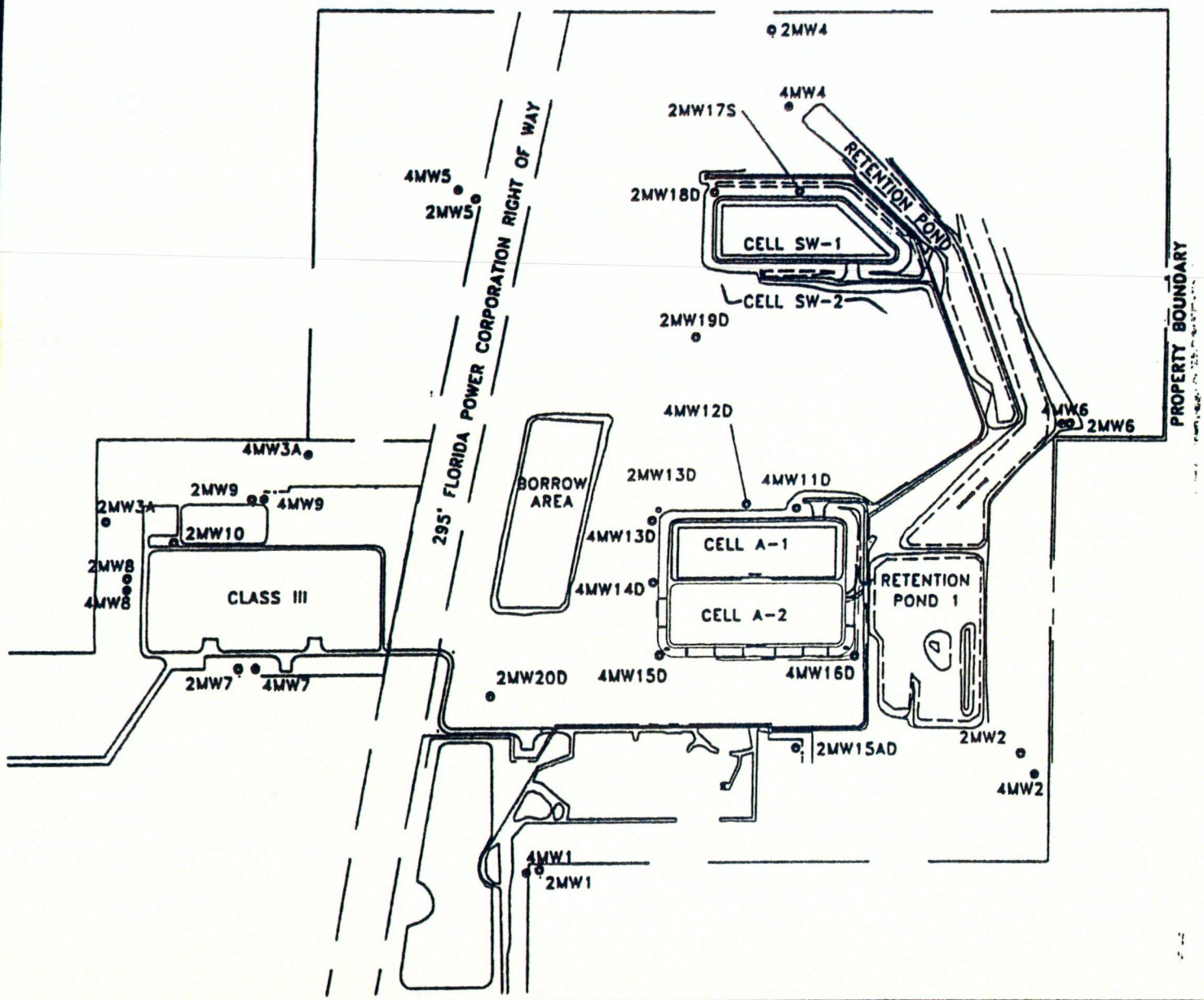
West Pasco Class III Landfill
Pasco County
Board of County Commissioners
Utility Services Branch
Pasco County, Florida

MACTEC

Site Aerial Photograph

6515-04-0147.05

Figure: 1



EXPLANATION

4MW2
- EXISTING 4" PVC FLORIDAN AQUIFER MONITORING WELL AND DESIGNATION

2MW2
- EXISTING 2" PVC SURFICIAL AQUIFER MONITORING WELL AND DESIGNATION

0 1000
Scale In Feet

Prepared/Date: JT 6/07/06
Checked/Date: CJR 6-29-6

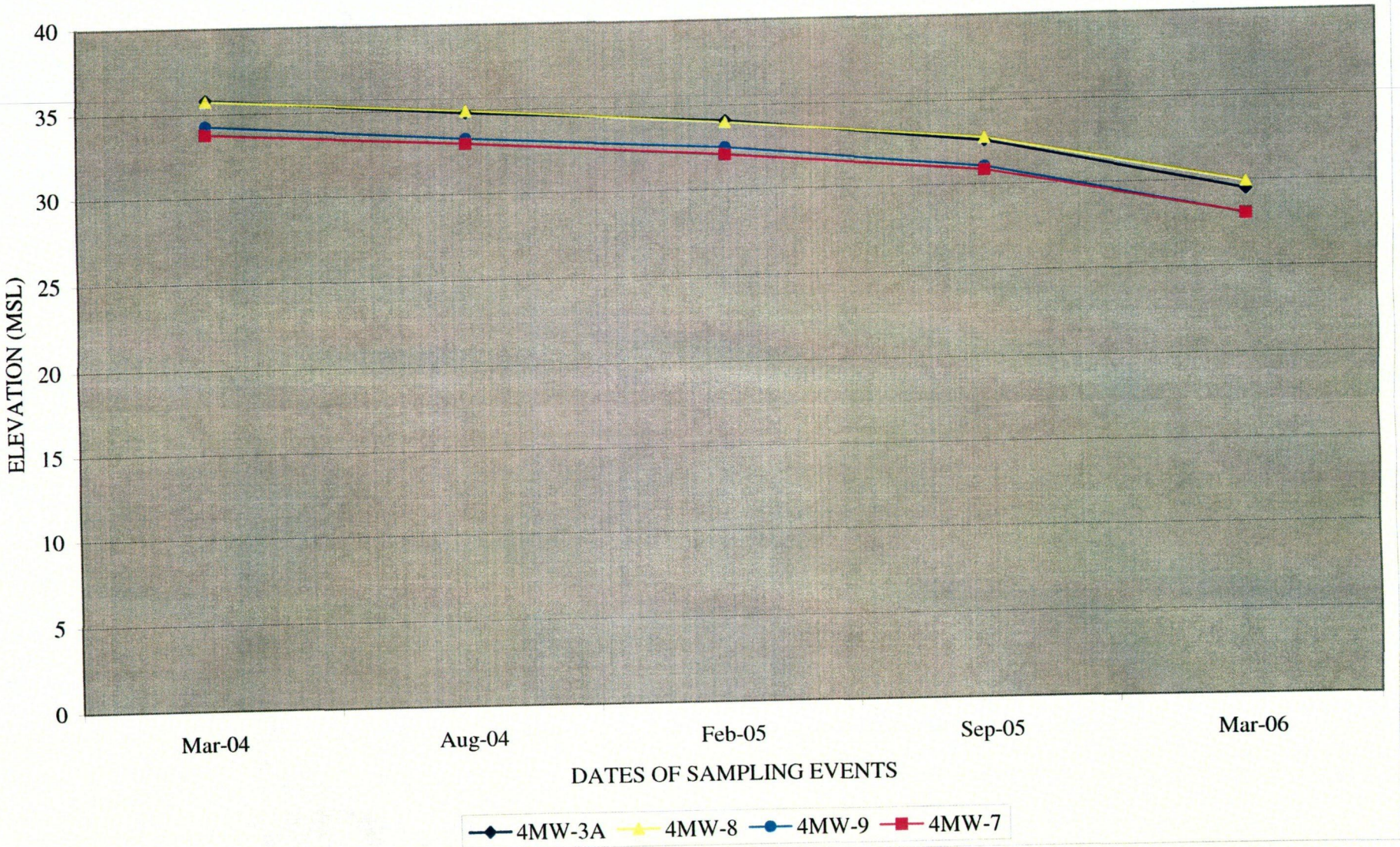
WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

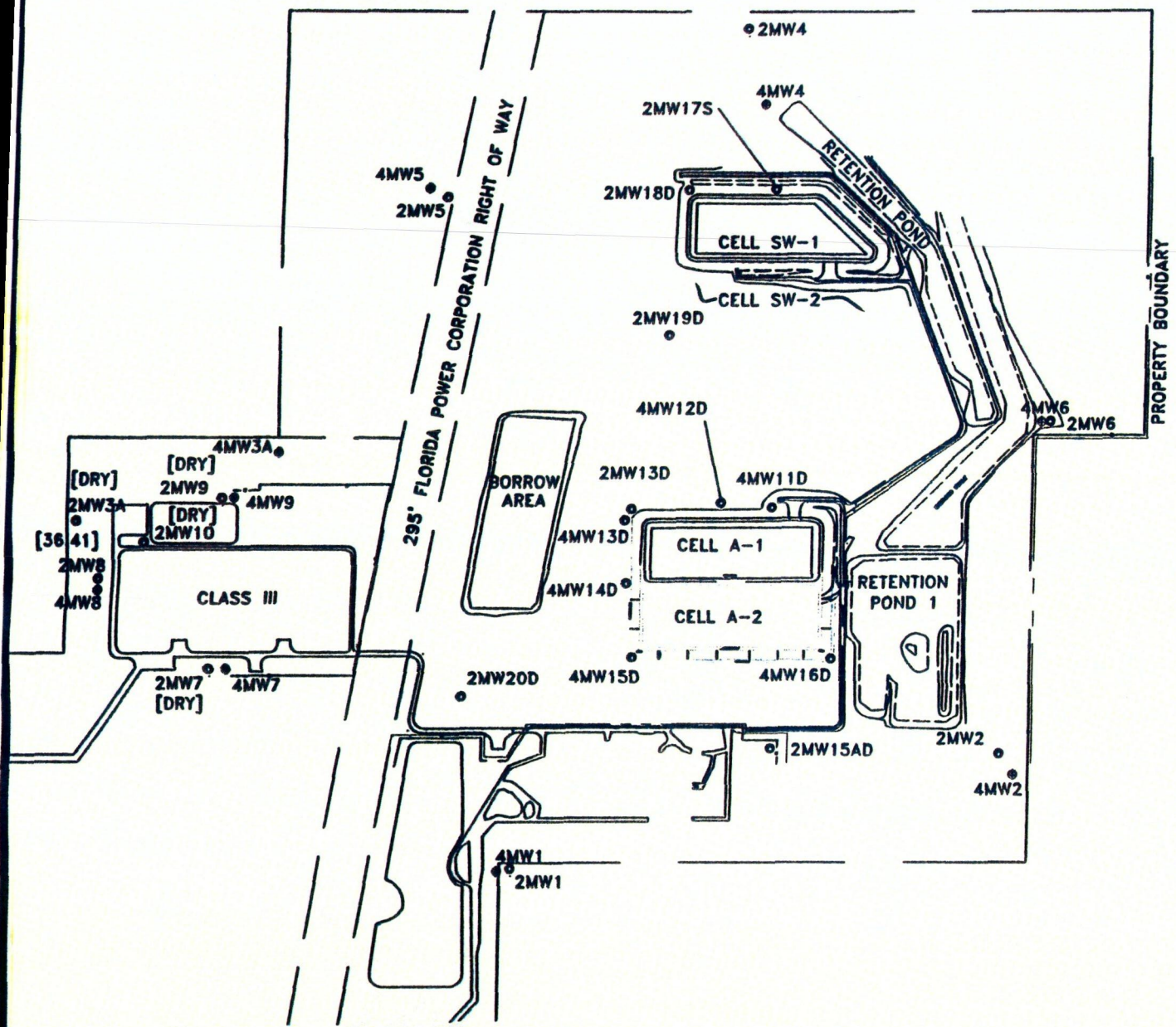
MONITORING WELL LOCATION MAP

Project 6515-04-0147 Figure 2

Figure 3: Monitoring Well Hydrographs



Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06



EXPLANATION

4MW2
- EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
- EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[34.37]
GROUNDWATER ELEVATION (IN FEET, NGVD)

-33.00-
GROUNDWATER CONTOUR LINE

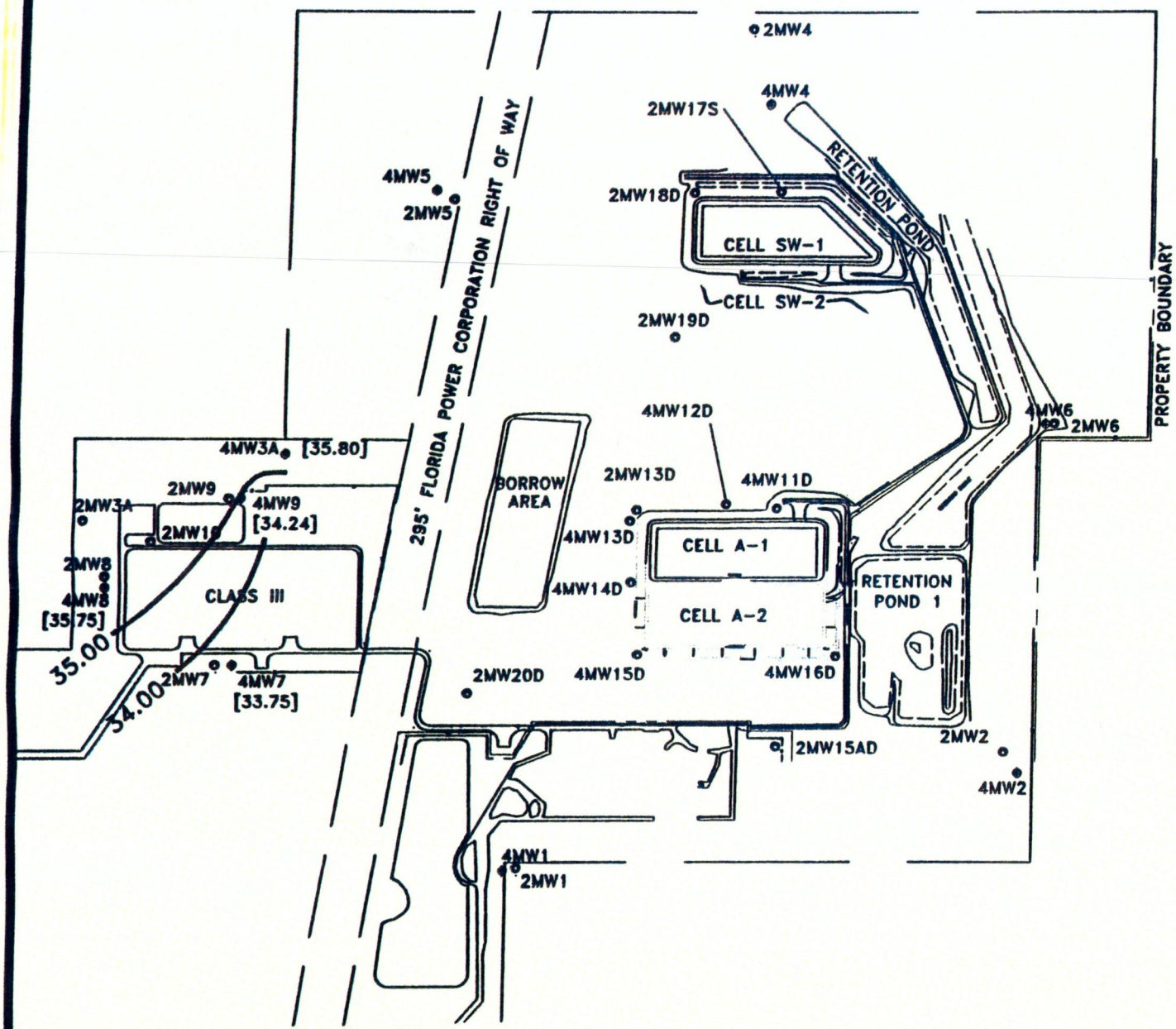
0 1000
Scale In Feet

Prepared/Date: JT 06/07/06
Checked/Date: CJM 6-28-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
SURFICIAL AQUIFER WATER TABLE
YEAR 2004, QUARTER I
APRIL 2004
Project 6515-04-0147 Figure 4



EXPLANATION

4MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[34.37]
GROUNDWATER ELEVATION (IN FEET, NGVD)

-33.75-
GROUNDWATER CONTOUR LINE

0 1000
Scale In Feet

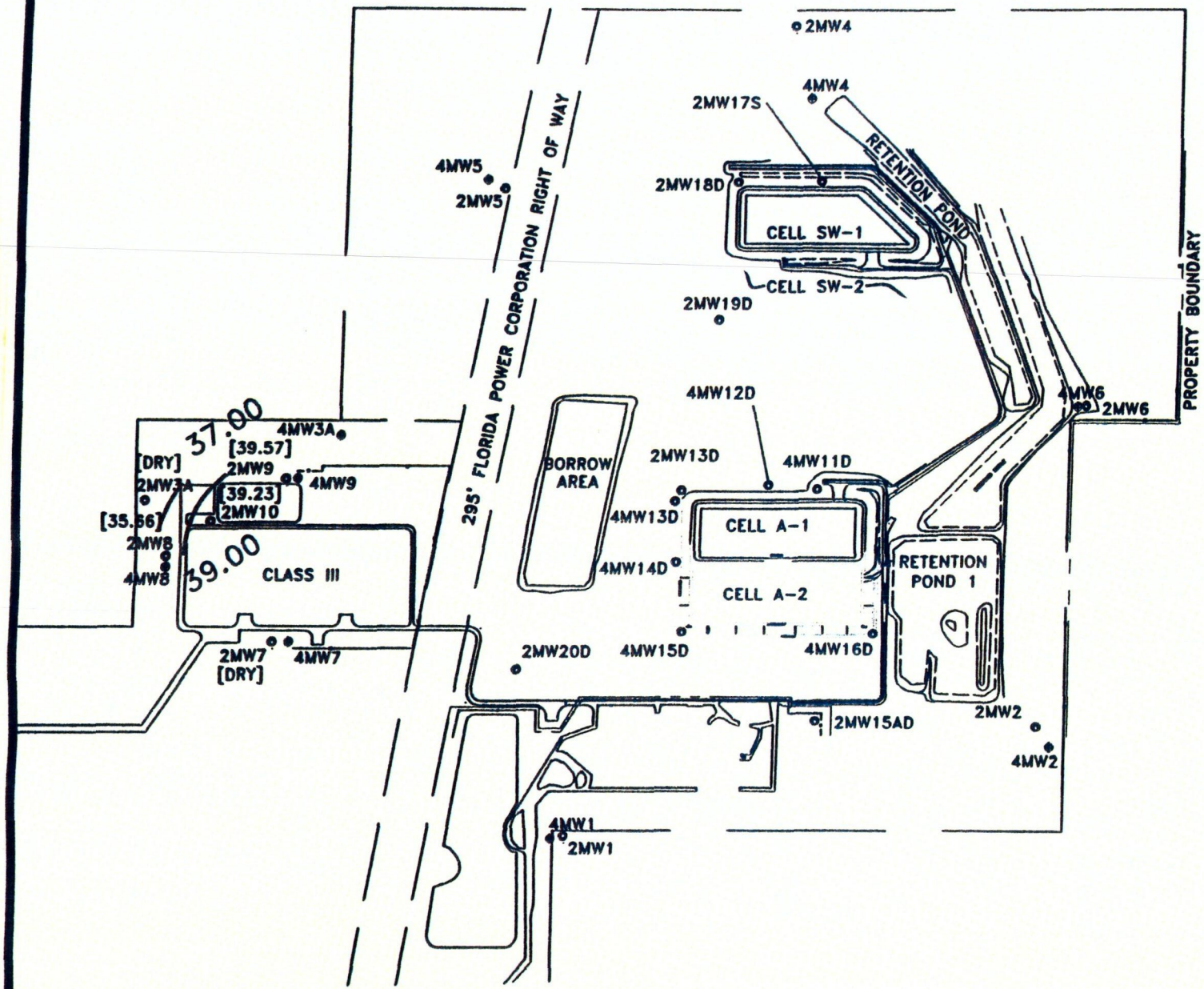
Prepared/Date: JT 06/07/06
Checked/Date: CVL 6-24-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
FLORIDAN AQUIFER POTENTIOMETRIC SURFACE
YEAR 2004, QUARTER I
APRIL 2004

Project 6515-04-0147 Figure 5



EXPLANATION

4MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[35.66]
GROUNDWATER ELEVATION (IN FEET, NGVD)

-37.00-
GROUNDWATER CONTOUR LINE

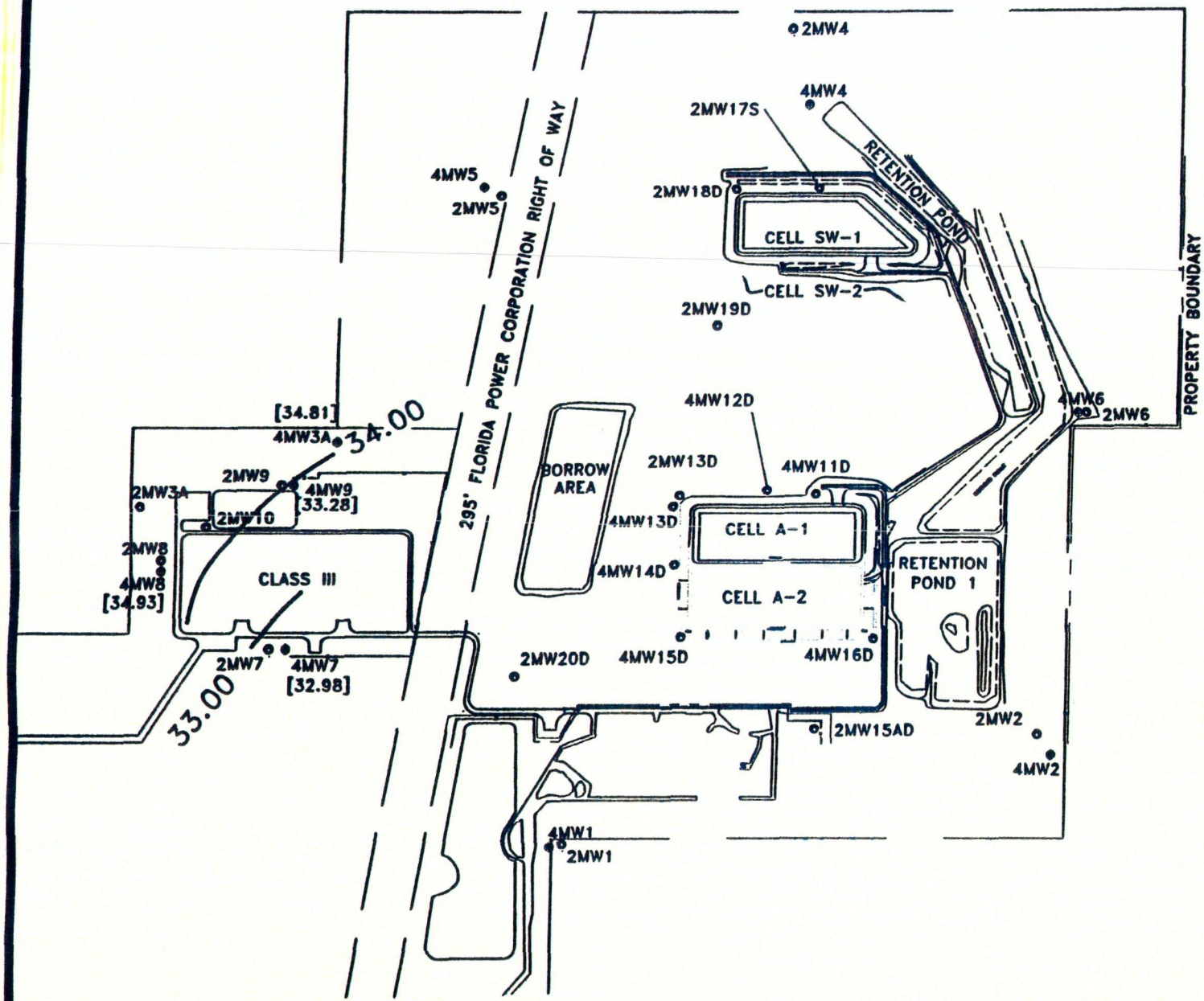
0 1000
Scale In Feet

Prepared/Date: JT 06/07/06
Checked/Date: CMC 6-29-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
SURFICIAL AQUIFER WATER TABLE
YEAR 2004, QUARTER III
AUGUST 2004
Project 6515-04-0147 Figure 6



EXPLANATION

4MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[32.98]
GROUNDWATER ELEVATION (IN FEET, NGVD)

-33.00-
GROUNDWATER CONTOUR LINE

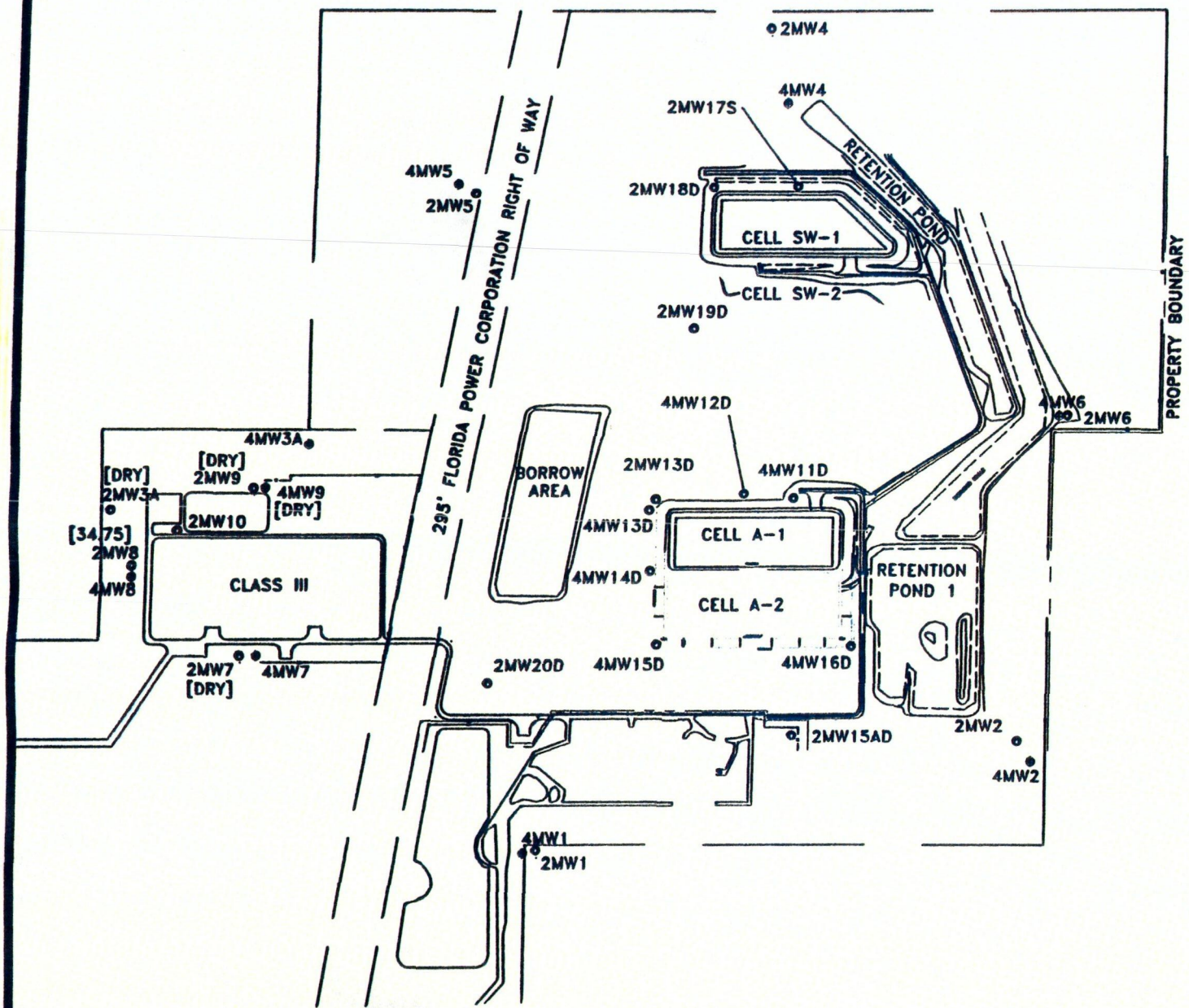
0 1000
Scale In Feet

Prepared/Date: JT 06/07/06
Checked/Date: CJM 6-29-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
FLORIDAN AQUIFER
PIEZOMETRIC SURFACE
YEAR 2004, QUARTER III, AUG 2004
Project 6515-04-0147 Figure 7



EXPLANATION

4MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[35.66]
GROUNDWATER ELEVATION (IN FEET, NGVD)

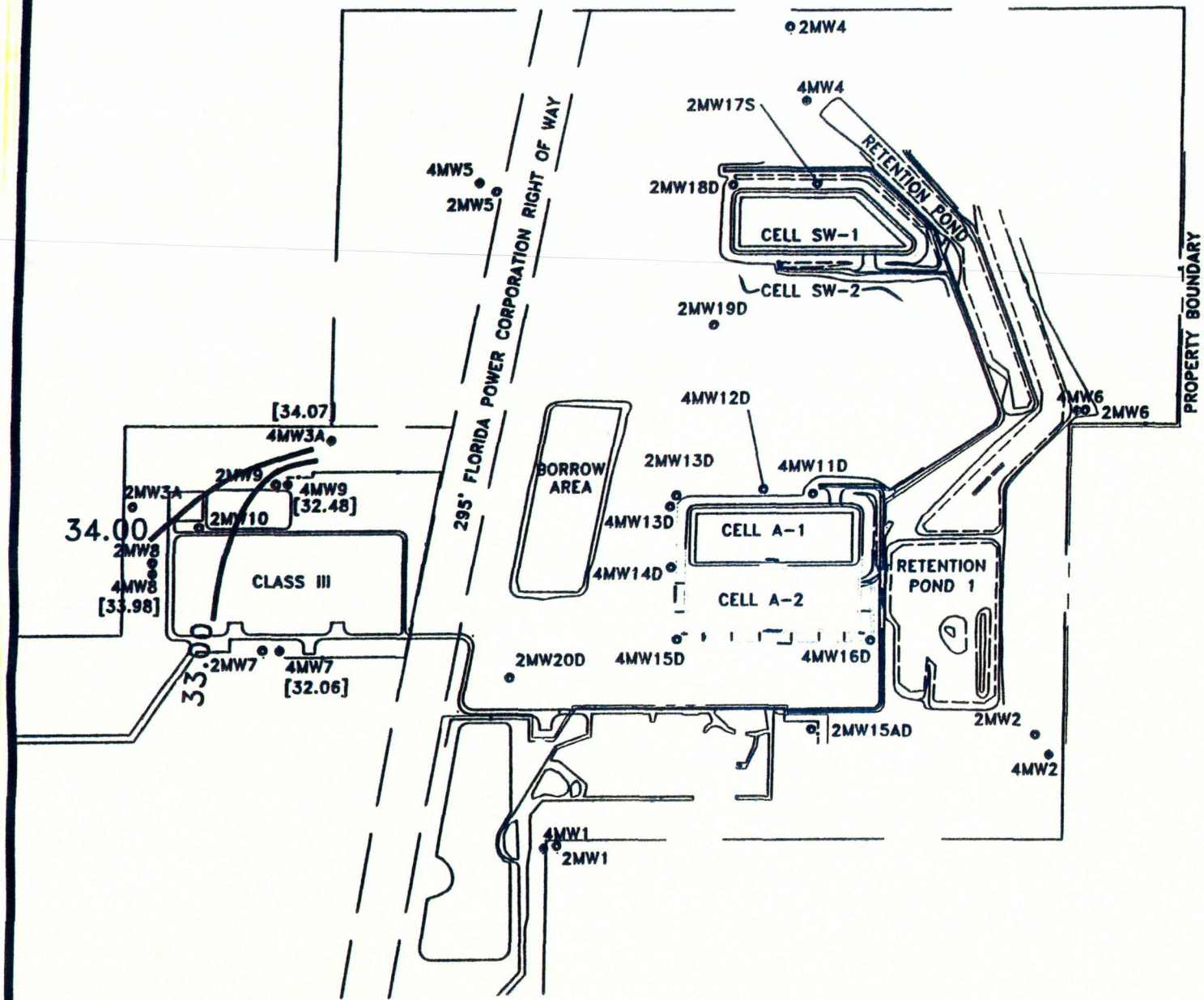
0 1000
Scale In Feet

Prepared/Date: JT 06/07/06
Checked/Date: GR 6-29-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
SURFICIAL AQUIFER WATER TABLE
YEAR 2005, QUARTER I
FEBRUARY 2005
Project 6515-04-0147 Figure 8



EXPLANATION

4MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[32.98]
GROUNDWATER ELEVATION (IN FEET, NGVD)

-33.00-
GROUNDWATER CONTOUR LINE

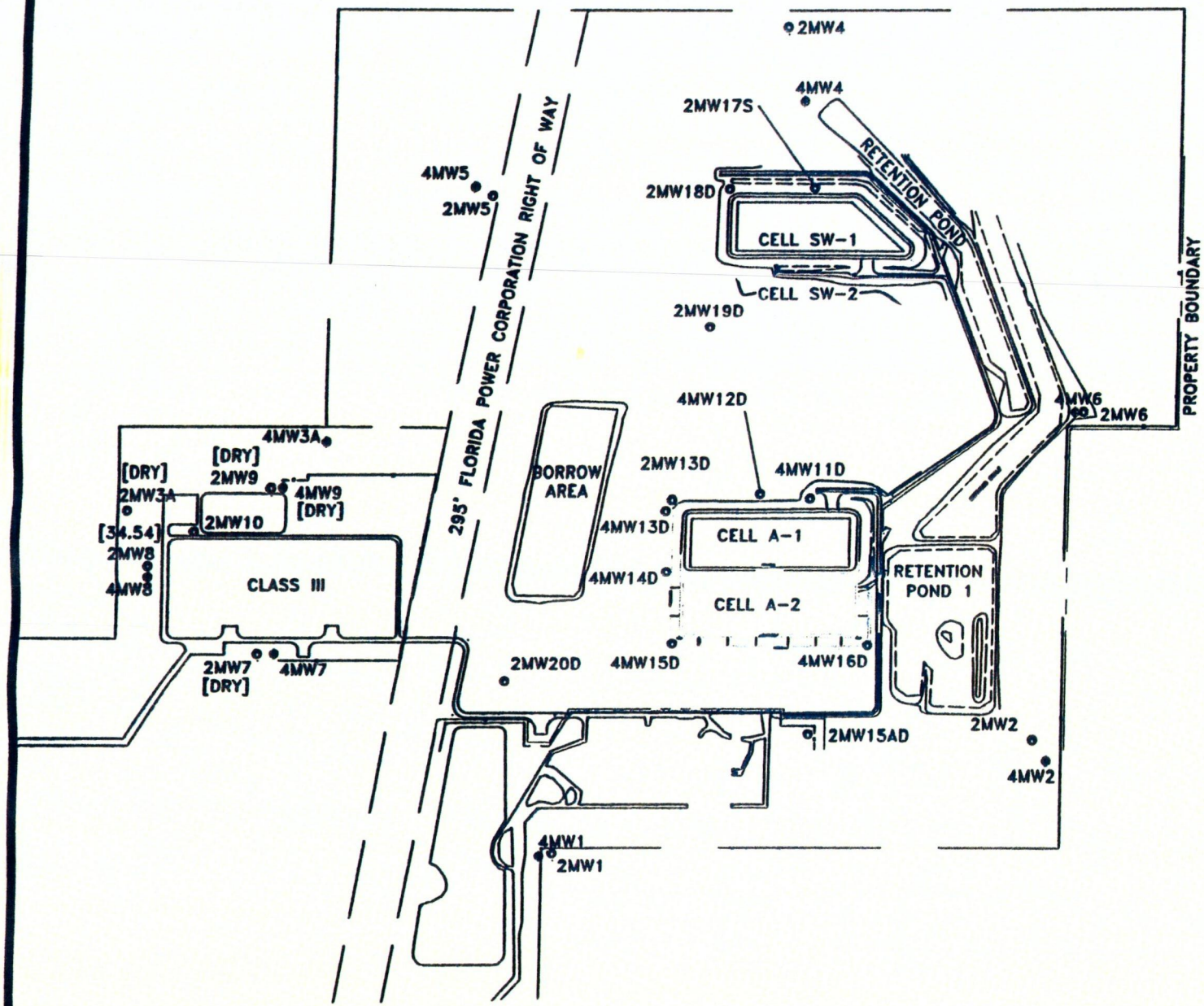
0 1000
Scale In Feet

Prepared/Date: JT 06/07/06
Checked/Date: GR 6-29-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
FLORIDAN AQUIFER
PIEZOMETRIC SURFACE
YEAR 2005, QUARTER I, FEB. 2005
Project 6515-04-0147 Figure 9



EXPLANATION

4MW2
⊕ FLORIDAN AQUIFER MONITORING WELL

2MW2
◎ SURFICIAL AQUIFER MONITORING WELL

(4MW)
4" PVC WELL

(2MW)
2" PVC WELL

[36.21]
GROUNDWATER ELEVATION
(IN FEET, NGVD)

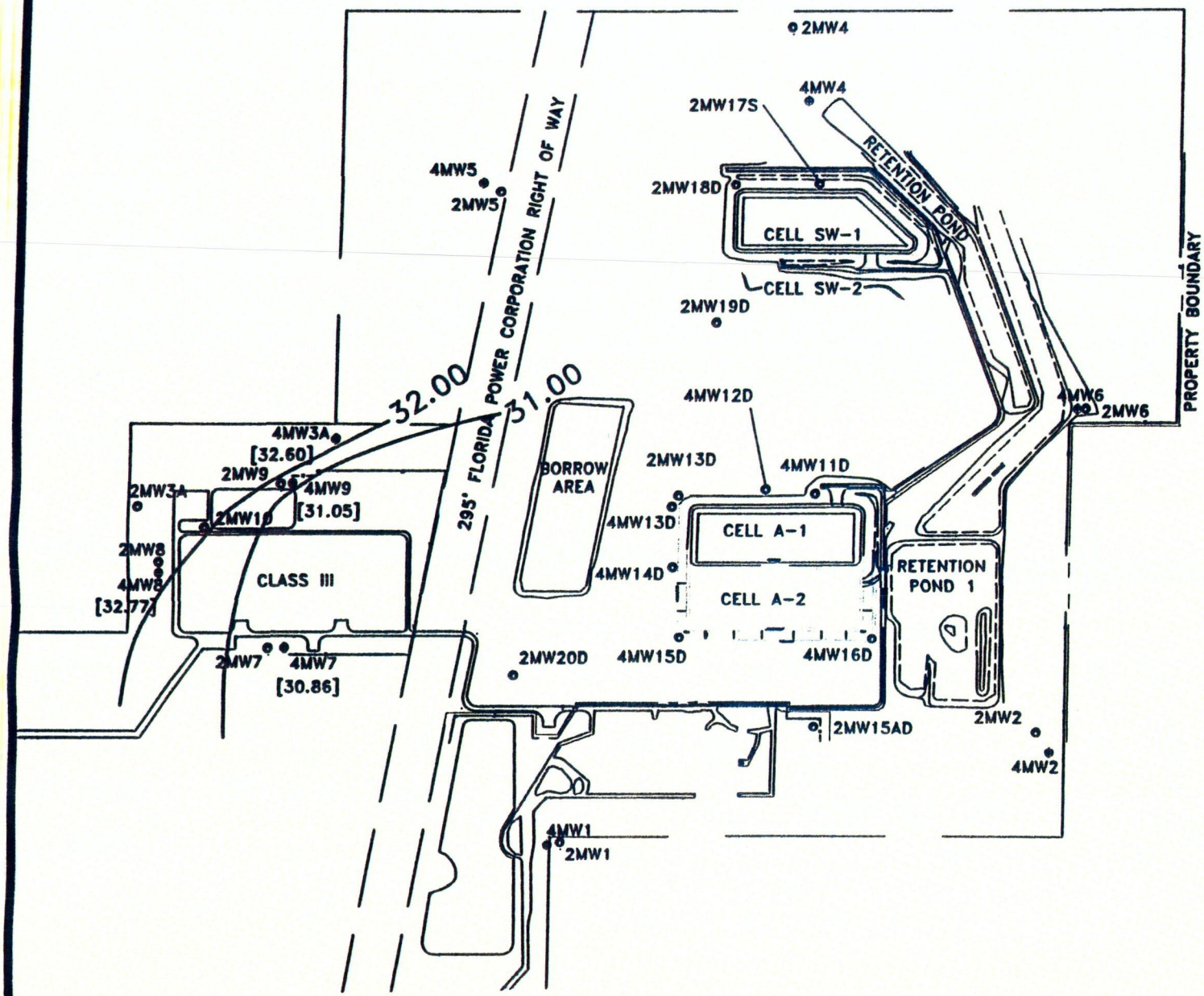
0 1000
Scale In Feet

Prepared/Date: JT 06/07/06
Checked/Date: CJM 6-29-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
SURFICIAL AQUIFER WATER TABLE
YEAR 2005, QUARTER III
SEPTEMBER 2005
Project 6515-04-0147 Figure 10



EXPLANATION

4MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
● EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[34.37]
GROUNDWATER ELEVATION (IN FEET, NGVD)

-33.75-
GROUNDWATER CONTOUR LINE

0 1000
Scale in Feet

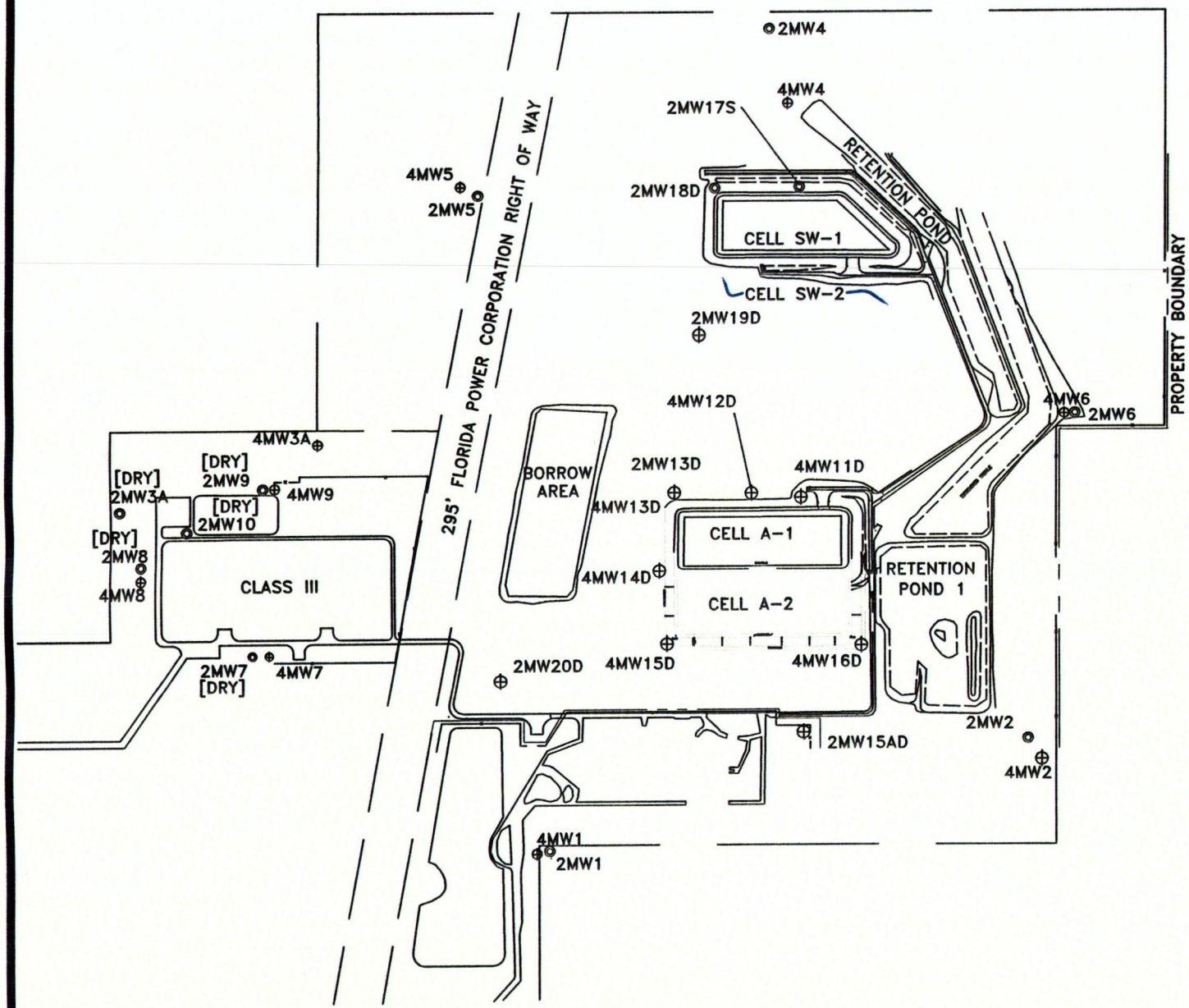
Prepared/Date: JT 06/07/06
Checked/Date: CJR 6-29-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
FLORIDAN AQUIFER POTENTIOMETRIC SURFACE
YEAR 2005, QUARTER III
SEPTEMBER 2005

Project 6515-04-0147 Figure 11



EXPLANATION

4MW2
⊕ EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
⊙ EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[32.98]
GROUNDWATER ELEVATION (IN FEET, NGVD)

33.00-
GROUNDWATER CONTOUR LINE

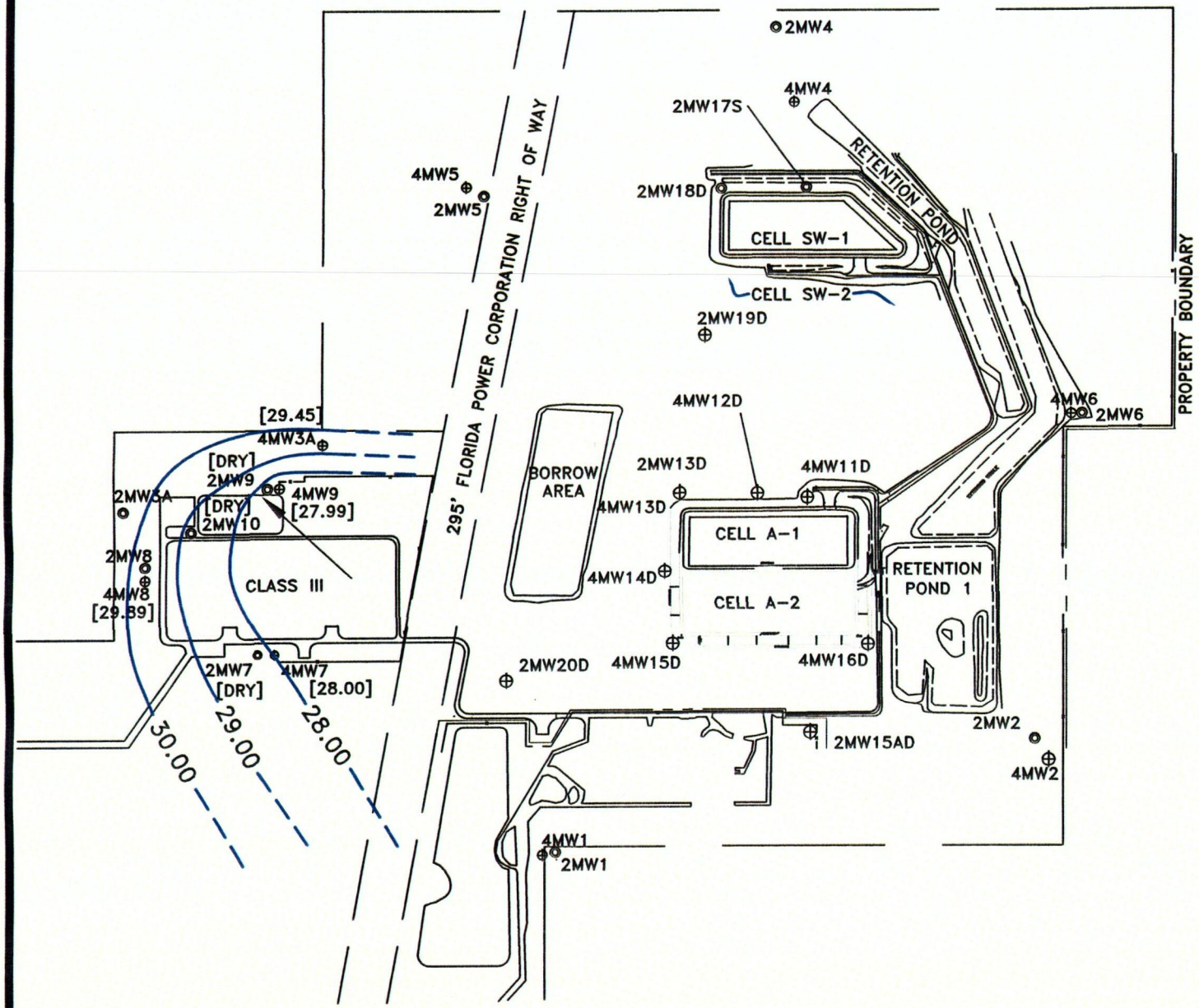
0 1000
Scale In Feet

Prepared/Date: JT 06/02/06
Checked/Date: CJM 8-3-6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

GROUNDWATER MONITORING
SURFICIAL AQUIFER WATER TABLE
YEAR 2006, QUARTER I
MARCH 2006
Project 6515-04-0147 Figure 12



EXPLANATION

4MW2
⊕ EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

2MW2
⊙ EXISTING GROUNDWATER MONITORING WELL AND DESIGNATION

(4MW)
4" PVC FLORIDAN AQUIFER WELL

(2MW)
2" PVC SURFICIAL AQUIFER WELL

[32.98]
GROUNDWATER ELEVATION (IN FEET, NGVD)

33.00-
GROUNDWATER CONTOUR LINE
1 FEET – CONTOUR INTERVAL

GROUND WATER FLOW DIRECTION

0 1000
Scale In Feet

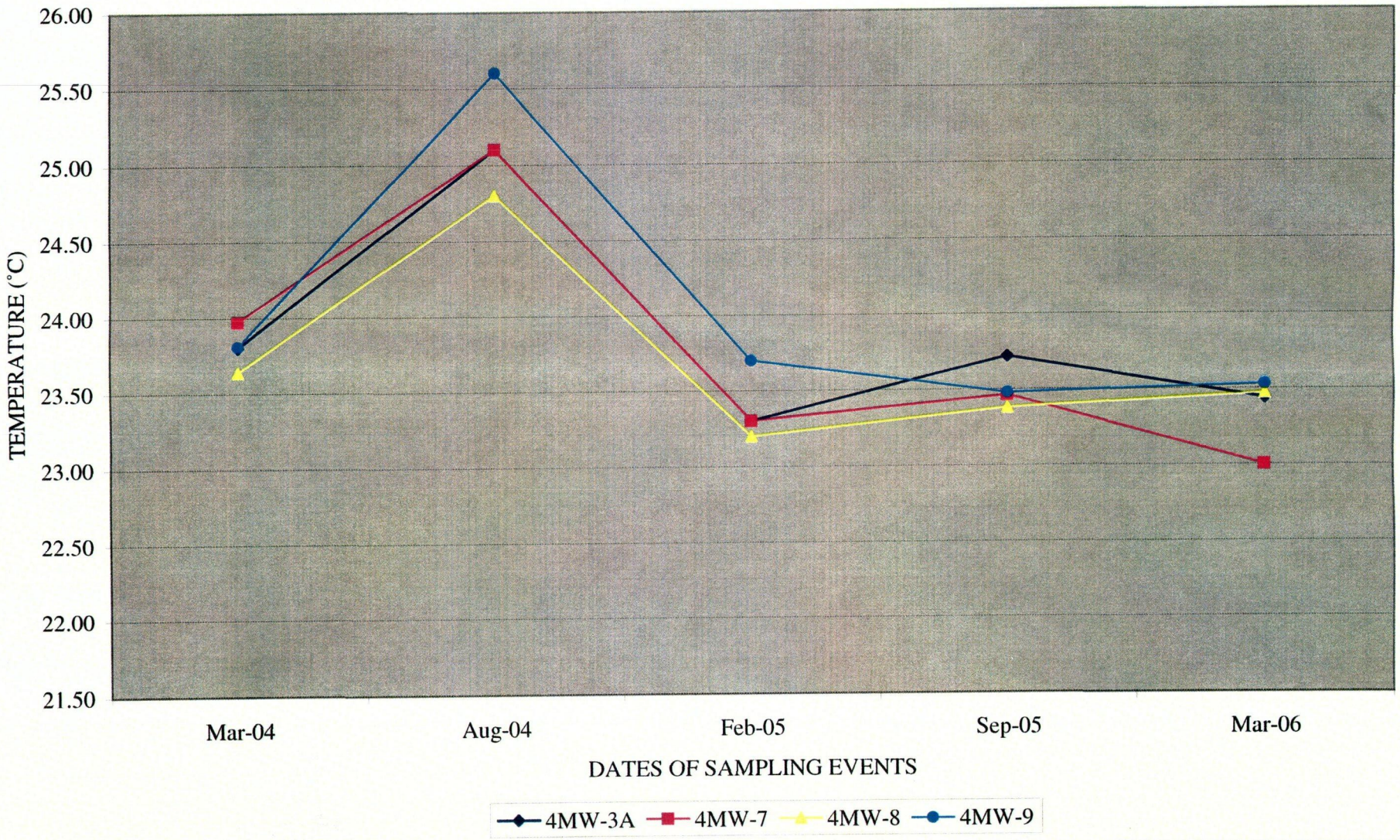
Prepared/Date: JT 06/02/06
Checked/Date: CM 8/3/6

WEST PASCO CLASS III LANDFILL
PASCO COUNTY
BOARD OF COUNTY COMMISSIONERS
UTILITY SERVICES BRANCH
PASCO COUNTY, FLORIDA

MACTEC

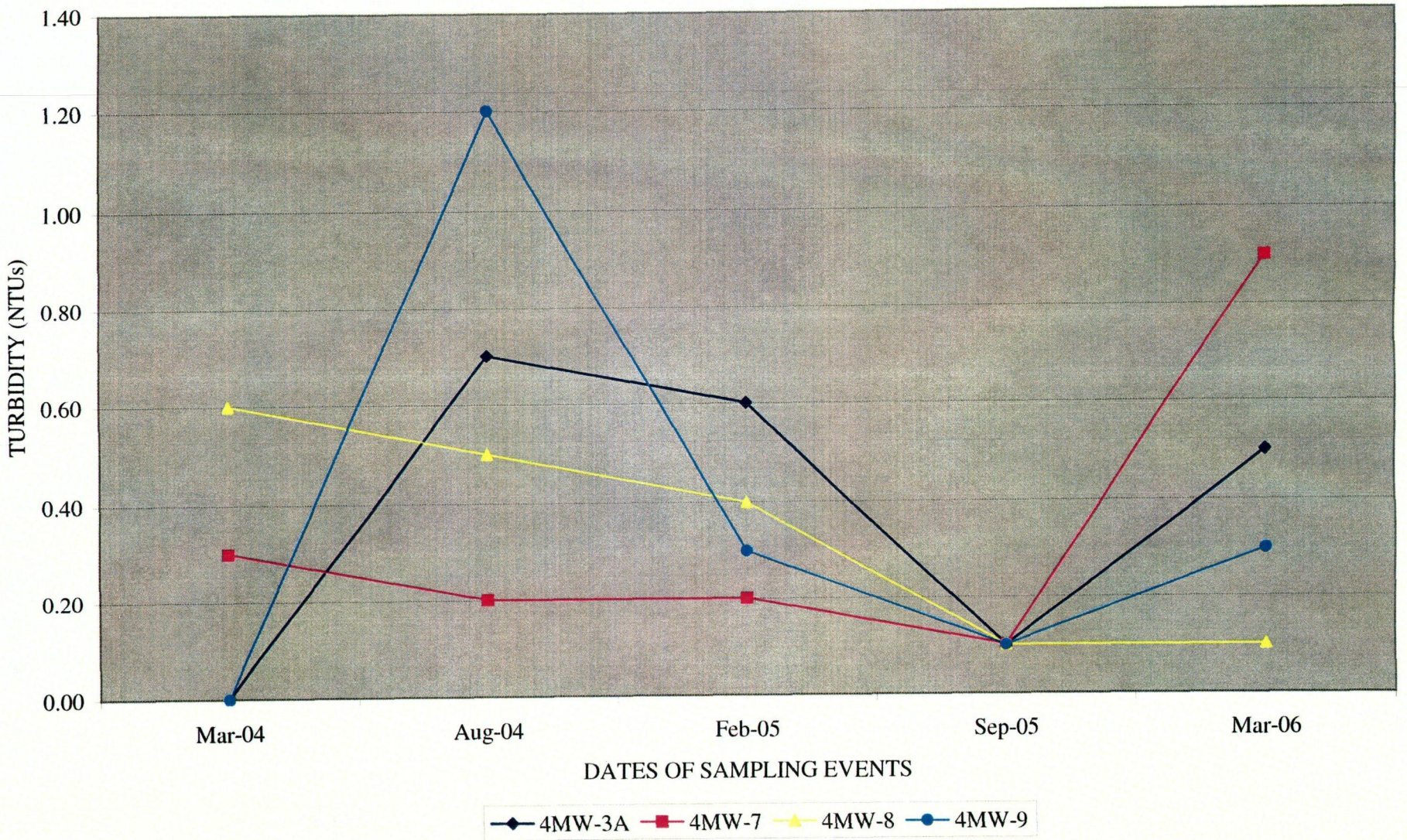
GROUNDWATER MONITORING
FLORIDAN AQUIFER
PIEZOMETRIC SURFACE
YEAR 2006, QUARTER I MARCH 2006
Project 6515-04-0147 Figure 13

Figure 14: Temperature vs. Time



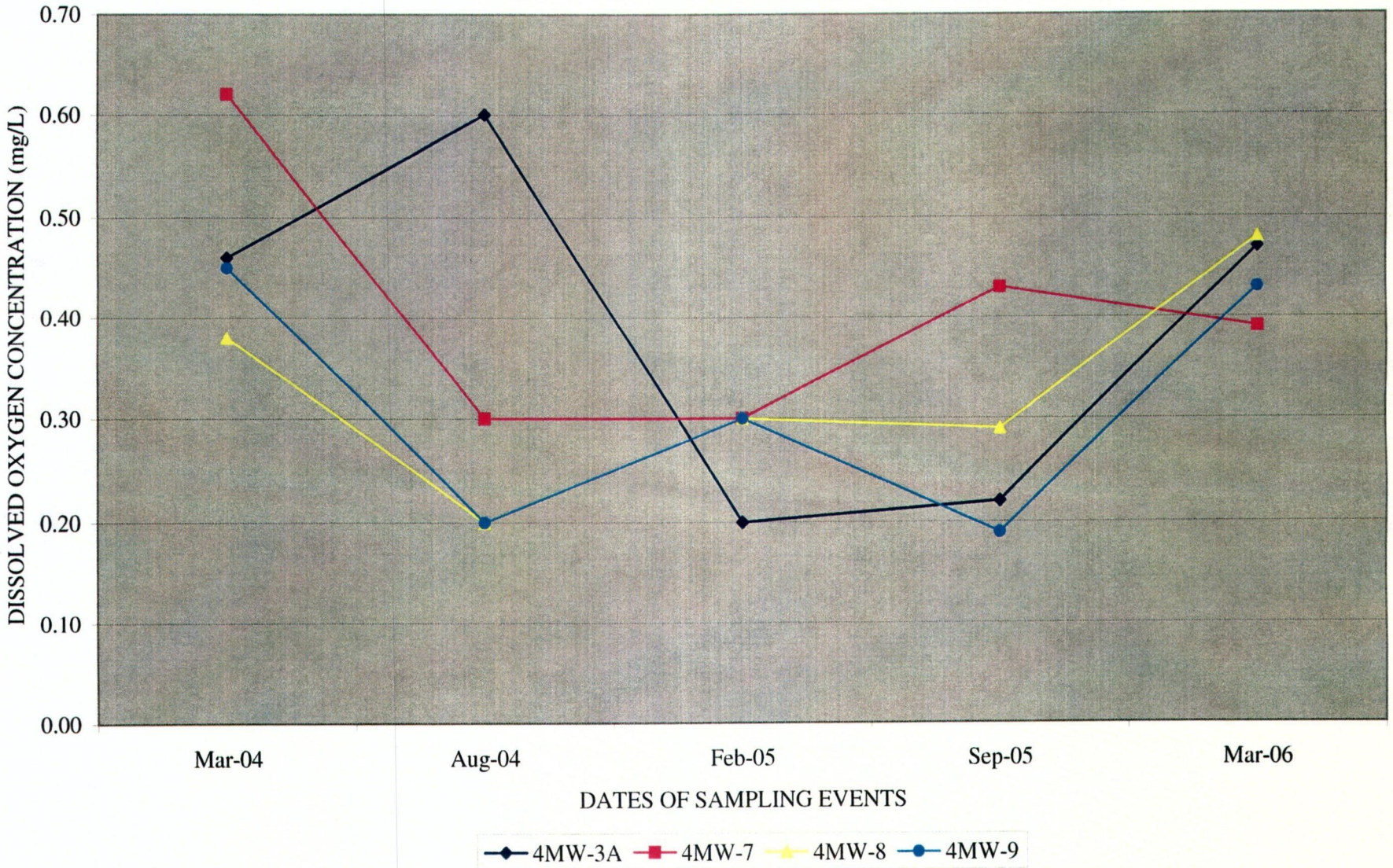
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 15: Turbidity Levels vs. Time



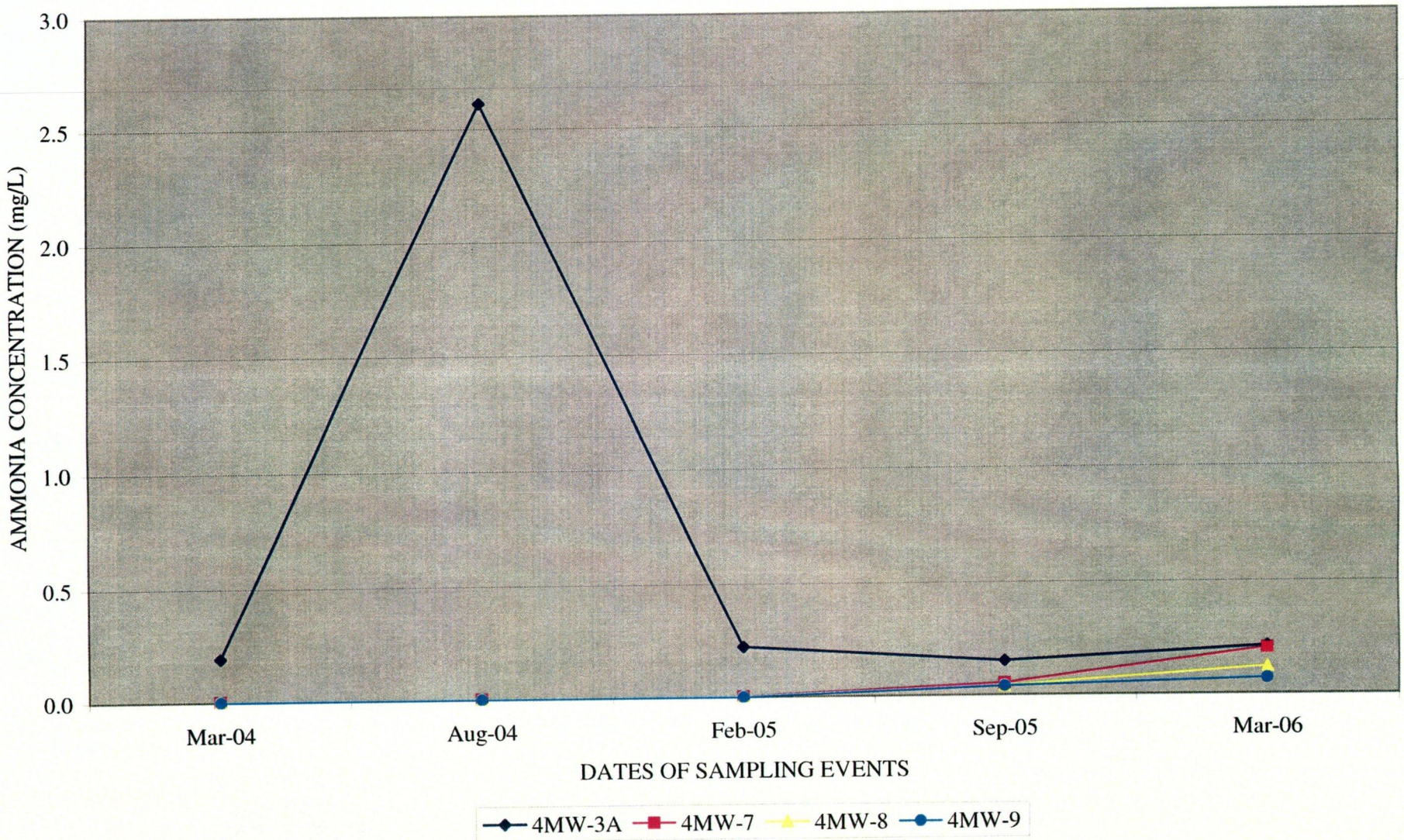
Prepared by: RRK 7/26/06
Reviewed by: JB 6/2/06

Figure 16: Dissolved Oxygen Concentrations vs. Time



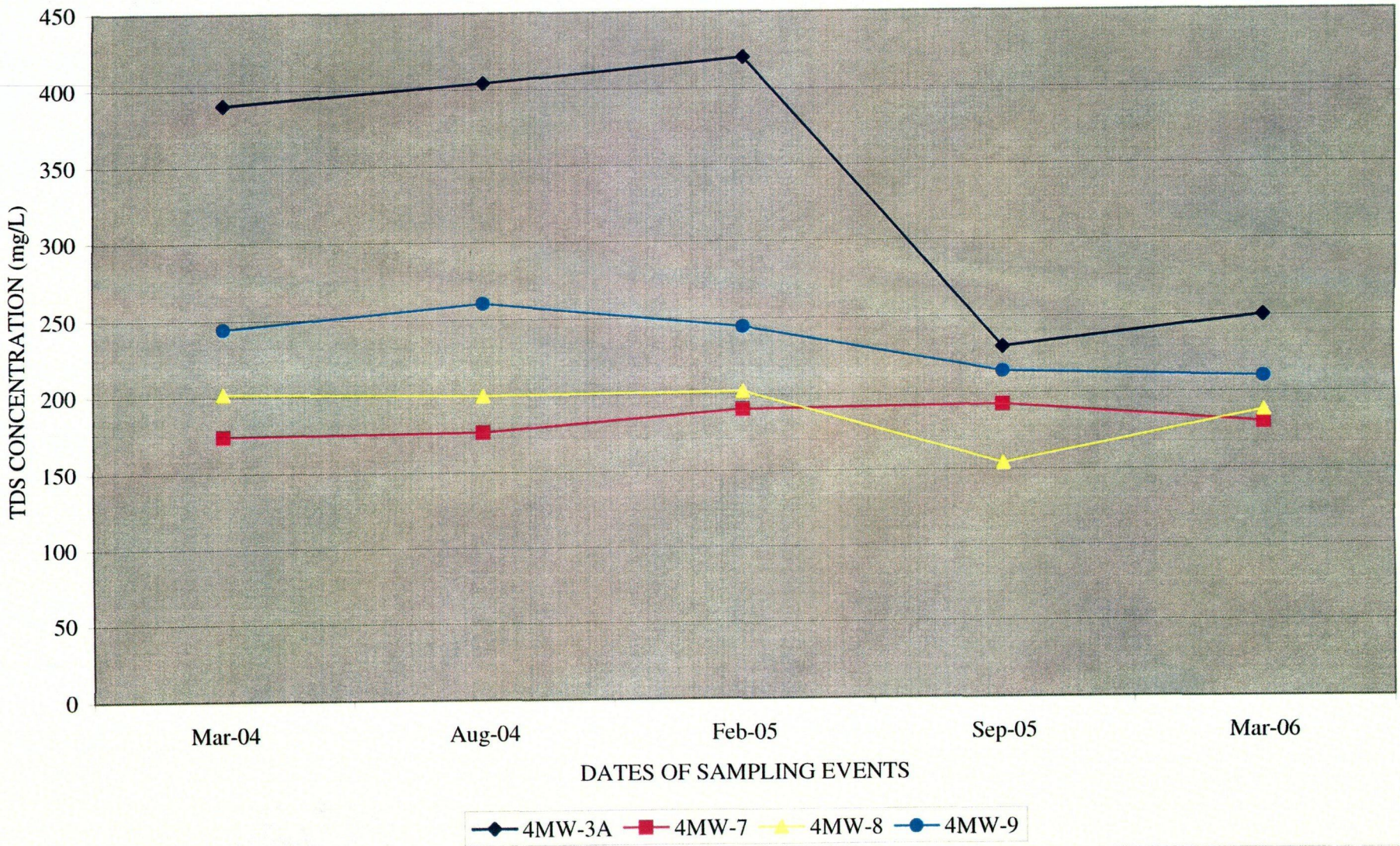
Prepared by: RRK 7/26/06
Reviewed by: ~~TB~~ 8/2/06

Figure 17: Ammonia Concentrations vs. Time



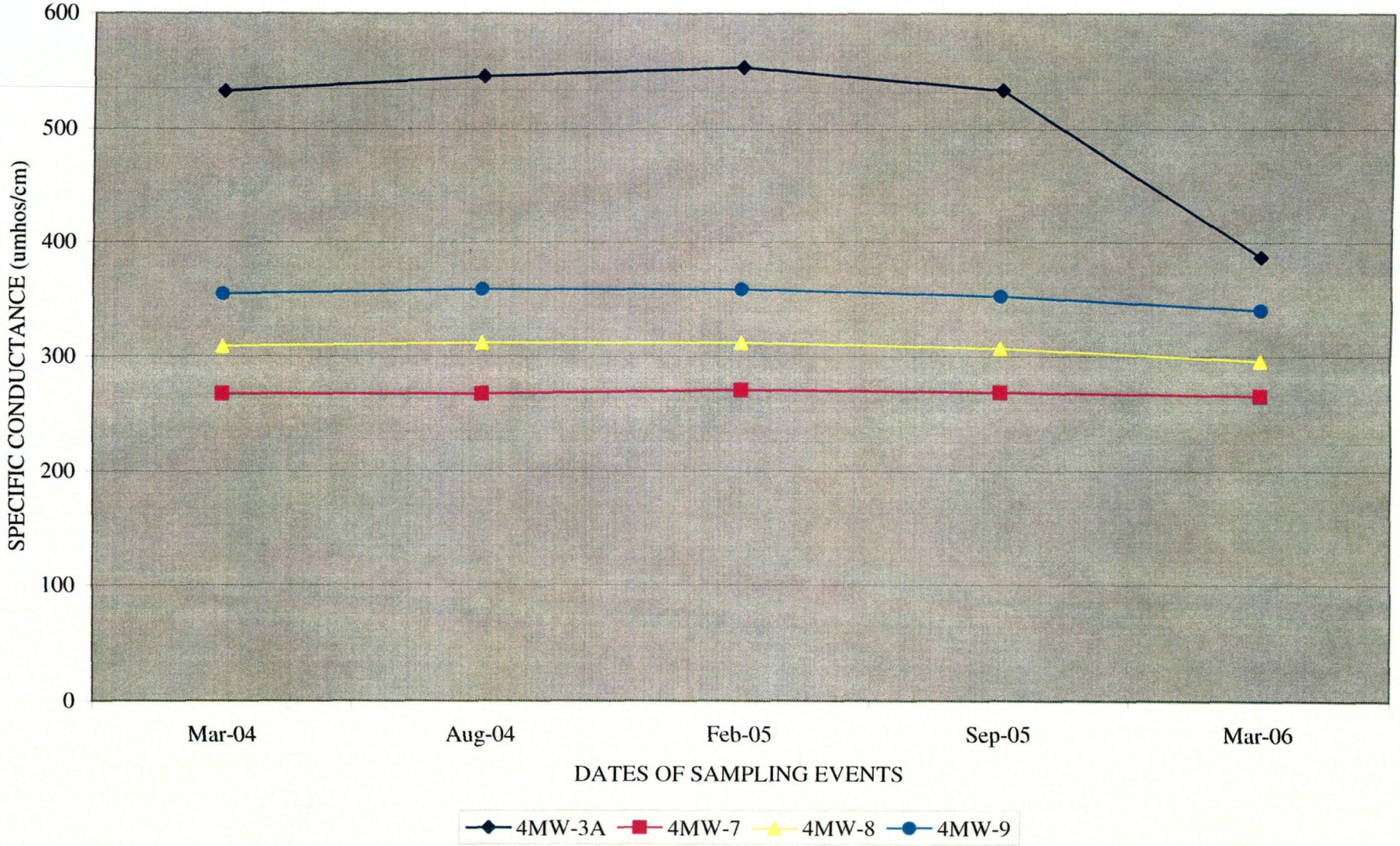
Prepared by: RRK 7/26/06
Reviewed by: TJS 8/2/06

Figure 18: Total Dissolved Solid Concentrations (TDS) vs. Time



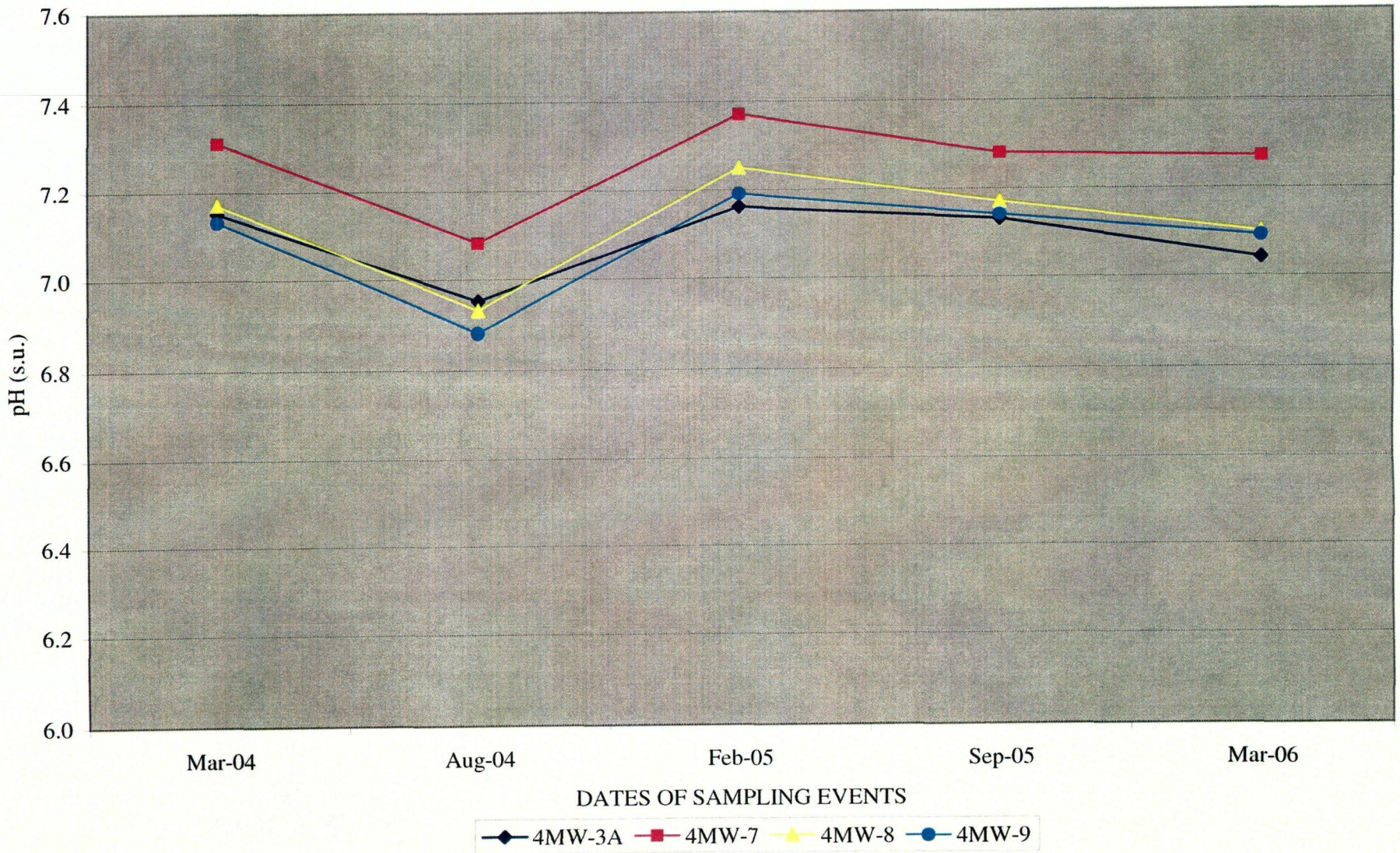
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 19: Specific Conductance Levels vs. Time



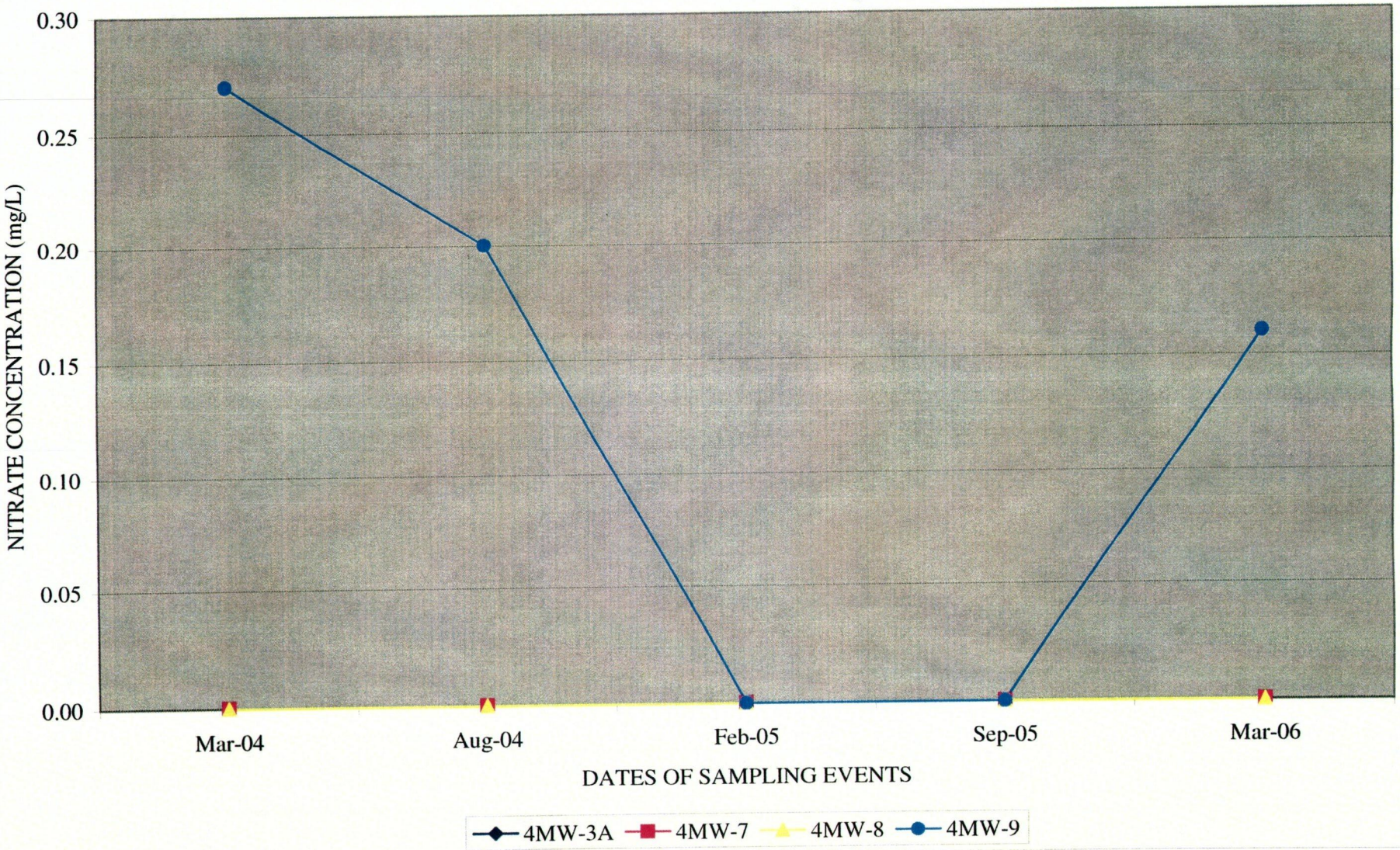
Prepared by: RRK 7/26/06
Reviewed by: ~~BB~~ 8/2/06

Figure 20: pH Levels vs. Time



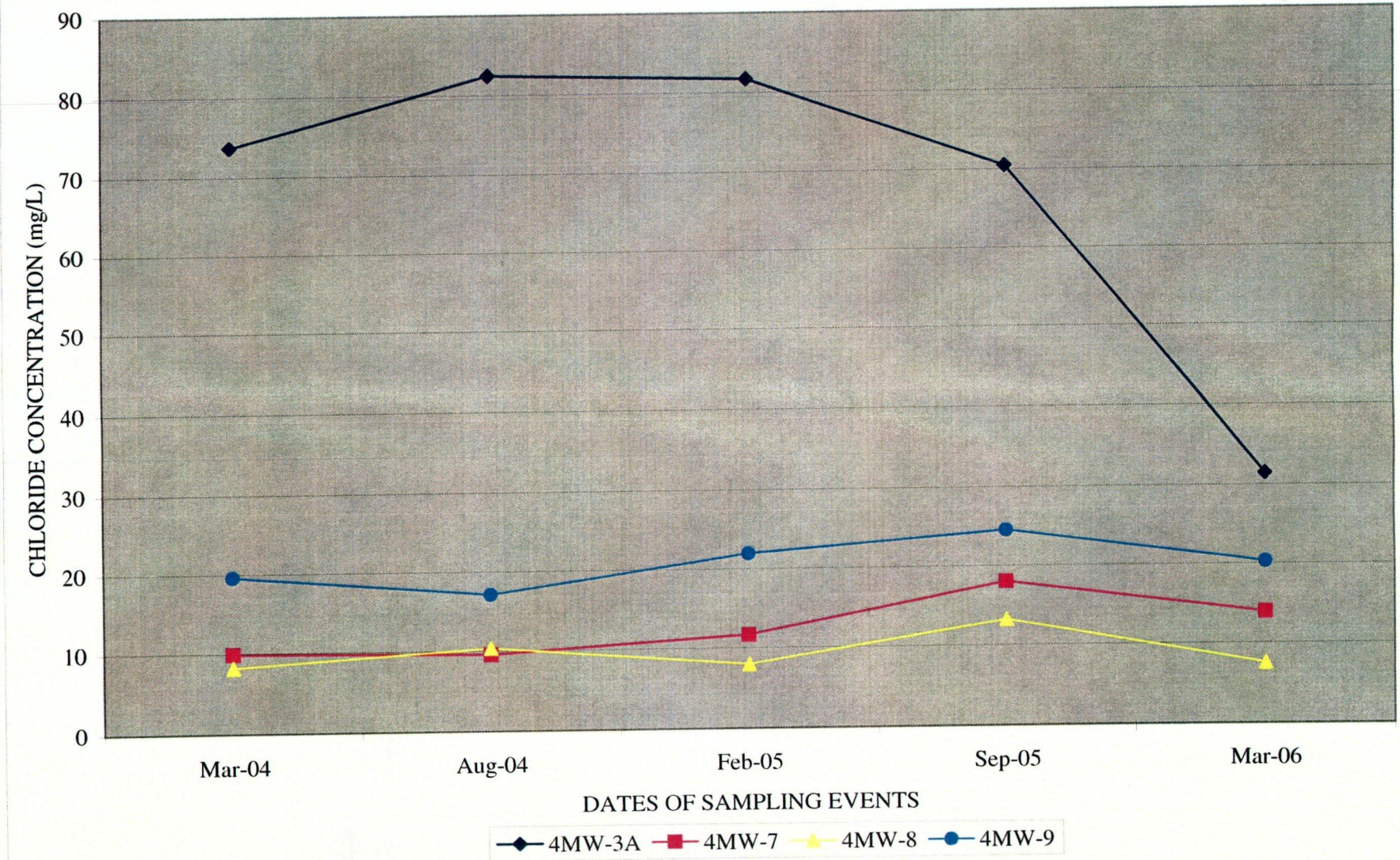
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 21: Nitrate Concentrations vs. Time



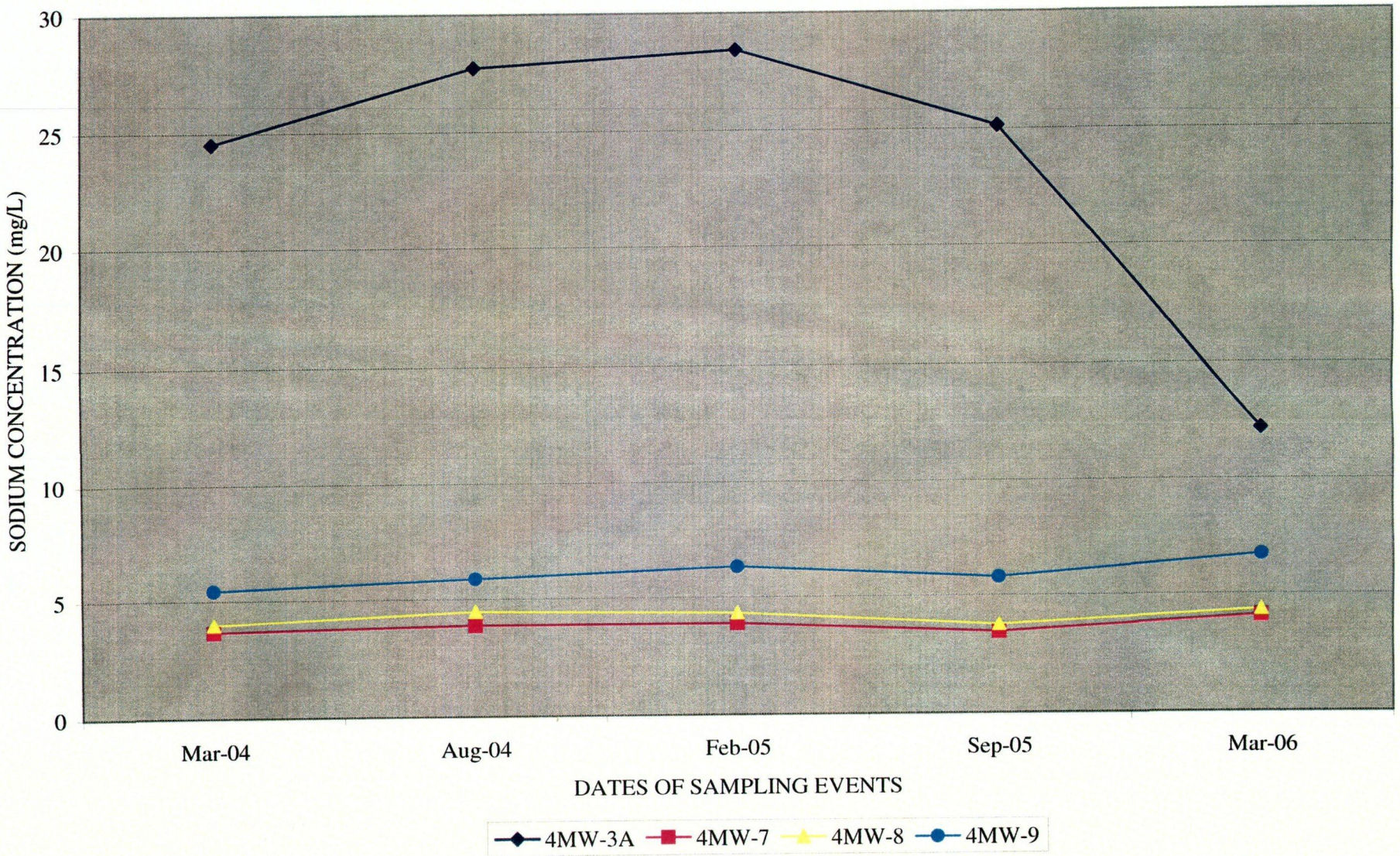
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 22: Chloride Concentrations vs. Time



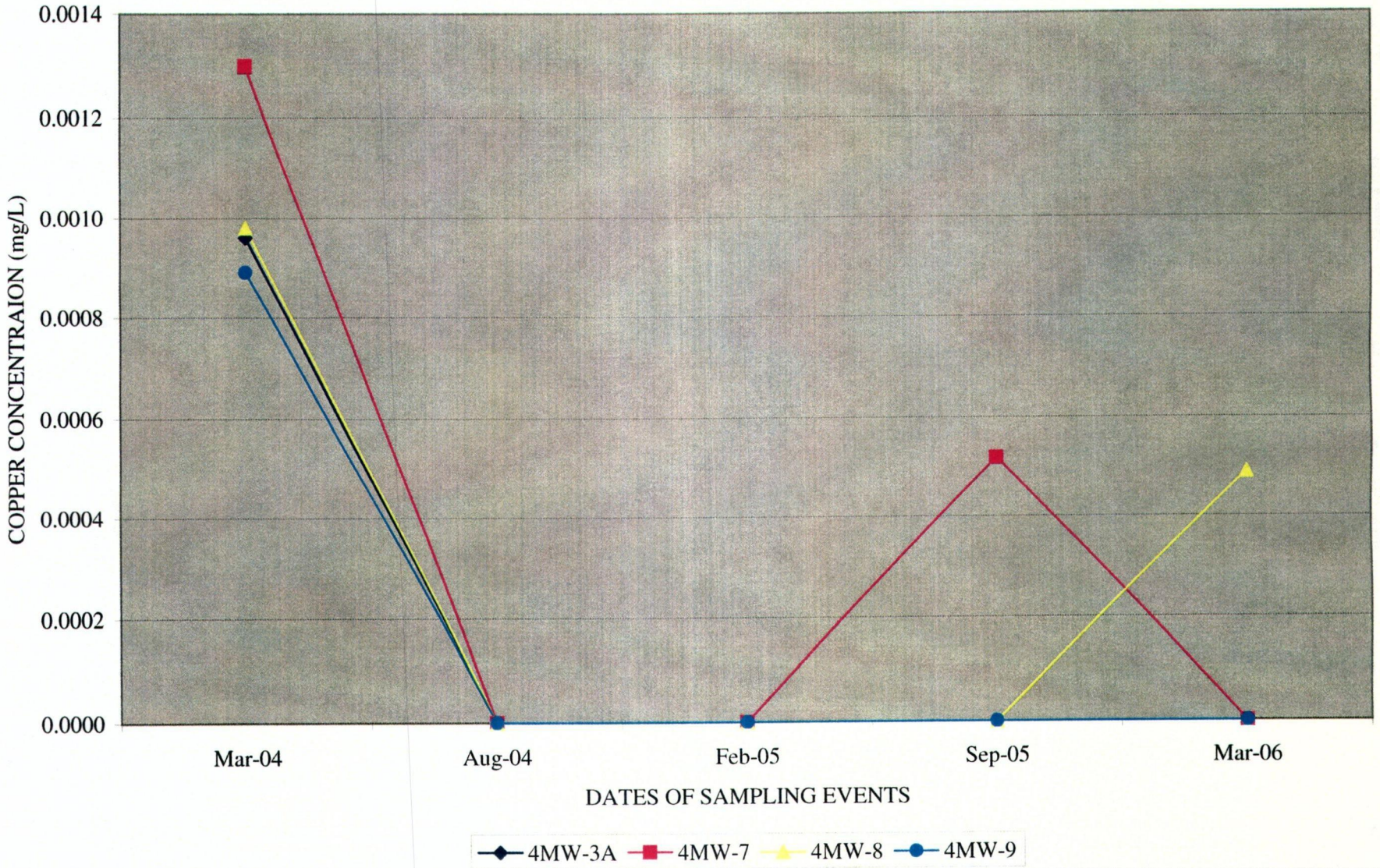
Prepared by: RRK 7/26/06
Reviewed by: TJS 8/2/06

Figure 23: Sodium Concentrations vs. Time



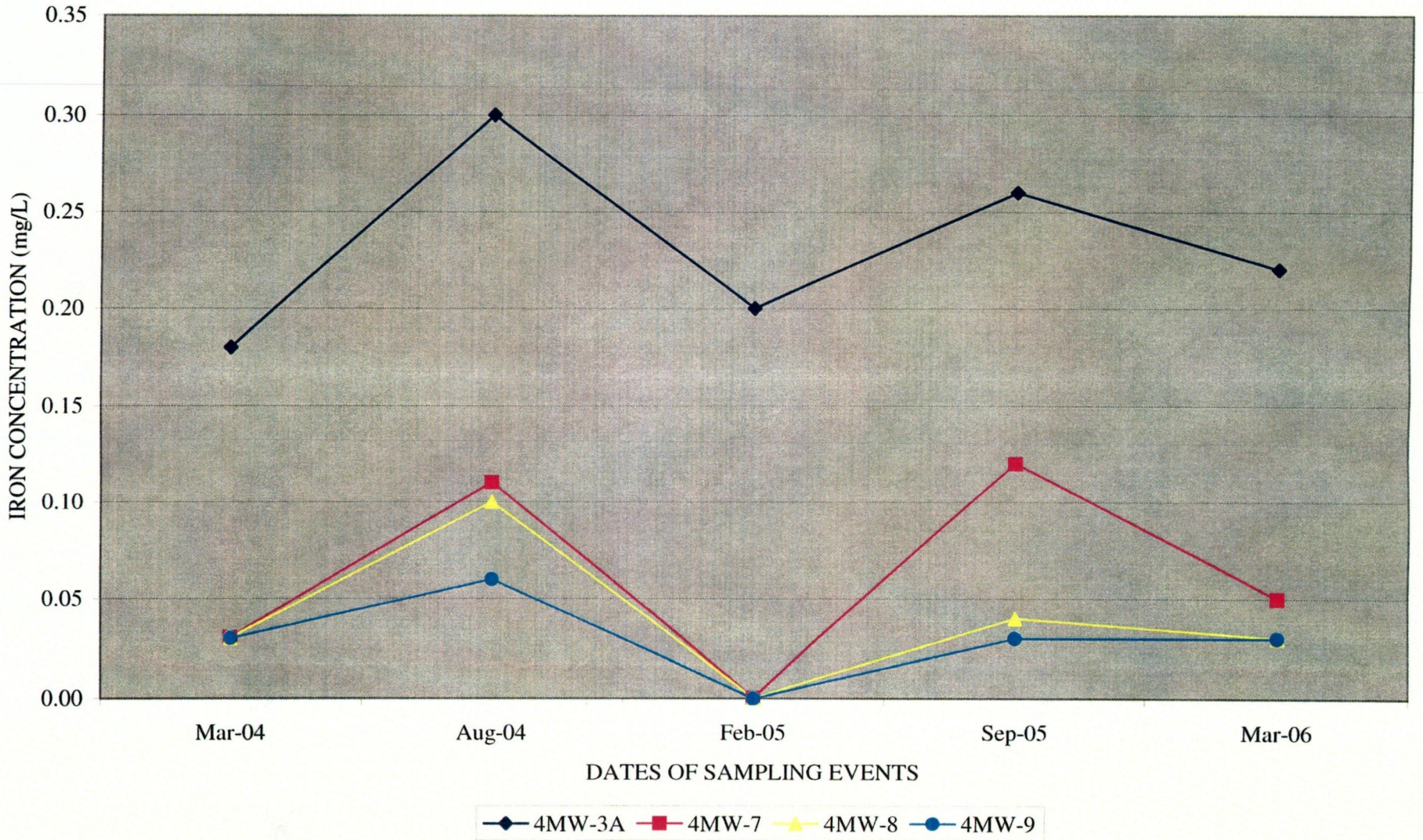
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 24: Copper Concentrations vs. Time



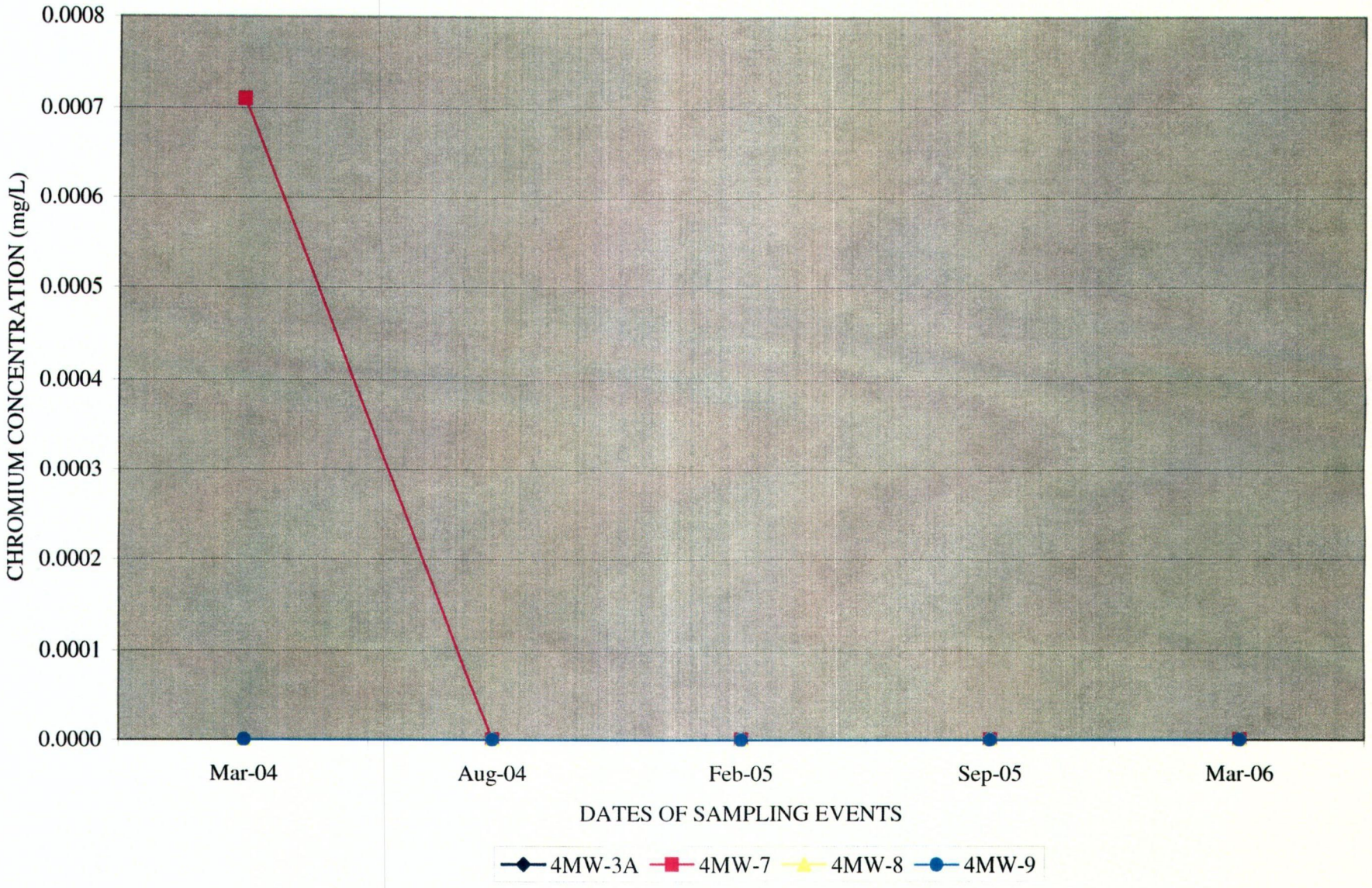
Prepared by: RRK 7/26/06
Reviewed by: JB 8/2/06

Figure 25: Iron Concentrations vs. Time



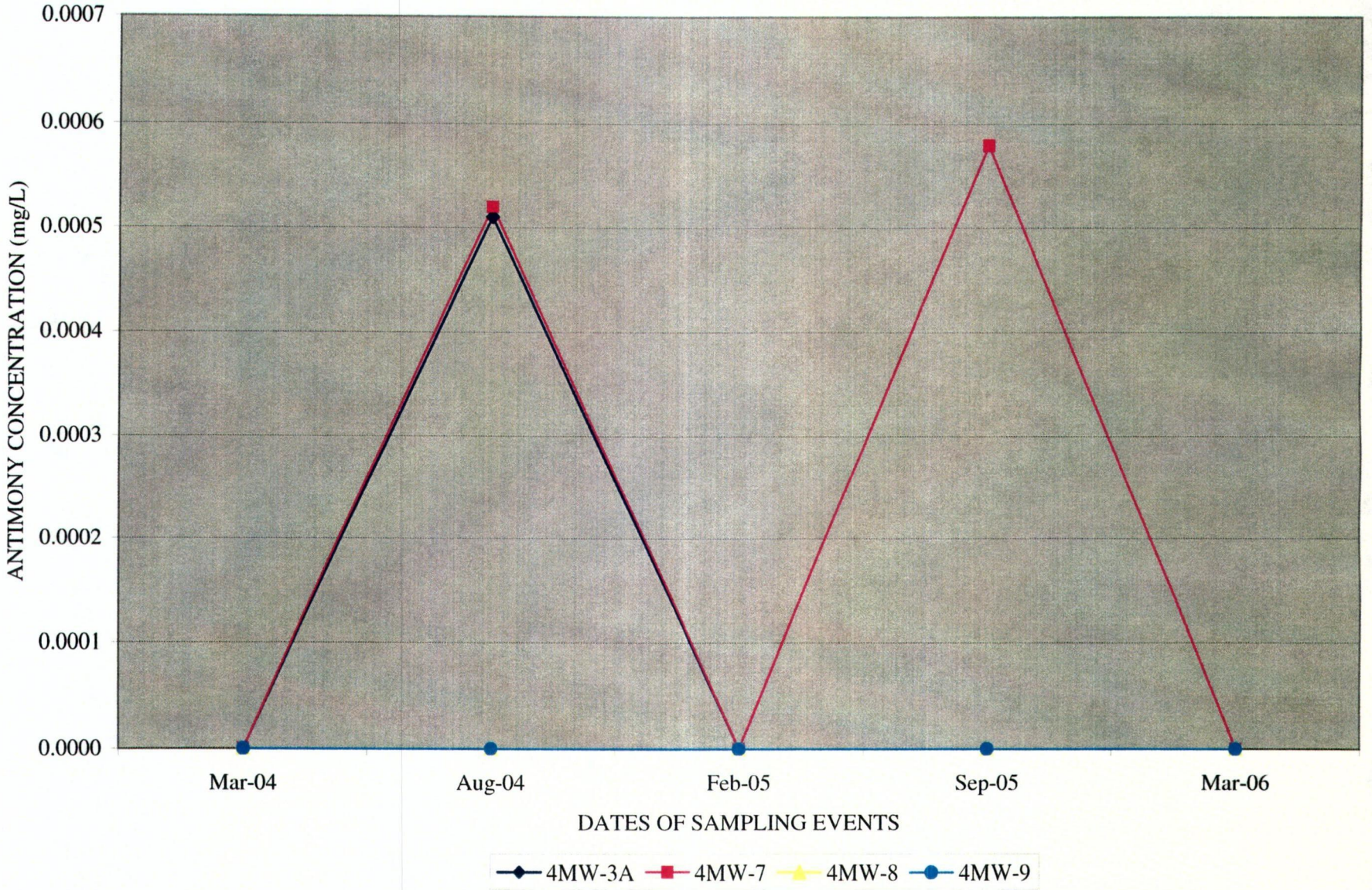
Prepared by: RRK 7/26/06
Reviewed by: JB 8/2/06

Figure 26: Chromium Concentrations vs. Time



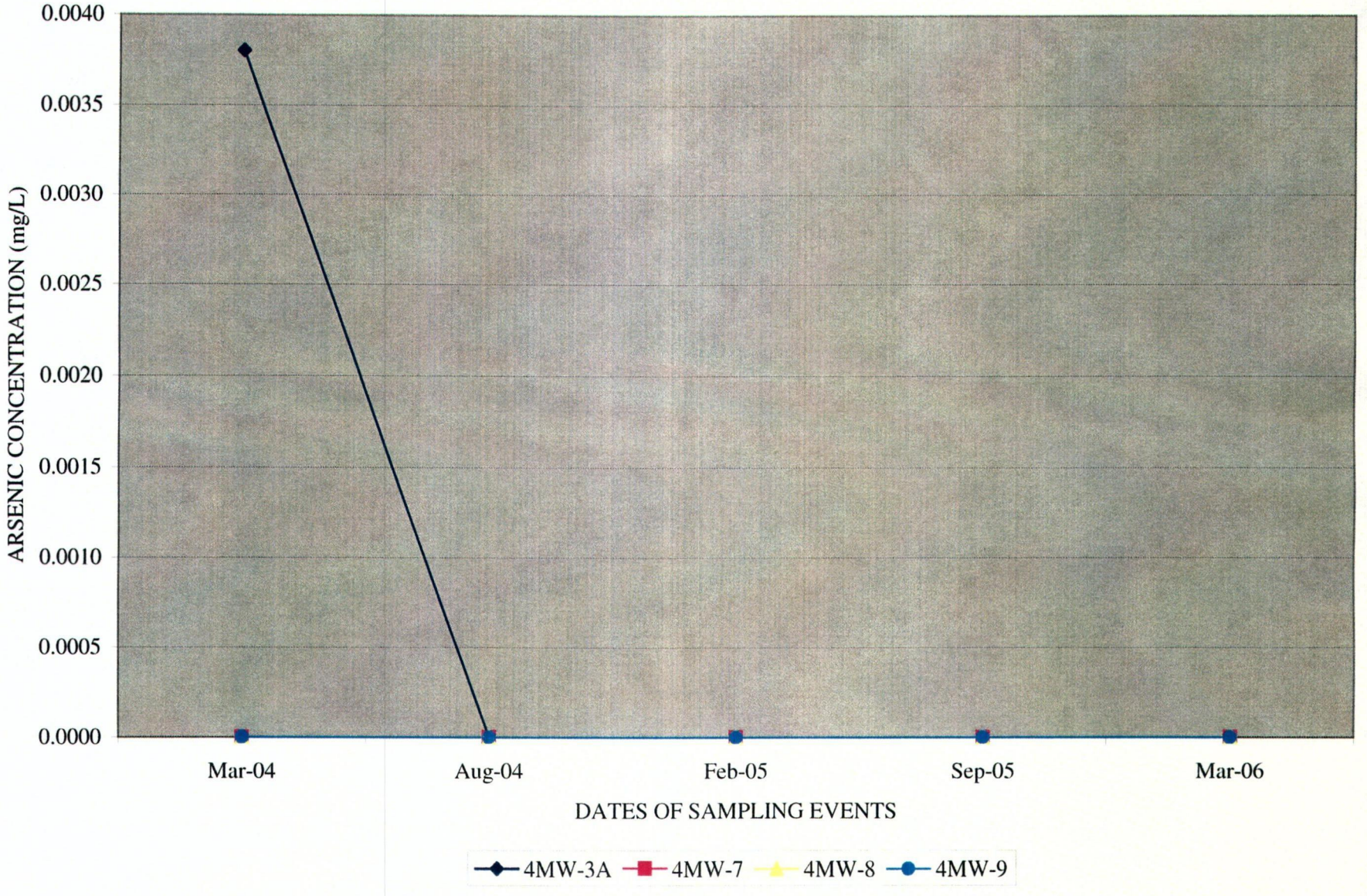
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 27: Antimony Concentrations vs. Time



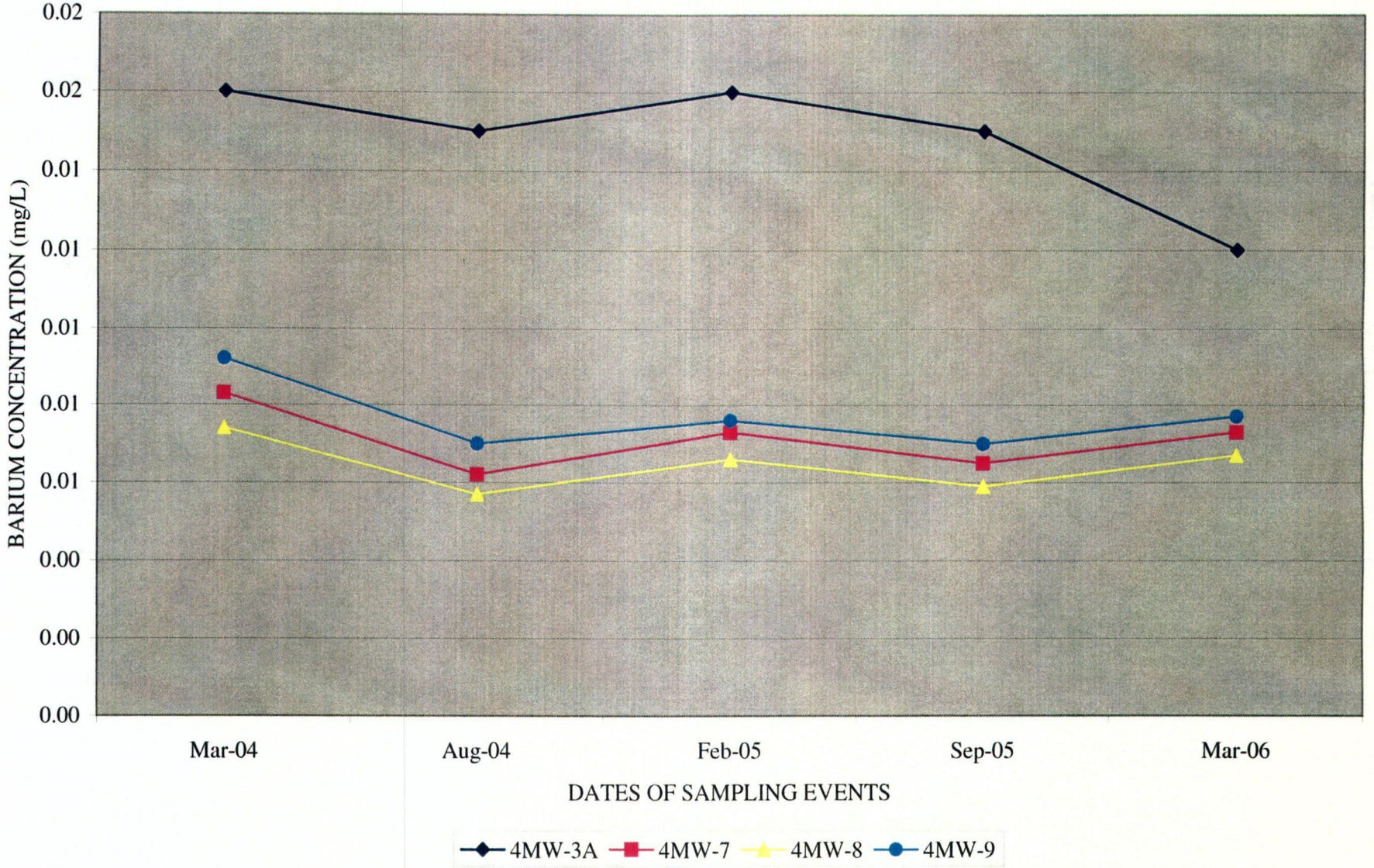
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 28: Arsenic Concentrations vs. Time



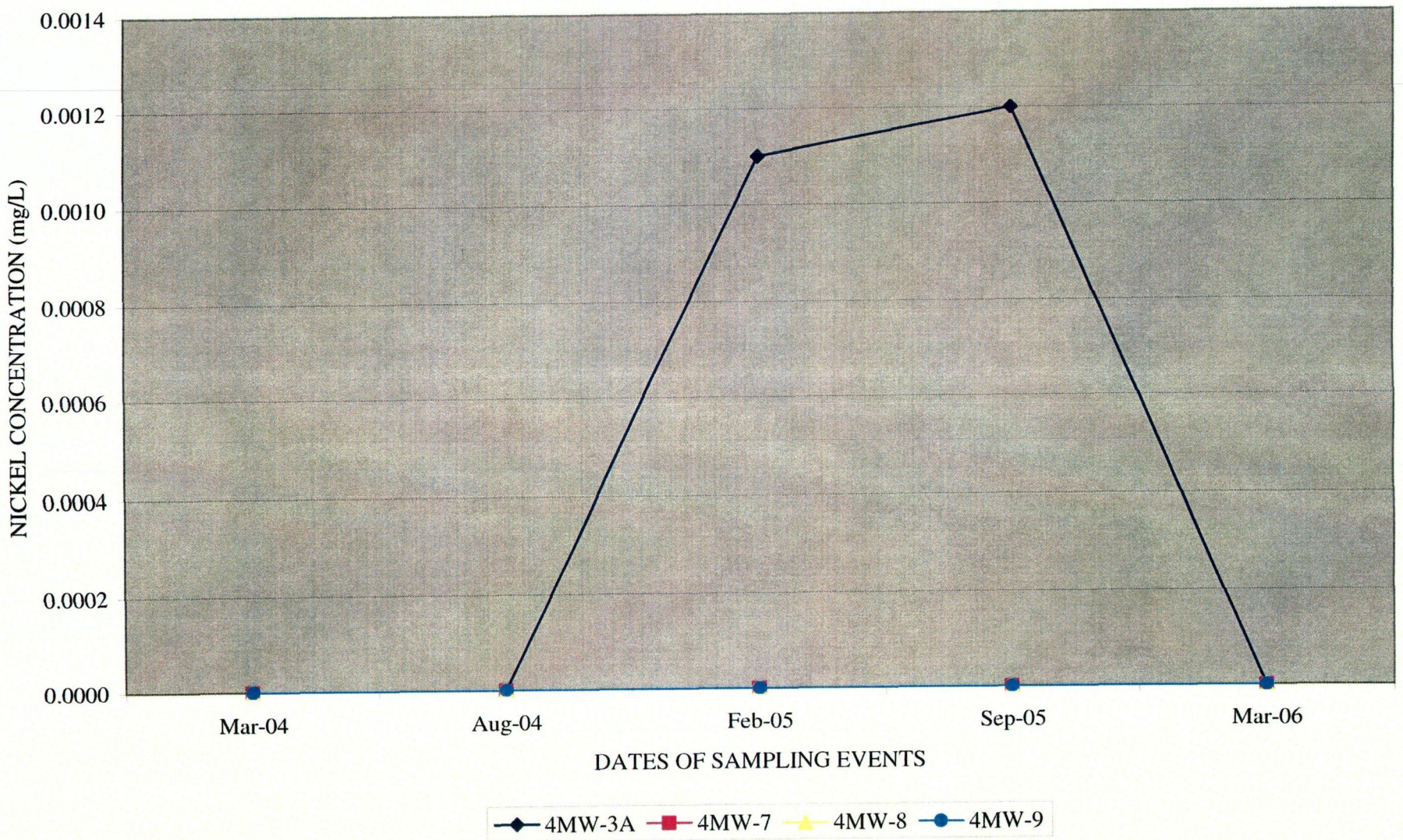
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 29: Barium Concentrations vs. Time



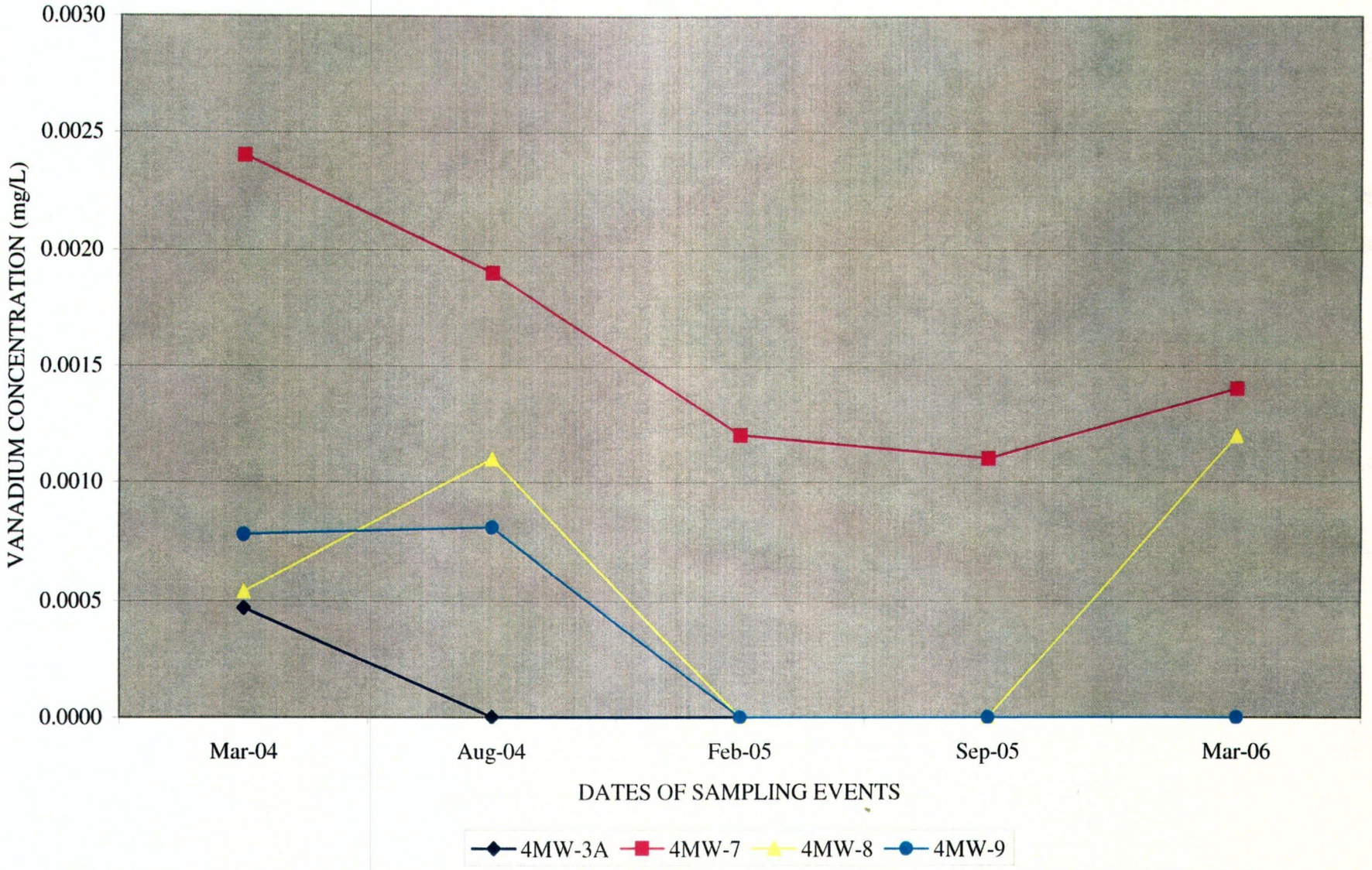
Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06

Figure 30: Nickel Concentrations vs. Time



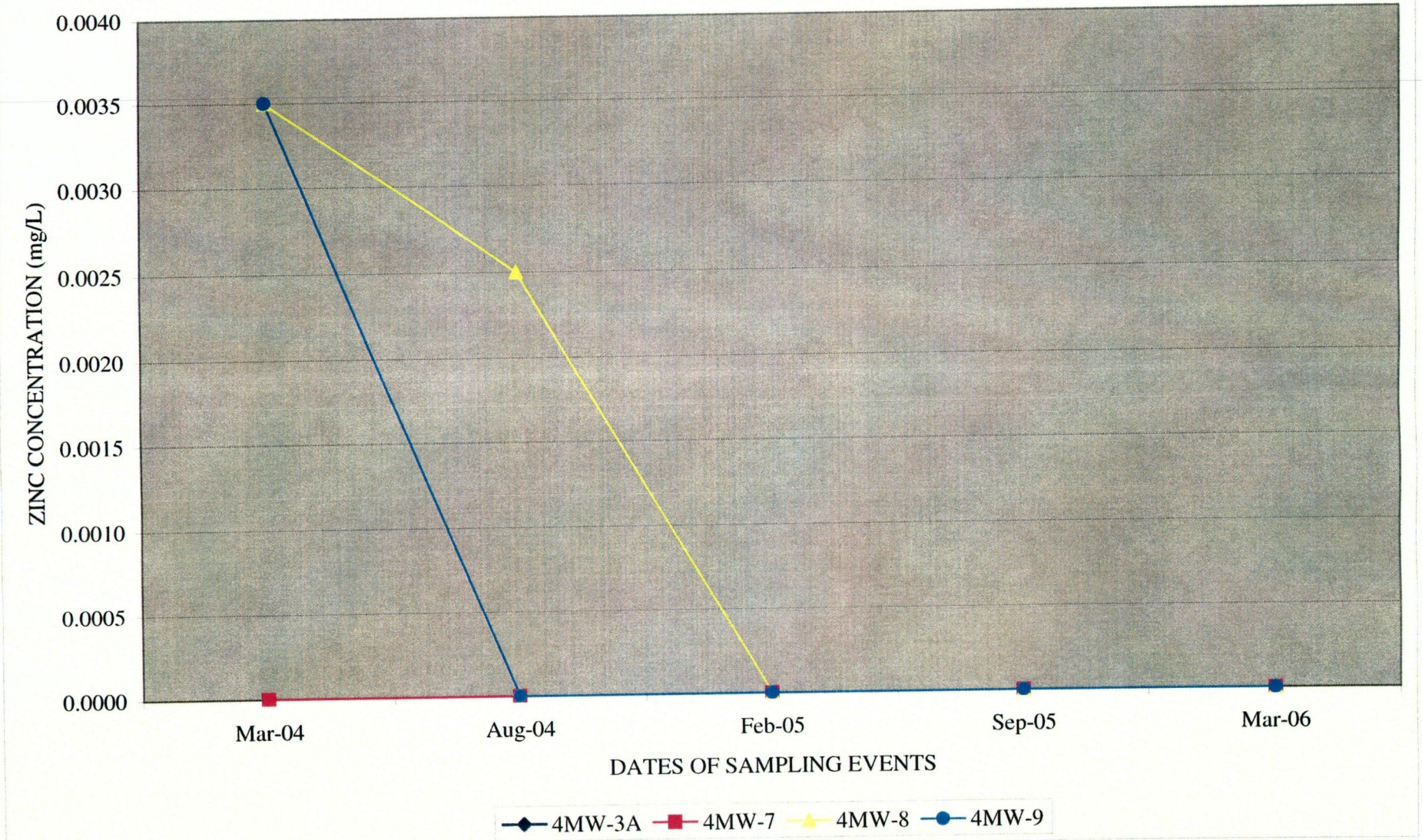
Prepared by: RRK 7/26/06
Reviewed by: 8/2/06

Figure 31: Vanadium Concentrations vs. Time



Prepared by: RRK 7/26/06
Reviewed by: TS 8/2/06

Figure 32: Zinc Concentrations vs. Time



Prepared by: RRK 7/26/06
Reviewed by: TB 8/2/06