CRAIG A SMITH & ASSOCIATES
CONSULTING ENGINEERS • PLANNERS • SURVEYORS

June 24, 1997

Ms. Heidi Vandor, P.G.
Florida Department of Environmental Protection
Southeast District
P.O. Box 15425
West Palm Beach, FL 33416

RE: REPERMITTING THE OPERATION OF THE CITY OF PAHOKEE INJECTION WELL
CAS PROJECT NO. 94-0404

Dear Ms. Vandor:

We are transmitting additional information on the Pahokee Injection Well. These are intended to complement the repermit application submitted earlier.

The following are attached:

1. Location Maps
2. Details of Wells
3. Updated Area Review and Evaluation
4. Wastestream Analysis
5. Process Description
6. Mechanical Integrity Test Results
7. Groundwater Monitoring Data
8. Specific Injectivity Data
9. Financial Responsibility Regarding Plugging and Abandoning Data
10. Meter Certification
11. Additional Wastestream Analysis
12. Certifications.

Please let us know if you need additional information.

Sincerely,

CRAIG A. SMITH & ASSOCIATES

Robert Binger, P.E.
Project Manager

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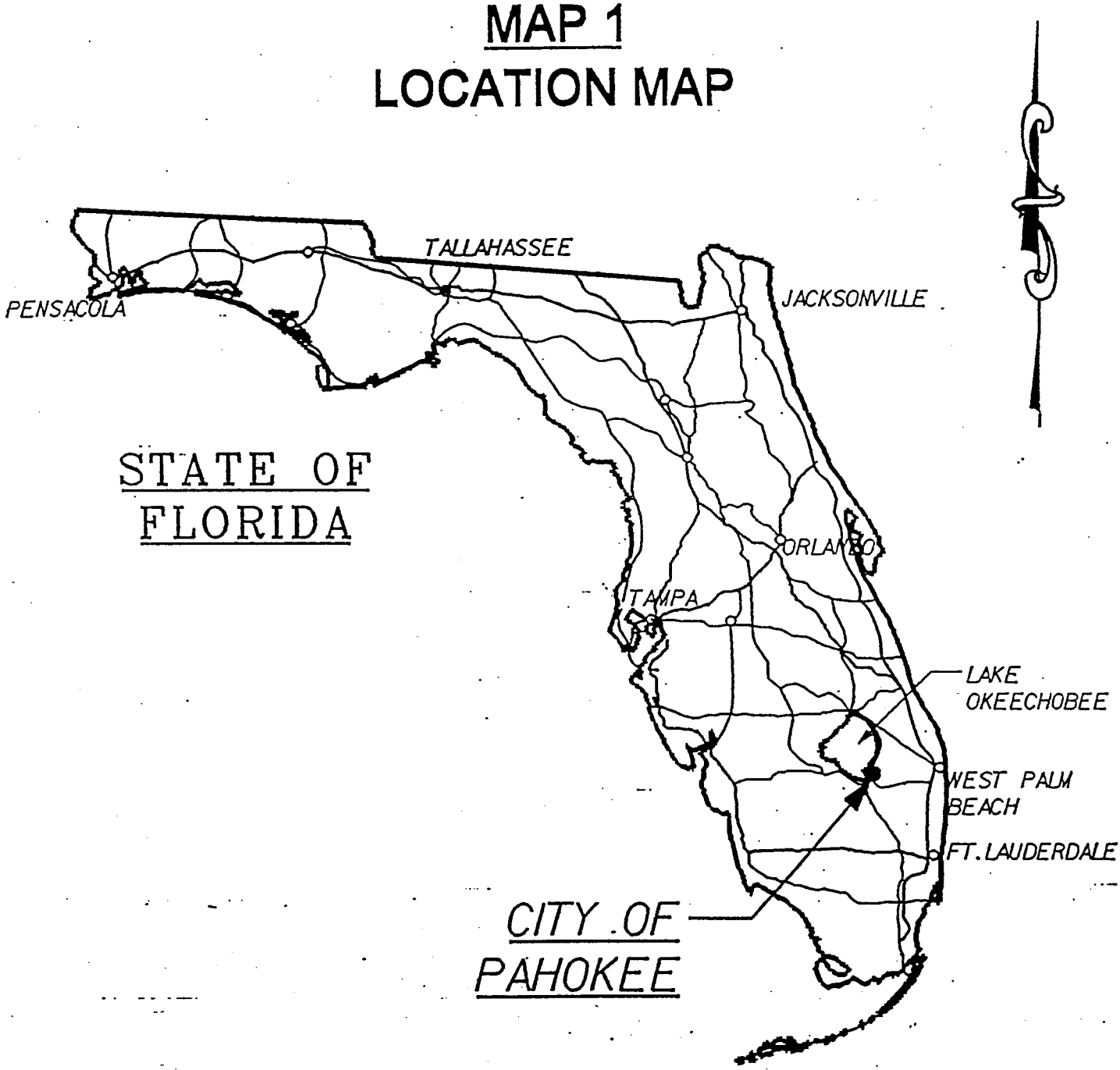
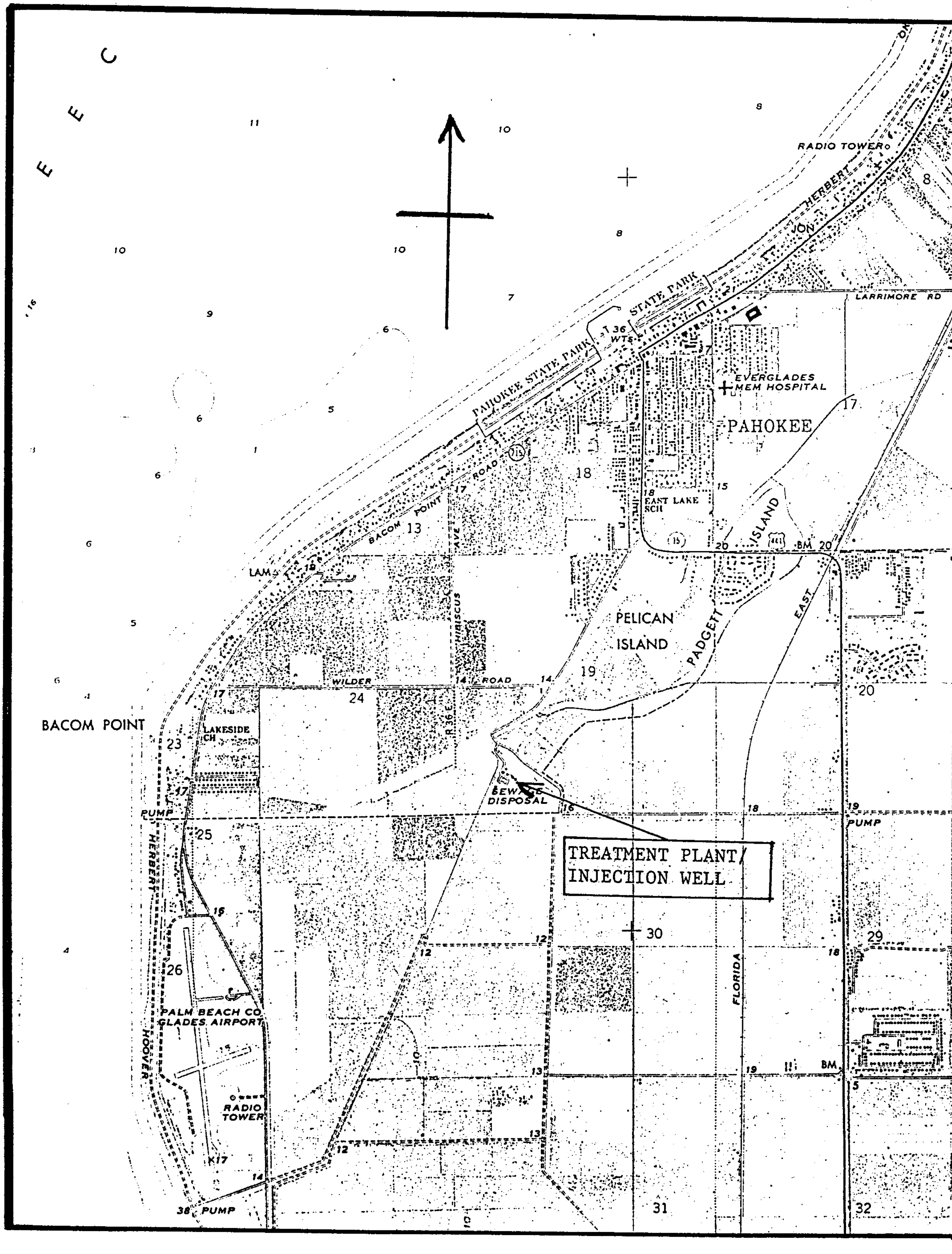
1000 West McNab Road, Pompano Beach, Florida 33069 • (954) 782-8222, FAX: (954) 786-8927
Palm Beach: (561) 736-3188 Dade: (305) 940-4661

ATTACHMENT 1: Location Map

CITY OF PAHOKEE
MAP 1
LOCATION MAP

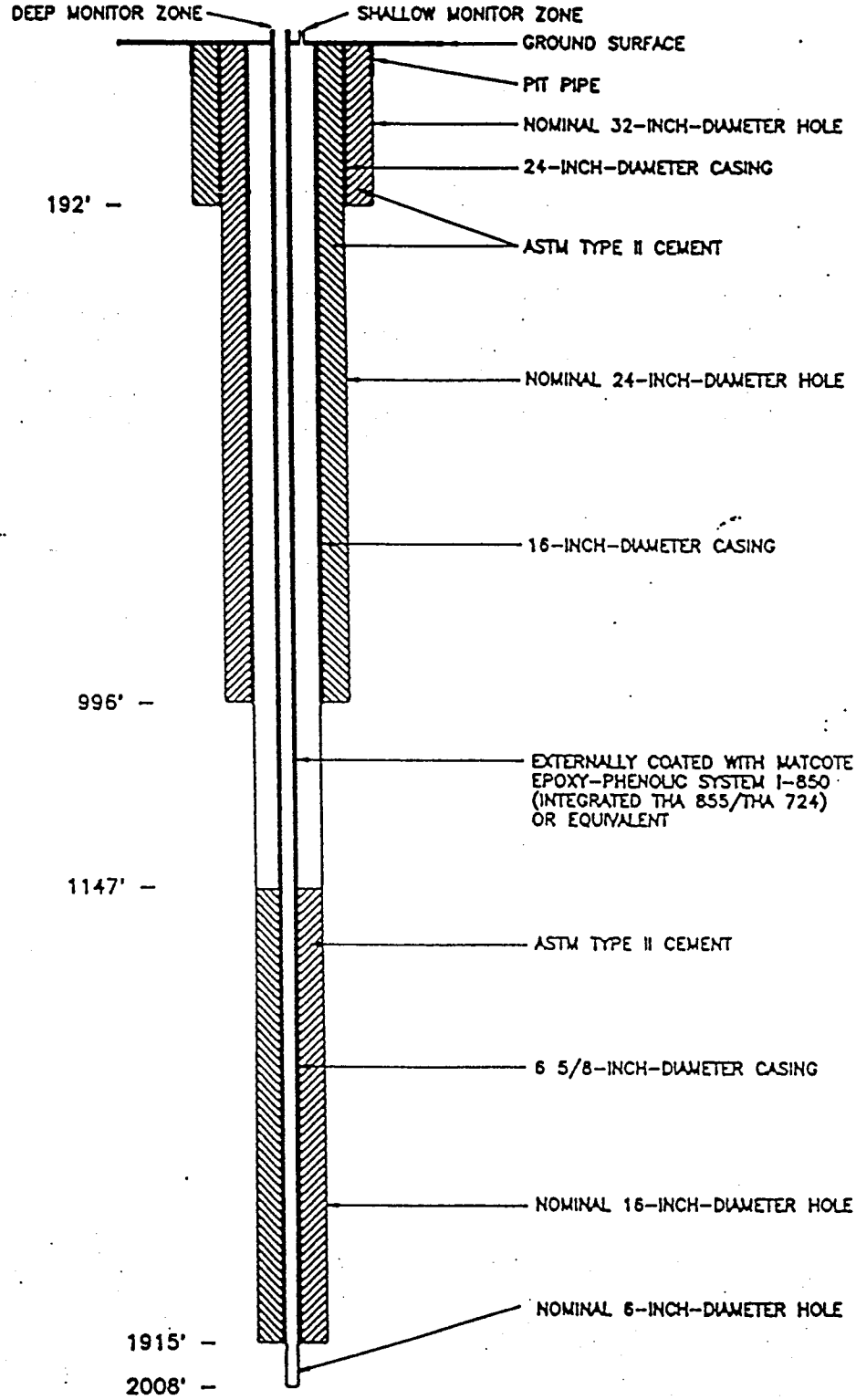




RADIO TOWER
HERBERT HOOVER
STATE PARK
PAHOKEE STATE PARK
LARRIMORE RD
EVERGLADES MEM HOSPITAL
PAHOKEE
EAST LAKE SCH
BACOM POINT ROAD
PELICAN ISLAND
PADGETT ISLAND
EAST FLORIDA
WILDER ROAD
HIBISCUS AVE
BACOM POINT
LAKESIDE CH
SEWAGE DISPOSAL
TREATMENT PLANT/
INJECTION WELL
PUMP
PALM BEACH CO GLADES AIRPORT
RADIO TOWER

ATTACHMENT 2: Details Of Wells

GERAGHTY & MILLER, INC. Environmental Services	COMPILED BY: K. VERON	DATE: JUL 90	SCALE: NONE	PREPARED FOR: RUSSELL & AXON, INC.
	PREPARED BY: B. OUVA	FILE NO: PF06403		
	PROJECT MGR.: J. WHEATLEY			



SUBJECT:

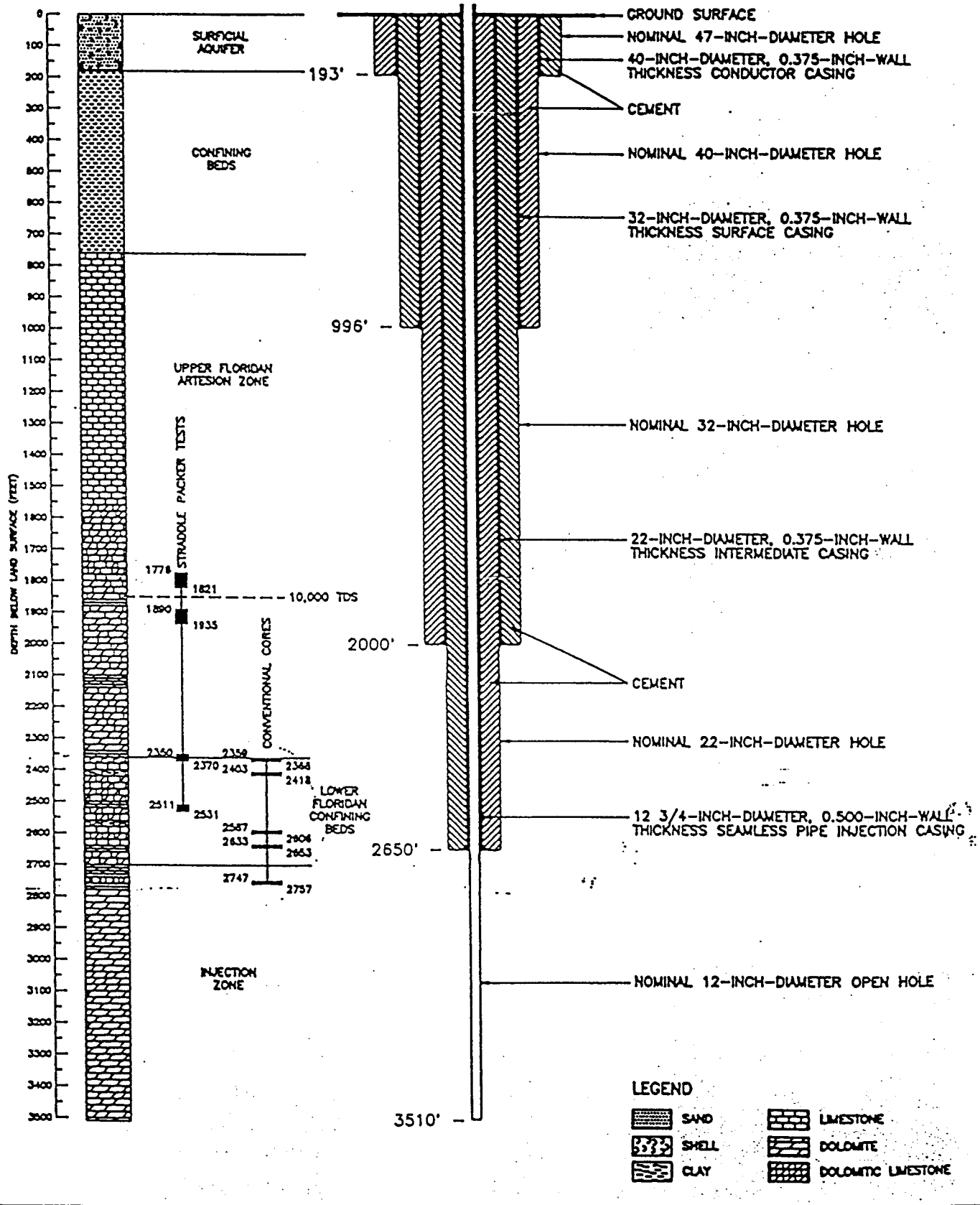
FINAL COMPLETION CONSTRUCTION DETAILS FOR
CITY OF PAHOKEE
DEEP MONITOR WELL

FIGURE
3

GERAGHTY & MILLER, INC.
Environmental Services

COMPILED BY:	K. VERON	DATE: JUL 90	SCALE: NONE
PREPARED BY:	B. OLIVA	FILE NO: PF06403	
PROJECT MGR.:	J. WHEATLEY		

PREPARED FOR: RUSSELL & AXON, INC.



SUBJECT:

FINAL COMPLETION CONSTRUCTION AND TESTING DETAILS FOR CITY OF PAHOKEE INJECTION WELL

FIGURE 2

ATTACHMENT 3: Evaluation And Review Of Area And Updated Review Information

GERAGHTY
& MILLER, INC.
Environment and Infrastructure

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June 24, 1996
PF0782.001

Mr. Robert Binger, P.E.
Craig A. Smith & Associates
1000 West McNab Road
Pompano Beach, Florida 33069

Re: Operating Permit Application Support
City of Pahokee Class I Injection Well System Operating Permit Renewal
CAS Project No. 93-1599

Dear Mr. Binger:

Enclosed please find one original copy of the narrative evaluation of the size of the area of review, based upon the available operation and monitoring data, with a justification for the selected radius. Also included are updated hydrogeologic information for the area of review, the updated Area of Review Map, the final construction details for the City of Pahokee Injection Well (Figure 2), the final construction details for the City of Pahokee Deep Monitor Well (Figure 3), and water-level elevation contour maps both for the Surficial Aquifer (Figure 4) and Floridan Aquifer (Figure 5). A Site Plan for the City of Pahokee Wastewater Treatment Plant also is included for your use. The text for the narrative evaluation and the hydrogeologic information (Microsoft WORD 6.0), with the 3 CADD (Release 12) generated figures (the Site Plan and Figures 2 and 3), are included on the enclosed diskette.

We appreciate the opportunity to provide professional services to Craig A. Smith & Associates in support of the Operating Permit renewal application for the City of Pahokee Injection Well System. If you have any questions or comments, please feel free to contact us.

Sincerely,
GERAGHTY & MILLER, INC.

Michael J. Waldron, P.G.
Staff Scientist

Thomas L. Tessier, P.G.
Vice President

MJW:lt
g:\aproject\csmith\PF0782.001\cvrltr.doc

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UPDATED AREA OF REVIEW

The minimum radius for the area of review is one mile, as defined in Section 62-528.300 (4), Florida Administrative Code (FAC); that radius has been utilized for the updated City of Pahokee Injection Well System area of review, based on 1) the original area of review radius of one mile utilized for the permit application to construct and test the injection well system, and 2) an evaluation of the available injection-well system operation and monitoring data. The size of the area of review originally was based on a conservative estimate of the width of the "zone of endangering influence" in the vicinity of the injection well. The area of review represents the estimated land surface area overlying and encompassing the lateral area in which the buoyant forces or increased pressures in the injection zone may cause the migration of the injected or formation fluid into an underground source of drinking water.

Operation and Monitoring Data

The operational injection pressure and injection flow volume data collected between January 1992 and November 1996 has been presented in both tabular and graphical form in order to evaluate the operational efficiency (performance) of the well during the 5-year period and to justify the size of the selected area of review.

The performance of an injection well is based on 2 main factors which influence the wellhead operating pressures over the life of the well. The first is the ability of the receiving ("Boulder Zone") formation to accept the effluent at design capacities. The second factor influencing the wellhead operating pressures over time is the condition of the injection casing, which is responsible for the friction loss component of the total wellhead pressure measured at the surface. The performance of an injection casing changes over time as the casing "ages" and, in general, varies with the roughness coefficient (C) of the casing (as estimated by the modified Hazen-Williams equation). An increasing trend in wellhead injection pressure (per unit volume of injected effluent) over time is attributed to one of these factors.

An evaluation of the available operational data from the City of Pahokee Injection Well, System indicates that the average daily flow (wastewater injection rate) volume has varied between 0.84 million gallons per day (mgd) and 1.74 mgd for the months of January 1992 through December 1996. The average daily operating wellhead pressure has varied between 35 pounds per square inch (psi) and 49 psi for the months of January 1992 through December 1996. Based on the injection pressure and injection flow volume data collected from January 1992 to November 1996 (Figure #), it appears that the injection well efficiency has not significantly decreased since January 1992. The (monthly-average) maximum daily flow rate for the 23-inch inside diameter injection well was 2.62 mgd (less than 2000 gallons per minute [gpm]), equivalent to a downhole velocity of less than 5.4 feet per second within the well casing, between January 1992 and November 1996. During that same period, the peak hourly flow rate to the injection well did not exceed 3.2 mgd (less than 2250 gpm) or approximately 6.6 feet per second.

The monthly maximum and monthly minimum pressure readings from the dual-zone Deep Monitor Well, from both the upper monitoring zone and the lower monitoring zone (measured in psi at the wellhead), have been presented both in graphical and tabular form. Readings collected between January 1992 and March 1993, appear to be anomalous. However, according to the current Lead Operator at the City of Pahokee Wastewater Treatment Plant, between January 1992 and March 1993, monitoring zone pressure readings were recorded while the monitoring zone pumps were operating (in order to purge water for the monthly water sampling event). Since March 1993, the pumps for the wells have not been used and the monitoring well zones are allowed to flow under artesian conditions prior to each monthly sampling event. Since March 1993, daily monitoring zone pressure readings have been recorded while the well zones were shut-in. Based on the available lower monitoring zone pressure data collected from March 1993 through November 1996, the lower monitoring zone pressure readings appear stable, ranging from a minimum of 12 psi to a maximum of 20 psi. Total dissolved solids concentrations analyzed from lower monitor zone water samples were reported between 16,000 and 18,600 milligrams per liter during the 5-year period and do not demonstrate either an increasing or decreasing trend during the period from January 1992 to November 1996.

A review of the testing results submitted with the March 1991 Geraghty & Miller report entitled "Construction and Testing of Injection Well System #1, City of Pahokee Wastewater Treatment Plant, Palm Beach County, Florida" and the available operation and monitoring data collected during the active life of the injection well system indicate that the injection zone is capable of accepting treated effluent at the permitted rate (3.9 mgd). The operation and monitoring data do not provide evidence that injection of treated wastewater into the "injection zone", located below a depth of approximately 2650 feet, has caused upward migration of injected or formation water into an Underground Source of Drinking Water.

Updated Area of Review Map

An updated Area of Review Map is presented as Figure 1, illustrating the one-mile area of review radius. The updated locations of surface-water bodies, roads, and residences have been included by utilizing the most recent U.S. Geological Survey topographic map available (1970), the most recent (1995) aerial photographs of the vicinity and the most recent (available) City of Pahokee street atlas. South Florida Water Management District (District) well permit postings were reviewed to update the current location and construction data for permitted water supply wells within a one mile radius of the City of Pahokee Injection Well System. The District records indicated that no potable water supply (public or private) or irrigation water supply wells are located (posted as permitted wells at the District) within a one mile radius of the City of Pahokee Wastewater Treatment Plant (Figure 1). The final completion construction and testing details for the City of Pahokee Injection Well and Deep Monitor Well are presented as Figures 2 and 3, respectively. The Palm Beach County Health Department (formerly part of the Palm Beach County Department of Health and Rehabilitative Services), a state agency, was contacted to determine whether a record of permitted private water supply wells exists for property owners (permittees) within the area of review. According to Mr. Russ Weaver with that

agency, listings of permittees for Palm Beach County are archived at that Department, but the permit listings are indexed chronologically and are not available in an electronic format (or cross-referenced by the well location). In addition, the status of the permits are not updated.

The Florida Geological Survey (formerly the Florida Bureau of Geology) Division of Oil and Gas was contacted to determine if any former or current oil (or gas) wells exist in the area of review. According to Mr. Edward Garrett with that agency, records indicate that no abandoned or active oil or gas (either exploratory or production) wells exist within 3 miles of the area of review.

Based on the available operation and monitoring data for the injection well system, the one mile area of review radius appears to be a conservatively large estimate of the potential width of the "zone of endangering influence" in the vicinity of the injection well. However, due to the relative scarcity of available well data within that one mile radius, and based on Section 62-528.300 (4) (b), FAC, the originally permitted width of the area of review was retained for the purpose of updating regional hydrogeologic data in the vicinity of the Pahokee Injection Well System.

UPDATED GEOLOGIC AND HYDROGEOLOGIC INFORMATION

Local and regional geologic and hydrogeologic information was presented in the March 1991 Geraghty & Miller report entitled "Construction and Testing of Injection Well System #1, City of Pahokee Wastewater Treatment Plant, Palm Beach County, Florida". A brief review of the regional hydrogeologic setting for the vicinity of the injection well system follows to indicate the general vertical and lateral limits within the area of review of all underground sources of drinking water, their position relative to the injection formation and the direction of water movement, where known, in each underground source of drinking water which may be affected by the proposed injection.

The lithologies encountered during the drilling of the pilot hole for the City of Pahokee injection well are presented as a stratigraphic column on Figure 2 with corresponding hydrogeologic units defined to the right of the column. The uppermost 180 feet of sediments encountered during pilot hole drilling were Pleistocene, Pliocene, and late Miocene-age sands, in addition to silts, limestone and shell. These sediments contain the Surficial Aquifer which is used as a major source of drinking water throughout most of Palm Beach County. Due to the presence of highly mineralized water in the Surficial Aquifer in western Palm Beach County, the City of Pahokee uses water from Lake Okeechobee for drinking water and irrigation purposes.

The altitude of the water table in the Surficial Aquifer in April 1984 (after 1988 USGS- Water Resources Investigations Report 88-4056, modified from Miller, 1985a.) is presented as Figure 4. The water table is shown at an elevation of between 8 and 10 feet (based on the National Geodetic Vertical Datum [NGVD] adjustment of 1929) in the vicinity of the Pahokee Injection Well System. Based upon a review of the 1970 U.S. Geological Survey topographic map, the land surface elevation shows little slope in the area of review and appears to be between approximately 10 and 15 feet NGVD. Within the area of review, the groundwater flow direction in the Surficial Aquifer appears to be away from the higher elevations at the Lake Okeechobee shoreline. The shallow groundwater also appears to flow from the lake's primary canals toward groundwater depressions between the canals to the east of the lake (Figure 4).

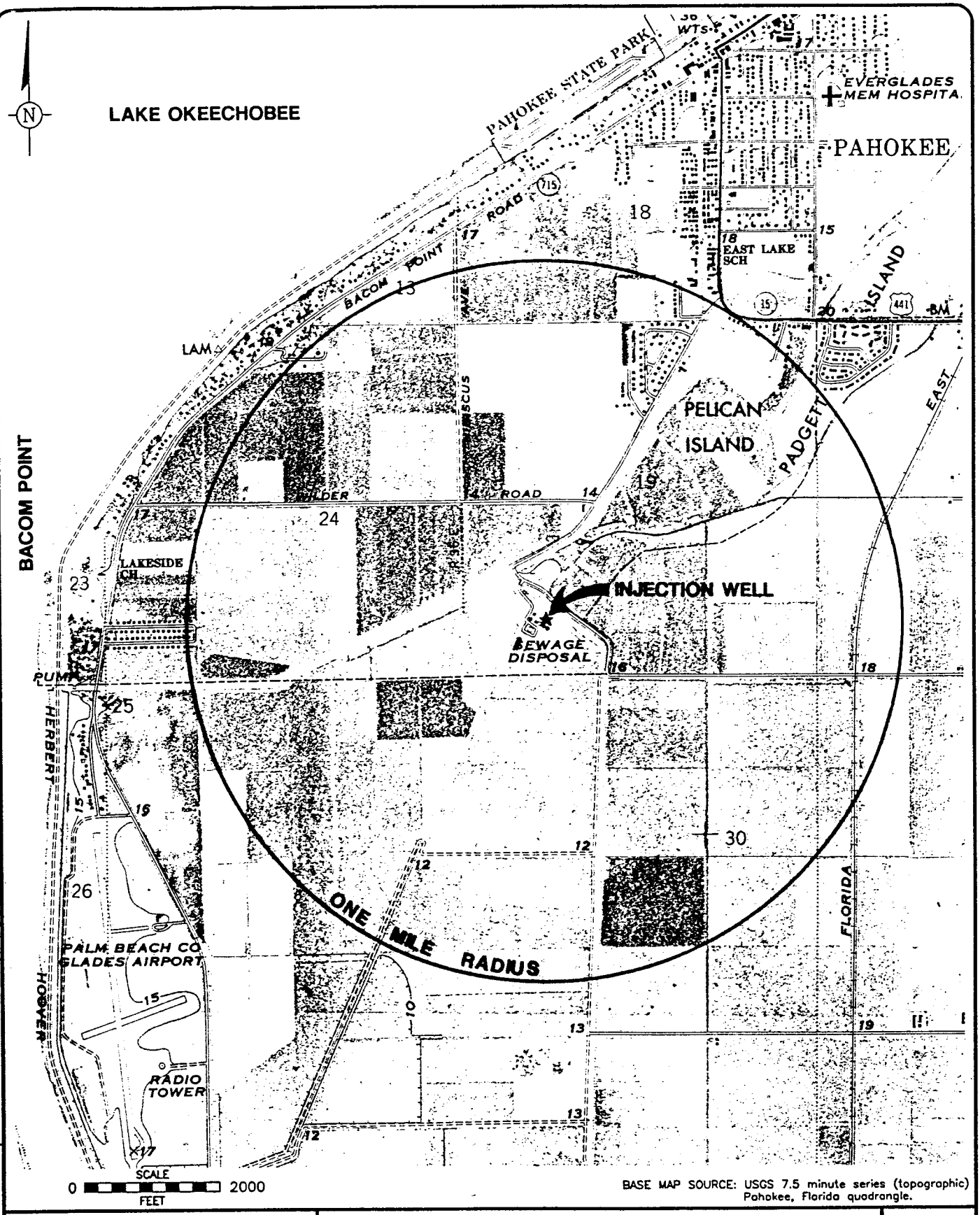
Underlying the Surficial Aquifer are approximately 600 feet of Miocene clay and marl which form a confining sequence between the Surficial Aquifer and the lower Miocene (and Oligocene) to Eocene limestones and dolomites of the Floridan Aquifer. These sediments form a confining sequence referred to as the Hawthorn Group.

The Hawthorn Group sediments overlie the Floridan Aquifer which exists under artesian conditions with a potentiometric level above land surface. The dense Miocene clays of the overlying Hawthorn Group sediments provide good confinement for this aquifer. From approximately 780 to 910 feet deep, the limestones correspond to descriptions of the Suwanee and Tampa Formations and to the Ocala Group limestones. The middle to upper Eocene limestones, dolomitic limestones and dolomites of the Avon Park and Lake City Limestone Formations were encountered between 910 and

2090 feet. The limestones and dolomites comprise the Upper Floridan Aquifer. The existence of the Lake City limestone in this area was inferred from the literature as there was insufficient microfossil evidence in samples from this pilot hole to delineate a base for the Avon Park Formation. Dolomite was first encountered at 1560 feet deep. Below 2090 feet, the lower Avon Park or Lake City Limestone Formation consists of interbedded limestones and dolomites. Based on the testing program, a confining sequence underlying the Upper Floridan Aquifer was defined between a depth of approximately 2350 and 2650 feet at the City of Pahokee injection well. This confining sequence, also referred to as the "Lower Floridan Confining Beds" (Figure 2), overlies a section of highly permeable dolomite referred to as the "Boulder Zone".

The potentiometric surface elevation contours (in feet, referenced to NGVD) and the generalized groundwater flow directions for the artesian Upper Floridan Aquifer in May 1980 are presented as Figure 5 (revised from Johnston and others [1981], and Healy [1982]). The potentiometric surface sloped gently toward the east in the area of review. Water quality in the Floridan Aquifer is poor in comparison to Surficial Aquifer water quality. Water from the Floridan Aquifer in this area contains concentrations of dissolved solids which exceed drinking water standards. The aquifer is not extensively utilized as a source of drinking water in Palm Beach County because of the additional treatment required to meet drinking water standards. During construction and testing of the injection well, representative water samples were collected from isolated sections of the injection well pilot hole during straddle-packer pumping tests and from the proposed injection zone. Water samples were analyzed for selected ions to establish the 10,000 milligrams per liter (mg/L), total dissolved solids (TDS) concentration interface (the depth below which the TDS concentration exceeds 10,000 mg/L). As reported in the March 1991 Geraghty & Miller report, the 10,000 mg/L TDS interface occurs at a depth of approximately 1820 to 1890 feet in the Upper Floridan Aquifer.

The top of the lower Eocene sediments of the Oldsmar Formation were first encountered at a depth of approximately 2700 feet as characterized by the vuggy texture of the dolomite drill cutting samples and large scale dissolution features noted on a caliper log. This zone contains highly mineralized water and is used throughout south Florida for the disposal of wastewater.



BASE MAP SOURCE: USGS 7.5 minute series (topographic) Pahokee, Florida quadrangle.

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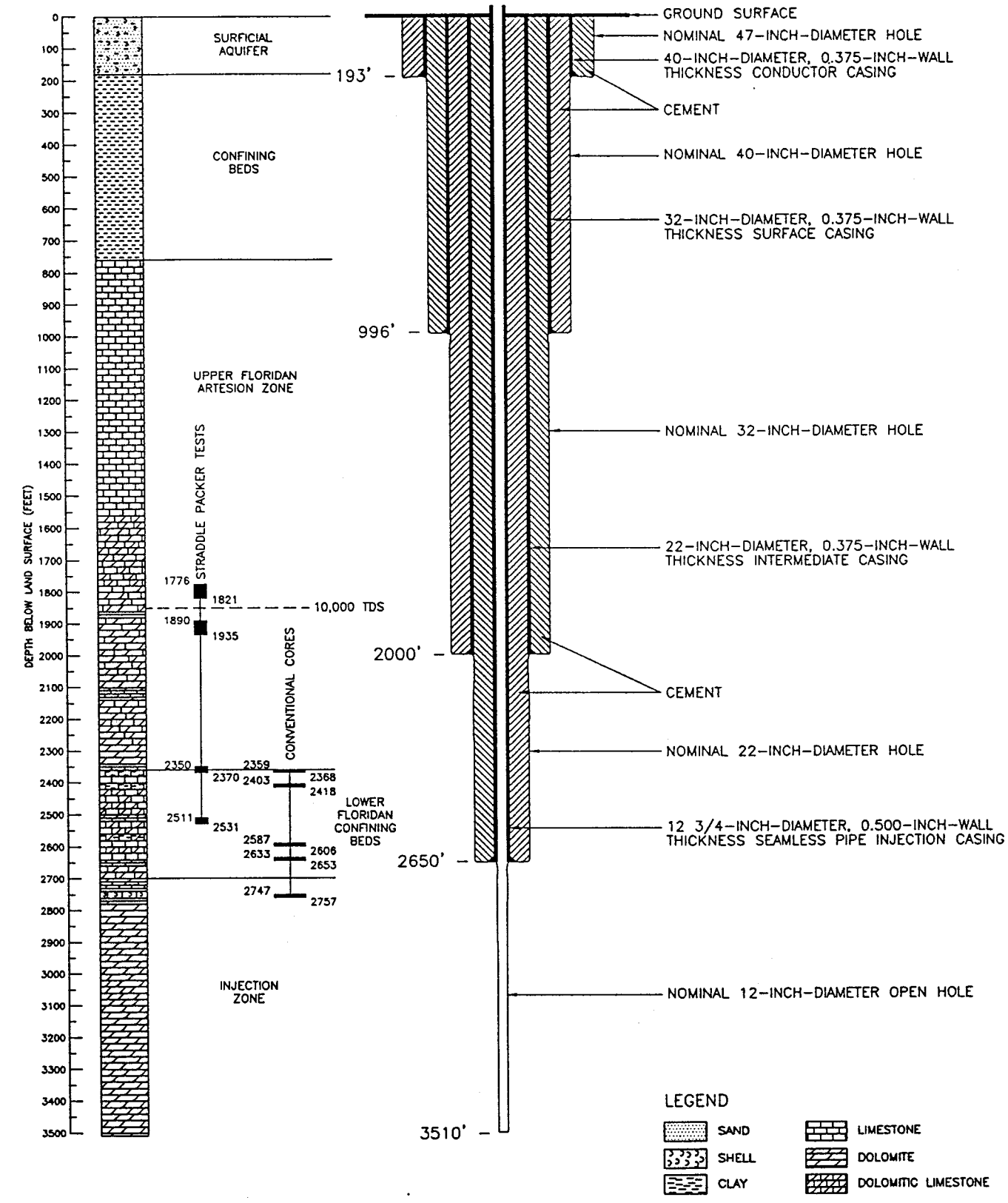
AREA OF REVIEW
CITY OF PAHOKEE INJECTION WELL SYSTEM
PAHOKEE, FLORIDA

Prepared For
CRAIG A. SMITH & ASSOCIATES

FIGURE
1



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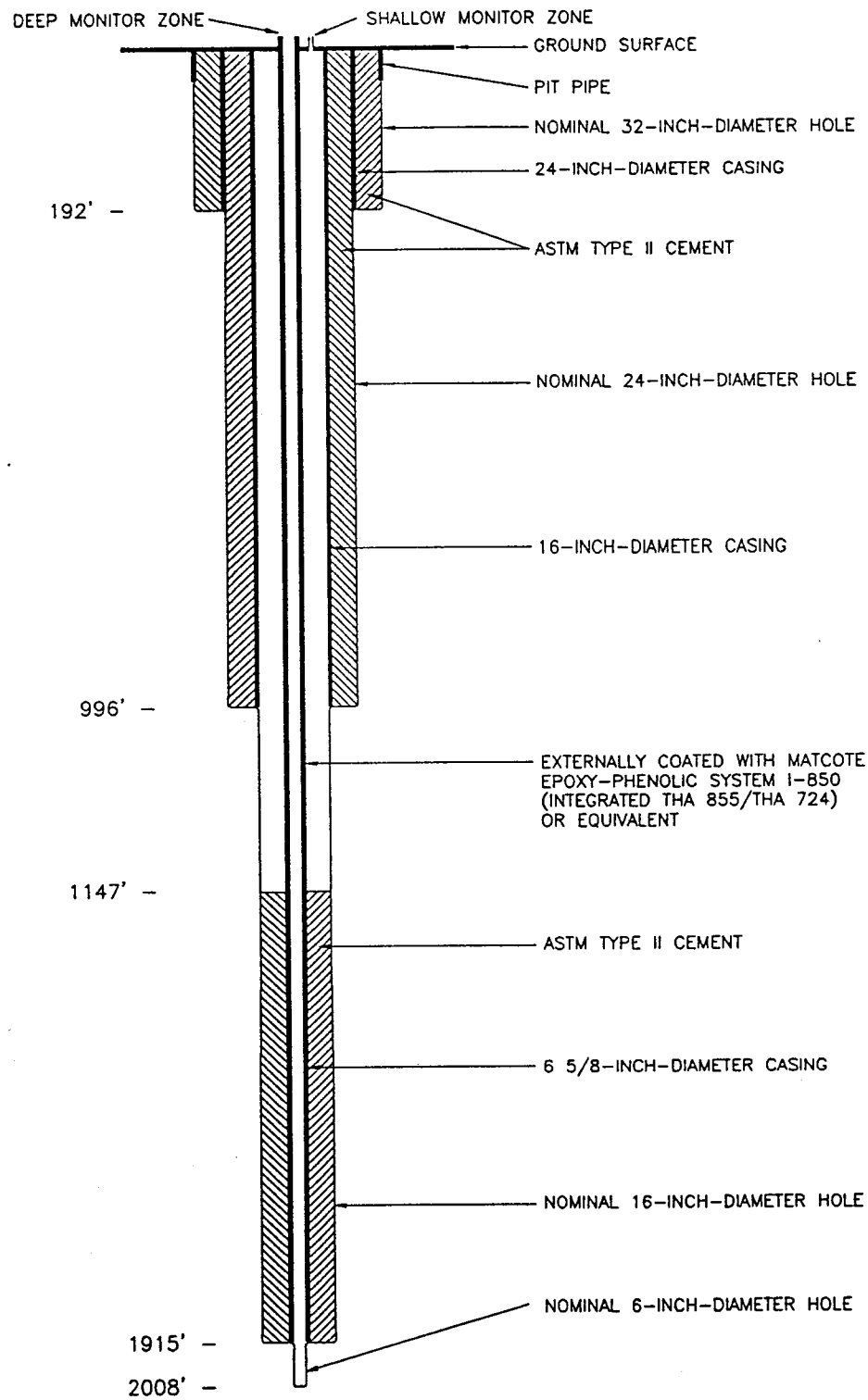
FINAL COMPLETION CONSTRUCTION AND TESTING DETAILS FOR CITY OF PAHOKEE INJECTION WELL PAHOKEE, FLORIDA

Prepared For
CRAIG A. SMITH & ASSOCIATES

FIGURE
2



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FINAL COMPLETION CONSTRUCTION DETAILS FOR CITY OF PAHOKEE DEEP MONITOR WELL PAHOKEE, FLORIDA

Prepared For
CRAIG A. SMITH & ASSOCIATES

FIGURE
3

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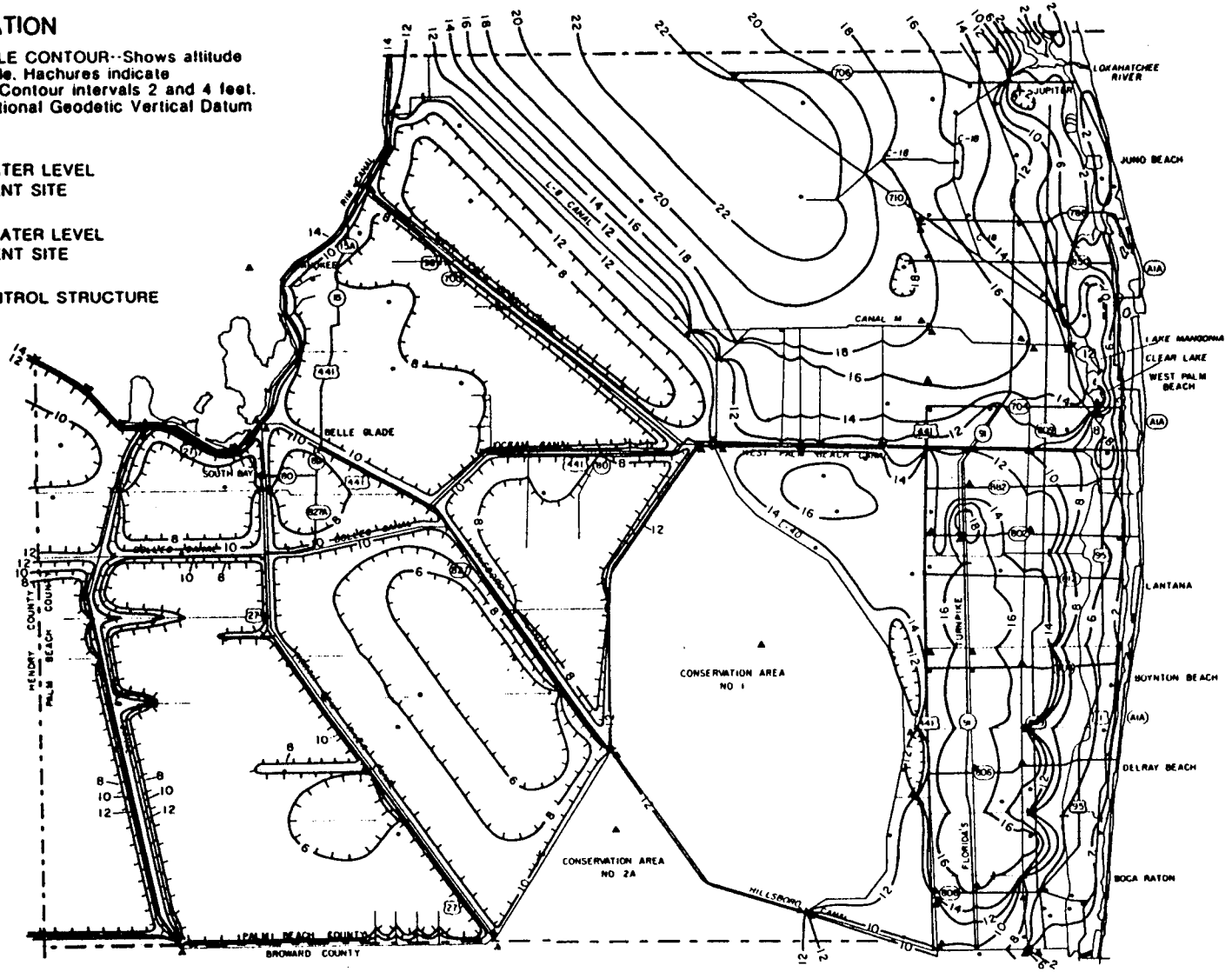
EXPLANATION

— 8 — WATER-TABLE CONTOUR--Shows altitude of water table. Hachures indicate depressions. Contour intervals 2 and 4 feet. Datum is National Geodetic Vertical Datum of 1929.

• GROUND-WATER LEVEL MEASUREMENT SITE

▲ SURFACE-WATER LEVEL MEASUREMENT SITE

I WATER CONTROL STRUCTURE



SCALE
0 8
MILES

SOURCE: Department of the Interior, USGS Water-Resources Investigations Report 88-4056, Wesley L. Miller, 1988.

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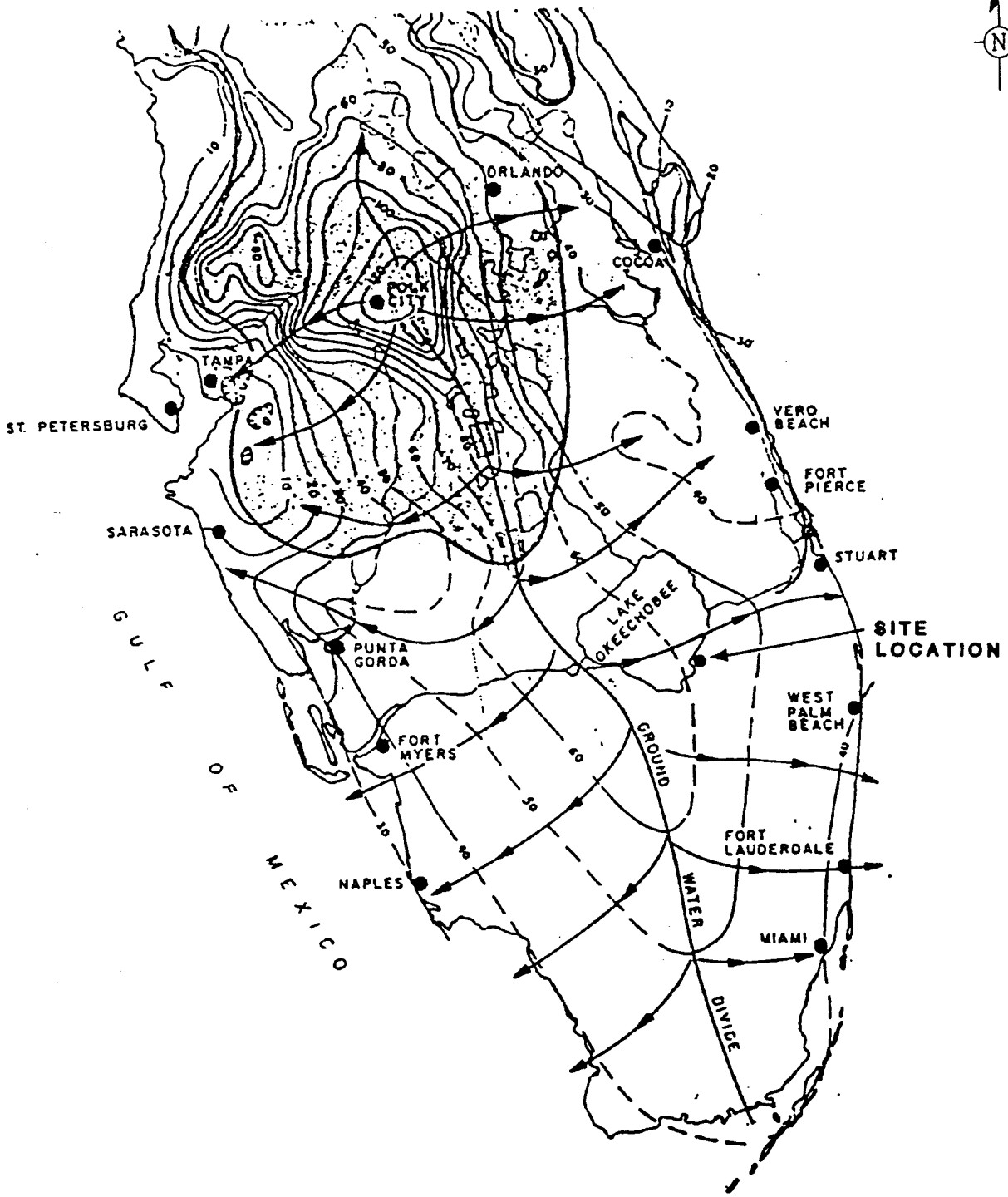
ALTITUDE OF WATER TABLE, SURFICIAL AQUIFER SYSTEM PALM BEACH COUNTY, FLORIDA APRIL 1984

Prepared For
CRAIG A. SMITH & ASSOCIATES

FIGURE
4



SOURCE: USGS, revised from Johnston and others (1981) and Healy (1982).

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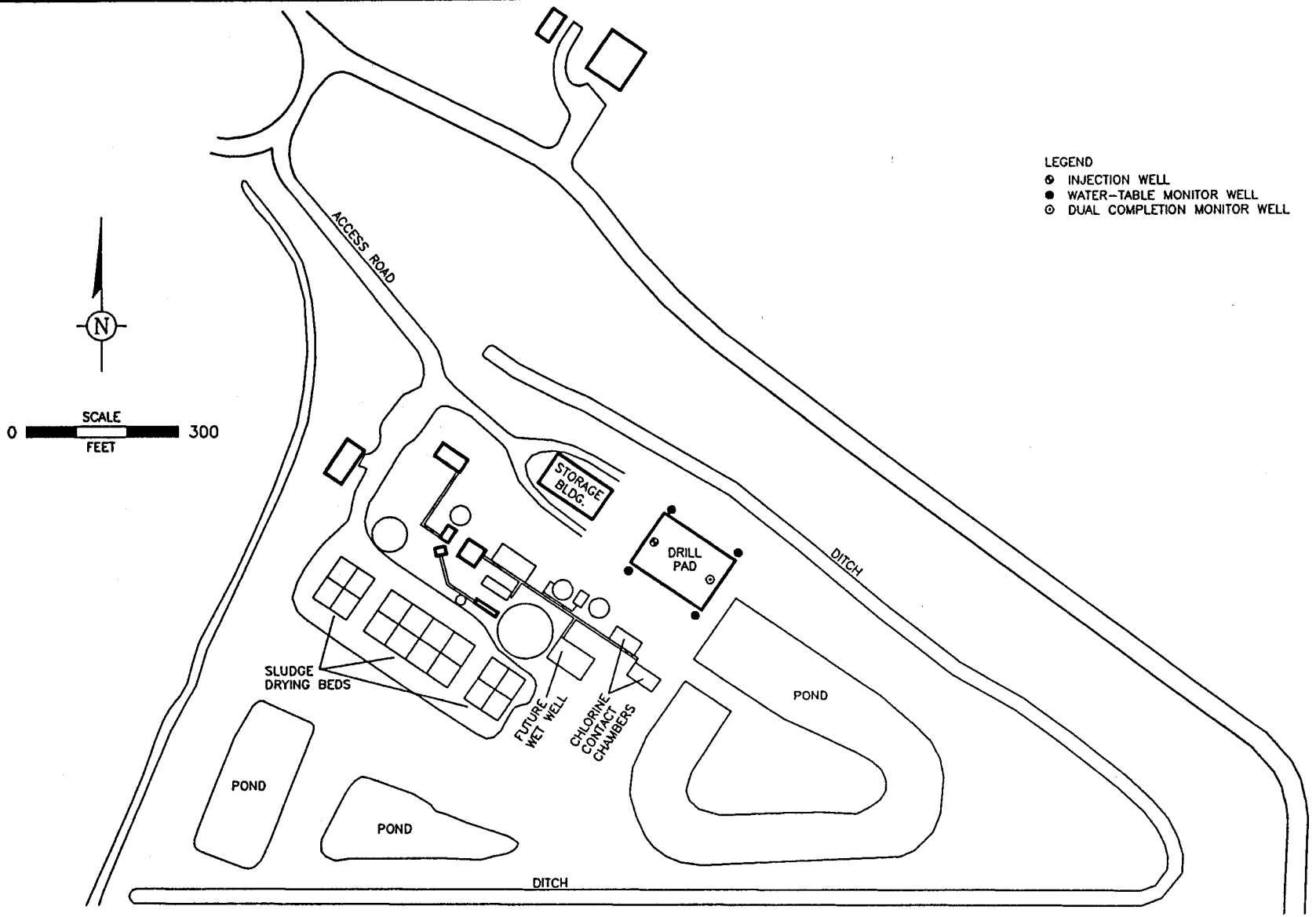
PENINSULAR FLORIDA SHOWING THE UPPER FLORIDAN AQUIFER POTENTIOMETRIC SURFACE IN MAY 1980

Prepared For
CRAIG A. SMITH & ASSOCIATES

FIGURE
5

DWG DATE: 11JUN97 | PRJCT NO.: PF0782.001 | FILE NO.: CSMITH | DRAWING: 78201-PS | CHECKED: M.WALDRON | APPROVED: T.TESSIER | DRAFTER: B.OLIVA

DWG DATE: 17JUN97	PRJCT NO.: PF0782.001	FILE NO.: CSMITH	DRAWING: 78201-FP	CHECKED: M.WALDRON	APPROVED: T.TESSIER	DRAFTER: B.OLIVA



GERAGHTY & MILLER, INC.
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SITE PLAN
CITY OF PAHOKEE WASTEWATER TREATMENT PLANT
PAHOKEE, FLORIDA

Prepared For
CRAIG A. SMITH & ASSOCIATES

FIGURE

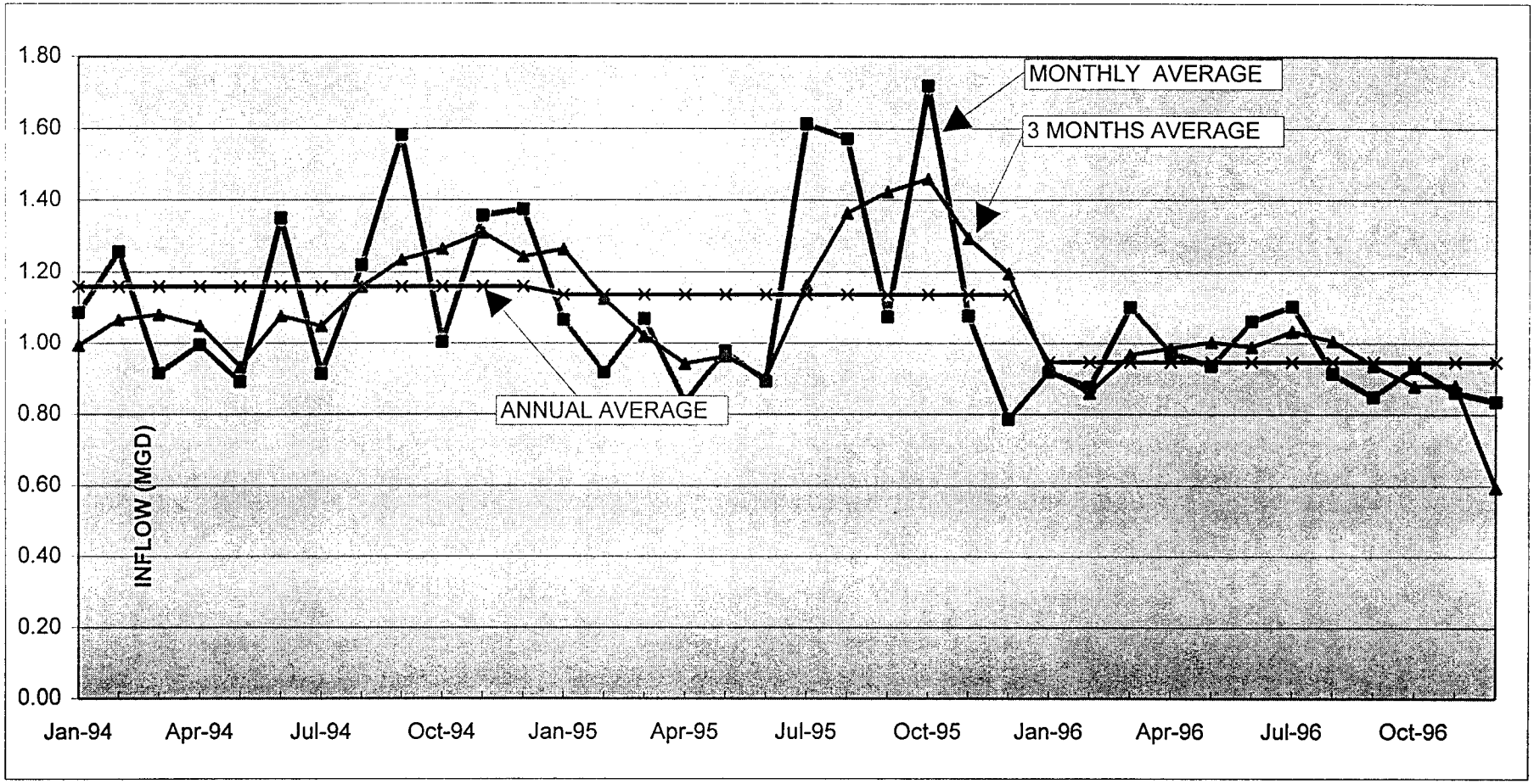
ATTACHMENT 4: Wastestream Analysis

PAHOKEE WASTEWATER TREATMENT PLANT- SUMMARY OF DATA

		FLOW DATA			RAINFALL		EFFLUENT CONCENTRATION					
DATE	DAYS OF DATA	Max.Avg Day MGD	3Mth.Avg Day MGD	Ann. Avg Day MGD	IN/MO	3 MTH AVG	MO. AVE.CBOD5 (Mg/l)	MO. PEAK CBOD5 Mg/l	ANN. AVE. CBOD5 MG/L	MO.AVE. TSS Mg/l	MO. PEAK TSS Mg/l	ANNUAL AVE TSS Mg/l
Jan-94	31	1.09	0.99	1.160	5.52	2.980	1.80	2.53	2.118	7.31	9.800	5.838
Feb-94	28	1.26	1.07	1.160	3.33	3.127	1.73	2.1	2.118	2.26	5.500	5.838
Mar-94	31	0.92	1.08	1.160	1.32	3.390	2.27	3.7	2.118	7.01	10.300	5.838
Apr-94	30	1.00	1.05	1.160	1.24	1.963	2.04	2.39	2.118	6.65	11.000	5.838
May-94	31	0.89	0.93	1.160	2.24	1.600	2.47	2.83	2.118	6.69	7.750	5.838
Jun-94	30	1.35	1.08	1.160	9.55	4.343	1.87	2.66	2.118	5.35	7.500	5.838
Jul-94	31	0.91	1.05	1.160	5.82	5.870	2.39	4.1	2.118	8.01	13.800	5.838
Aug-94	31	1.22	1.16	1.160	10.99	8.787	2.48	3.34	2.118	5.94	8.500	5.838
Sep-94	30	1.58	1.24	1.160	8.08	8.297	1.22	1.67	2.118	3.47	4.600	5.838
Oct-94	31	1.00	1.27	1.160	6.97	8.680	2.41	2.86	2.118	6.31	9.750	5.838
Nov-94	30	1.36	1.31	1.160	7.39	7.480	2.05	2.08	2.118	3.35	5.000	5.838
Dec-94	31	1.38	1.24	1.160	8.02	7.460	2.71	5.53	2.118	7.70	17.250	5.838
Jan-95	31	1.07	1.27	1.137	3.57	6.327	3.27	5.3	3.389	5.80	9.500	5.584
Feb-95	28	0.92	1.13	1.137	3.9	5.163	2.80	4.9	3.389	9.60	15.250	5.584
Mar-95	31	1.07	1.02	1.137	3.51	3.660	2.66	3.6	3.389	6.44	7.250	5.584
Apr-95	30	0.84	0.94	1.137	1.38	2.930	2.07	2.41	3.389	5.19	6.750	5.584
May-95	31	0.98	0.96	1.137	2.06	2.317	2.13	2.83	3.389	4.60	5.750	5.584
Jun-95	30	0.89	0.90	1.137	8.34	3.927	1.94	2.65	3.389	5.00	7.250	5.584
Jul-95	31	1.61	1.16	1.137	5.72	5.373	2.75	4.64	3.389	7.13	8.750	5.584
Aug-95	31	1.57	1.36	1.137	9.03	7.697	2.77	5.92	3.389	5.35	9.000	5.584
Sep-95	30	1.07	1.42	1.137	4.4	6.383	2.98	6	3.389	2.90	4.000	5.584
Oct-95	31	1.72	1.46	1.137	8.25	7.227	3.25	4	3.389	5.25	10.000	5.584
Nov-95	30	1.08	1.30	1.137	1.47	4.707	4.80	7	3.389	4.00	6.000	5.584
Dec-95	31	0.79	1.20	1.137	0.74	3.487	9.25	15	3.389	5.75	8.000	5.584
Jan-96	31	0.92	0.93	0.947	1.64	1.283	7.80	11	7.664	10.40	14.000	8.028
Feb-96	29	0.88	0.86	0.947	0.55	0.977	6.00	8	7.664	5.50	6.000	8.028
Mar-96	31	1.10	0.97	0.947	5.55	2.580	7.75	16	7.664	11.50	25.000	8.028
Apr-96	30	0.97	0.99	0.947	1.79	2.630	8.00	9	7.664	7.00	12.000	8.028
May-96	31	0.94	1.00	0.947	7.92	5.087	5.50	7	7.664	4.30	6.000	8.028
Jun-96	30	1.06	0.99	0.947	7.23	5.647	12.30	17	7.664	15.00	26.000	8.028
Jul-96	31	1.10	1.03	0.947	4.32	6.490	7.00	12	7.664	5.00	8.000	8.028
Aug-96	31	0.92	1.01	0.947	5.85	5.800	7.00	9	7.664	6.00	11.000	8.028
Sep-96	30	0.85	0.94	0.947	6.99	5.720	8.50	12	7.664	6.00	7.000	8.028
Oct-96	31	0.93	0.88	0.947	4.55	5.797	7.00	9	7.664	10.00	13.000	8.028
Nov-96	30	0.86	0.88	0.947	2.06	4.533	8.00	9	7.664	8.00	11.000	8.028
Dec-96	31	0.84	0.60	0.947	0.9	2.503	7.12	9	7.664	7.64	10.000	8.028

PAHOKEE WASTEWATER TREATMENT PLANT--SUMMARY OF DATA.

INFLOW TO TREATMENT PLANT



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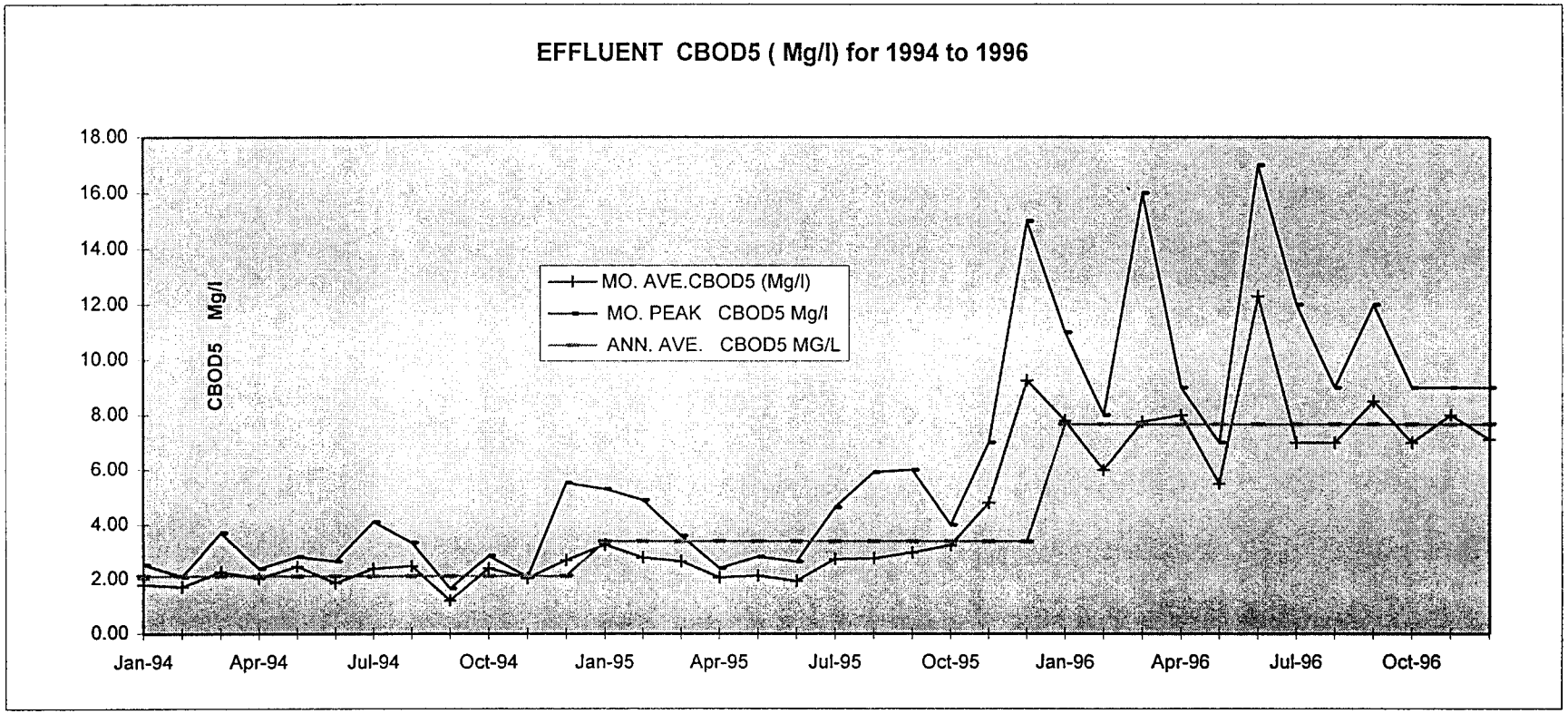
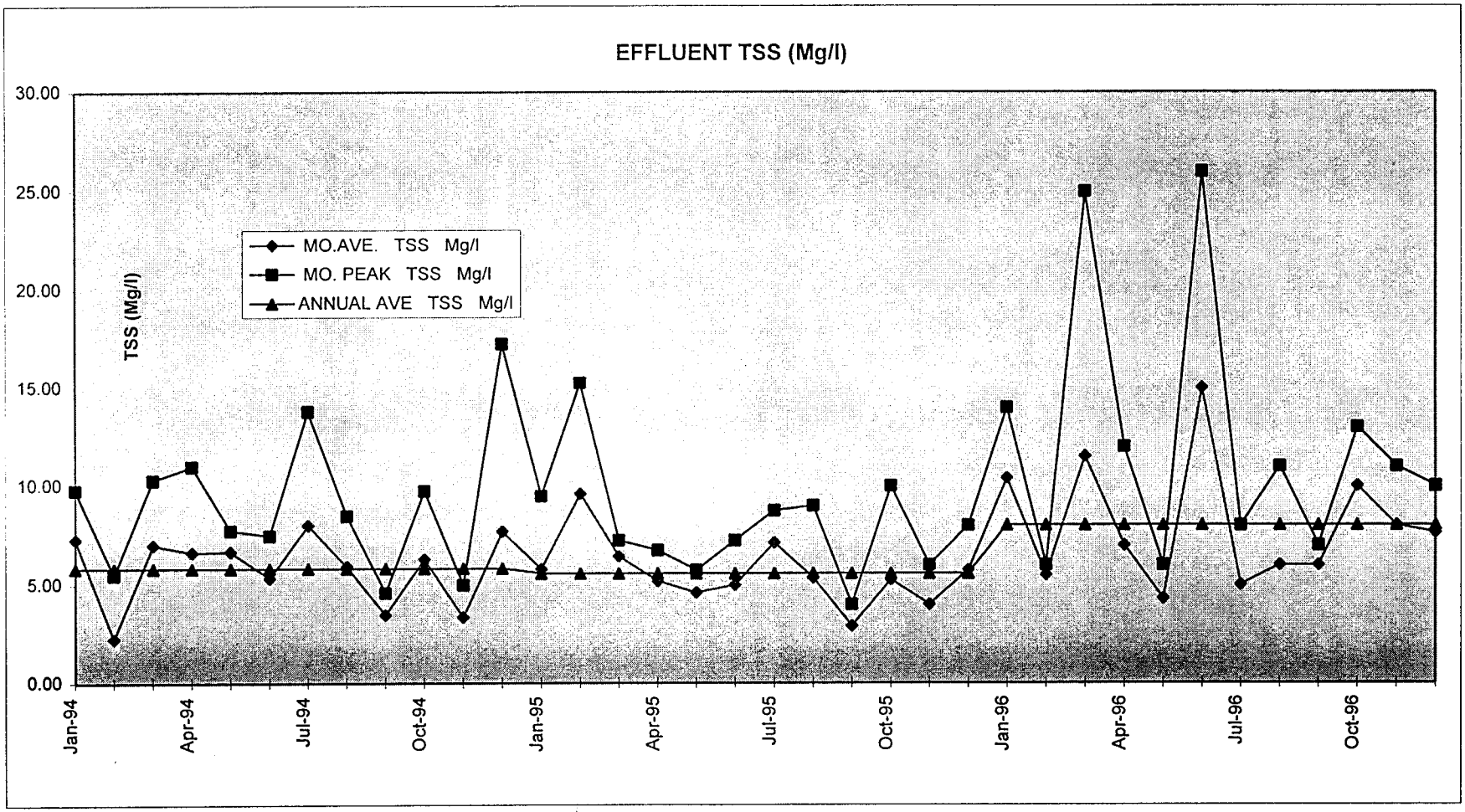


PAHOKEE WASTEWATER TREATMENT PLANT-SUMMARY OF DATA



PAHOKEE WASTEWATER TREATMENT PLANT
SUMMARY OF INFLUENT/EFFLUENT CONCENTRATION FOR 1996

Date Samp	Influent Concentrations		Primary Clarifier		Effluent Concentrations	
	CBOD	TSS	CBOD	TSS	CBOD	TSS
3-Jan	134	146	38	60	7	10
9	130	142	68	80	6	10
16	162	145	64	89	9	7
23	202	179	81	97	11	14
30	150	137	64	98	6	11
Avg	155.6	149.8	63	84.8	7.8	10.4
6-Feb	162	133	50	74	7	5
13	147	155	46	60	5	6
20	123	136	67	60	5	6
27	172	158	62	74	8	5
Avg	151	145.5	56.25	67	6.25	5.5
5-Mar	170	141	40	62	3	4
12	121	88	56	65	16	25
19	146	120	58	73	7	9
27	172	186	68	57	5	8
Avg	152.25	133.75	55.5	64.25	7.75	11.5
2-Apr	122	108	58	62	7	4
9	84	63	38	29	6	5
16	147	129	62	56	8	12
23	96	120	70	54	9	8
30	152	120	54	62	8	6
Avg	120.2	108	56.4	52.6	7.6	7
7-May	115	90	52	41	7	4
14	184	144	38	51	6	5
21	144	97	50	56	3	6
28	83	64	45	30	6	2
Avg	129.24	100.6	48.28	46.12	5.92	4.8
4-Jun	144	112	65	50	8	11
11	132	114	68	78	17	26
18	166	115	54	37	12	15
26	113	106	41	49	12	9
Avg	136.848	109.52	55.256	52.024	10.984	13.16
2-Jul	84	61	39	22	6	3
9	70	63	48	36	5	4
16	87	108	55	42	10	6
23	69	76	52	34	4	5
30	102	118	67	40	12	8
Avg	82.4	85.2	52.2	34.8	7.4	5.2
6-Aug	164	132	48	52	7	11
13	136	104	58	42	9	5
20	165	134	73	50	6	3
27	170	132	36	53	4	5
Avg	143.48	117.44	53.44	46.36	6.68	5.84
3-Sep	96	104	40	29	10	6
10	156	124	52	64	7	4
17	138	112	72	95	5	6

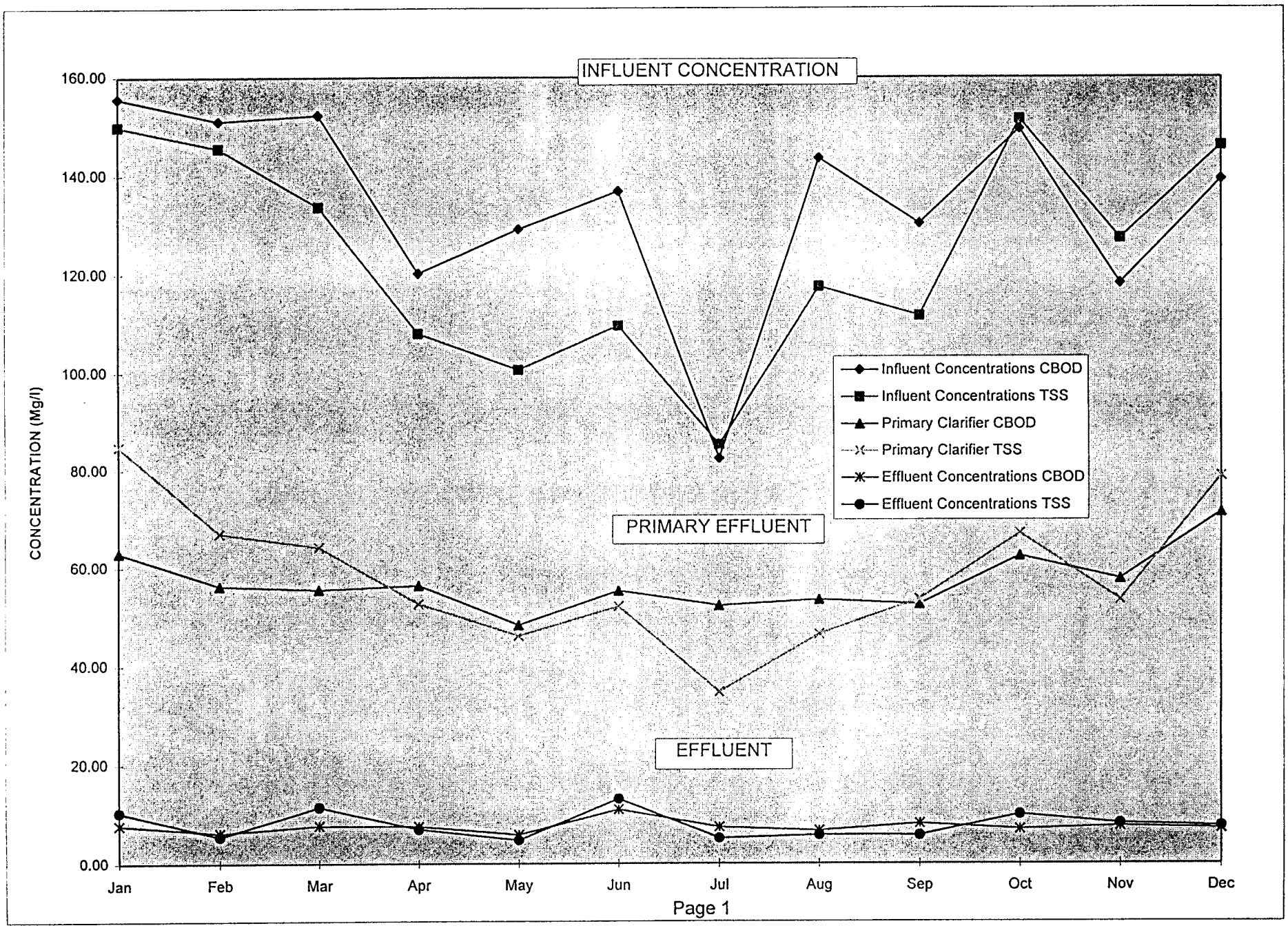
PAHOKEE WASTEWATER TREATMENT PLANT
SUMMARY OF INFLUENT/EFFLUENT CONCENTRATION FOR 1996

Date Samp	Influent Concentrations		Primary Clarifier		Effluent Concentrations	
	CBOD	TSS	CBOD	TSS	CBOD	TSS
24	118	100	45	33	12	7
Avg	130.296	111.488	52.488	53.472	8.136	5.768
2-Oct	152	115	62	80	8	11
9	108	132	45	76	4	8
15	127	104	56	49	7	9
22	172	183	89	64	7	9
29	188	223	60	66	9	13
Avg	149.4	151.4	62.4	67	7	10
5-Nov	136	154	72	50	7	8
12	88	76	61	42	9	6
19	122	145	54	60	8	6
26	95	110	39	48	7	11
Avg	118.08	127.28	57.68	53.4	7.6	8.2
3-Dec	208	250	130	162	7	10
10	134	120	43	54	9	8
17	134	118	59	72	5	9
25	102	115	67	52	7	3
Avg	139.216	146.056	71.336	78.68	7.12	7.64
nnual Avg	**134.5**	**124.25**	**57.29**	**59.06**	**7.60**	**8.02**

PAHOKEE WASTEWATER TREATMENT PLANT
INFLUENT/EFFLUENT CONCENTRATION (Mg/l) OF TSS, CBOD5 FOR 1996

	Influent Concentration		Primary Clarifier		Effluent Concentration	
Month	CBOD	TSS	CBOD	TSS	CBOD	TSS
Jan	155.60	149.80	63.00	84.80	7.80	10.40
Feb	151.00	145.50	56.25	67.00	6.25	5.50
Mar	152.25	133.75	55.50	64.25	7.75	11.50
Apr	120.20	108.00	56.40	52.60	7.60	7.00
May	129.24	100.60	48.28	46.12	5.92	4.80
Jun	136.85	109.52	55.26	52.02	10.98	13.16
Jul	82.40	85.20	52.20	34.80	7.40	5.20
Aug	143.48	117.44	53.44	46.36	6.68	5.84
Sep	130.30	111.49	52.49	53.47	8.14	5.77
Oct	149.40	151.40	62.40	67.00	7.00	10.00
Nov	118.08	127.28	57.68	53.40	7.60	8.20
Dec	139.22	146.06	71.34	78.68	7.12	7.64
Average	134.50	124.25	57.29	59.06	7.60	8.02

PAHOKEE WASTEWATER TREATMENT PLANT
INFLUENT/EFFLUENT CONCENTRATION FOR 1996



ATTACHMENT 5: PROCESS DESCRIPTION

CITY OF PAHOKEE - REPERMITTING OF INJECTION WELL

Process Description

The Pahokee Wastewater Treatment Plant was initially constructed and placed in operation in the mid sixties. The design capacity of this first train is 0.50 MGD. A second "Walker Modular" train was added in 1974 with 0.70 MGD design capacity. The current permitted capacity is 1.20 MGD based on a three month average daily flow.

The average inflow to the Pahokee Wastewater Treatment Plant for 1996 was 0.948 MGD or 658 gpm. The corresponding average inflows for 1994 and 1995 were 1.160 MGD and 1.137 MGD respectively.

The annual average of maximum and peak inflow rates for 1996 are 1.10 MGD and 2.02 MGD respectively. The plants inlet pipes are 12 inches and 8 inches. There is a third 4 inch inlet pipe from the treatment plant pumping station. The influent discharges at elevation 26.75 ft. (approximately 11 feet above ground level) to a mechanical bar screen. There is also a manual bar screen which operates when the mechanical screen is not operating. The total influent flows to the splitter box from the bar screen.

The splitter box is adjustable to permit sixty percent (60%) of the flow to be treated by the Walker Modular Plant (Train #2) and forty percent (40%) by Train #1.

The influent and effluent CBOD and TSS concentration for 1996 are shown at Attachment 2. The CBOD ranges from 208 mg/l on December 3 to 69 mg/l on 23 July. The TSS varied from 250 on December 3 to 61 mg/l on July 2. The average CBOD and TSS for the year were 134.5 mg/l and 124.25 mg/l respectively. The annual average CBOD and TSS of the effluent from the primary clarifier were 57.28 mg/l and 59.07 mg/l respectively. The average percentage removal of CBOD and TSS achieved in the primary clarifier is 68 percent and 52 percent respectively. These results are summarized below:

	CBOD	TSS
Influent Max - December 3, 1996	208 mg/l	250 mg/l
Influent Min - July 23, 1996	69 mg/l	61 mg/l
Average for 1996	134.5 mg/l	124.25 mg/l
Average Influent from Primary Clarifier	57.28 mg/l	59.07 mg/l
Average Removal Primary Clarifier	68%	52%
Average Effluent 1994 - 1996	4.21 mg/l	627 mg/l

Train #1: The forty percent flow from the splitter box is gravity fed to the primary clarifier which also acts as a grit remover. The average $CBOD_5$ and TSS of the effluent leaving the primary clarifier to the aeration tanks are 57.28 mg/l and 59.07 mg/l respectively. There are two (2) equal compartments to the aeration tank and each

volume is 9,597 ft^3 and total volume is 19,195 ft^3. Flow through the aeration tanks is in series.

The flow from the aeration tank is conveyed by a 16 inch pipe to a splitter box which permits equal flow to each of two 5841 cu. ft. secondary clarifiers. The effluent from these clarifiers is mixed with the effluent from Train #2, flows to a holding tank and is subsequently pumped to the injection well on the site. The average $CBOD_5$ and TSS of the dry weather effluent from 1994 to 1996 are 4.21 mg/l and 6.27 mg/l respectively. The return sludge is taken from the secondary clarifier and pumped to the inlet of the aerators.

Sludge from the primary and secondary clarifiers are pumped to the aerobic digester. The wasted sludge is gravity fed from the digester tank to the sludge drying beds.

Train #2: (Walker Modular Plant). The Walker Modular Plant treats approximately sixty percent (60%) or approximately 0.52 MGD of the plant inflow. The Walker Modular Plant is a large circular tank with diameter 72.5 feet. The respective volumes of the aeration tanks and the aerobic digester are 16,245 cu ft and 22,950 cu ft. The average $CBOD_5$ and TSS of the influent to the Walker Plant in 1996 are 134.5 mg/l and 124.25 mg/l respectively.

Return sludge is airlifted from the clarifier to the aeration compartment. Waste sludge from the aerobic digesters is gravity fed to the adjacent sludge drying beds. The effluent is mixed with the effluent from Train #1 and flows to the holding tank and then pumped to the injection well. The pumping rate and pressure at the injection well are 900 gpm and 38 psi respectively.

A schematic of the treatment plant is shown at Attachment 1.

Summary

Permitted capacity: 1.2 MGD based on three months average.

Date placed in service (in the current capacity) : 1974

Modification in last five years: None

ATTACHMENT 6: Mechanical Integrity Test Result

Injection Well
Mechanical Integrity Testing
City Of Pahokee

September 1994

Prepared for

City Of Pahokee
171 North Lake Avenue
Pahokee, Florida 33476

Prepared by

WATER TECHNOLOGY ASSOCIATES, INC.
P.O. BOX 31011
Palm Beach Gardens, Florida 33420

Injection Well
Mechanical Integrity Testing
City Of Pahokee

CONTENTS

APPENDICES

Injection Well
Mechanical Integrity Testing
City Of Pahokee

Introduction

In fulfillment of Section 17-28.250(1)(c), Florida Administrative Code (FAC), the City of Pahokee injection well has been tested for mechanical integrity. This report describes the testing methods that were performed, the results of the testing, and provides interpretation of the data collected during the 5-year Mechanical Integrity Test and the monitoring data since the last testing. As specified in section 17-28.130(6) FAC, the mechanical integrity test consisted of a hydrostatic pressure test of the injection casing, a temperature log, a Radioactive Tracer Survey (RTS) and a television survey.

Hydrostatic Pressure Test

On June 21, 1994, an inflatable packer was set near the base of the 12 3/4-inch injection casing at a depth of 2645 feet below pad level the base of the injection casing is 2650 feet below pad level. The packer, which measured 10 feet long, was inflated and the casing was internally pressurized to 147 pounds per square inch (psi). A pressure decline of 2 psi was then observed over a sixty minute test period. This decline represents a 1.4 percent change in the original pressure, which is within the 5 percent limits specified by the regulations. A copy of the test gauge inspection certification records and certified results of the hydrostatic pressure test are contained in Appendix A This test was witnessed by James A. Wheatley P. G., of Water Technology Associates, Inc. and David McNabb P. G., from the Florida Department of Environmental Protection.

Temperature Log

On June 22, 1994 Florida Geophysical Logging, Inc. conducted a temperature log on the injection well from the surface to a total depth of 2787 feet below pad level. The temperature was a constant 83.5 degrees from surface to 2650 feet below pad level (casing shoe) below this point the temperature increases to 85 degrees to a depth of 2734 feet. The temperature in the open hole from 2734 to the bottom of the logged interval then remained constant at 84.25 degrees. A copy of the temperature log is contained in Appendix B.

Radioactive Tracer Survey

On June 22, 1994, a Radioactive Tracer Survey (RTS) was conducted. A detailed description and interpretation of the Radioactive Tracer Survey is presented in the following text. The test began with Florida Geophysical Logging, Inc., conducting a background Gamma Ray Log (GRL) and a casing collar locator (CCL). The background GRL was "memorized" and subsequently reprinted on each "out of position" logging run to serve as a means of comparison. A schematic diagram of the logging tool is represented at the top of the Radioactive Tracer Survey Log. Each logging run is identified by a file number presented at the top and bottom of the log, an example is the background log PIWRTS1. After the completion of the background Gamma Ray Log the logging tool ejector was calibrated to a 0.5 millicurie (MCI) per second discharge, and the reservoir was loaded with 10 millicuries radioactive Iodine 131. A copy of the Radioactive Tracer Survey is contained in Appendix C.

The first test conducted was a static test (PIWRTS3). For this test the ejector port was positioned 1 foot below the bottom of the 12 3/4 inch injection casing and one MCI of tracer material was released under static conditions (no injection occurring). Time drive monitoring was conducted for 67 minutes after release. At about the one minute mark, the middle detector (located 1.5 feet above the ejector) shows evidence of the slug dispersing upward from the ejector. Readings increase from background values of approximately 20 gamma ray American Petroleum Institute (GAPI) units to about 2000 GAPI units within a one minute period. Readings from the bottom detector, located 8.5 feet below the ejector, increase from the background of approximately 20 GAPI units at about the 7 minute mark to a maximum of approximately 1080 GAPI units about 17 minutes after tracer ejection. These results indicate that the slug was dispersing at a rate less than one foot per minute. After the 67 minutes of time drive logging the tools were moved up hole and logged out of position (PIWRTS4). The results of this log indicate that the tracer material had dispersed to a point approximately 45 feet above the point of ejection. The injection casing was then flushed approximately 2100 gallons of water (plant effluent). Following the flushing an out of position log was conducted (PIWRTS5) from below the casing to 2360 feet below land surface (bls) this log shows that all tracer material had been flushed out of the casing because all gamma ray levels returned to background levels. These results are interpreted as providing evidence that the casing integrity is sound and there are no channels behind the casing.

For the next test (low rate test) an injection rate of 29 gallons per minute (gpm) was established using plant effluent. The tracer ejector was positioned 5 feet above the bottom of the casing the recorder was placed in the time drive mode (PIWRTS6) and a 1.5 MCU slug of tracer material was ejected. The readings from the middle gamma ray detector began to increase from background within seconds of ejection and returned

to background after about 30 minutes later. The readings from the bottom detector increased from background approximately 2 minutes after ejection. No detection of the tracer material was seen at the upper gamma ray detector any time during 60 minutes of time drive monitoring. The tools were then logged out of position (PIWRTS7) to a depth of 2400 feet bls. No indication of movement up hole of the tracer material was observed. These results are interpreted as providing evidence that the casing integrity is sound and there are no channels behind the casing.

The final tracer test was the high rate test. The injection into the well was adjusted to a rate of 500 gpm, the logging tools were positioned so that the ejector was 1 foot below the bottom of the casing, the recorder was placed in time drive mode (PIWRST8) and 7.5 MCI of tracer material was ejected. Increases in gamma ray detection were seen almost immediately on both the middle and bottom gamma ray detectors. Gamma ray levels returned to background levels in approximately 1.5 minutes after tracer ejection. No indication of tracer material was seen by the upper gamma ray detector. Observation and recording of the data continued for 60 minutes. The tools were then logged out of position (PIWRTS9) to a depth of 2400 feet bls. No indication of movement up hole of the tracer material was observed. These results are interpreted as providing evidence that the casing integrity is sound and there are no channels behind the casing.

Upon the completion of all the above mentioned tests a final background log was conducted (PIWRTS10) on the total depth of the well. The logs were recorded over traces of the initial background log and showed excellent repeatability except for approximately 10 feet around the base of the injection casing attributed to staining during tracer material ejection.

Television Survey

Copies of the television survey are included with this report for your review (Appendix D). Florida Geophysical Logging, Inc., performed the logging on June 23, 1994. The survey was performed from land surface (pad level) to a depth of 2750 feet bls, where visibility declined rapidly. Water clarity above this elevation was good, enabling the camera to capture clear images of the casing interior, casing seat, and open-hole section. The survey did not reveal any substantial deterioration of the casing.

Monitoring Well Data

The City of Pahokee has performed analyses on water samples obtained from the deep and shallow zones of it's duel zone monitor well on a weekly schedule for the following perimeters; temperature, pH, conductivity, chlorides, TDS and ammonia. During the

first 12 to 18 months many of the data sets show various types of fluctuations that seem to be due to infiltration of the drilling fluid into the formation during the construction of the monitoring well.

Shallow Monitoring Zone

Graphical presentation of the data collected from the shallow monitor zone is presented in Appendix E. The temperature data shows some fluctuation during about the first year and a half, from this point it appears to have stabilized at about 27 degrees C. The pH data shows s slight fluctuations from one analyses to the next, but stays within the range of 7.5 to 8.0. Conductivity data shows some fluctuations during the first year, after this time the values stabilized at about 6,000 umhos/cm. Chloride data shows some fluctuations from one sampling event to the next over the entire period, but no discernible trend of either increase or decrees can be seen in the data. The TDS data has the same look as the chloride data with no trend other than stabilization apparent. The ammonia data also shows some fluctuation from event to event with no increasing trend that can be seen from the data. Based on the total review of the data from the shallow monitoring zone there does not appear to be any change in the water quality of the shallow monitoring zone.

Deep Monitoring Zone

Graphical presentation of the data collected from the deep monitor zone is presented in Appendix F. The temperature data for the deep monitor zone has stayed in the range of 27 to 27.5 degrees C for the entire period of the data. During the first year the pH seemed to show an increase form about 7.25 to about 7.6 where it has remained stable. The conductivity shows an increase from about 22,000 umhos/cm to about 28,000 umhos/cm over the first 18 months, stabilizing at 28,000 mhos/cm for the rest of the monitoring period. The chloride data has been relatively stable at about 10,000 mg/l for the entire period. The TDS data shows fluctuation between sampling events, but overall does not indicate either an upward or downward trend. Over the entire period the ammonia data has hovered around 0.5 mg/l. Based on the total review of the data from the deep monitoring zone there does not appear to be any change in the water quality of the deep monitoring zone.

Conclusions

Based on the results of the temperature log, hydrostatic pressure test, radioactive tracer survey, television survey and review of the analytical data collected from the duel zone monitoring well there is no indication that the City of Pahokee injection well lacks mechanical integrity at this time.

Respectfully Submitted

9-27-94

James A. Wheatley P. G
Project Hydrogeologist

9/27/94

William D. Reese P.E.*
Project Engineer

* Execution indicates the signed has reviewed this document and supporting data and concurs with the engineering aspects of the presentation.

APPENDIX A

Test Equipment

INSPECTION CERTIFICATION

Customer Youngquist Brothers

BIC W/O No. 4482403

Item Pressure Gauge

Mfg. Ametek / U.S. Gauge D.

Part/Model No. 0-3000 PSI

Serial No. 920912 BIC

This unit is Certified to be within manufacturers' specifications, except as noted:

_____

_____

And the accuracy is traceable to the N.I.S.T. (formerly NBS), or reference standards based upon fundamental constants of nature.

Signed: Bernette Kinsey

Date: 5-19-94

BARFIELD

MIAMI, FL • ATLANTA, GA

4101 N.W. 29th Street
Miami, FL 33142
XBIR995K

1478 Central Avenue
East Point, GA 30344
XBID995K

THIS APPLIANCE CALIBRATED USING

MODEL # 1005-E

S/N 89268

_____

_____

WHOSE ACCURACY IS TRACEABLE TO THE N.I.S.T. (formerly NBS).

MECHANICAL INTEGRITY TESTING
HYDROSTATIC PRESSURE TEST DATA
INJECTION WELL
CITY OF PAHOKEE

Hydrostatic Pressure Test on the 12-inch Injection Casing

Date: June 21,1994

Time	Delta Time (minutes)	Pressure (psi)
0905	0	147
0910	5	147
0915	10	147
0920	15	147
0925	20	146
0930	25	146
0935	30	146
0940	35	146
0945	40	146
0950	45	146
0955	50	146
1000	55	145
1005	60	145

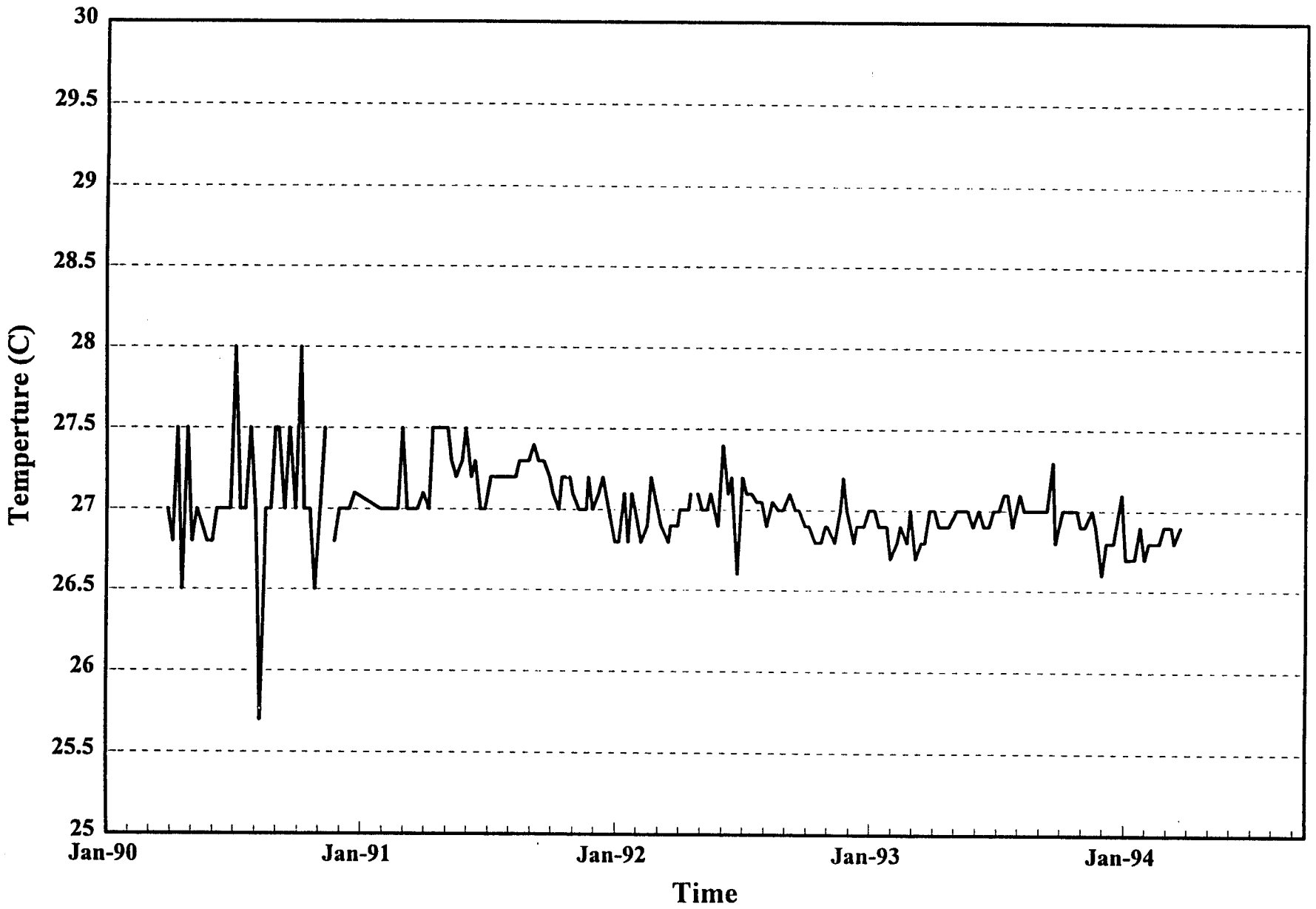
I, James A. Wheatley P.G., certify that the above is true and accurate.

Signed _____
James A. Wheatley P.G.

APPENDIX E

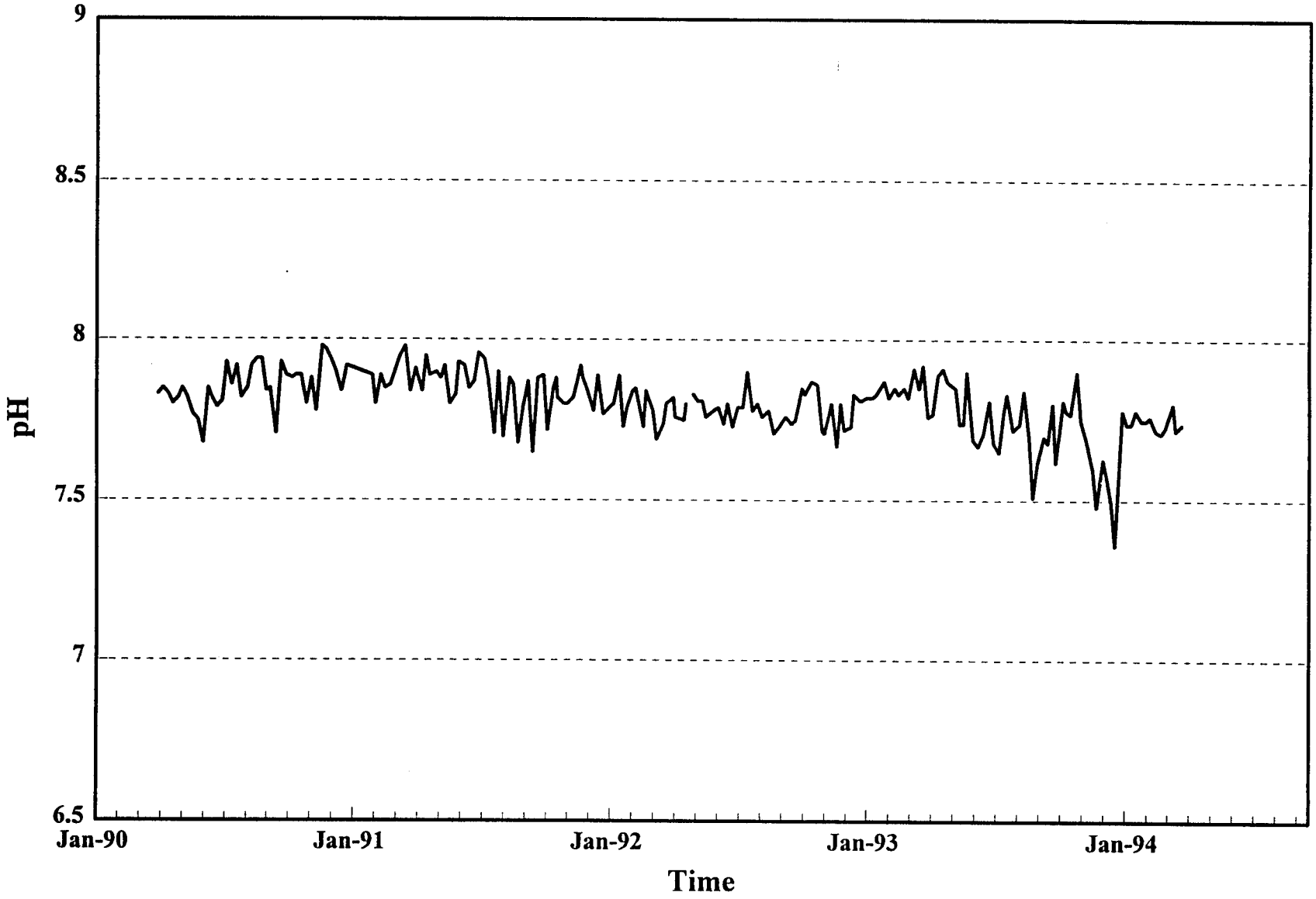
CITY OF PAHOKEE

Temperature - Shallow Monitor Zone



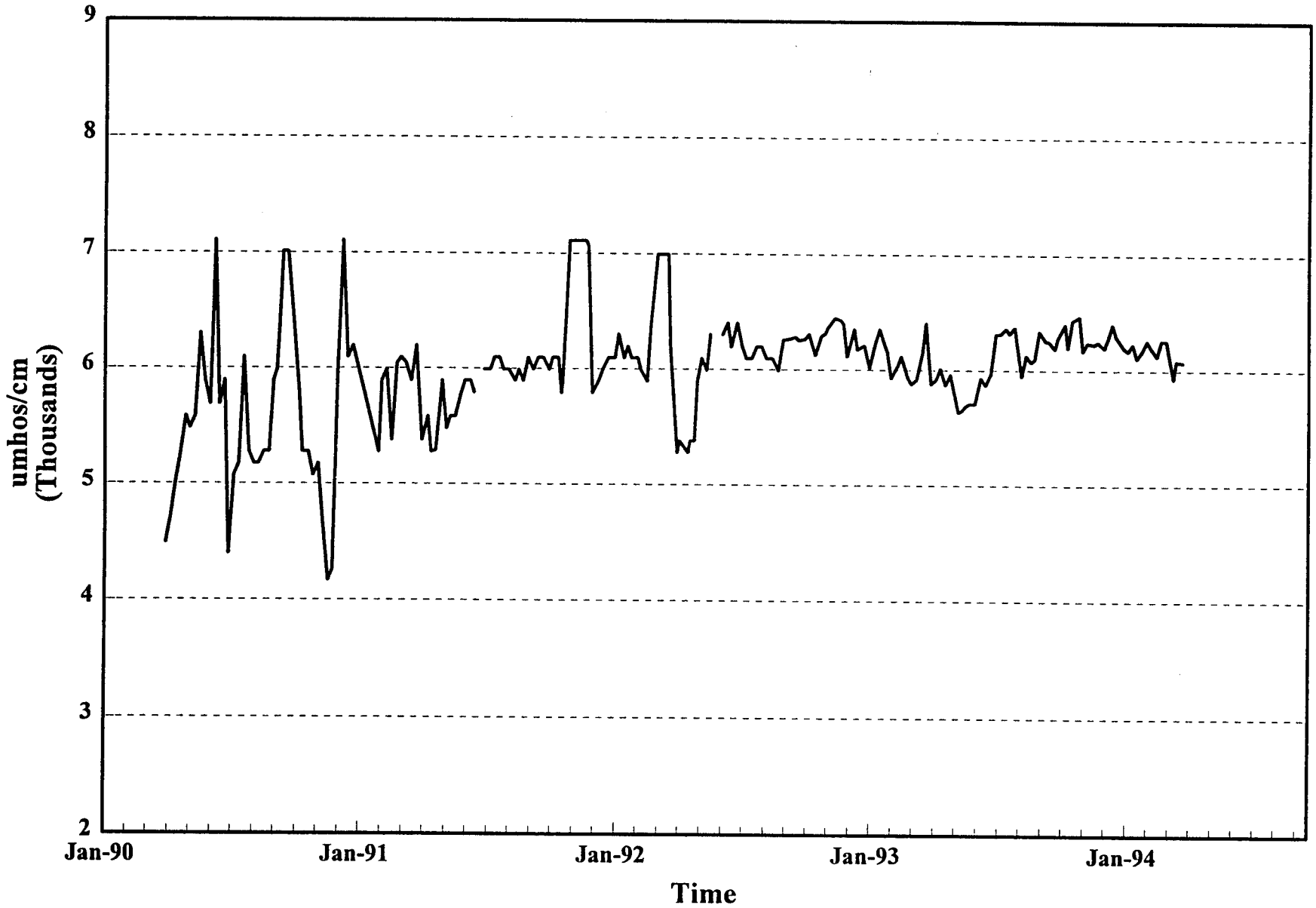
CITY OF PAHOKEE

pH - Shallow Monitor Zone



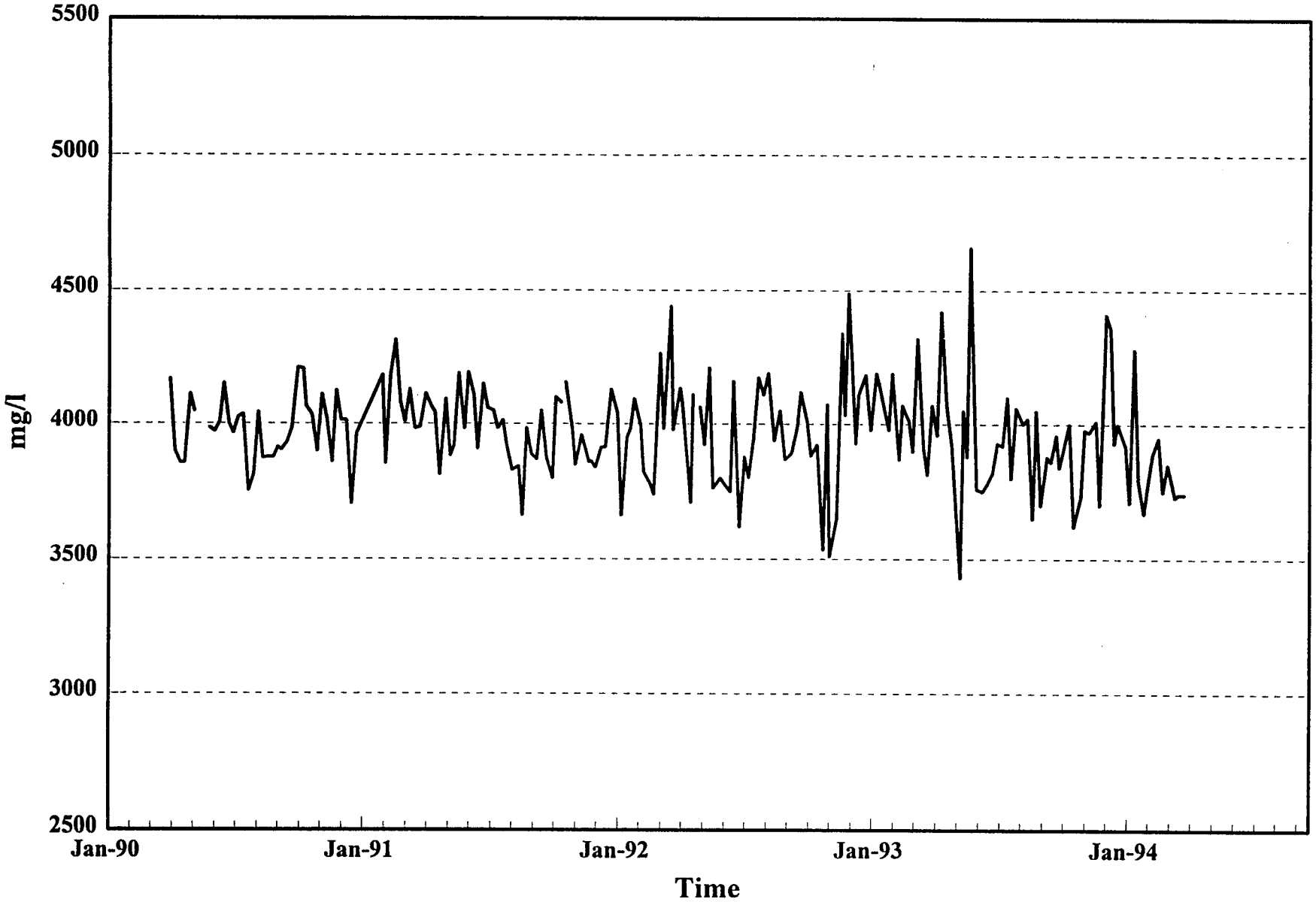
CITY OF PAHOKEE

Conductivity - Shallow Monitor Zone



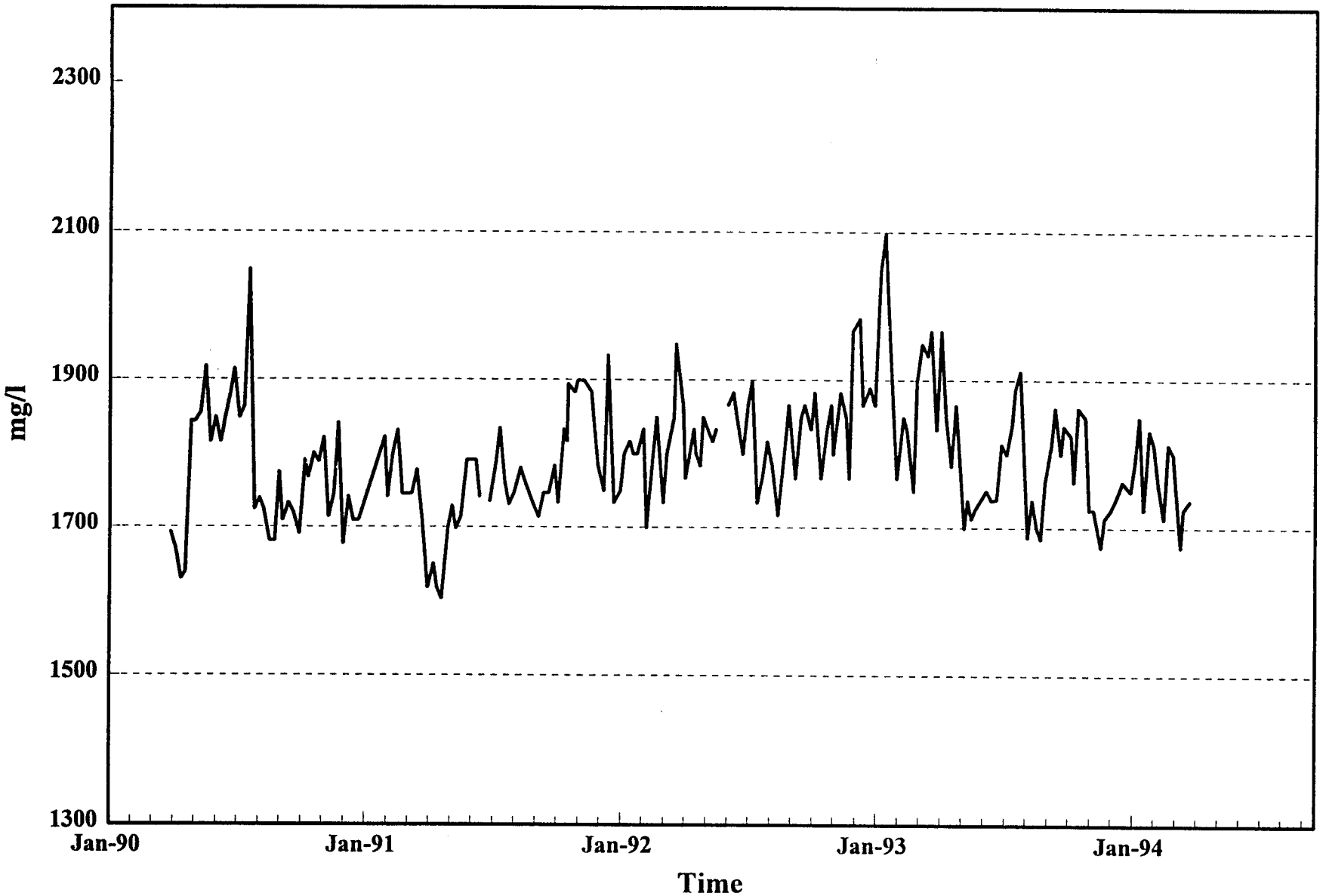
CITY OF PAHOKEE

TDS - Shallow Monitor Zone



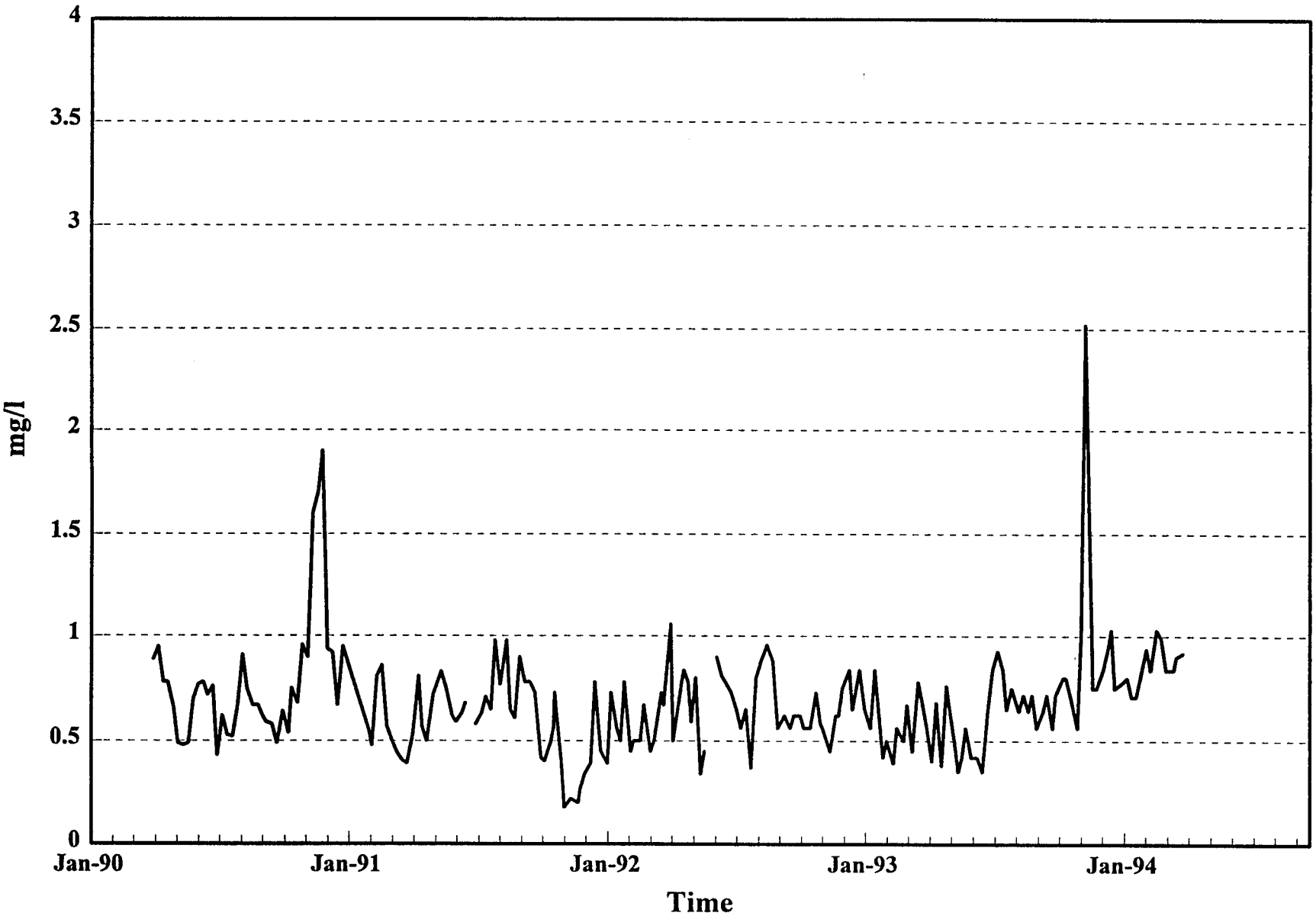
CITY OF PAHOKEE

Chlorides - Shallow Monitor Zone



CITY OF PAHOKEE

Ammonia - Shallow Monitor Zone

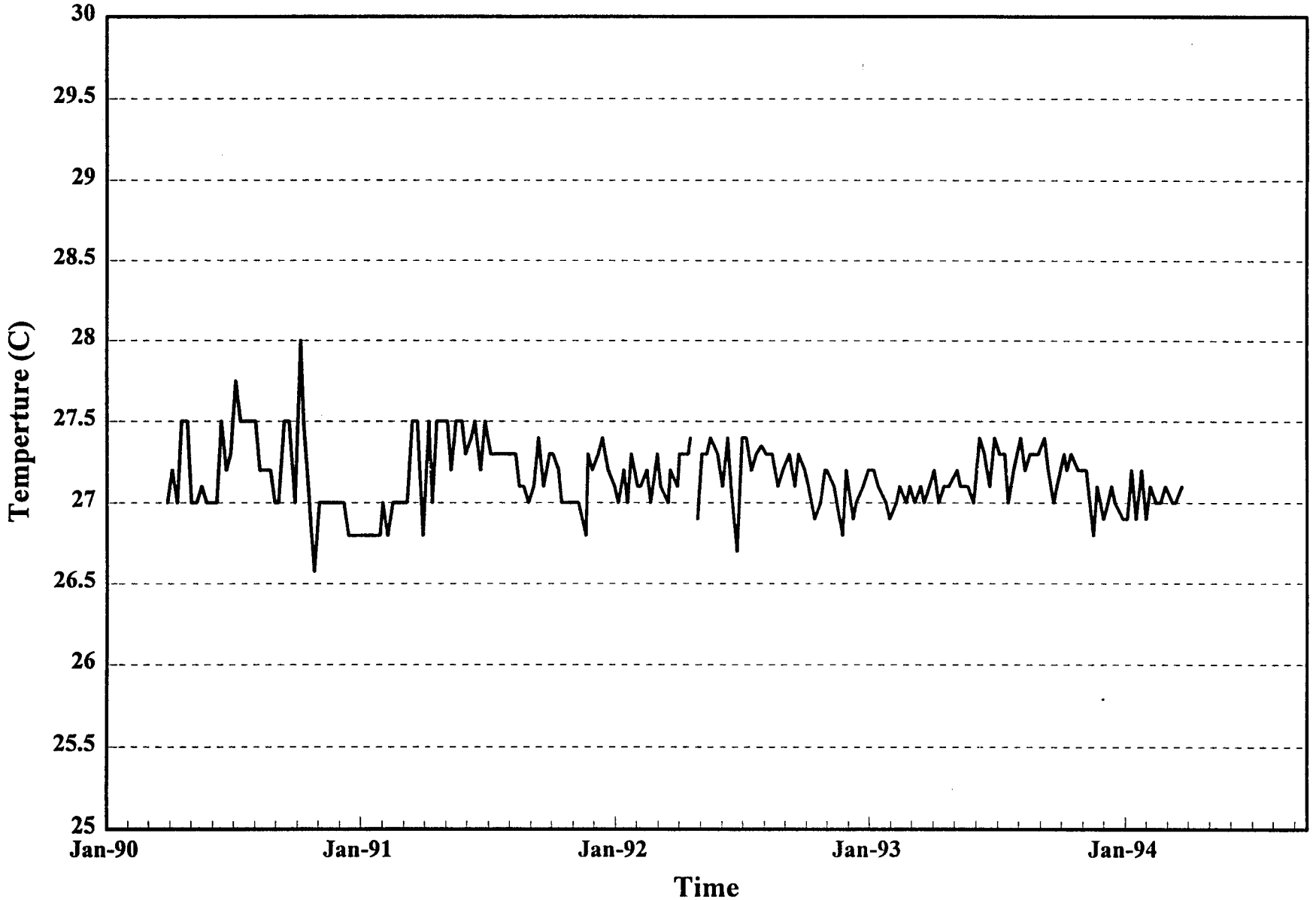


WATER TECHNOLOGY ASSOCIATES, INC.

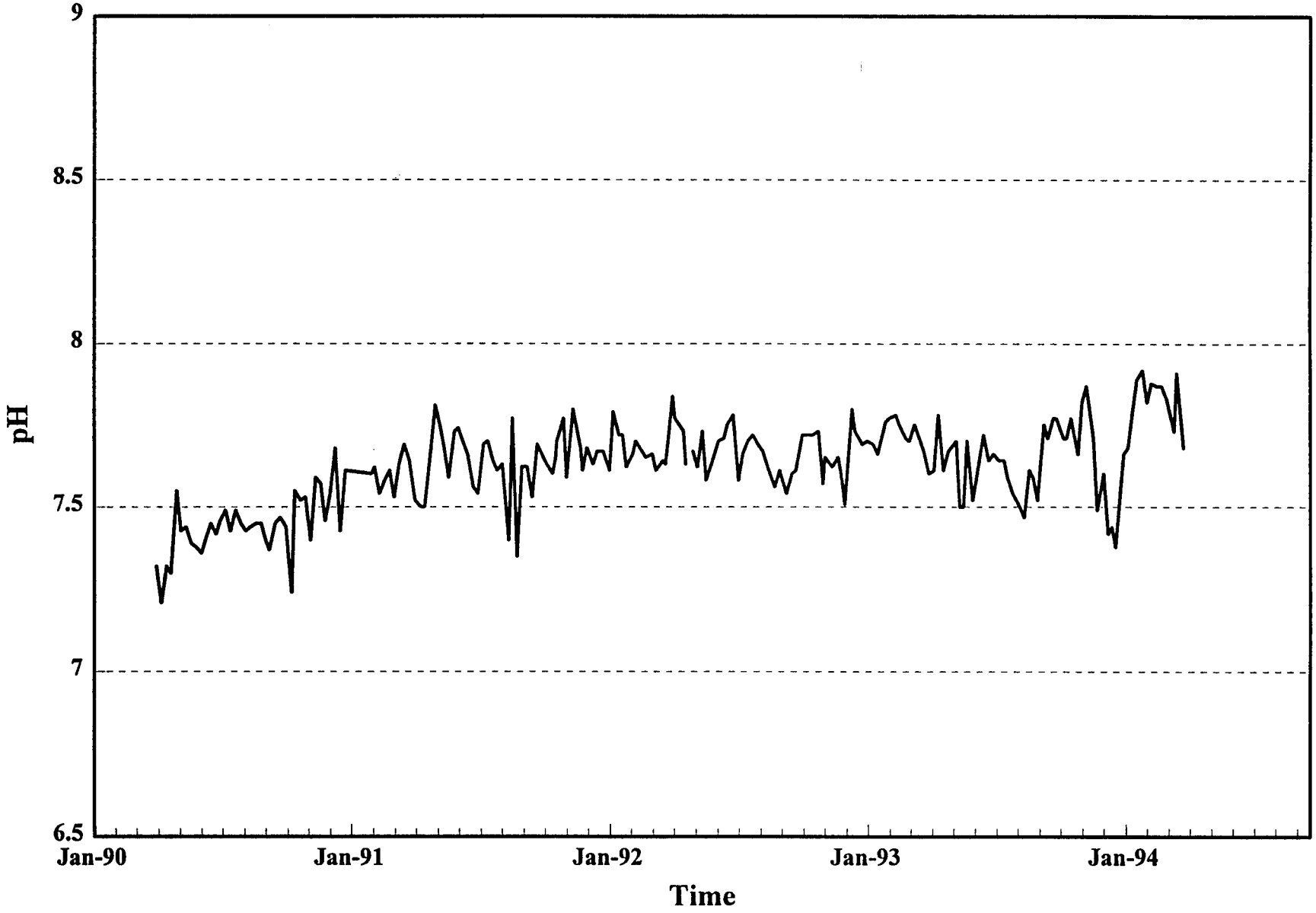
APPENDIX F

CITY OF PAHOKEE

Temperture - Deep Monitor Zone

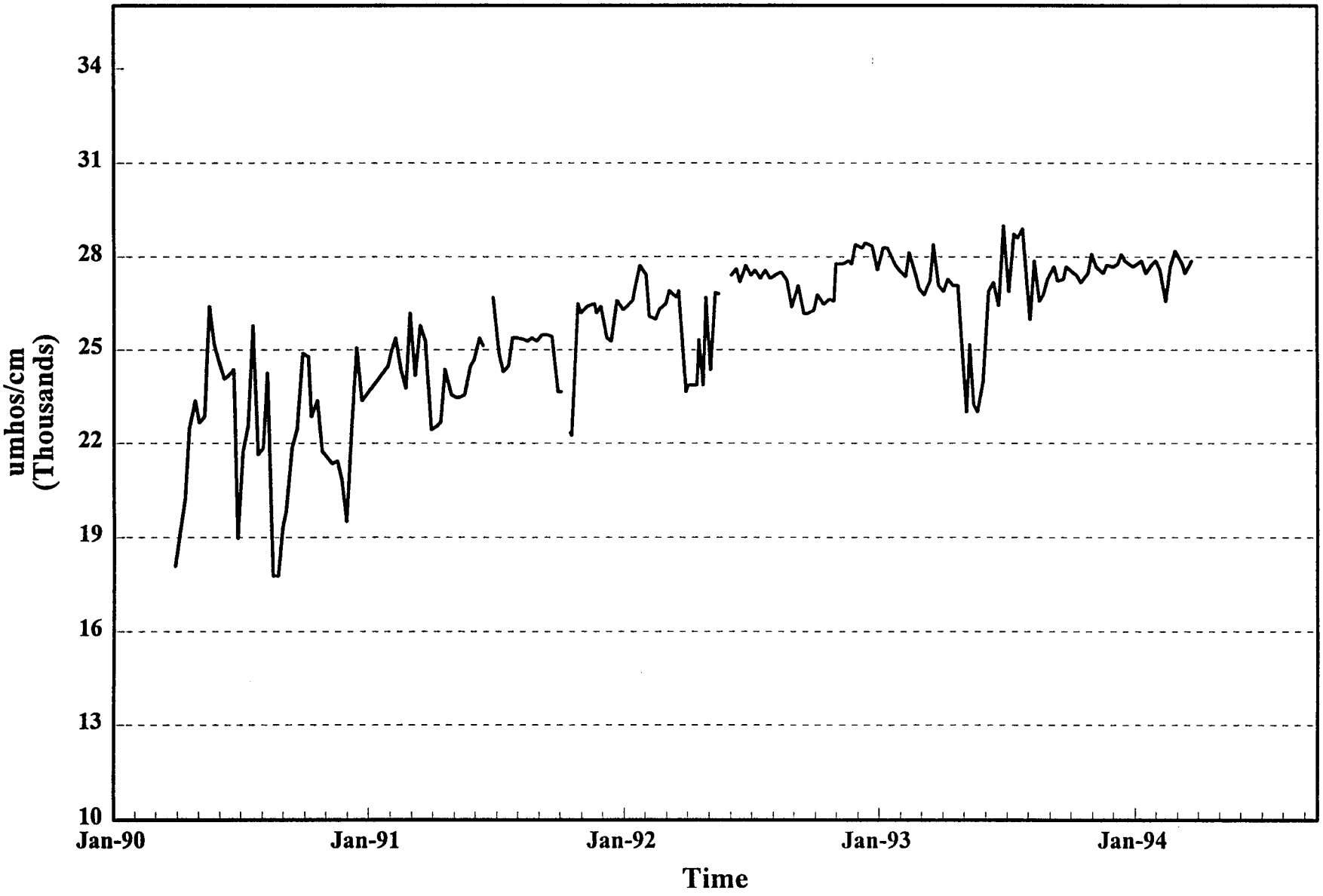


CITY OF PAHOKEE
pH - Deep Monitor Zone



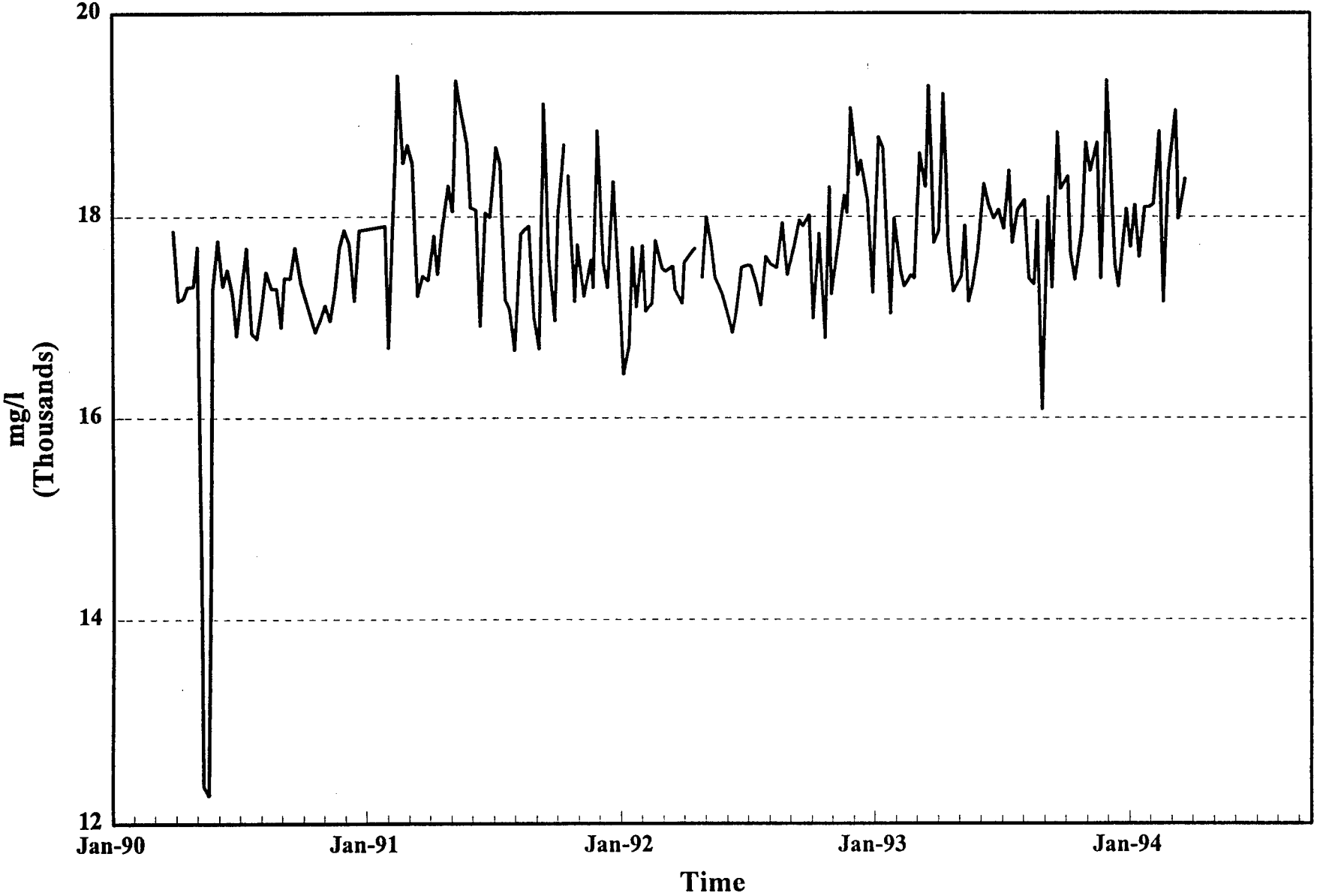
CITY OF PAHOKEE

Conductivity - Deep Monitor Zone



WATER TECHNOLOGY ASSOCIATES, INC.

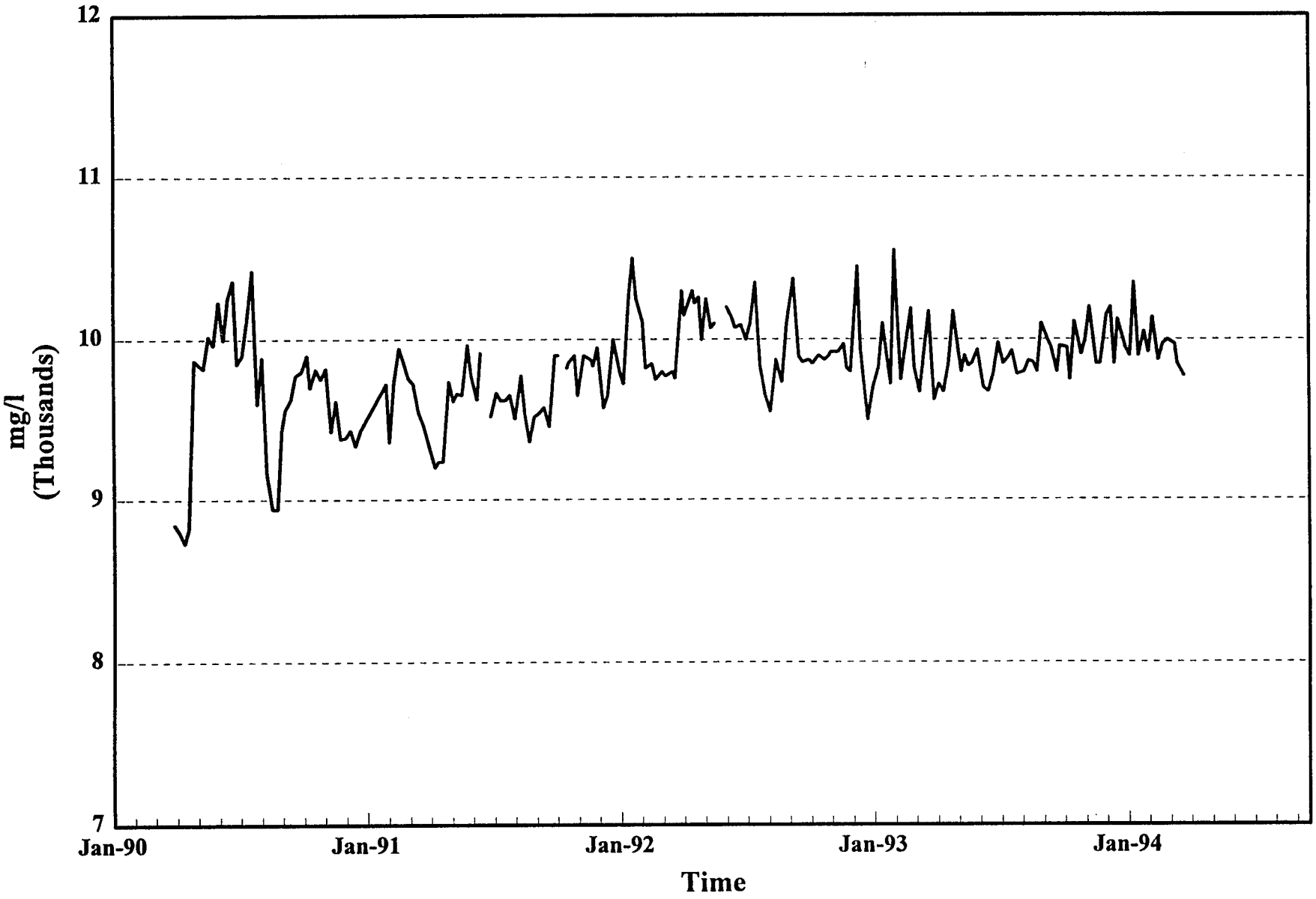
CITY OF PAHOKEE
TDS - Deep Monitor Zone



WATER TECHNOLOGY ASSOCIATES, INC.

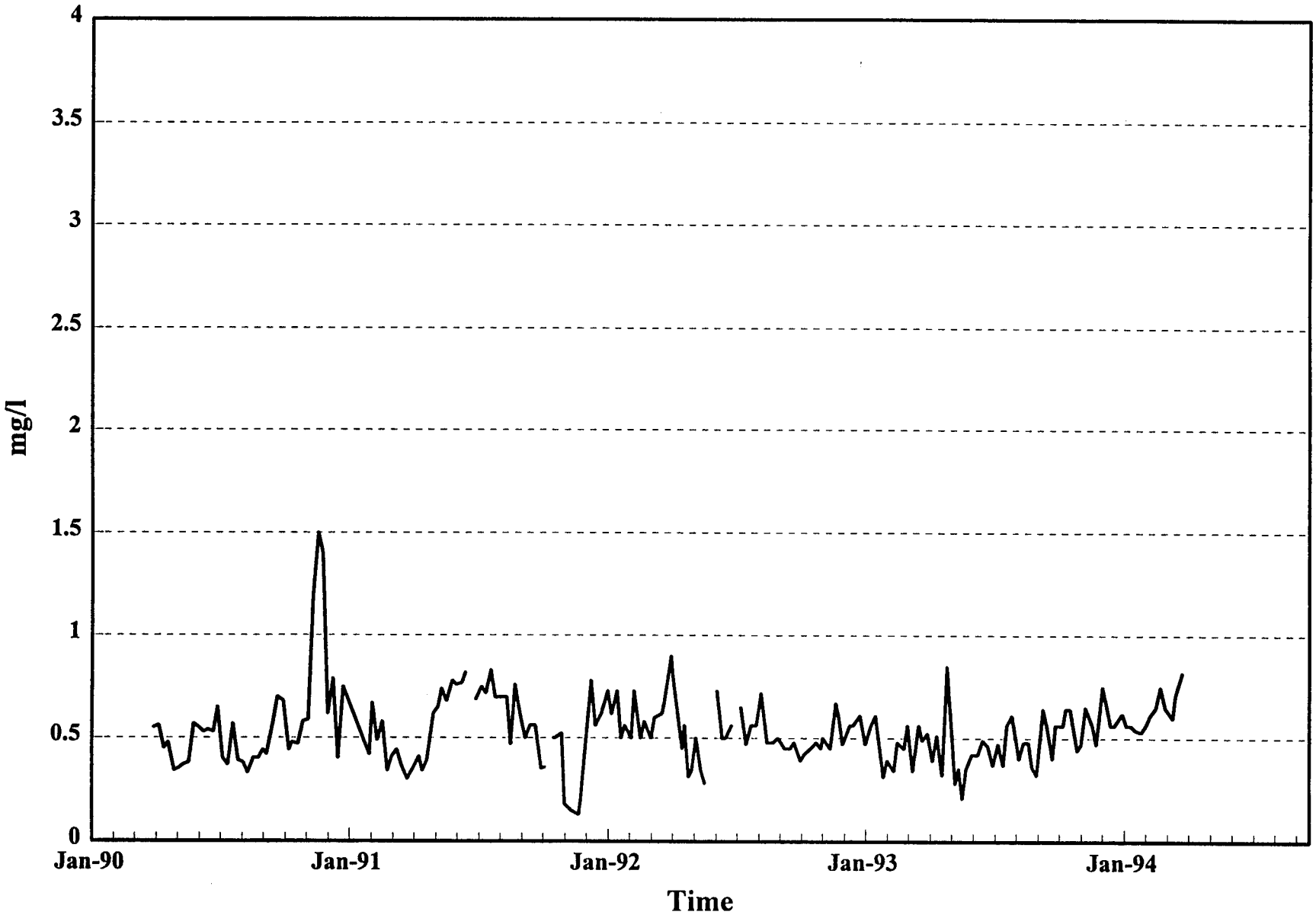
CITY OF PAHOKEE

Chlorides - Deep Monitor Zone



CITY OF PAHOKEE

Ammonia - Deep Monitor Zone



WATER TECHNOLOGY ASSOCIATES, INC.

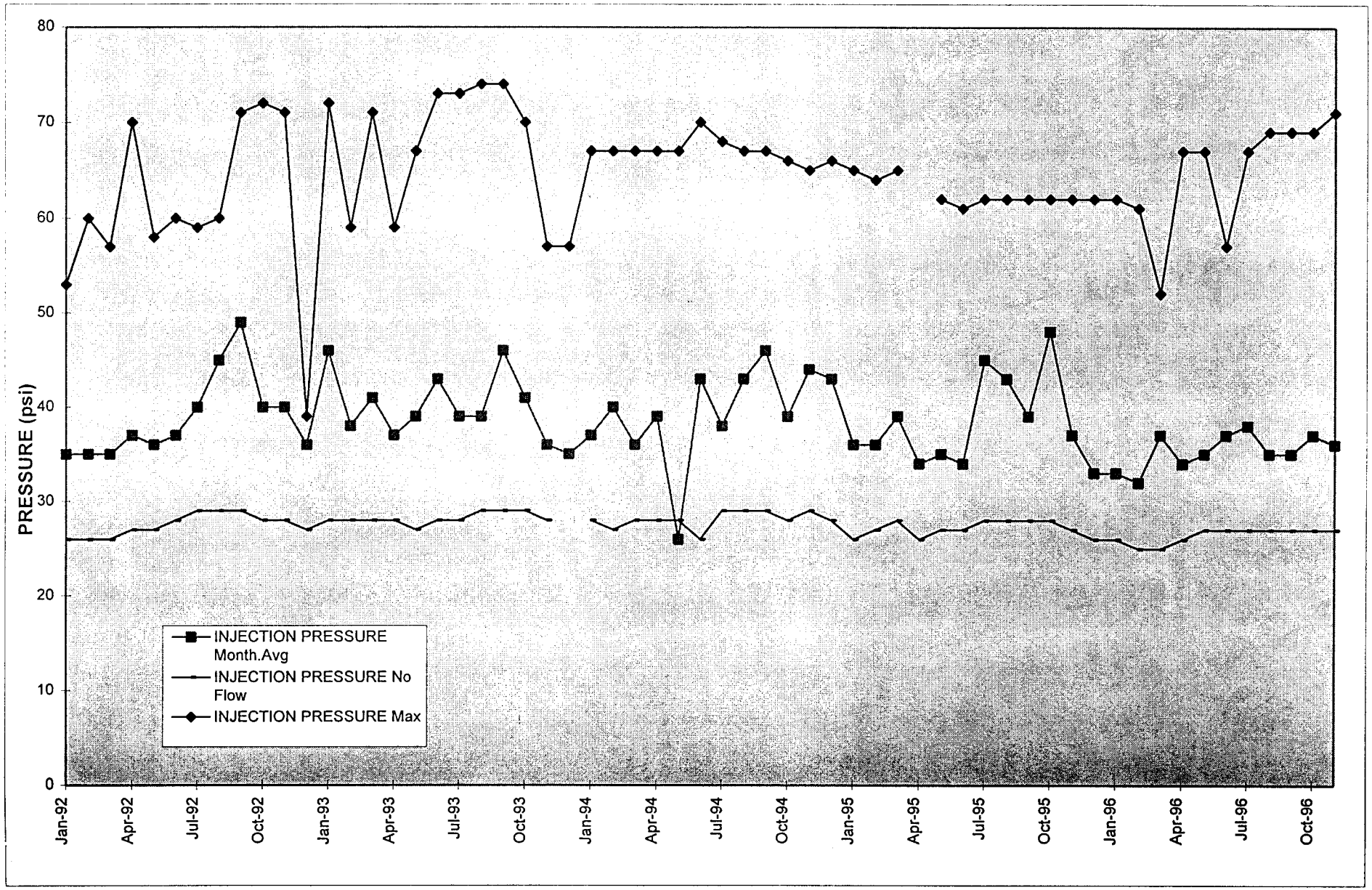
ATTACHMENT 7: Groundwater Monitoring Data

PAHOKEE WASTEWATER TREATMENT PLANT
OPETRATING DATA FOR INJECTION WELL 1992 TO 1996

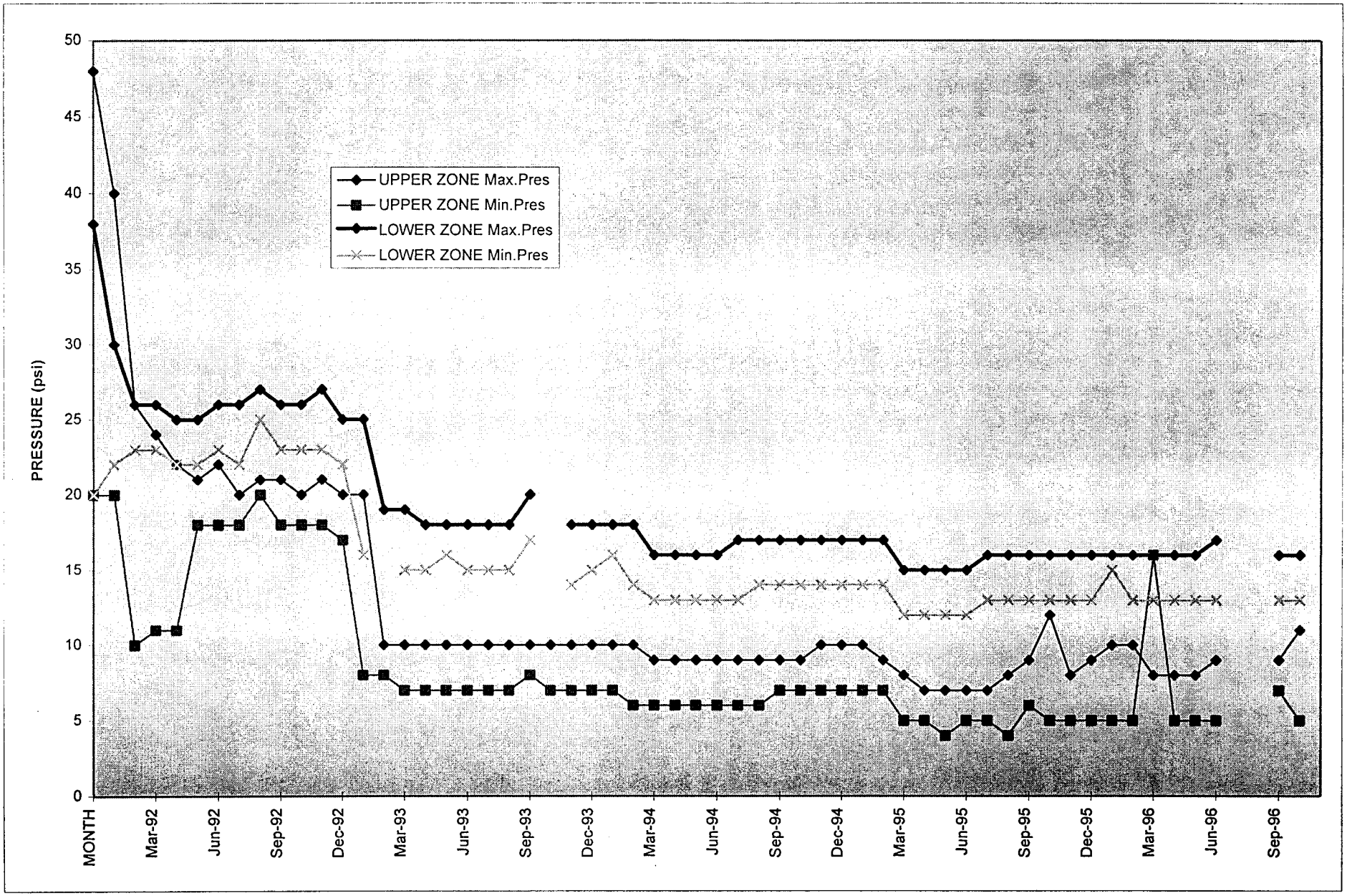
	INJECTION WELL						MONITORING WELL																
	FLOW (MGD)			INJECTION PRESSURE			UPPER ZONE									LOWER ZONE								
MONTH	ADF	MDF	Peak	Max	Month. Avg	No Flow	Max. Pres	Min. Pres	TDS	Cl	NH3-N	TKN	pH	COND	TEMP	Max. Pres	Min.P res	TDS	Cl	NH3-N	TKN	pH	COND	TEMP
Jan-92	1.28	1.42	2.76	53	35	26	48	20	3947	1792	0.59					38	20	17041	10107	0.63				
Feb-92	1.26	1.38	2.76	60	35	26	40	20	3835	1795	0.53					30	22	17420	9882	0.58				
Mar-92	1.22	1.46	2.76	57	35	26	26	10	4168	1833	0.59					26	23	17431	9782	0.6				
Apr-92	1.41	2.03	2.76	70	37	27	24	11	4009	1809	0.79					26	23	17509	10245	0.6				
May-92	1.15	1.32	2.76	58	36	27	22	11	3991	1833	0.55					25	22	17629	10104	0.34				
Jun-92	1.32	2.09	2.76	60	37	28	21	18	3821	1849	0.81					25	22	17131	10123	0.57				
Jul-92	1.39	2.28	2.67	59	40	29	22	18	3953	1816	0.56					26	23	17374	10069	0.54				
Aug-92	1.61	2.03	2.73	60	45	29	20	18	4073	1778	0.88					26	22	17640	9700	0.56				
Sep-92	1.85	2.51	2.7	71	49	29	21	20	3969	1837	0.59					27	25	17748	10050	0.47				
Oct-92	1.38	2.25	2.64	72	40	28	21	18	3839	1829	0.62					26	23	17410	9872	0.44				
Nov-92	1.34	2.58	3	71	40	28	20	18	3922	1833	0.55					26	23	17907	9907	0.53				
Dec-92	1.12	1.28	1.56	39	36	27	21	18	4179	1926	0.77					27	23	18556	9922	0.55				
Jan-93	1.68	2.44	3.11	72	46	28	20	17	4068	1970	0.62					25	22	17942	9835	0.49				
Feb-93	1.21	1.59	2.61	59	38	28	20	8	4035	1799	0.49					25	16	17543	10098	0.42				
Mar-93	1.38	2.51	3	71	41	28	10	8	3986	1937	0.65	1.54	7.88	6090	80.2	19		18407	9916	0.49	0.84	7.71	27363	80.6
Apr-93	0.98	1.39	2.7	59	37	28	10	7	4088	1859	0.56	1.49	7.84	5928	80.4	19	15	17958	9807	0.52	1.16	7.65	27100	80.8
May-93	0.95	1.38	3	67	39	27	10	7	4005	1718	0.46	1.96	7.81	5673	80.6	18	15	17448	9844	0.3	1.4	7.6	23613	80.8
Jun-93	1.35	2.52	3.14	73	43	28	10	7	3778	1741	0.46	1.26	7.72	5870	80.4	18	16	18023	9775	0.45	1.19	7.63	26138	80.9
Jul-93	0.86	1.32	2.61	73	39	28	10	7	3962	1849	0.8	2.24	7.73	6336	80.6	18	15	18042	9885	0.48	1.96	7.61	28430	81
Aug-93	1.03	2.25	3	74	39	29	10	7	3930	1703	0.68	1.31	7.7	6063	80.6	18	15	17713	9820	0.43	0.93	7.52	26825	81.1
Sep-93	1.74	2.46	3.17	74	46	29	10	7	3848	1814	0.64	1.68	7.68	6264	80.6	18	15	17742	9960	0.5	1.26	7.7	27450	81
Oct-93	1.24	2.08	2.42	70	41	29	10	8	3828	1824	0.72	2.24	7.82	6375	80.6	20	17	17825	9929	0.57	1.82	7.71	27413	81
Nov-93	1.02	1.56	2.52	57	36	28	10	7	3915	1708	1.26	3.08	7.63	6222	80.4									
Dec-93	0.87	1.07	2.55	57	35		10	7	4175	1743	0.89	3.5	7.51	6300	80.2	18	14	18130	10078	0.63	1.4	7.46	27875	80.6
Jan-94	1.09	2.51	2.82	67	37	28	10	7	3834	1788	0.77	2.94	7.76	6.78	80.2	18	15	17920	10027	0.56	1.89	7.79	27730	80.6*
Feb-94	1.26	2.24	2.82	67	40	27	10	7	3845	1775	0.95	1.96	7.74	6213	80.2	18	16	18060	9975	0.64	1.68	7.86	27450	80.6
Mar-94	0.92	1.48	2.43	67	36	28	10	6	3765	1734	0.88	1.68	7.75	6089	80.4	18	14	18467	9897	0.7	1.54	7.79	27850	80.8
Apr-94	1	1.55	2.43	67	39	28	9	6	3824	1747	0.9	2.38	7.76	58.31	80.4	16	13	17906	10010	0.67	1.54	7.76	28220	80.8
May-94	0.89	1.04	2.46	67	26	28	9	6	3768	1771	0.82	2.38	7.78	6008	80.4	16	13	18213	9797	0.68	1.68	7.78	27538	80.8
Jun-94	1.35	2.46	2.89	70	43	26	9	6	3763	1884	0.72	2.8	7.76	6298	80.6	16	13	17897	9788	0.56	1.4	7.75	28063	81
Jul-94	0.91	1.67	2.43	68	38	29	9	6	3521	1902	0.75	2.58	7.73	6036	80.4	16	13	17634	9977	0.76	1.12	7.76	27690	80.8
Aug-94	1.22	1.89	2.4	67	43	29	9	6	3798	1871	0.86	3.29	7.72	6195	80.4	17	13	18284	9891	0.76	1.4	7.82	27788	80.6
Sep-94	1.58	2.54	2.94	67	46	29	9	6	3824	1802	0.78	2.8	7.81	5965	80.6	17	14	18017	9569	0.89	2.1	7.83	27250	80.8
Oct-94	1	1.64	2.43	66	39	28	9	7	3873	1777	0.94	3.36	7.77	5758	80.1	17	14	17742	9532	0.82	1.54	7.79	27200	80.6

ATTACHMENT 8: Specific Injectivity Data

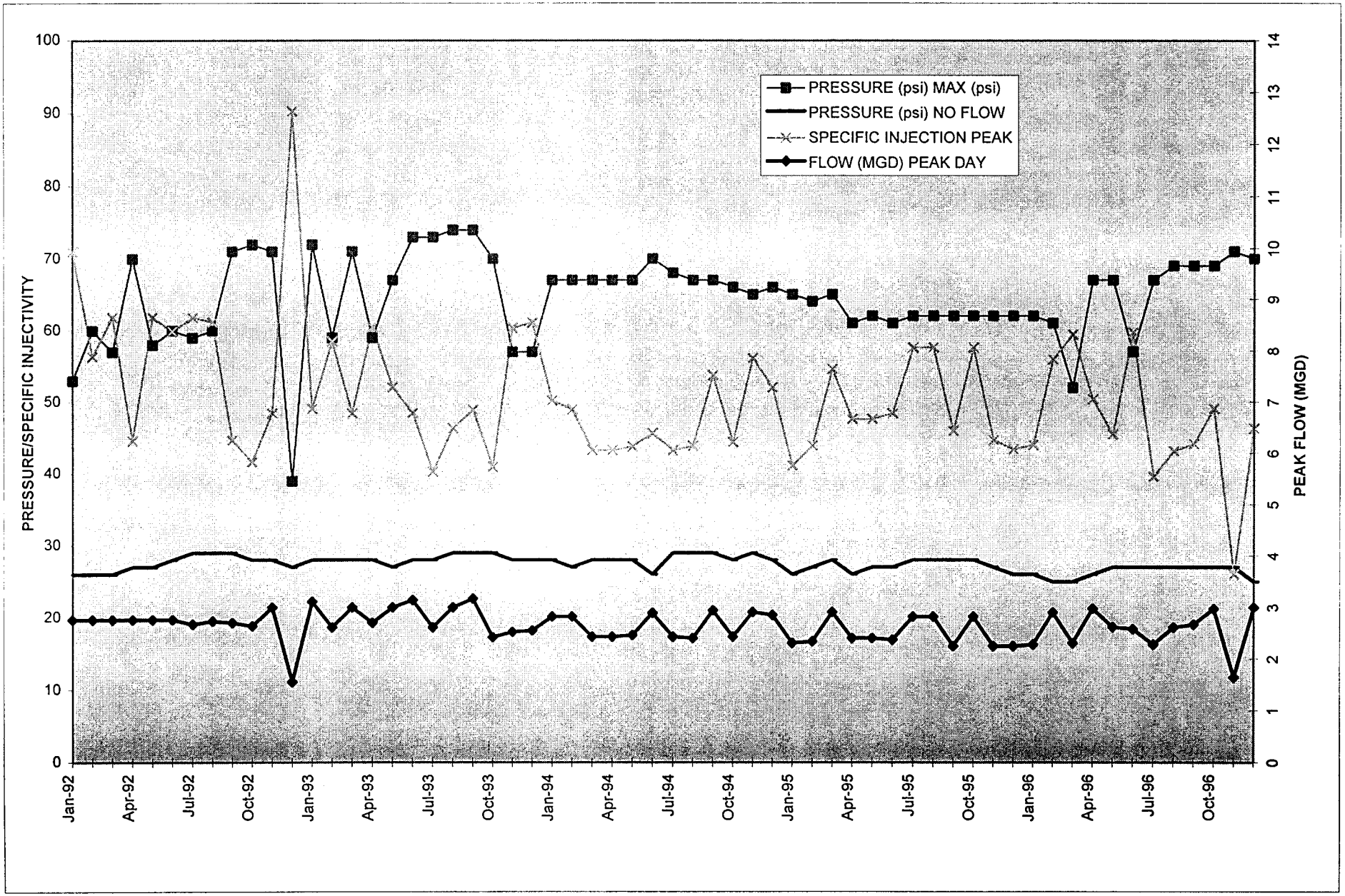
PAHOKEE WASTEWATER TREATMENT PLANT
INJECTION/MONITORING WELL PRESSURE



PAHOKEE WASTEWATER TREATMENT PLANT
UPPER AND LOWER ZONE PRESSURE FOR MONITORING WELL

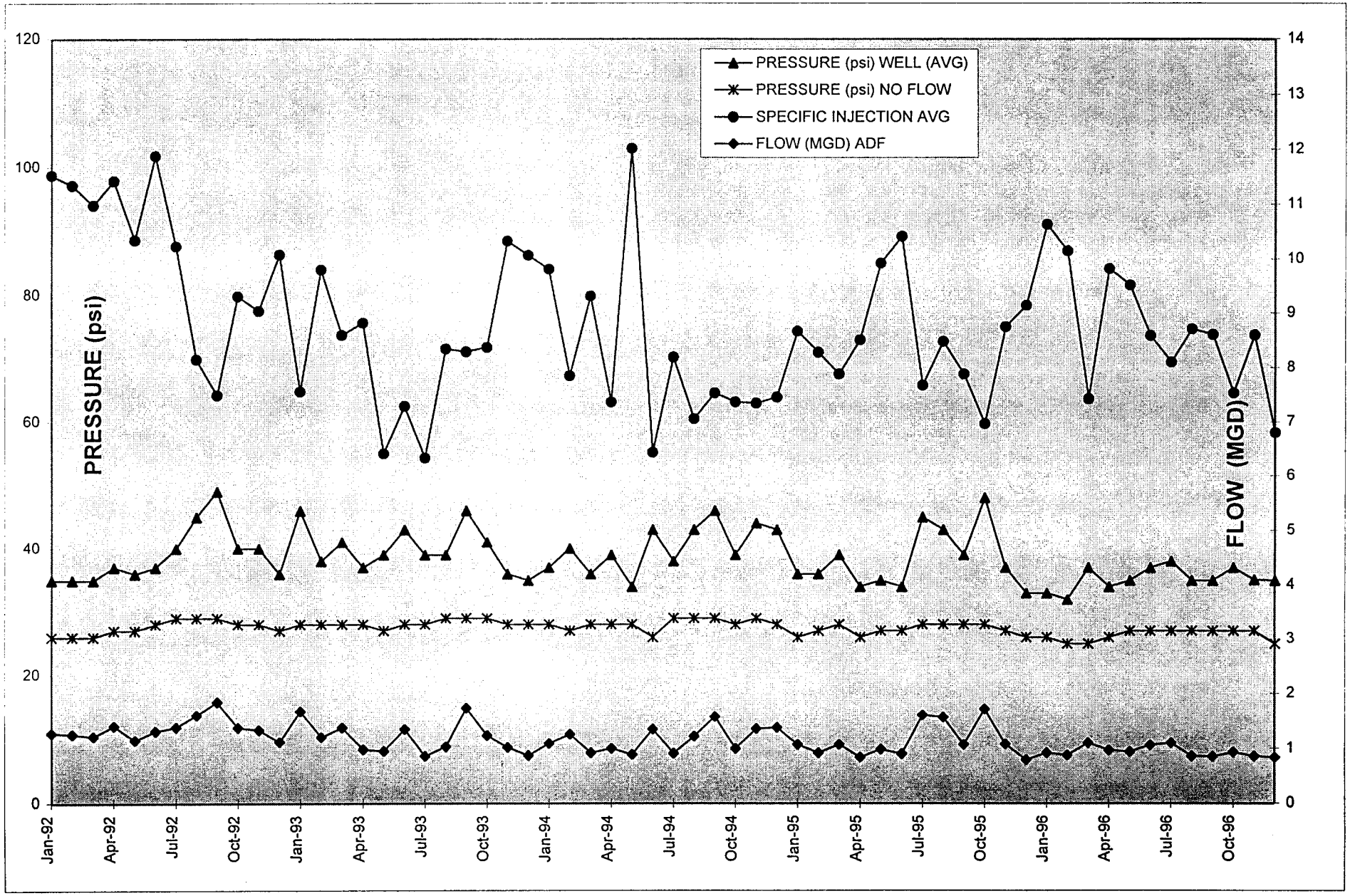


PAHOKEE WASTEWATER TREATMENT PLANT
PEAK FLOW/ PRESSURE/ INJECTIVITY DATA FOR DEEPWELL

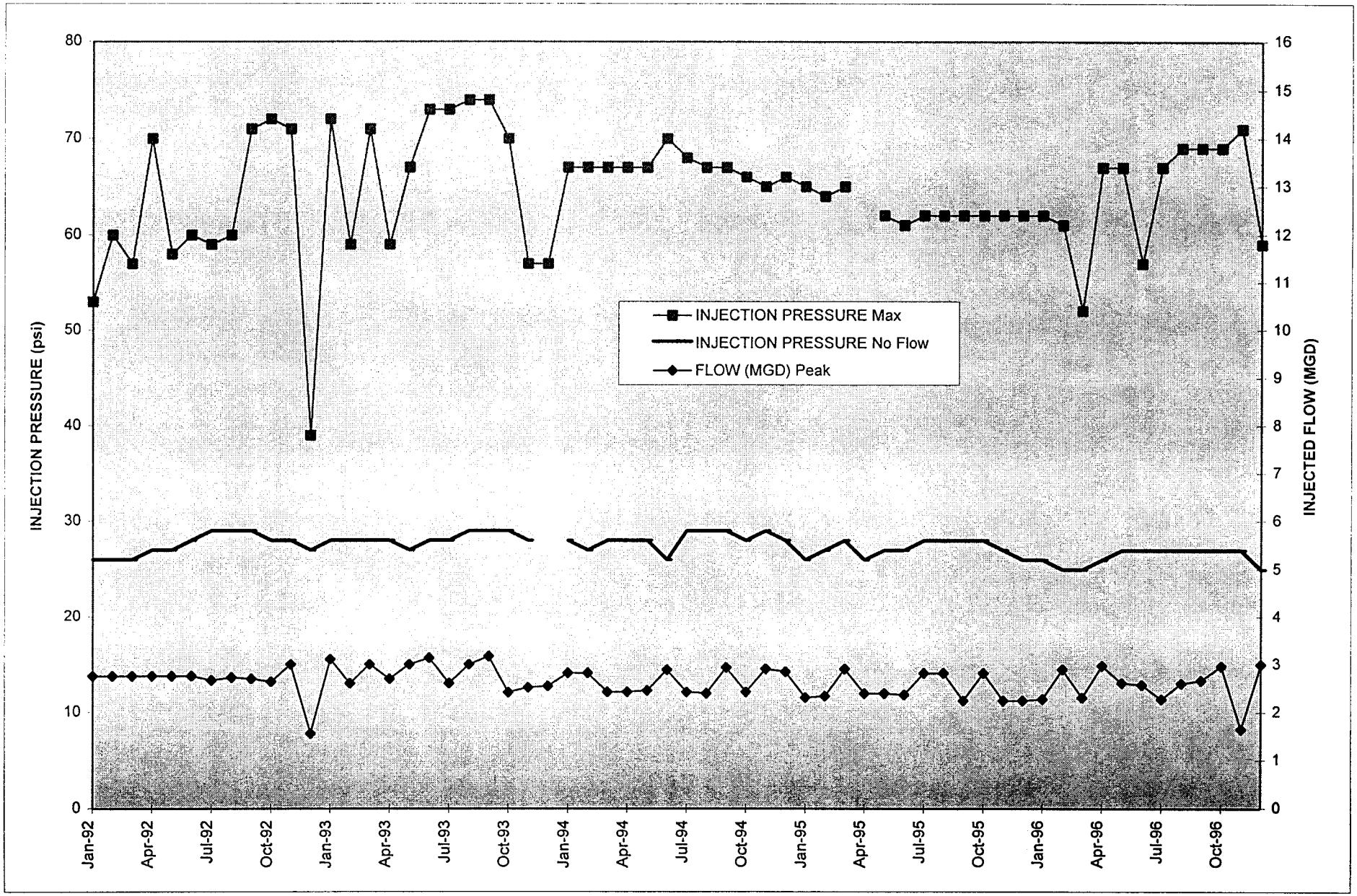


PAHOKEE WASTEWATER TREATMENT PLANT

MONTHLY AVERAGE FLOW/ PRESSURE/ SPECIFIC INJECTIVITY DATA JANUARY 1992 to DECEMBER 1996

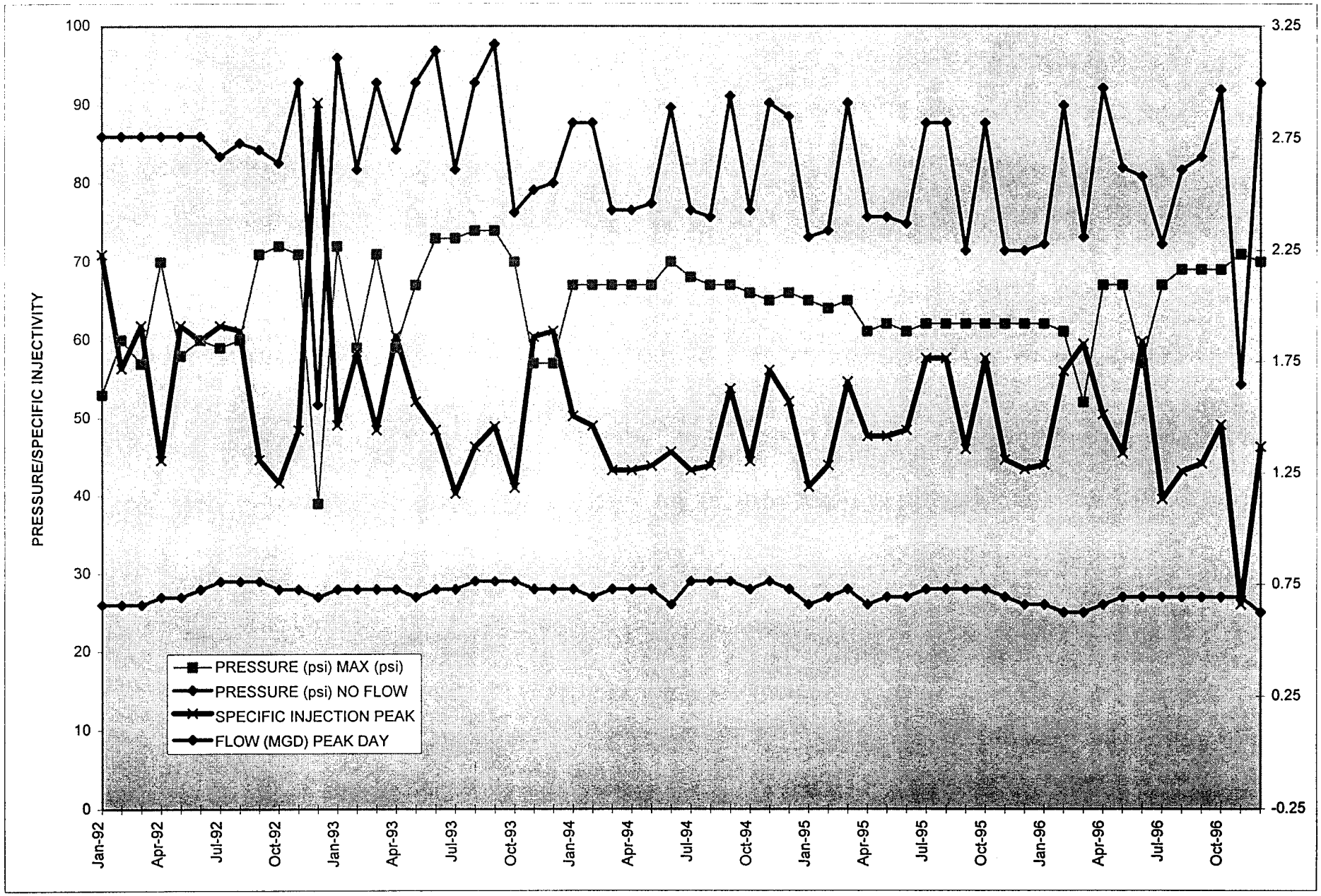


PAHOKEE WASTEWATER TREATMENT PLANT
MONTHLY MAXIMUM INJECTION PRESSURE/PEAK FLOW FOR INJECTION WELL

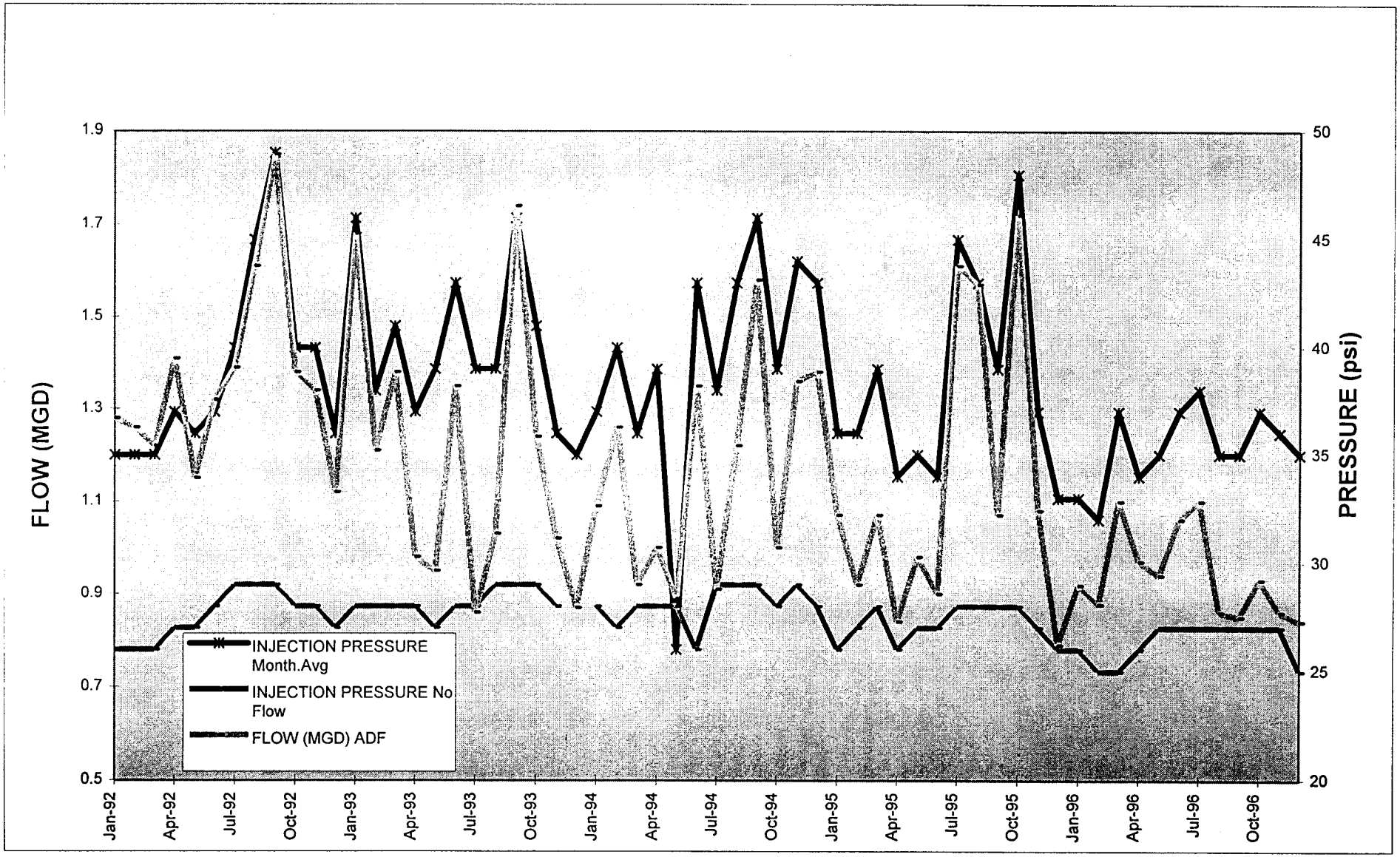


PAHOKEE WASTEWATER TREATMENT PLANT

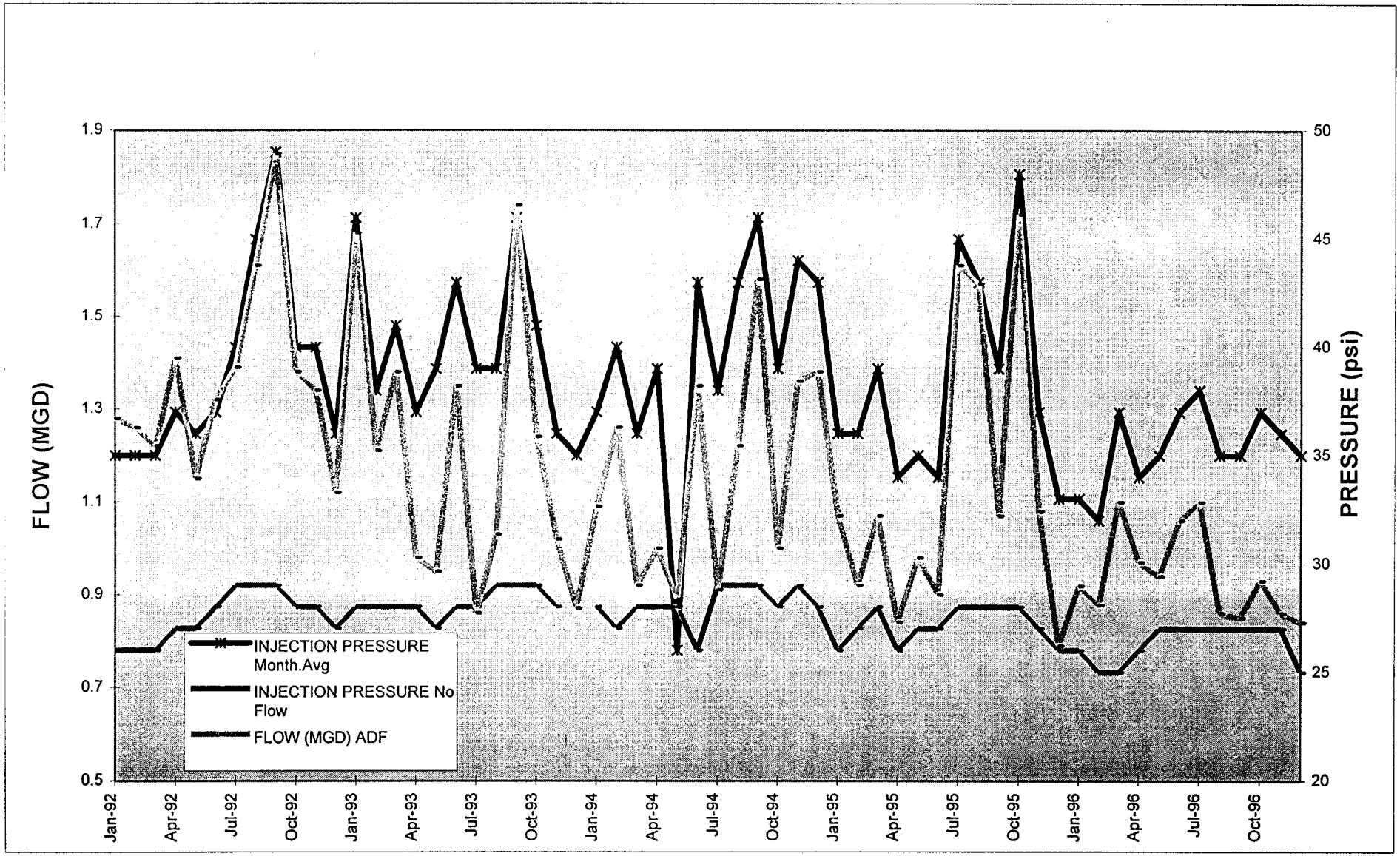
MONTHLY PEAK FLOW/PRESSURE/ SPECIFIC INJECTIVITY DATA FOR DEEP WELL



PAHOKEE WASTEWATER TREATMENT PLANT
MONTHLY FLOW/INJECTION PRESSURE VARIATION FOR INJECTION WELL



PAHOKEE WASTEWATER TREATMENT PLANT
MONTHLY AVERAGE FLOW/ AVERAGE INJECTION PRESSURE FOR INJECTION WELL



ATTACHMENT 9: Financial Responsibility Regarding Plugging And Abandoning Well

YOUNGQUIST BROTHERS, INC.

15465 PINE RIDGE ROAD FT. MYERS, FL. 33908
PHONE (941) 489-4444 FAX (941) 489-4545

Date : June 16, 1997

To : Craig A. Smith & Associates
Attn. : **Mr. Robert Binger**

Ref. : City of Pahokee Injection Well Plugging and Abandonment

COST ESTIMATE :

Dear Mr. Binger ;

We have reviewed the information you sent regarding the City of Pahokee's 12 inch Injection Well

From this information we have developed the following estimate of costs to Plug and Abandon the subject well. Our estimate includes mobilizing all required equipment to the site and pumping a theoretical volume of cement. Wellhead disassembly, site preparation and restoration is to be performed by owner. Geophysical Logging if required will be at additional cost.

All work will be performed in accordance with applicable regulations of the Florida Department of Environmental Protection, South Florida Water Management and local authorities.

ESTIMATE TO PLUG & ABANDON INJECTION WELL	**$ 70,934.00**
TOTAL PROJECT ESTIMATE	**$ 70,934.00**

Should we be able to provide any additional information, and /or clarification of anything contained herein please do not hesitate to call.

Sincerely ;

Bill Musselwhite
Vice President
Client and Government Relations
YOUNGQUIST BROTHERS, INC.

YOUNGQUIST BROTHERS, INC.

15465 PINE RIDGE ROAD FT. MYERS, FL. 33908
PHONE (941) 489-4444 FAX (941) 489-4545

Date : June 16, 1997

To : Craig A. Smith & Associates
Attn. : **Mr. Robert Binger**

Ref. : City of Pahokee Injection Well Plugging and Abandonment

Cost Estimate Detail :

Dear Mr. Binger ;

We are pleased to offer the following breakdown to accompany our Cost Estimate for the Plugging and Abandonment of the City of Pahokee Injection Well.

Our estimate was conditioned on the owner providing all wellhead disassembly, site preparation and restoration.

Our estimate is predicated on two basic factors. First, the theoretical volume of cement to be pumped, and second, a lump sum amount to cover Mobilization, Demobilization, Set-Up Charges, etc.

Shown below is the basic make up of our estimate.

INJECTION WELL

Cement	2,702 cubic feet
Cement Value	17.00 per cu. ft.
Sub - Total	$ 45,934.00
Mob., Demob,	$ 25,000.00
TOTAL	**$ 70,934.00**

I trust the above information is sufficient to your purpose. Please contact me should I be able to be of further assistance.

Sincerely ;

Bill Musselwhite
Vice President
Client and Government Relations
YOUNGQUIST BROTHERS, INC.

MICHAEL H. STAUDER
· ATTORNEY · AT · LAW ·
BOARD CERTIFIED CIVIL TRIAL LAWYER

CRYSTAL TREE OFFICE CENTRE
Suite 315 • 3rd Floor
1201 U.S. Highway One • North Palm Beach, FL 33408-3548
Telephone: (407) 627-8899
Fax: (407) 627-5734

PAHOKEE OFFICE
127 North Lake Avenue
P.O. Box 558 • Pahokee, FL 33476-0558
Telephone: (407) 924-6000

REPLY TO:
Pahokee

June 10, 1997

TO WHOM IT MAY CONCERN:

RE: City of Pahokee, Florida

This is to advise that the undersigned is the City Attorney for the City of Pahokee, Florida.

This is to further confirm that the City of Pahokee, Florida, is, in fact, a Florida "Municipality" created pursuant to general or special law authorized or recognized pursuant to s.2 or s.6, Article VIII of the State of Florida Constitution.

The City of Pahokee, Florida, as a Florida "Municipality" has the governmental, corporate, and proprietary powers to enable the City of Pahokee to conduct municipal government, perform municipal functions, and render municipal services and to exercise any power for municipal purposes except, when expressly prohibited by law as more specifically set forth in Chapter 166 of the Florida Statutes.

Specifically, the City of Pahokee meets the definition of a local government as defined in Chapter 218, Florida Statutes, including, but not limited to, Part V of Chapter 218, Florida Statutes, entitled "Financial Emergencies".

If you have any further questions regarding the City of Pahokee, Florida's status as a Florida "Municipality", please feel free to contact me at any time.

Very truly yours,

Michael H. Stauder
Attorney for City of Pahokee

MHS:ba

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MICHAEL H. STAUDER
· ATTORNEY · AT · LAW ·
BOARD CERTIFIED CIVIL TRIAL LAWYER

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Pahokee

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Very truly yours,

Michael H. Stauder
Attorney for City of Pahokee

MHS:ba

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MICHAEL H. STAUDER
· ATTORNEY · AT · LAW ·
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Pahokee

June 10, 1997

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Very truly yours,

Michael H. Stauder
Attorney for City of Pahokee

MHS:ba

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CERTIFICATION OF FINANCIAL RESPONSIBILITY

The City of Pahokee, a unit of local government of the State of Florida, hereby certifies that it has unconditionally obligated itself to have the financial resources necessary to close, plug, and abandon its Class I underground injection well(s) and related monitoring wells, as required by Chapter 62-528, Florida Administrative Code. It is further understood that the cost estimate to conduct plugging and abandonment, established on _____, shall be reviewed on an annual basis and this obligation shall incorporate accumulated inflation costs. An annual adjustment exceeding 10 percent in any one year shall require submission of an updated certification form.

List of Injection Wells Covered By This Agreement:
(for each injection well list the following information)

Facility Name: Pahokee Wastwater Treatemnt Plant

Facility Address: 1001 Rim Canal Road, Pahokee, FL 33476

Facility Contact: Cathy Nance

Phone Number: 561-924-2926 or 561-924-5534

Latitude/Longitude of Injection Well: 26°48'N/80°40'00"W

DEP/EPA Identification Number: FLS 5050M00787

Current Plugging and Abandonment Cost Estimate: $70,934.00

It is hereby understood that the cancellation of this certification may not take place without the prior written consent of the Secretary of the Florida Department of Environmental Protection.

(Signature)

Kenneth N. Schenck
(Print Name)

City Manager
(Title)

6/10/97
(Date)

NOTARY:

(Name) Debra Palmer

(Date Commission Expires)

DEBRA PALMER
MY COMMISSION # CC426463 EXPIRES
December 14, 1998
BONDED THRU TROY FAIN INSURANCE, INC.

ATTACHMENT 10: Meter Calibration Certificates

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 930331

ITEM RECORDER/XMIT/GAUGES MGR. CHESSEL/ROSEMOUNT/U.S. GAUGE

MODEL NO. 390/DP/GP/N/A SER. 8680/1153364/1155576/N/A

CALIBRATION DATE 3-31-93 RECALIBRATION DUE MAR 94

TECHNICIAN TWIDDY PROCEDURE USED MFR O/M MANUAL

ENVIRONMENTAL CONDITIONS GOOD °F — %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: PRESSURE GAUGE TESTED WITHIN TOLERANCE ±2% F.S. RECORDER, DP TRANSMITTER, GP TRANSMITTER WITHIN MANUFACTURE SPECIFICATION

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610SP	B7617	JUL 92	JUL 93	PRESSURE CALIBRATOR
TRANSCAT	1040E	380703	JAN 93	JAN 94	ANALOG CALIBRATOR

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. ANNUAL BY Charles R. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 930928
ITEM RECORDER/TX/GAUGES MGR. CHESSEL/ROSEMOUNT/U.S. GAUGE
MODEL NO. 390/DD-GP/NA SER. 8680/1153264-1155576/NA
CALIBRATION DATE 9-25-93 RECALIBRATION DUE MAR 94
TECHNICIAN TWIDDY PROCEDURE USED MFR'S O/M MANUAL
ENVIRONMENTAL CONDITIONS 78 °F NA %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: EQUIPMENT PERFORMANCE CHECKED WITHIN APPLICABLE O/M MANUALS SPECIFICATIONS

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610SP	B6717	JUL 93	JUL 95	PRESSURE CAL
TRANSCAT	1040E	380703	JAN 93	JAN 94	ANALOG CAL
FLUKE	87	78801365	JAN 93	JAN 95	MULTIMETER
FLUKE	PV350	N/A	SEP 93	SEP 95	PRESSURE HTR
POLYSONICS	UPM84P	16750	MAR 93	MAR 97	FLOW CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY Charles R. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 930930

ITEM TX/RECORDER MGR. BIF

MODEL NO. 231-25/235-01 SER. 64874-1/64875-M

CALIBRATION DATE 11-6-93 RECALIBRATION DUE MAR 94

TECHNICIAN TWIDDY PROCEDURE USED MFR'S MANUAL

ENVIRONMENTAL CONDITIONS 76 °F N/A %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☒ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☒ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: FLOW TRANSMITTER REQUIRED REPLACEMENT OF PIVOT ON RATE ARM, RECORDER ADJUSTED TO MFR'S SPECIFICATION

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
SKINA	2101SPL	4-E-89104M	DEC-92	DEC93	FLOW CAL
KEY	11-BIF	9001	DEC 92	DEC 93	PDM CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY Charles R. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 930331

ITEM RECORDER/XMIT/GAUGES MGR. CHESSEL/ROSEMOUNT/U.S. GAUGE

MODEL NO. 390/DP/GP/N/A SER. 8680/1153364/1155576/N/A

CALIBRATION DATE 3-31-93 RECALIBRATION DUE MAR 94

TECHNICIAN TWIDDY PROCEDURE USED MFR O/M MANUAL

ENVIRONMENTAL CONDITIONS GOOD °F ——— %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)

☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: PRESSURE GAUGE TESTED WITHIN TOLERANCE ±2% F.S. RECORDER, DP TRANSMITTER, GP TRANSMITTER WITHIN MANUFACTURING SPECIFICATION

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610SP	B7617	JUL 92	JUL 93	PRESSURE CALIBRATOR
TRANSCAT	1040E	380703	JAN 93	JAN 94	ANALOG CALIBRATOR

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. ANNUAL BY Charles R. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 930928
ITEM RECORDER/TX/GAUGES MGR. CHESSEL/ROSEMOUNT/U.S. GAUGE
MODEL NO. 390/DP-GP/NA SER. 8680/1153264-1155576/NA
CALIBRATION DATE 9-25-93 RECALIBRATION DUE MAR 94
TECHNICIAN TWIDDY PROCEDURE USED MFR'S O/M MANUAL
ENVIRONMENTAL CONDITIONS 78 °F NA %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: EQUIPMENT PERFORMANCE CHECKED WITHIN APPLICABLE O/M MANUALS SPECIFICATIONS

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610SP	B6717	JUL 93	JUL 95	PRESSURE CAL
TRANSCAT	1040E	380703	JAN 93	JAN 94	ANALOG CAL
FLUKE	87	48801365	JAN 93	JAN 95	MULTIMETER
FLUKE	PV350	N/A	SEP 93	SEP 95	PRESSURE HTR
POLYSONICS	UPM84P	16750	MAR 93	MAR 97	FLOW CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY Charles R. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 930930

ITEM TX/RECORDER MGR. BIF

MODEL NO. 231-25/235-01 SER. 64874-1/64875-M

CALIBRATION DATE 11-6-93 RECALIBRATION DUE MAR 94

TECHNICIAN TWIDDY PROCEDURE USED MFR'S MANUAL

ENVIRONMENTAL CONDITIONS 76 °F N/A %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☒ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☒ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: FLOW TRANSMITTER REQUIRED REPLACEMENT OF PIVOT ON RATE ARM, RECORDER ADJUSTED TO MFR'S SPECIFICATION

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
SKINA	8101SPL	4-C-89104M	DEC-92	DEC 93	FLOW CAL
KEY	11-BIF	901	DEC-92	DEC 93	RDM CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY Charles R. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

SOUTHLAND CONTROLS CO.

6616 PARK LANE EAST • LAKE WORTH, FLORIDA 33467

NAME Pahokee, City of DATE 3-2-94

CITY Waste Water Treatment Plt. P.O. BOX

Certificate of Inspection

The instrument listed below has been duly tested and inspected and found to meet all published physical and operating specifications.

The accuracy and calibration of this instrument is traceable to the National Bureau of Standards through certified standards.

Sewage Rec Flow Meter	BIF	B-6	64875-1-M
INSTRUMENT NAME — DESCRIPTION	MANUFACTURER	MODEL	SERIAL NO.

☐ NO ADJUSTMENT REQUIRED ☐ REPLACEMENT PARTS ADDED

☑ ADJUSTMENT REQUIRED

REMARKS Initially 18.2% high

INSP. 30194 Final ± 1%

DR Quigley

AUTHORIZED SIGNATURE

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

OWNER OF ITEM AAHOKEE WWTP REPORT NO. 940319

ITEM RECORDER/TX/GAUGES MGR. CHESSEL/ROSEMOUNT/U.S.GAGE

MODEL NO. 390/DP-CD/NA SER. 8680/1153264, 1155576/NA

CALIBRATION DATE 3-19-94 RECALIBRATION DUE SEP 94

TECHNICIAN TWIDDY PROCEDURE USED MFR'S O/M MANUAL

ENVIRONMENTAL CONDITIONS 78 °F NA %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: CHECKED O.K., INSTALLED ISOBAR SURGE PROTECTOR ON INPUT POWER SOURCE

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610SP	B6717	JUL 94	JUL 95	PRESS. CAL.
TRANSCAT	1040E	380703	JAN 94	JAN 95	ANALOG CAL.
FLUKE	27	48201365	JAN 94	JAN 95	MULTIMETER
FLUKE	PV350	N/A	SEP 94	SEP 95	PRESS. MTR.
POLYSONICS	UFM84P	16750	MAR 94	MAR 95	FLOW CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY C. J. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 940319

ITEM GAUGES / RECORDER MGR. MARSHALL / DICKSON

MODEL NO. NA / PRPR8 SER. N/A / 206199

CALIBRATION DATE 3-19-94 RECALIBRATION DUE SEP 94

TECHNICIAN TWIDDY PROCEDURE USED MFR'S O/M MANUAL

ENVIRONMENTAL CONDITIONS 78 °F N/A %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☒ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: REPLACED SNUBBERS, CLEANED TUBING, PERFORMED CALIBRATION IN ACCORDANCE WITH MFR. MANUALS.

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TEMSCAT	6105P	B7617	JUL 94	JUL 95	PRESS. CAL.
FLUKE	87	4880365	JAN 94	JAN 95	ANALOG CAL.
FLUKE	A1350	N/A	SEP 94	SEP 95	PRESS. MTR.

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY C. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

Charles Twiddy
P.O. Box 2268
Clewiston, Florida
33440-6268

OWNER OF ITEM AAHOREE WWTP REPORT NO. 940319

ITEM RECORDER/TX/GAUGES MGR. CHESSEL/ROSEMOUNT/U.S.GAGE

MODEL NO. 390/DP-CD/NA SER. 8620/1153264, 1155576/NA

CALIBRATION DATE 3-19-94 RECALIBRATION DUE SEP 94

TECHNICIAN TWIDDY PROCEDURE USED MPR's 'O'/NI MANUAL

ENVIRONMENTAL CONDITIONS 78 °F NA %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: CHECKED O.K., INSTALLED ISOBAR. SURGE PROTECTOR ON INPUT POWER SOURCE

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610SP	B6717	JUL 94	JUL 95	PRESS. CAL.
TRANSCAT	1040E	380703	JAN 94	JAN 95	ANALOG CAL.
FLUKE	87	48801365	JAN 94	JAN 95	MULTIMETER
FLUKE	PV350	N/A	SEP 94	SEP 95	PRESS. MTR.
POLYSONICS	UFM84P	16750	MAR 94	MAR 95	FLOW CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY C. J. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 940217

ITEM RECORDER MGR. CHESSELL

MODEL NO. 390 SER. 8680

CALIBRATION DATE 02-17-94 RECALIBRATION DUE MAR 94

TECHNICIAN TWIDDY PROCEDURE USED MFR'S O/M MANUAL

ENVIRONMENTAL CONDITIONS 76 °F NA %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☒ OUT OF TOLERANCE (ADJUSTMENT REQ'D)

☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: SYSTEM FOUND TO BE IN DEFAULT, REPROGRAM AND ADJUST PARAMETER IN ACCORDANCE WITH MANUFACTURES MANUAL.

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSAT	1040E	380703	JAN 94	JAN 95	ANALOG CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. UNSCH BY C. Jacobs

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☐

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

MEA inc.
Charles R. Twiddy
P.O. Box 2268
Clewiston, FL 33440

OWNER OF ITEM Ahokee WWTP REPORT NO. 940917

ITEM Recorder/XMIT/Gauge MGR. Chessell/Rosemount/U.S. Gage

MODEL NO. 390/DD-CP/NA SER. 8680/153264-155576/NA

CALIBRATION DATE Sept 17, 1994 RECALIBRATION DUE Mar 95

TECHNICIAN TWIDDY PROCEDURE USED STANDARD

ENVIRONMENTAL CONDITIONS 82 °F N/A %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☒ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: Equipment Checked With in Mfr's Specifications

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	610P	B6717	Jul 94	Jul 95	Press. Cal.
TRANSCAT	1040E	380703	JAN 94	JAN 95	DIGITAL CAL.
FLUKE	87	4880365	JAN 94	JAN 95	CAL. METER
FLUKE	PV350	N/A	Sep 94	Sep 95	PRESS. METER
POLYSONICS	UFM8AP	16750	MAR 93	MAR 97	FLOW CAL.

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. Semi-Annual BY C. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☒

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

MEA inc.
Charles R. Twiddy
P.O. Box 2268
Clewiston, FL 33440

OWNER OF ITEM Pahokee WWTP REPORT NO. 940917

ITEM Gauges / Recorder MGR. Marshall / Dickson

MODEL NO. N/A / PRPR8 SER. N/A / 206199

CALIBRATION DATE 9-17-94 RECALIBRATION DUE Mar 95

TECHNICIAN Twiddy PROCEDURE USED Standard

ENVIRONMENTAL CONDITIONS 82 °F N/A %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☒ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: Cleaned piping and snubbers, calibrated in accordance with MFR's manuals.

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
TRANSCAT	6105P	B7617	Jul 94	Jul 95	Press. Cal.
FLUKE	87	4880365	JAN 94	JAN 95	Cal. Meter
FLUKE	PV350	N/A	Sep 94	Sep 95	Press. Cal.

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. Semi-Annual BY C. J. [signature]

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☒

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

MEA inc.
Charles R. Twiddy
P.O. Box 2268
Clewiston, FL 33440

OWNER OF ITEM PAHOKEE WWTP REPORT NO. 940917

ITEM XMIT / RECORDER MGR. BIF

MODEL NO. 3105/235-01 SER. 64874I / 64875-M

CALIBRATION DATE Sept 17, 94 RECALIBRATION DUE MAR 94

TECHNICIAN TWIDDY PROCEDURE USED STANDARD

ENVIRONMENTAL CONDITIONS 85 °F N/A %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☒ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: SYSTEM: REPAIRED, (NEW WIRE CABLE Rqd.)
CALIBRATED IN ACCORDANCE WITH MFR'S MANUALS

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
SIGMA	810SR	LE04891049	DEC 93	DEC 94	FLOW CAL
KEY	11-BIP	901	DEC 93	DEC 94	PDM CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY C. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☒

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

MEA inc.
Charles R. Twiddy
P.O. Box 2268
Clewiston, FL 33440

OWNER OF ITEM: PAHOKEE WWTP REPORT NO. 960808A

ITEM: RECORDER/XMITTER MGR. BIP

MODEL NO. 335-01/931735 SER. 6487S-1/6487T-1

CALIBRATION DATE Sept 8, 96 RECALIBRATION DUE Mar 97

TECHNICIAN TWIDDY PROCEDURE USED STANDARD

ENVIRONMENTAL CONDITIONS 88 °F NA %RH

ITEM FOUND: ☐ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)
☒ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: BIP TRANSMITTER WAS STUCK AT LOWER LIMITS, ADJUSTED WIRECABLE, CALIBRATED WITHIN MFR'S SPEC'S.

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
Key	11-BIP	901	Dec 95	Dec 96	ANNUAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP Semi-Annual BY C. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 17 IN PLANT ☒

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

MEA inc.
Charles R. Twiddy
P.O. Box 2268
Clewiston, FL 33440

OWNER OF ITEM OKEE WWTP REPORT NO. 960808B

ITEM RECORDER/CAGE MGR. DICKSON/MARSHALL

MODEL NO. PEPR8/NA SER. 306197/NA

CALIBRATION DATE SEP 8,96 RECALIBRATION DUE MAR97

TECHNICIAN TWIDDY PROCEDURE USED STANDARD

ENVIRONMENTAL CONDITIONS 88 °F NA %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)

☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: UNITS CALIBRATED WITHIN MFR'S SPEC's

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL.	DUE	REMARKS
FLUKE	5700	865717	JULY96	JULY97	FLEES CAL
FLUKE	87	88036S	JAN96	JAN97	CAL. LAB.
FLUKE	PV350	NA	SEP96	SEP96	FLEES CAL

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. SEMI-ANNUAL BY C. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☒

INSTRUMENTS

CALIBRATION AND REPAIR SERVICES

Certificate of Inspection

MEA inc.
Charles R. Twiddy
P.O. Box 2268
Clewiston, FL 33440

OWNER OF ITEM Pahokee WWTP REPORT NO. 960808A

ITEM PCR/XMITTER/GAGE MGR. C-TESSEL/ROSEMOUNT/U.S.

MODEL NO 390/1151DP-CD/NA SER. 8680/1153264-1155576/NA

CALIBRATION DATE Sept 8,96 RECALIBRATION DUE MAR 97

TECHNICIAN TWIDDY PROCEDURE USED STANDARD

ENVIRONMENTAL CONDITIONS 88 °F N A %RH

ITEM FOUND: ☒ WITHIN TOLERANCE ☐ OUT OF TOLERANCE (ADJUSTMENT REQ'D)

☐ OUT OF TOLERANCE (REPAIR REQ'D) ☐ INOPERATIVE UPON RECEIPT

ITEM RETURNED: ☐ WITHIN TOLERANCE ☐ CORRECTION CHART SUPPLIED

SPECIFICATIONS/REMARKS: ALL EQUIPMENT CALIBRATED WITHIN MFR'S SPEC'S

THE ABOVE LISTED INSTRUMENT HAS BEEN DULY TESTED AND INSPECTED AND FOUND TO MEET ALL PUBLISHED PHYSICAL AND OPERATING SPECIFICATIONS.

STANDARDS USED IN THIS CALIBRATION:

MFR.	MODEL	SERIAL NO.	DATE CAL	DUE	REMARKS
TRANSCAT	6105P	B6717	July 96	JULY 97	PRESS. CAL.
TRANSCAT	1040E	380703	JAN 96	JAN 97	DIGITAL CAL.
FLUKE	87	4880365	JAN 96	JAN 97	CAL. MFR.
FLUKE	PV350	N/A	Sep 96	Sep 97	PRESS MFR.

THE ACCURACY OF THE ABOVE LISTED STANDARDS IS DIRECTLY OR INDIRECTLY TRACEABLE TO THE NATIONAL BUREAU OF STANDARDS.

INSP. Scott-Anwar BY C. Twiddy

CALIBRATED AT LABORATORY ☐ MOBILE UNIT # 1 IN PLANT ☒

ATTACHMENT11: Additional Wastestream Analysis

PSI Environmental Geotechnical Construction
Consulting • Engineering • Testing

ANALYTICAL REPORT

TESTED FOR: Environmental Services of South Florida
P.O. Box 10003
Riviera, Fl. 33419

PROJECT: Water Analysis
Letter received 12/24/96

ATTENTION: Mike Feidor

DATE: January 3, 1997

OUR REPORT NUMBER: 385-6P235-0060

Attached, please find our analytical report for samples described on the Chain-of-Custody (C-O-C). Please note that our laboratory has assigned unique sample numbers to each of your samples as shown on the attached C-O-C. Please reference our report number and direct any questions on this report to the individual designated below or to one of our Customer Service Representatives.

Reviewed By,

Anthony R. Febbraro, Department Manager

Respectfully submitted,
Professional Service Industries, Inc.

HRS #84218
HRS #E84388
FL CQAP #860130

/bl

Environmental Services of South Florida, Inc.

P.O. Box 10003 • Riviera Beach, Florida 33419 • (407) 848-7805

DHRS LAB # E86055
DHRS LAB #86117

LABORATORY ANALYSIS
WATER / WASTEWATER / SOIL / FOOD

CONSULTING
INDUSTRIAL / AGRICULTURAL / DOMESTIC

DRINKING WATER CHEMICAL ANALYSIS

System: City of Pahokee

Address: Palm Beach County, Florida

Sample Site: Wastewater Effluent Stream

Date and Time of Collection: 12/19/96, 1145 **Collector:** D. Fiedor

Type of Supply: -

Date and Time of Sample Arrival in Lab: 12/19/96, 1550

Date Reported: 3/11/97

marks:

PRIMARY STANDARDS		SECONDARY STANDARDS		GENERAL	
PARAMETER	RESULT	PARAMETER	RESULT	PARAMETER	RESULT
Arsenic as As	<0.01	Chloride as Cl	450	Total Hardness as CaCO,	
Barium as Ba	<0.10	Color* (APHA)	65	Total Alkalinity as CaCO,	
Cadmium as Cd	<0.001	Copper as Cu	0.001	N.C.H. as CaCO,	
Chromium as Cr	0.005	Corrosivity*		Bicarbonate as HCO,	
Lead as Pb	0.002	Foaming Agents	0.06	Calcium as Ca	
Mercury as Hg	<0.001	H,S		Magnesium as Mg	
Selenium as Se	<0.01	Iron as Fe	0.07	Free Carbon Dioxide as CO,	
Silver as Ag	<0.001	Manganese as Mn	0.003	Bicarbonate as CaCO,	
Nitrate as N	5.2	Odor*	3	Carbonate as CaCO,	
Fluoride as F	0.50	pH* (UNITS)	6.9	Hydroxide as CaCO,	
Turbidity,* NTU	3.1	Sulfate as SO,	180	Sodium as Na	332
Nitrite as NO,	1.45	TDS (180° C)	1470		
Endrin		Zinc as Zn	0.019	pHs*	
Lindane		C.O.D.	72	Stability Index* 2pHs-pH	
Methoxychlor				Saturation Index* pH-pHs*	
Toxaphene					
2,4-D					
2,4,5 TP Silvex				Michael A. Fiedor, Director	
Aluminum as Al	0.03	*All results in mg/liter except those denoted			
Nickel as Ni	0.002				

LAB #: 612239-01
Client ID: 3951

Matrix: Water

Analyte	Results	Units	Method	Analysis Date	Analyst	MDL
Total Antimony	<0.005	mg/l	204.2	12/26/96	MC	0.005
Total Beryllium	<0.001	mg/l	210.2	12/26/96	MC	0.001
Total Thallium	<0.001	mg/l	279.2	12/27/96	MC	0.001
Total Cyanide	<0.005	mg/l	335.3	12/26/96	MB	0.005
Total Organic Carbon	30	mg/l	415.1	01/03/97	SV	1.0

psi

Quality Control Project Narrative

Client: **Name: Environmental Services of South Florida**
Project: Pahokee
HPN # 63028

Samples were accepted by Harbor Branch Environmental Laboratory in accordance with documented sample acceptance procedures. Analytical results presented in this report have been reviewed for compliance with laboratory QA/QC plan. The QC parameters which were evaluated have been summarized below. Non-compliant items are noted.

- **Laboratory Blank:** All analytes were below Method Detection Limits (MDL).
- **Laboratory Control Sample:** Recoveries for analytes were within laboratory precision and accuracy limits.
- **Matrix Spike/Matrix Spike Duplicate:** Recoveries for analytes were within laboratory precision and accuracy limits.

PUBLIC DRINKING WATER ANALYSIS REPORTING FORMAT

PUBLIC WATER SYSTEM INFORMATION (to be completed by system or lab)

System Name:_____ I.D. #:_____

Address:_____ Phone #:_____

Type check one: ( ) Community ( ) Nontransient Noncommunity ( ) Noncommunity

SAMPLE INFORMATION (to be completed by sampler)

Sample Date (MMDDYY): 12/19/96 Sample Time: 11:45

Sample Location (be specific): Wastestream

Sampler Name and Phone: _____

Sampler's Signature: _____ Title: _____

Check Type(s): ( ) Distribution ( ) Recheck of MCL ( ) Resample of Lab Invalidated Sample
( ) Clearance ( ) Thm Max Res Time ( ) Plant Tap
( ) Distrib entry pt (X) Raw ( ) Composite of Multiple Sites--Attach a format for each site.

LABORATORY CERTIFICATION INFORMATION (to be completed by lab) -- **ATTACH HRS ANALYTE SHEET**

Lab Name: Harbor Branch Environmental Laboratory HRS #: 96230 Expiration Date: 06/30/97

Address: 5600 U.S. 1 North, Ft. Pierce, FL 34946 Phone # : (561) 465-2400 ext 285

Subcontracted Lab HRS #: None Group Analyzed: None

ANALYSIS INFORMATION (to be completed by lab) -- **SAMPLE NUMBER:** 63028001

Date Sample(s) Received: 12/19/96 Group(s) Analyzed & Results attached for compliance with 62-550, F.A.C.:

( ) Nitrate Only	( ) Nitrite Only	( ) Asbestos Only	( ) Trihalomethanes
Inorganics-- ( ) All 17 ( ) Partial	Volatile Organics-- (X) All 21 ( ) Partial	Secondaries-- ( ) All 14 ( ) Partial	Pesticides & PCBs-- ( ) All 30 ( ) Partial
Group I Unregulateds-- ( ) All 13 ( ) Partial	Group II Unregulateds-- ( ) All 23 ( ) Partial	Group III Unregulateds-- ( ) All 11 ( ) Partial	Radiochemical-- ( ) Single Sample ( ) Qtrly Composite*

* Provide radiochemical sample dates & locations for each quarter

I, N. Myron Gunsalus, Jr., do HEREBY CERTIFY that all attached analytical data are correct.

Signature _____

Title Laboratory Director Date January 3, 1997

COMPLIANCE INFORMATION (to be completed by State)

Sample Collection Satisfactory: _____ Sample Analysis Satisfactory: _____

Resample Requested for: _____ Reason: _____

Person notified to resample: _____ Date Notified: _____

DER/HRS Reviewing Official: _____

Effective September 1994

HARBOR BRANCH ENVIRONMENTAL LABORATORY

(PWS028)
VOLATILE ORGANIC ANALYSIS
62-550.310(2)(b)

Project	Environmental Services of So. Florida	**Workorder**	Pahokee
Sample Location	Wastestream		
Sample Number	63028001		
Sampling Date	12/19/96 11:45		
Preservative	1:1 Hydrochloric Acid		
Date Received	12/19/96 18:10		

ID	Parameter [MCL]	Result		Method	MDL	Date	Lab ID
2378	1,2,4-Trichlorobenzene[70]	ND	ug/L	EPA 524.2	0.20	12/30/96	96230
2380	cis-1,2-Dichloroethylene[70]	ND	ug/L	EPA 524.2	0.14	12/30/96	96230
2955	Total Xylenes[10000]	ND	ug/L	EPA 524.2	0.20	12/30/96	96230
2964	Dichloromethane[5]	ND	ug/L	EPA 524.2	0.19	12/30/96	96230
2968	o-Dichlorobenzene[600]	ND	ug/L	EPA 524.2	0.16	12/30/96	96230
2969	para-Dichlorobenzene[75]	ND	ug/L	EPA 524.2	0.15	12/30/96	96230
2976	Vinyl chloride[1]	ND	ug/L	EPA 524.2	0.19	12/30/96	96230
2977	1,1-Dichloroethylene[7]	ND	ug/L	EPA 524.2	0.15	12/30/96	96230
2979	trans-1,2-Dichloroethylene[100]	ND	ug/L	EPA 524.2	0.15	12/30/96	96230
2980	1,2-Dichloroethane[3]	ND	ug/L	EPA 524.2	0.15	12/30/96	96230
2981	1,1,1-Trichloroethane[200]	ND	ug/L	EPA 524.2	0.10	12/30/96	96230
?	Carbon tetrachloride[3]	ND	ug/L	EPA 524.2	0.060	12/30/96	96230
2983	1,2-Dichloropropane[5]	ND	ug/L	EPA 524.2	0.12	12/30/96	96230
2984	Trichloroethylene[3]	ND	ug/L	EPA 524.2	0.44	12/30/96	96230
2985	1,1,2-Trichloroethane[5]	ND	ug/L	EPA 524.2	0.27	12/30/96	96230
2987	Tetrachloroethylene[3]	ND	ug/L	EPA 524.2	0.14	12/30/96	96230
2989	Monochlorobenzene[100]	ND	ug/L	EPA 524.2	0.19	12/30/96	96230
2990	Benzene[1]	ND	ug/L	EPA 524.2	0.080	12/30/96	96230
2991	Toluene[1000]	ND	ug/L	EPA 524.2	0.10	12/30/96	96230
2992	Ethylbenzene[700]	ND	ug/L	EPA 524.2	0.090	12/30/96	96230
2996	Styrene[70]	ND	ug/L	EPA 524.2	0.11	12/30/96	96230

HARBOR BRANCH ENVIRONMENTAL LABORATORY

PESTICIDE & PCB CHEMICAL ANALYSIS
62-550.310(2)(c)
(PWS029)

Project	Environmental Services of So. Florida	**Workorder**	Pahokee
Sample Location	Wastestream		
Sample Number	63035001		
Sampling Date	12/19/96 11:45		
Preservative	Sodium Thiosulfate		
Date Received	12/19/96 18:10		

ID	Parameter [MCL]	Result		Method	MDL	Date	Lab ID
2005	Endrin[2]	ND	ug/L	EPA 508	0.0061	12/24/96	96230
2010	Lindane[.2]	ND	ug/L	EPA 508	0.0040	12/24/96	96230
2015	Methoxychlor[40]	ND	ug/L	EPA 508	0.0040	12/24/96	96230
2020	Toxaphene[3]	ND	ug/L	EPA 508	1.2	12/24/96	96230
2031	Dalapon[200]	ND	ug/L	EPA 515.1	20	12/27/96	96230
2032	Diquat[20]	ND	ug/L	EPA 549.1	0.67	12/23/96	96230
2033	Endothall[100]	ND	ug/L	EPA 548.1	10	12/18/96	84269
2034	Glyphosate[700]	ND	ug/L	EPA 547	6.0	01/01/97	96230
2035	Di(2-ethylhexyl)adipate[400]	ND	ug/L	EPA 525	0.82	12/24/96	86405
2036	Oxamyl (Vydate)[200]	ND	ug/L	EPA 531.1	0.36	01/03/97	96230
2037	Simazine[4]	ND	ug/L	EPA 507	0.33	12/24/96	96230
39	Di(2-ethylhexyl)phthalate[6]	ND	ug/L	EPA 525	1.4	12/24/96	86405
40	Picloram[500]	ND	ug/L	EPA 515.1	0.085	12/27/96	96230
2041	Dinoseb[7]	ND	ug/L	EPA 515.1	2.7	12/27/96	96230
2042	Hexachlorocyclopentadiene[50]	ND	ug/L	EPA 508	0.071	12/24/96	96230
2046	Carbofuran[40]	ND	ug/L	EPA 531.1	0.21	01/03/97	96230
2050	Atrazine[3]	ND	ug/L	EPA 507	0.24	12/24/96	96230
2051	Alachlor[2]	ND	ug/L	EPA 507	0.29	12/24/96	96230
2065	Heptachlor[.4]	ND	ug/L	EPA 508	0.0051	12/24/96	96230
2067	Heptachlor epoxide[.2]	ND	ug/L	EPA 508	0.0040	12/24/96	96230
2105	2,4-D[70]	ND	ug/L	EPA 515.1	0.32	12/27/96	96230
2110	2,4,5-TP (Silvex)[50]	ND	ug/L	EPA 515.1	0.11	12/27/96	96230
2274	Hexachlorobenzene[1]	ND	ug/L	EPA 508	0.019	12/24/96	96230
2306	Benzo(a)pyrene[.2]	ND	ug/L	EPA 550.1	0.021	12/23/96	96230
2326	Pentachlorophenol[1]	ND	ug/L	EPA 515.1	0.65	12/27/96	96230
2383	PCB[.5]	ND	ug/L	EPA 508	0.49	12/24/96	96230
2931	Dibromochloropropane[.2]	ND	ug/L	EPA 504.1	0.0085	12/20/96	96230
2946	Ethylene dibromide[.02]	ND	ug/L	EPA 504.1	0.011	12/20/96	96230
2959	Chlordane[2]	ND	ug/L	EPA 508	0.012	12/24/96	96230

PUBLIC DRINKING WATER ANALYSIS REPORTING FORMAT

PUBLIC WATER SYSTEM INFORMATION (to be completed by system or lab)

System Name:_____ I.D. #:_____

Address:_____ Phone #:_____

Type check one: ( ) Community ( ) Nontransient Noncommunity ( ) Noncommunity

SAMPLE INFORMATION (to be completed by sampler)

Sample Date (MMDDYY): 12/19/96 Sample Time: 11:45

Sample Location (be specific): Wastestream

Sampler Name and Phone: _____

Sampler's Signature: _____ Title: _____

Check Type(s): ( ) Distribution ( ) Recheck of MCL ( ) Resample of Lab Invalidated Sample
( ) Clearance ( ) Thm Max Res Time ( ) Plant Tap
( ) Distrib entry pt (X) Raw ( ) Composite of Multiple Sites--Attach a format for each site.

LABORATORY CERTIFICATION INFORMATION (to be completed by lab) -- **ATTACH HRS ANALYTE SHEET**

Lab Name: Harbor Branch Environmental Laboratory HRS #: 96230 Expiration Date: 06/30/97

Address: 5600 U.S. 1 North, Ft. Pierce, FL 34946 Phone # : (561) 465-2400 ext 285
Subcontracted Lab HRS #: None Group Analyzed: None

ANALYSIS INFORMATION (to be completed by lab) -- **SAMPLE NUMBER:** 63035001

Date Sample(s) Received: 12/19/96 Group(s) Analyzed & Results attached for compliance with 62-550, F.A.C.:

( ) Nitrate Only	( ) Nitrite Only	( ) Asbestos Only	( ) Trihalomethanes
Inorganics-- ( ) All 17 ( ) Partial	Volatile Organics-- ( ) All 21 ( ) Partial	Secondaries-- ( ) All 14 ( ) Partial	Pesticides & PCBs-- ( ) All 30 (X) Partial
Group I Unregulateds-- ( ) All 13 ( ) Partial	Group II Unregulateds-- ( ) All 23 ( ) Partial	Group III Unregulateds-- ( ) All 11 ( ) Partial	Radiochemical-- ( ) Single Sample ( ) Qtrly Composite*

* Provide radiochemical sample dates & locations for each quarter

I, N. Myron Gunsalus, Jr., do HEREBY CERTIFY that all attached analytical data are correct.

Signature _____

Title Laboratory Director Date January 14, 1997

COMPLIANCE INFORMATION (to be completed by State)

Sample Collection Satisfactory: _____ Sample Analysis Satisfactory: _____

Resample Requested for: _____ Reason: _____

Person notified to resample: _____ Date Notified: _____

DER/HRS Reviewing Official: _____

Effective September 1994

HARBOR BRANCH ENVIRONMENTAL LABORATORY

Quality Control Project Narrative

Client:

Name: Environmental Services of South Florida
Project: Pahokee
HPN # 63035

Samples were accepted by Harbor Branch Environmental Laboratory in accordance with documented sample acceptance procedures. Analytical results presented in this report have been reviewed for compliance with laboratory QA/QC plan. The QC parameters which were evaluated have been summarized below. Non-compliant items are noted.

- **Laboratory Blank:** All analytes were below Method Detection Limits (MDL).
- **Laboratory Control Sample:** Recoveries for analytes were within laboratory precision and accuracy limits.
- **Matrix Spike/Matrix Spike Duplicate:** Recoveries for analytes were within laboratory precision and accuracy limits.

Due to a spiking error, surrogate recoveries for the samples associated with HPN 62926 and associated quality control samples did not meet EPA Method 508 specified criteria. All spike recoveries in the matrix spike and matrix spike duplicate and laboratory control sample and control sample duplicate met precision and accuracy criteria. Additionally, a double blind performance evaluation sample showed acceptable recoveries, thereby concluding that results obtained for the quality control batch had accurate results.

Erik S. Penfield
Quality Assurance Manager

PUBLIC DRINKING WATER ANALYSIS REPORTING FORMAT

PUBLIC WATER SYSTEM INFORMATION (to be completed by system or lab)

System Name:_____ I.D. #:_____

Address:_____ Phone #:_____

Type check one: ( ) Community ( ) Nontransient Noncommunity ( ) Noncommunity

SAMPLE INFORMATION (to be completed by sampler)

Sample Date (MMDDYY): 12/19/96 Sample Time: 11:45

Sample Location (be specific): # 3951 Wastestream

Sampler Name and Phone: _____

Sampler's Signature: _____ Title: _____

Check Type(s): ( ) Distribution ( ) Recheck of MCL ( ) Resample of Lab Invalidated Sample
( ) Clearance ( ) Thm Max Res Time ( ) Plant Tap
( ) Distrib entry pt (X) Raw ( ) Composite of Multiple Sites--Attach a format for each site.

LABORATORY CERTIFICATION INFORMATION (to be completed by lab) -- **ATTACH HRS ANALYTE SHEET**

Lab Name: Harbor Branch Environmental Laboratory HRS #: 96230 Expiration Date: 06/30/97

Address: 5600 U.S. 1 North, Ft. Pierce, FL 34946 Phone # : (561) 465-2400 ext 285

Subcontracted Lab HRS #: None Group Analyzed: None

ANALYSIS INFORMATION (to be completed by lab) -- **SAMPLE NUMBER:** 63064001

Date Sample(s) Received: 12/23/96 Group(s) Analyzed & Results attached for compliance with 62-550, F.A.C.:

( ) Nitrate Only	( ) Nitrite Only	( ) Asbestos Only	(X) Trihalomethanes
Inorganics-- ( ) All 17 ( ) Partial	Volatile Organics-- ( ) All 21 ( ) Partial	Secondaries-- ( ) All 14 ( ) Partial	Pesticides & PCBs-- ( ) All 30 ( ) Partial
Group I Unregulateds-- ( ) All 13 ( ) Partial	Group II Unregulateds-- ( ) All 23 ( ) Partial	Group III Unregulateds-- ( ) All 11 ( ) Partial	Radiochemical-- ( ) Single Sample ( ) Qtrly Composite*

* Provide radiochemical sample dates & locations for each quarter

I, N. Myron Gunsalus, Jr., do HEREBY CERTIFY that all attached analytical data are correct.

Signature N. Myron Gunsalus

Title Laboratory Director Date January 9, 1997

COMPLIANCE INFORMATION (to be completed by State)

Sample Collection Satisfactory: _____ Sample Analysis Satisfactory: _____

Resample Requested for: _____ Reason: _____

Person notified to resample: _____ Date Notified: _____

DER/HRS Reviewing Official: _____

Effective September 1994

Quality Control Project Narrative

Client: **Name: Environmental Services of South Florida**
Project: Pahokee # 3951
HPN # 63064

Samples were accepted by Harbor Branch Environmental Laboratory in accordance with documented sample acceptance procedures. Analytical results presented in this report have been reviewed for compliance with laboratory QA/QC plan. The QC parameters which were evaluated have been summarized below. Non-compliant items are noted.

- **Laboratory Blank:** All analytes were below Method Detection Limits (MDL).
- **Laboratory Control Sample:** Recoveries for analytes were within laboratory precision and accuracy limits.

HARBOR BRANCH ENVIRONMENTAL LABORATORY

TRIHALOMETHANE ANALYSIS
62-550.310(2)(a)
(PWS027)

Project	Environmental Services of So. Florida	**Workorder**	Pahokee # 3951
Sample Location	#3951 Wastestream		
Sample Number	63064001		
Sampling Date	12/19/96 11:45		
Preservative	Sodium Thiosulfate		
Date Received	12/23/96 15:15		

ID	Parameter [MCL]	Res Chlorine Result		Method	MDL	Date	Lab ID
2950	Total THMs[.1]	0.0043	mg/L	EPA 524.2	0.00050	12/30/96	96230