7914 R-009-208.56

RESPONSE TO COMMENTS - SOUTH PLUME GROUNDWATER RECOVERY SYSTEM EVALUATION REPORT

12/06/96

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DOE-FEMP EPAS
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RESPONSES

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Department of Energy

Ohio Field Office
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DEC 06 1996

DOE-0249-97

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HSF-5J
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

RESPONSE TO COMMENTS — SOUTH PLUME GROUNDWATER RECOVERY SYSTEM EVALUATION REPORT

Reference:

1) Letter from James Saric, U.S. EPA, to Johnny W. Reising, U.S. DOE-FEMP, "DMEPP Report, January 1, 1996, to June 30, 1996," dated November 7, 1996.

2) Letter from Tom Schneider to Johnny Reising, "DOE FEMP, MSL 531-0297 HAMILTON COUNTY, DMEPP FIRST HALF 96 COMMENTS," dated November 2, 1996.

Enclosed please find the comment response document which addresses the Ohio Environmental Protection Agency (OEPA) comments on the South Plume Groundwater Recovery System Evaluation Report, covering the period from January 1, 1996, through June 30, 1996.

The U.S. Environmental Protection Agency (U.S. EPA) approved the document without comment, but expressed the desire for a status on the issue of deeper aquifer contamination and the actions being taken to improve system performance.

The restoration area verification sampling effort to further define the uranium plume in the area of Monitoring Well 3069 is currently in progress. An update on the progress and findings of this sampling effort will be provided in the meeting scheduled for December 19, 1996.

All South Plume Recovery Wells are now protected with surge protectors to help prevent electronic malfunctions during nearby thunderstorms. Additionally, the rehabilitation efforts on South Plume Recovery Well Number 3 (3926) have been completed and the well was returned to service on November 27, 1996. Recovery Well Number 4 (3927) is scheduled for rehabilitation next followed by Recovery Well Number 2 (3925), then Recovery Well Number 1 (3924).

If you have any questions, please contact John Kappa at (513) 648-3149, or Robert Janke at (513) 648-3124.

Sincerely,

Johnny Reising

Johnny W. Reising
Fernald Remedial Action
Project Manager

FEMP:Kappa

Enclosure: As Stated

cc w/enc:

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C. Little, FDF/2
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RESPONSES TO OHIO EPA COMMENTS ON SOUTH PLUME REMOVAL ACTION DESIGN MONITORING EVALUATION PROGRAM PLAN SYSTEM EVALUATION REPORT FOR JANUARY 1, 1996 - JUNE 30, 1996

General Comments

1) Commenting Organization: Ohio EPA Commentor: DD&GW

Comment: The DMEPP may need significant future alterations depending on the outcome of the Restoration Area Verification Sampling. The issue of type 4 aquifer contamination in Type 4 wells has not been addressed because existing data did not support it. Now that evidence for a vertical transportation has been found, it is important to assess the impact on the south plume and the south plume recovery system.

Response: As mentioned in this DMEPP report, an anomalous total uranium concentration of 9.8 ppb was obtained in monitoring well 4125 during the second quarter sampling event on 5/10/96. Previous sampling results from this well showed total uranium concentrations to be between 1 and 2 ppb. Sampling results from the third quarter of 1996 (8/8/96) showed total uranium concentrations of 1 ppb. It is believed that the 9.8 ppb result is an outlier and not indicative of deeper aquifer contamination at the type 4 level.

The DMEPP report did present evidence for total uranium contamination around monitoring well 3069 along the southern fenceline which is not seen shallower in monitoring well 2434 at the same location. As discussed in the report, Monitoring Well 3069 is close to an aquifer recharge area. As clean surface water infiltrates into the aquifer at this location, it combines with contaminated groundwater moving southeast with regional groundwater flow. The shallow plume appears to bifurcate around the recharge point and contamination moves deeper into the aquifer.

Sampling is currently being conducted to better define the plume geometry in this area as part of the Restoration Area Verification Sampling Task and results will be reported in the April 1997 DMEPP report.

The Restoration Area Verification Sampling Task is being performed to verify the contaminant plume shape and extent in areas where additional sample data is required. While DOE expects the results of this additional sampling will support and verify the current contaminant conditions, DOE acknowledges that the DMEPP program could significantly change as a result of the additional data. Indeed, several changes in the DMEPP program were detailed in the Integrated Environmental Monitoring Plan submitted on August 1, 1996.

Action: Monitoring Well 4125 will continue to be sampled for total uranium as part of the DMEPP sampling program. The results of the Restoration Area Verification Sampling currently being conducted in the vicinity of Monitoring Well 3069 will be analyzed when completed and the findings presented in the April 1997 DMEPP report. The report will include a discussion of what effect, if any, the sampling results have on the operation of the existing South Plume System, the proposed South Plume Optimization System, or the proposed Fenceline Injection Demonstration.

2) Commenting Organization: Ohio EPA Commentor: GeoTrans

Comment: A combined pumping rate of 1400 gpm for wells 3924 and 3925 (each pumping at 300 gpm), and wells 3926 and 3927 (each pumping at 400 gpm) would achieve the goal of plume capture in both the Type 2 and Type 3 wells provided well 3926 is reworked and is placed back on line. Based on the modeled scenario of 1400 gpm, plume capture in Well 2552 is achieved based on flow directions determined from colloidal borescope data for this well. However, seasonal fluctuations in the uranium concentrations in this well should be closely monitored in subsequent reports.

Response: DOE agrees the optimum pumping configuration for the South Plume Recovery System is given by Recovery Wells 3924 and 3925 pumping at 300 gpm each and Recovery Wells 3926 and 3927 pumping at 400 gpm each. Recovery Well 3926 is currently being rehabilitated and will be returned to service when the workover is complete. Monitoring well 2552 does appear to be within the capture zone of the 1400 gpm pumping configuration based on results from the colloidal borescope. Since Monitoring Well 2552 is on the extreme southwestern edge of the plume, it is an important indicator of plume movement, and therefore, it will continue to be sampled quarterly for uranium and measured monthly for water elevations.

Action: Continue to monitor well 2552 for water elevations monthly and total uranium concentrations quarterly. Continue work on Recovery Well 3926 and return it to the 400 gpm pumping rate as soon as possible.

3) Commenting Organization: Ohio EPA Commentor: GeoTrans

Comment: Temporal data used for plume delineation are not adequately explained. While only one sample was taken per quarter, the use of duplicate values is not explained in the text. These data were also used inconsistently on the Figures. For example, in Figure 4-1, total uranium for Type 2 monitoring wells is plotted and contoured. A duplicate value for Well 2166 (sampled on 2/13/96) was used to delineate the plume, while a normal (assumed primary sample value) was used for Well 2398 (sampled on 1/15/96). Duplicates and primary values should either be averaged or used consistently.

Response: When duplicate and normal samples are taken for a sampled well, DOE selects the highest of the two values for reporting. In this instance, Monitoring Well 2166 was sampled on 2/13/96 with a normal result of 66 ppb and a duplicate of 68 ppb. Monitoring Well 2398 was sampled on 1/15/96 with a normal result of 27.7 ppb. The two higher values were selected for posting on the contoured concentration map shown in Figure 4-1 rather than taking an average.

Action: Explanatory text outlining the use of duplicates versus normal sampling results will be added to future DMEPP reports to clarify the procedure.

4) Commenting Organization: Ohio EPA Commentor: GeoTrans

Comment: A closer look should be given to the vertical discretization of the plume. Although the horizontal extent of the plume is defined within the limits of the Type 3 wells, downward vertical migration of the plume is evident. In addition, the Mann-Kendall trend analysis indicates a significant trend upward in several of the Type 3 wells during the first two quarters of 1996. Type 4 wells may need to be included in the groundwater monitoring program for a more complete evaluation of the effectiveness of the recovery system.

Response: All seven of the type 3 wells with significant upward trends are north of the recovery system. Although the observed upward trends in Monitoring Wells 3095, 3624, and 3880 are believed to be due to the operation of the pumping system, the mechanism is uncertain because there are no significant vertical gradients in the aquifer in this area (See attached figures). The mechanism for the upward trend at these three wells could be geochemical in nature. If the reduced oxygen environment deeper in the aquifer is being drawn upwards by the recovery wells, additional sorbed contamination being released from the aquifer matrix could explain the upward trend.

Two of the remaining four type 3 monitoring wells with significant upward uranium trends are Monitoring Wells 3069 and 3125. Both of these wells are near significant recharge zones which would tend to push oxygen rich water deeper into the aquifer along with the contamination. Additional sampling is being done around Monitoring Well 3069 to improve definition of the vertical extent of the uranium plume.

Finally, the remaining two type 3 wells with significant upward uranium trends are Recovery Wells 3925 and 3926. These wells are showing increased contamination because the pumping is drawing contamination toward them for ultimate recovery.

In summary, all the type 3 monitoring wells or recovery wells showing significant upward trends in total uranium concentration are either located north of the recovery system or are part of the recovery system. The South Plume Optimization wells 1 and 3N which are to be installed north of the recovery system will also speed the recovery of contaminants and will ultimately shorten the aquifer remediation time.

The only type 4 wells in the South Plume area are 4015 and 4125. Monitoring Well 4125 is part of the DMEPP program and is sampled quarterly for uranium. Monitoring Well 4015 is a private homeowner well just south of Willey Road. Since Monitoring Well 3015, immediately across Willey Road from 4015, shows no evidence of contamination, Monitoring Well 4015 does not need to be sampled.

Action: Additional groundwater sampling is being conducted in the area around Monitoring Well 3069 to understand the plume geometry with depth. This data will be analyzed and reported in the April 1997 DMEPP.

Specific Comments

5) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 1.0 Pg#: 1-1 Line #: 29 Code C
Comment: Groundwater elevations should be measured in all wells on a monthly basis especially during the initial phases of the South Plume Optimization system. This is especially true during the major changes in the planned pumping schedules as presented in the Baseline Strategy Report.
Response: DOE agrees with the comment. See response to Ohio EPA Comment #6 below.
Action: See Action in response to Ohio EPA Comment #6 below.

6) Commenting Organization: Ohio EPA Commentor: OFFO
Section#: 2.0 Pg#: 2-1 Line #: 11 Code C
Comment: Groundwater elevation data should be collected on a monthly basis until Ohio EPA concurs in writing that a decrease in the monitoring frequency is warranted.
Response: In the October, 1995 DMEPP report on page 15, DOE stated that:

"Due to the stability of the recovery wellfield pumping rate, the frequency of groundwater elevation measurements will change to quarterly for the next reporting period [July 1, 1995 to December 31, 1995]. If the recovery system operation changes (i.e., change in pumping rates), provisions have been made to collect monthly groundwater elevations as warranted."

Furthermore, in the April, 1996 DMEPP report on page 1-2, DOE stated that:

"Due to the stability of the recovery wellfield pumping rates, these [elevation] measurements will be collected quarterly during subsequent reporting periods. The change from monthly to quarterly data collection was intended for the July to December 1995 period, but due to the temporary change in pumping configuration for the South Field injection test, the change was postponed for six months. However, if significant operational changes (e.g., pumping rates) occur within the recovery system, data will be collected more frequently as warranted."

Since the previous two reports were approved by Ohio EPA without specific comment on the proposed change in water elevation sampling frequency, DOE interpreted this to mean the proposed change was approved.

Pursuant to this interpretation, groundwater elevation data was collected quarterly during this reporting period (January 1, 1996 through June 30, 1996). The groundwater elevation sampling frequency was increased to monthly in August 1996.

In the Integrated Environmental Monitoring Plan (IEMP) submitted on August 1, 1996, DOE states on page 3-15 that:

"Groundwater elevations will be measured quarterly in these wells [listed on page 3-49 and shown in Figure 3-15] beginning in 1997 to provide data for construction of water table elevation maps...Additional monitoring wells and more frequent measurement interval[s] may be added near aquifer remediation modules as they become operational and as sensitive capture zone or stagnation zones are identified or if unpredicted fluctuations in contaminant concentrations are observed."

Action: Groundwater elevation data has been collected monthly since August 1996 and will continue to be collected monthly until conditions are such that a quarterly frequency can be justified. When such conditions are attained, DOE will recommend the change in measurement frequency in the next scheduled system evaluation report and make the changes after the recommendation has been approved by the U.S. EPA and Ohio EPA.

7) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 2.0 Pg#: 2-2 Line #: Code C
Comment: Table 2-1 shows that the following wells, 2015, 2070, 2106, 21063, 21194, 2166, 2398, 2434, and 2551 were added to the groundwater elevation monitoring program during this reporting period. The text does not explain why these wells were added to the program.

Response: These wells were added to the DMEPP program to provide groundwater elevation coverage in the area of the northeast lobe of the uranium plume. Adding these wells to the program allowed the groundwater elevation contours (shown in Figures 4-5 through 4-8 of this DMEPP report) to be extended further north to include the northeast lobe of the plume.

Action: None.

8) Commenting Organization: Ohio EPA Commentor: DDAGW
Section#: 3.0 Pg#: 3-3 Line #: 19 Code C

Comment: The DOE has designed and operated the south plume interception system based on the assumption that there is no uranium ground water contamination in the deeper part of the aquifer. Now, the single type 4 monitoring well in the south plume area is showing signs of uranium contamination. This has been attributed to a downward gradient caused by the infiltration of surface water just north of Willey road.

The DOE needs to assess this newly defined contaminant transport mechanism and determine its impact on the groundwater in the area of the south plume. It is very important to ascertain the affects that this vertical migration may have on the south plume extraction system. It is expected that this investigation is within the scope of the Restoration Area Verification PSP.

Response: The comment confuses two distinct issues reported in the DMEPP: the one-time uranium concentration of 9.8 ppb in Monitoring Well 4125 which is now considered to be an outlier, and the increasing uranium concentration at Monitoring Well 3069 which is attributed to aquifer recharge.

For an explanation of the anomalous sample results in Monitoring Well 4125 and the increasing concentrations around Monitoring Well 3069, see the response to Ohio EPA Comments 1 and 4.

Action: None.

9) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 3.0 Pg#: 3-4 Line #: 19 Code C

Comment: Sodium is a constituent found in the PRRS plume, and wells 2899, 2900, and 3898 all show increased levels of sodium during this evaluation period. In well 2900, sodium had a marginally upward trend (Table 3-5) and uranium had a significantly upward trend according to the Mann-Kendall trend analyses. This supports the idea that the recovery well field system is also removing the PRRS plume to the south. This should be discussed in the text. The implications of these findings should also be presented.

Response: Monitoring Wells 2900 and 3898 exhibited marginally upward trends for sodium with average concentrations for this reporting period of 38.20 mg/L and 8.45 mg/L respectively. Monitoring Well 2899 exhibited a significant upward trend for sodium with an average concentration of 18.65 mg/L for this reporting period. All three of these wells have average sodium concentrations below the 95th percentile background value for sodium of 47.1 mg/L (Characterization of Background Water Quality for Streams and Groundwater, DOE, 1994).

Based on the flow direction data from the colloidal borescope shown in Figure 4-9, groundwater flow in Monitoring Wells 2899 and 3898 is to the southeast away from the South Plume recovery wells. Groundwater flow in Monitoring Well 2900 is to the northwest toward the general direction of recovery well 3924. These results show that of the three wells with upward sodium trends, only the marginally upward sodium trend in Monitoring Well 2900 could be of concern.

DOE monitors recovery wells 3924 and 3925 weekly for arsenic (another mobile PRRS constituent of concern) and to date arsenic has not been detected in either of these two wells. Therefore, based on the lack of arsenic detections in recovery wells 3924 and 3925 and the fact that the sodium data from monitoring well 2900 is within the range of background, it appears that the South Plume system is not recovering any of the Paddys Run Road Site plume.

When all wells are operational, the pumping configuration of the South Plume recovery system with the existing four extraction wells is optimized to maximize the capture zone to the west towards Paddys Run and the uranium contamination observed in Monitoring Well 2552. Initially, recovery wells 3924 and 3925 were designed to pump 400 gpm each but DOE found that arsenic from PRRS plumes immediately south of recovery wells 3924 and 3925 appeared to be affected by South Plume pumping. In December 1993, recovery wells 3924 and 3925 were throttled back to 300 gpm each to minimize any impact to the PRRS plume. Any further reduction in pumping from these two recovery wells to return flow in Monitoring Well 2900 to a southeasterly direction would adversely impact the extent of uranium capture to the west and possibly allow breakthrough of contamination from the uranium plume immediately north of recovery wells 3924 and 3925.

Action: DOE will continue the current monitoring program to ensure that the South Plume Recovery System has negligible impact to Paddys Run Road Site plumes while maximizing the zone of uranium capture and recovery.

10) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 3.0 Pg#: 3-11 Line #: Table 3-6 Code C
Comment: The Mann-Kendall trend analyses indicate a significant upward trend in uranium concentrations in well 2900, (Table 3-6), during the first two quarters of 1996. Data for this well from two previous reports dated October 1995 and April 1996 indicate the same upward trend. The probable cause is stated as "unknown; will continue to evaluate". This data further supports the possibility that the South plume recovery well field is resulting in source removal from the PRRS plume.
Response: See the response to Ohio EPA comment #9.
Action: See action for Ohio EPA comment #9

11) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 3.0 Pg#: 3-12 Line #: Table 3-6 Code C
Comment: Also, in Table 3-6, Mann-Kendall trend analysis indicates a significant upward trend in uranium concentrations in well 4125. Because a significant upward trend is observed at this well, other Type 4 wells (Wells 4015 and 4920) should be evaluated for trends in uranium concentrations.

Response: Before the second quarter sampling round in 1996, the Mann-Kendall trend analysis for Monitoring Well 4125 was not performed because of insufficient data (Table 3-1, DMEPP, April 1996). With the anomalous sampling results of 9.8 ppb obtained on 5/10/96, the Mann-Kendall analysis for trend resulted in a significant upward trend. As explained in the responses to Ohio EPA comments #1 and #4, this result is now believed to be an outlier. Without this result and considering the third quarter 1996 results which were 1 ppb for Monitoring Well 4125, DOE does not believe there is sufficient evidence to warrant a change in the DMEPP sampling program.

Action: None.

12) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 4.0 Pg#: 4-1 Line #: 23 Code C

Comment: "These alternate pumping scenarios were modeled with the site groundwater model to define changes in the hydraulic capture zone". The text does not indicate which groundwater model was used. The text should reference the "Baseline Strategy Report."

Response: The improved SWIFT groundwater model documented in the "SWIFT Great Miami Aquifer Model Summary of Improvements Report" (DOE, April 1994) was used to model groundwater flow. This is the same groundwater model used in previous DMEPP reports and also used in the "Baseline Remedial Strategy Report" (DOE, October 1996). The only changes to the model were in individual well pumping rates used to model the three pumping configurations used during the reporting period. The pumping rates for the three scenarios are as follows:

Scenario gpm	RW-1 gpm	RW-2 gpm	RW-3 gpm	RW-4 gpm	RW-5 gpm	DMEPP Figures
1400	300	300	400	400	0	4-11, 4-14
1000	300	300	0	400	0	4-12, 4-15
1550	300	300	550	400	0	4-13, 4-16

Action: None

13) Commenting Organization: Ohio EPA Commentor: DDAGW
Section#: 4.2 Pg#: 4-4 Line #: 13-16 Code C

Comment: This statement contradicts section 4.0, page 4-2, lines 31-33 which describes a significant vertical gradient in the GMA. This newly identified vertical gradient is, according to this document, to be investigated as part of the Restoration Area Verification Sampling PSP. As such, it seems inappropriate to cease gathering groundwater elevation data from the type 3 wells at this time.

Response: DOE does not agree with the comment. The vertical movement of contaminants described in Section 4.0, page 4-2, lines 31-33 occurs under the influence of aquifer recharge at this immediate location. Similar localized gradients likely exist immediately adjacent to Paddys Run for the same reason. However, there is no reason to expect or evidence to support significant vertical gradients throughout the GMA in the area of the FEMP.

A comparison of historical water level data collected in type 2 and type 3 monitoring clusters located throughout the DMEPP program area indicates no measurable difference between water elevations at type 2 versus type 3 monitoring wells (See attached figures). Indeed, most of the type 3 water elevation data are exactly the same as corresponding type 2 elevation data to within measurement accuracy. The occasional difference between type 2 and type 3 water elevations (e.g. elevations from monitoring wells 2900 and 3900 taken on 8/94) is attributed to human error in the measurement process.

Since water elevation data is presented in the DMEPP report as contour maps with a contour interval of 0.5 feet, any differences between type 2 and type 3 water elevations (as evidenced by the attached location specific groundwater elevation plots for Type 2 and Type 3 wells) are insignificant. Furthermore, since there are fewer type 3 monitoring wells than type 2 monitoring wells, the contouring of type 3 elevation data is less reliable because of sparse data points at the deeper level.

Given these results, DOE believes it is unnecessary to continue collecting water elevation data at type 3 monitoring wells. As stated in the text, colloidal borescope data will continue to be collected at select type 3 monitoring wells to confirm groundwater flow directions and capture zones.

Action: DOE will continue to collect water elevation data at both type 2 and type 3 monitoring wells in the DMEPP program pending final resolution of this Ohio EPA comment and concerns.

14) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 4.3 Pg#: 4-5 Line #: 30 Code C

Comment: The modeled 1550 gpm pumping configuration indicated that the uranium plume for Type 2 wells for First Quarter 1996 was within the capture zone, except for the southwest portion of the plume in the vicinity of well 2552 (21 ug/L) in Figure 4-13. The concentration of uranium in well 2552 in the second quarter of 1996 was 16 ug/L (below the 20 ug/L) which achieves the goal of plume capture using this pumping configuration. It is not conclusive to state that plume containment has been achieved using this scenario without further evaluating the impact of seasonal fluctuations on well 2552. Flow direction determined in this well from colloidal borescope readings in December 1995, indicates groundwater flow is predominantly to the north and east within the capture zone of the recovery system.

Response: DOE does agree that Monitoring Well 2552 exhibits seasonal fluctuations about the 20 ppb MCL for total uranium as stated in Section 4.1 (pages 4-1 to 4-2), however, no statement regarding plume containment was made. The variation of total uranium concentrations associated with this well are well documented in this and previous DMEPP System Evaluation Reports. DOE further believes that the overall trend of total uranium concentrations in Monitoring Well 2552 is downward as exhibited in the total uranium concentration plots for Monitoring Well 2552 found in Appendix B of the report and as exhibited by the "Down Significant" statistical trend for the well given in Table 3-1.

Action: None.

15) Commenting Organization: Ohio EPA Commentor: GeoTrans
Section#: 5.0 Pg#: 5-2 Line #: 24 Code C

Comment: A borescope should be placed in Well 3069 to determine if flow in that well is to the northwest as in Well 2434, and contamination is migrating downward into the aquifer. (Well 4398 is the closest deep well to well 3069)

Response: The borescope was placed in Monitoring Well 3069 on two separate occasions in the second and third quarters of 1996. Groundwater flow directions were observed at 128 degrees from North on July 30, 1996 and at 131.5 degrees from North on September 20, 1996. This indicates groundwater flow at Monitoring Well 3069 is consistent with the regional southeasterly direction and contrasts with the northerly flow reported shallower in Monitoring Well 2434 at the same location.

Monitoring Well 4398 is part of the RCRA monitoring program. Sample results for uranium in this well continue to be at or below 1 μg/L or below method detection limits.

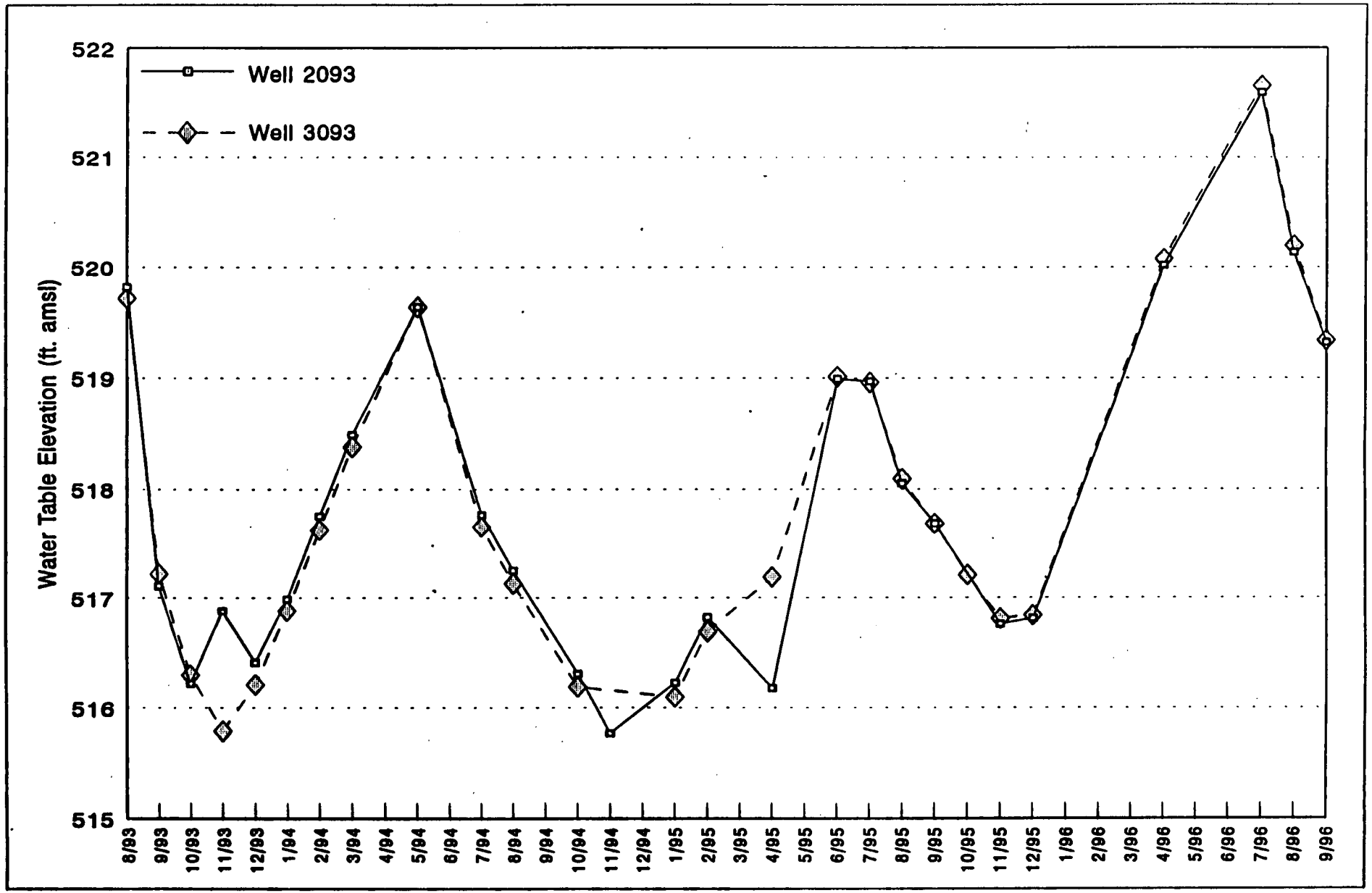
Action: None.

16) Commenting Organization: Ohio EPA Commentor: DDAGW
Section#: 5.0 Pg#: 5-3 Line #: 1-3 Code C

Comment: The new issues concerning the deeper uranium plume also may affect the optimization of the south plume system.

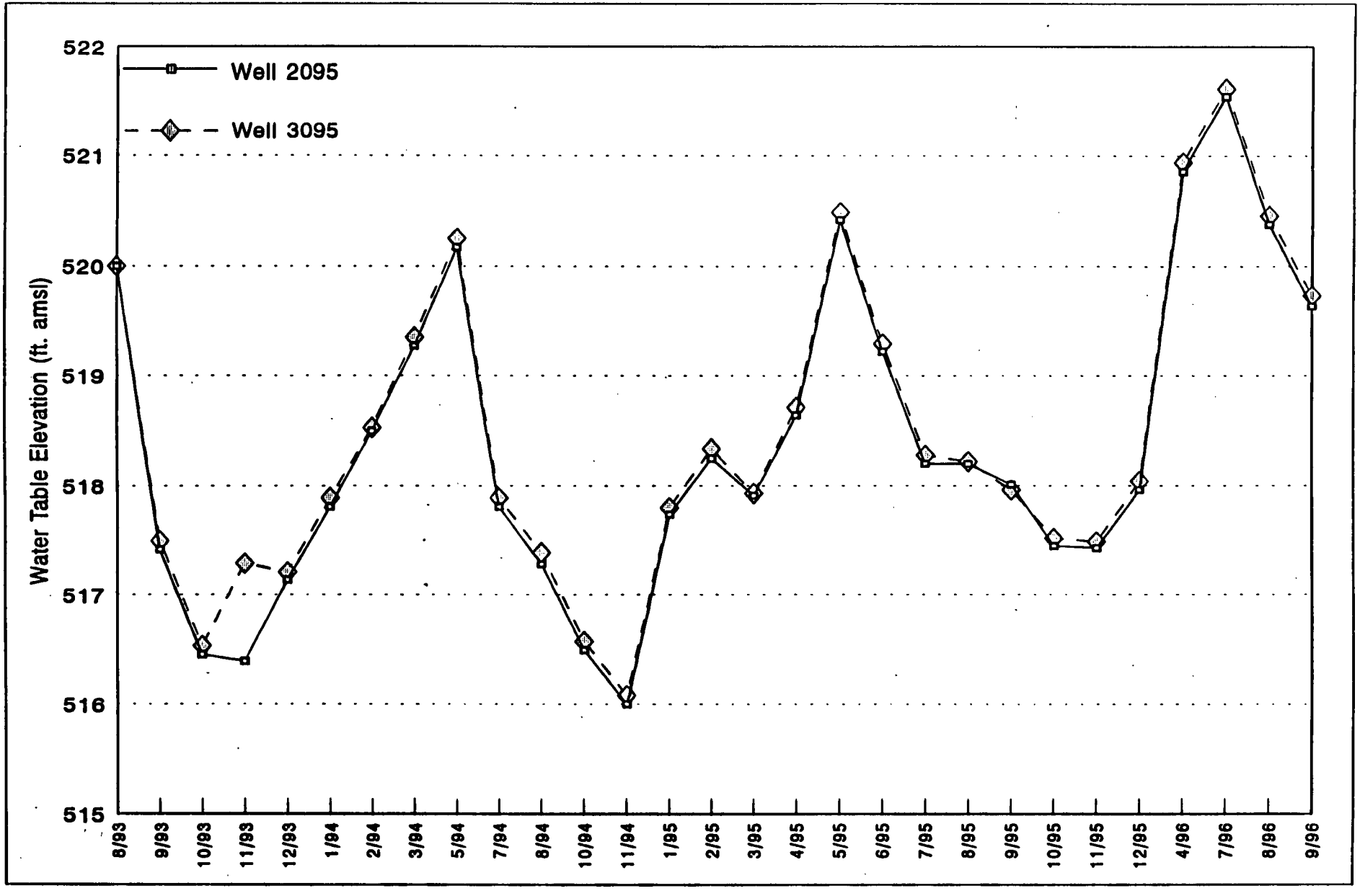
Response: Additional groundwater sampling is currently taking place in the vicinity of Monitoring wells 2434 and 3069 to better define the plume geometry. This activity is being done as part of the Restoration Area Footprint Verification activity. See response to Ohio EPA comment #1.

Action: The design of the South Plume Optimization System wells will be examined in light of the sample results from the Restoration Area Footprint Verification activity to see if any changes in the design or location of the planned extraction wells is warranted. Any design or location changes will be submitted for Ohio EPA approval prior to implementation.



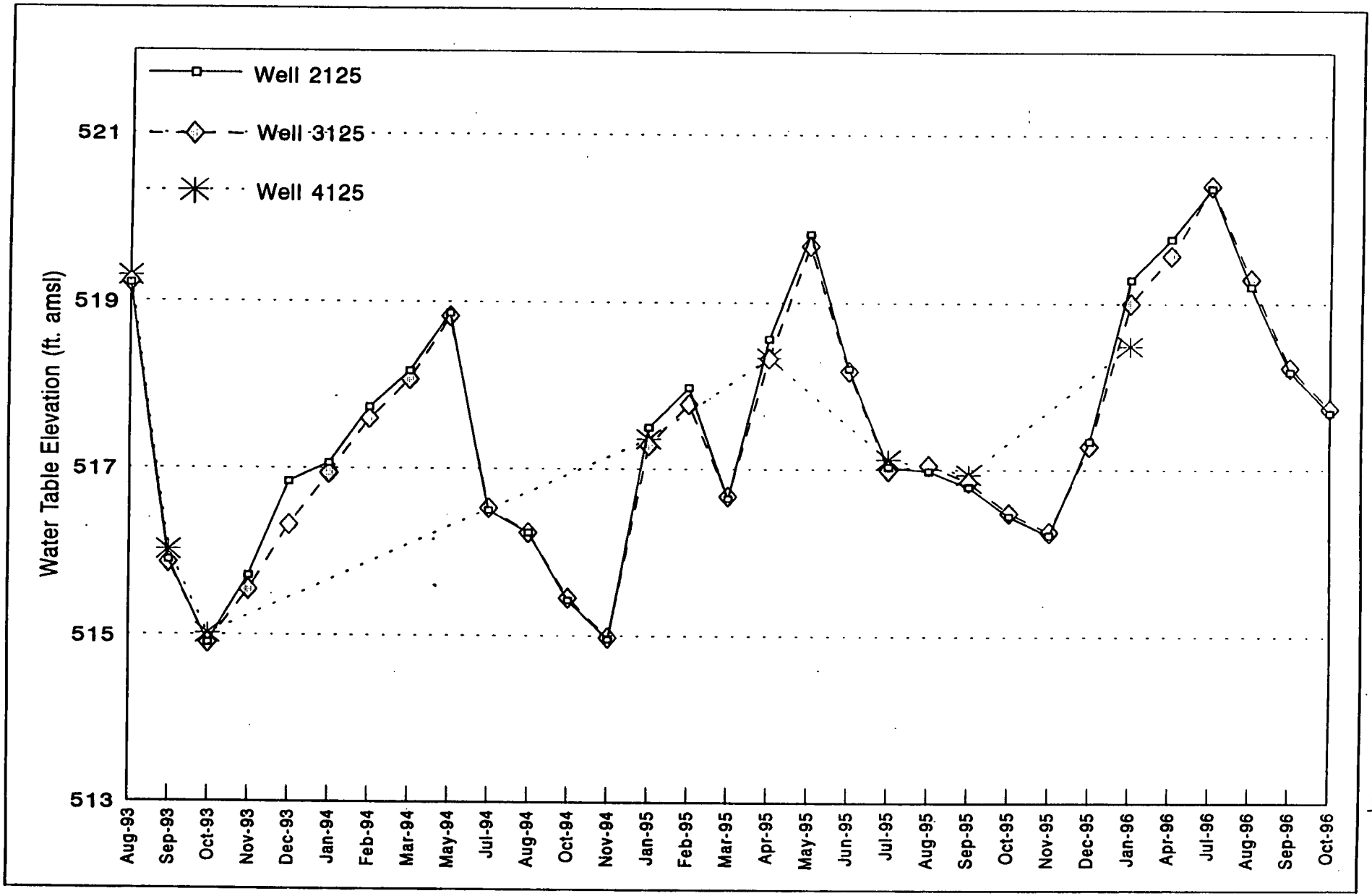
COMPARISON OF 2000 AND 3000 SERIES WELLS: HISTORICAL WATER TABLE ELEVATIONS AT WELLS 2093 AND 3093

See Response to Ohio EPA Specific Comment #13



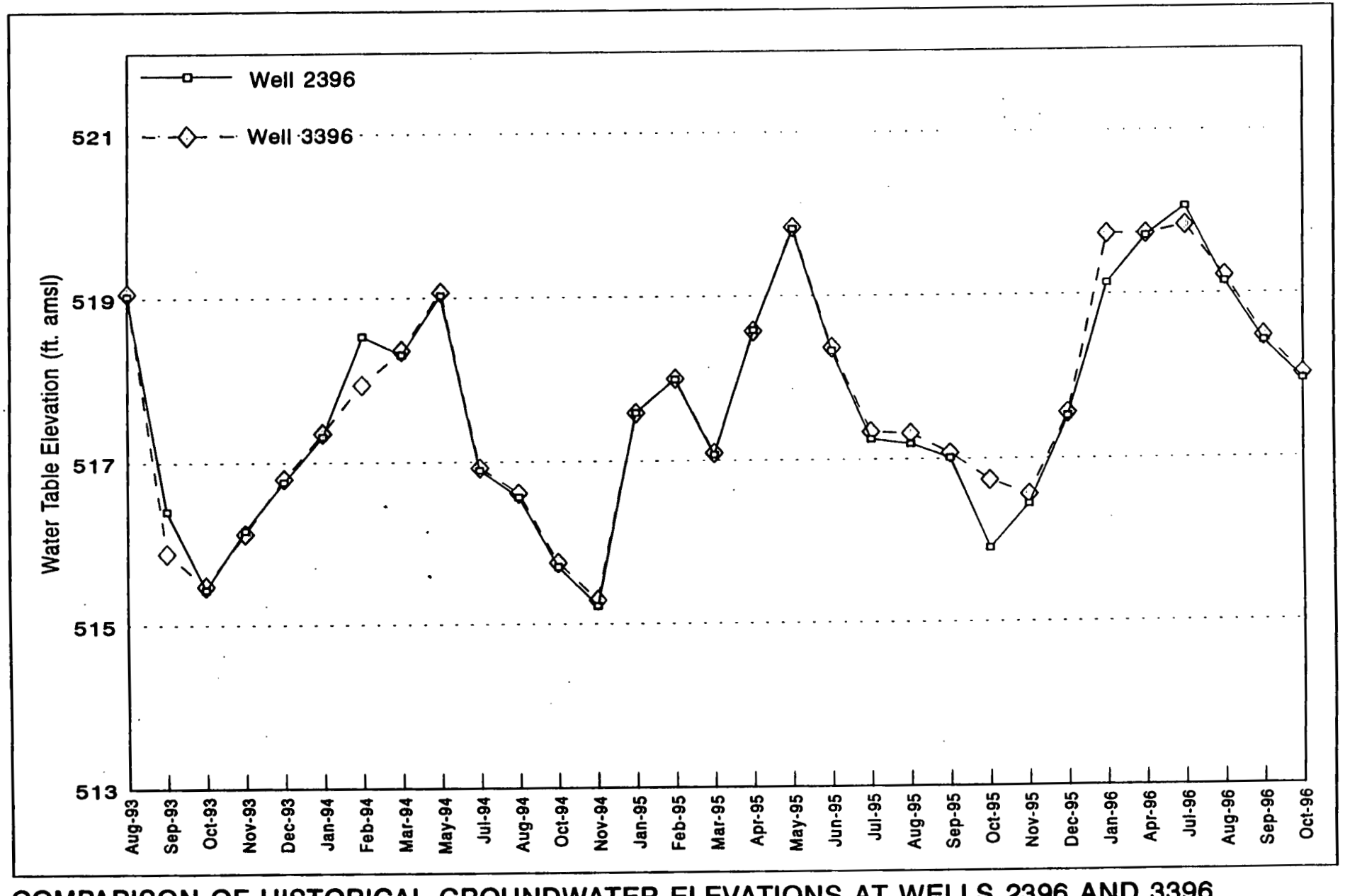
COMPARISON OF 2000 AND 3000 SERIES WELLS: HISTORICAL WATER TABLE ELEVATIONS AT WELLS 2095 AND 3095

See Response to Ohio EPA Specific Comment # 13



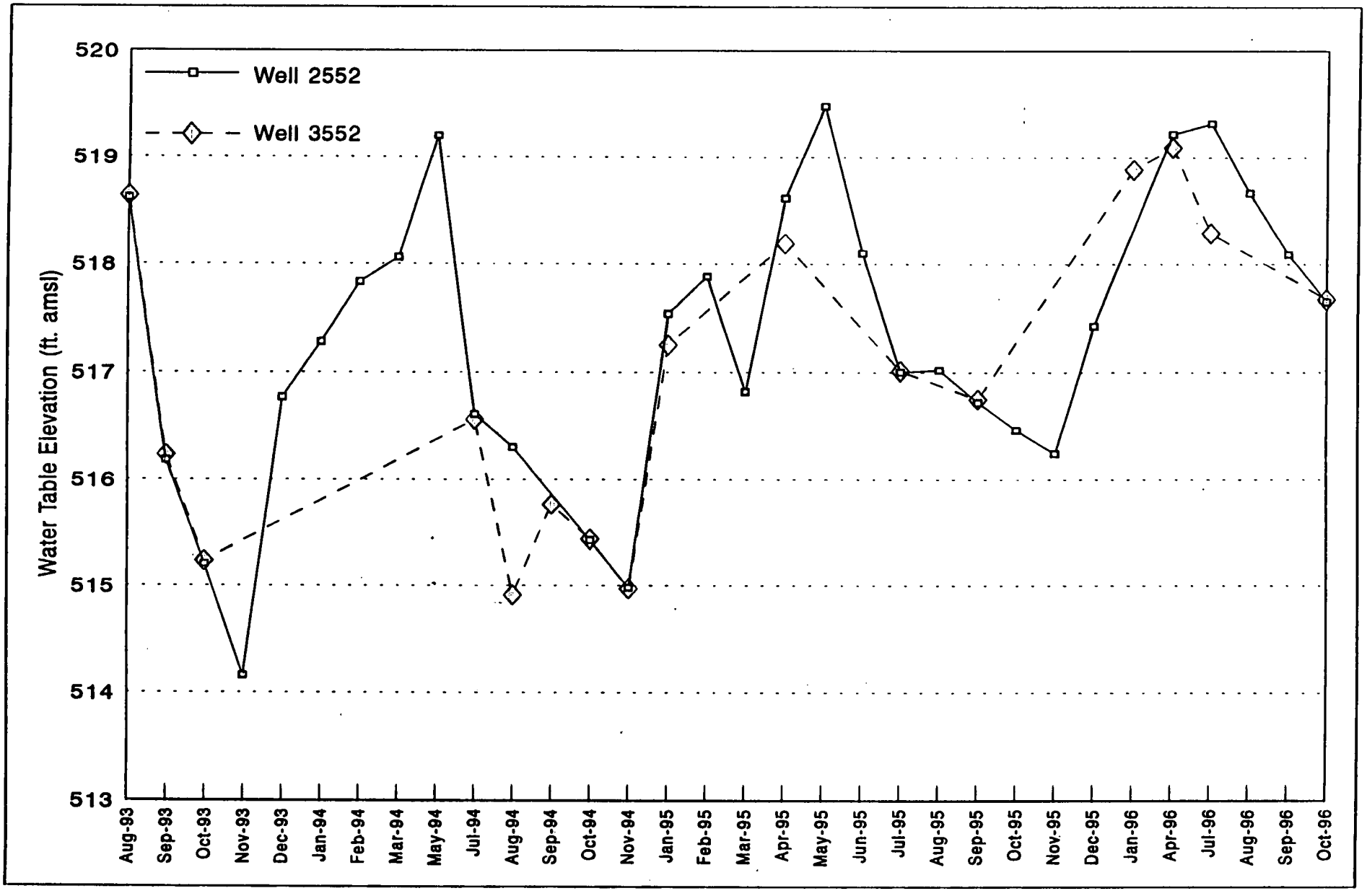
COMPARISON OF HISTORICAL GROUNDWATER ELEVATIONS AT WELLS 2125, 3125 AND 4125

See Response to Ohio EPA Specific Comment # 13



COMPARISON OF HISTORICAL GROUNDWATER ELEVATIONS AT WELLS 2396 AND 3396

See Response to Ohio EPA Specific Comment # 13



COMPARISON OF HISTORICAL GROUNDWATER ELEVATIONS AT WELLS 2552 AND 3552

See Response to Ohio EPA Specific Comment # 13

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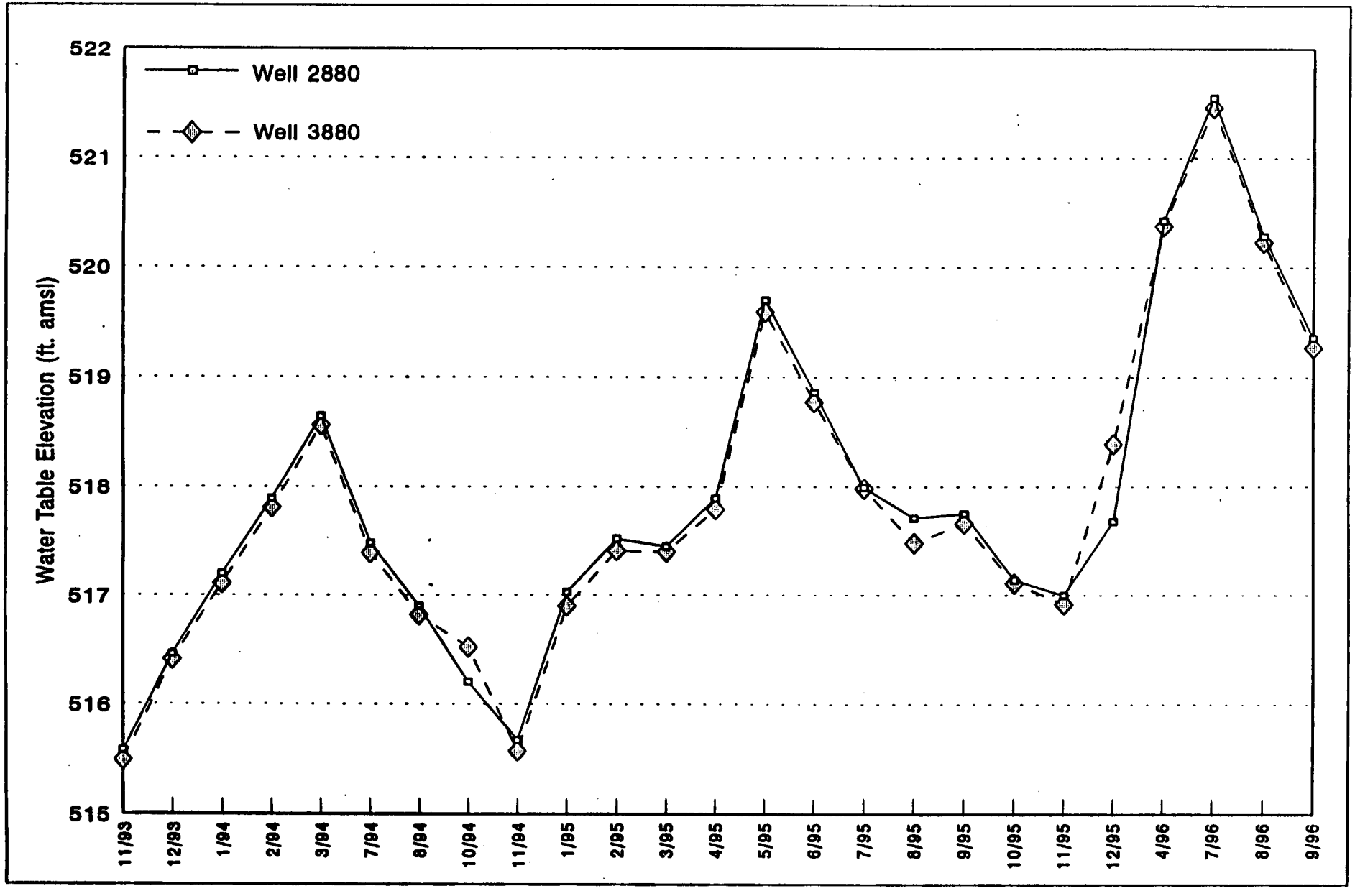
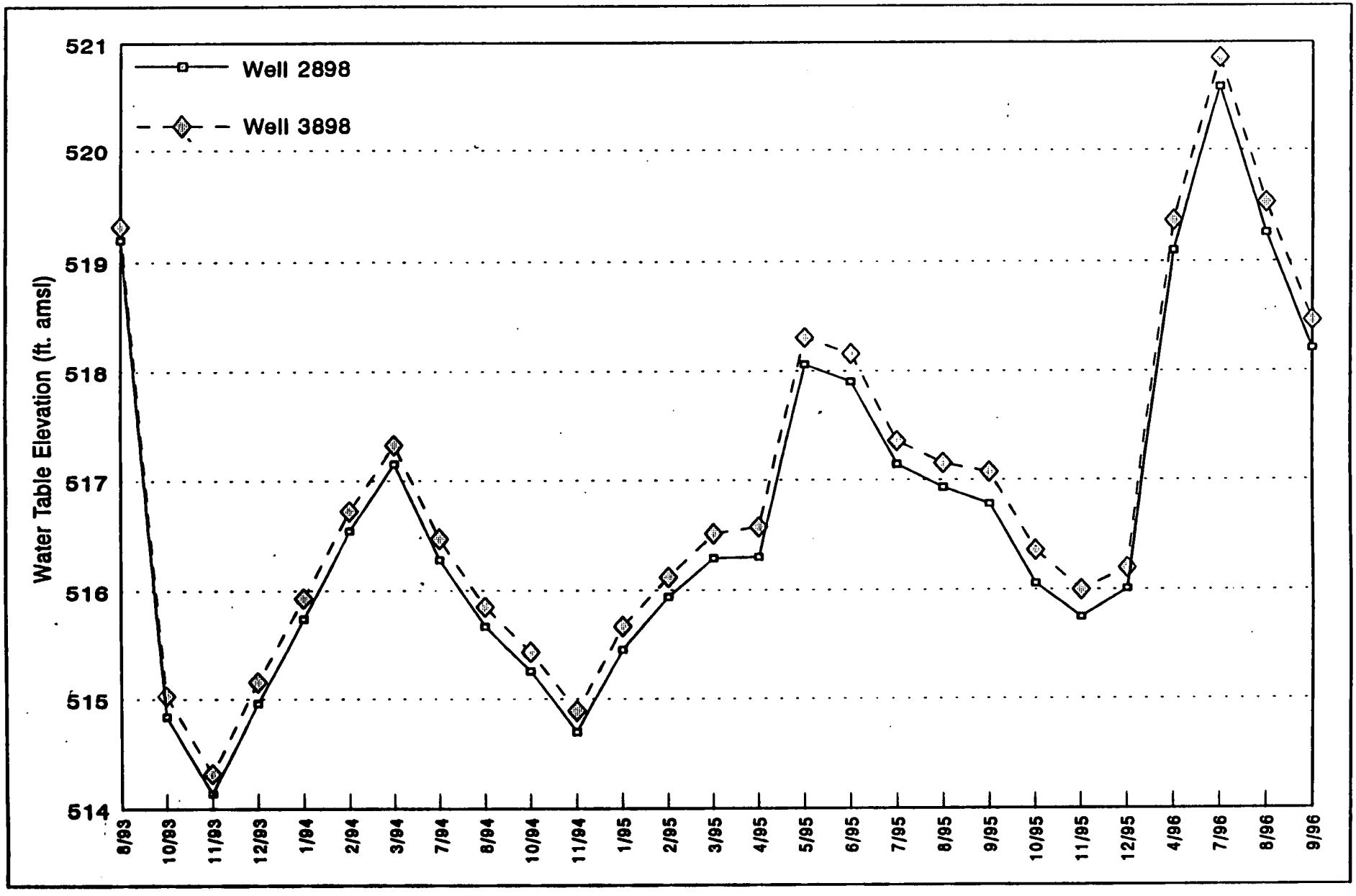


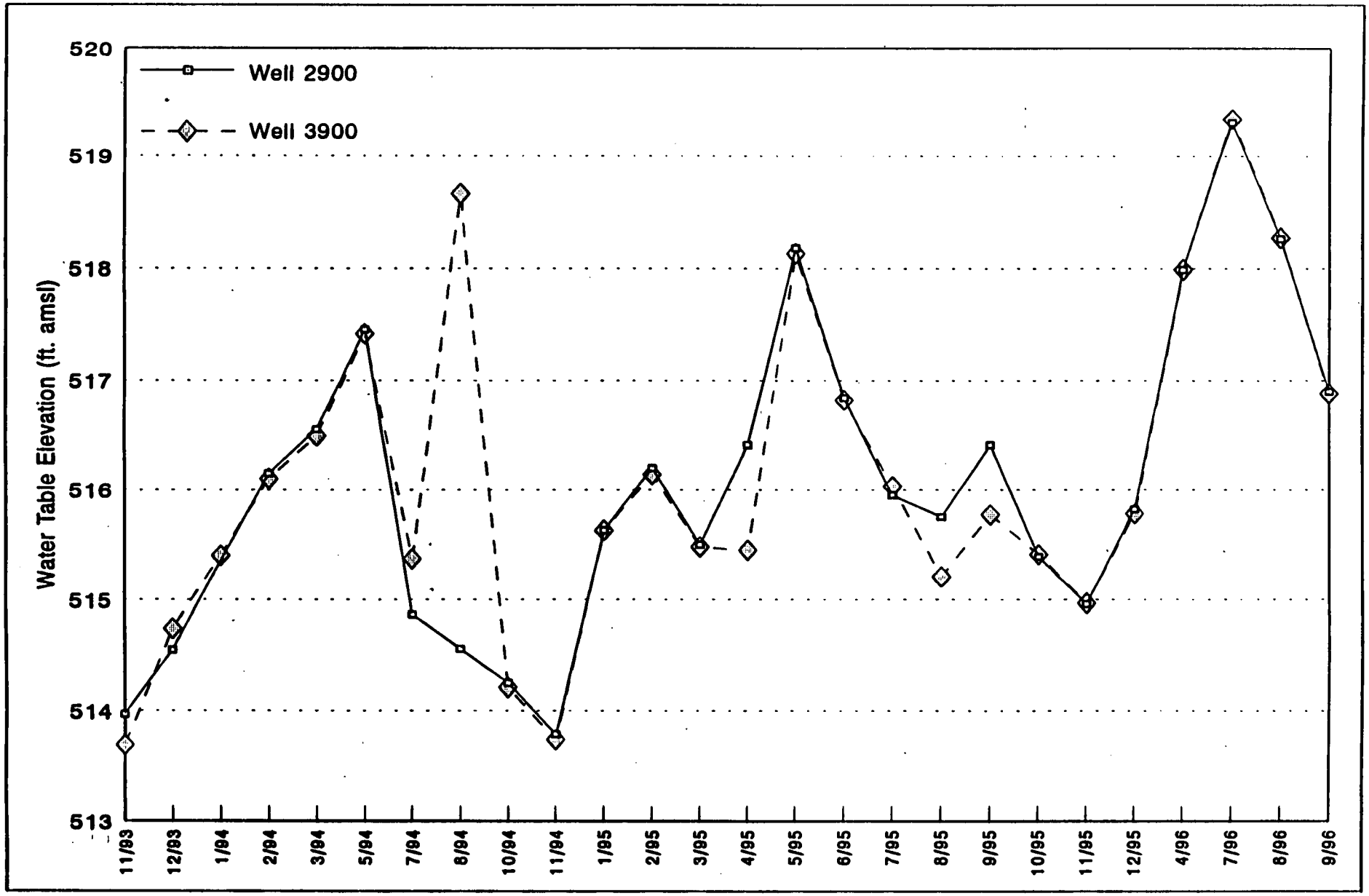
COMPARISON OF 2000 AND 3000 SERIES WELLS: HISTORICAL WATER TABLE ELEVATIONS AT WELLS 2880 AND 3880

See Response to Ohio EPA Specific Comment #13



COMPARISON OF 2000 AND 3000 SERIES WELLS: HISTORICAL WATER TABLE ELEVATIONS AT WELLS 2898 AND 3898

See Response to Ohio EPA Specific Comment # 13



COMPARISON OF 2000 AND 3000 SERIES WELLS: HISTORICAL WATER TABLE ELEVATIONS AT WELLS 2900 AND 3900

See Response to Ohio EPA Specific Comment # 13