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PRELIMINARY CHARACTERIZATION OF THE GROUNDWATER FLOW SYSTEM NEAR THE FEED MATERIALS PRODUCTION CENTER, GREAT MIAMI RIVER VALLEY FILL - AQUIFIER, FERNALD, OHIO

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Prepared for
Ohio Environmental Protection Agency
Southwest District Office
7 East Fourth Street
Dayton, Ohio 45402

by

GeoTrans, Inc.
51 North High Street
Columbus, Ohio 43210

September 30 , 1985

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Quality Assurance Review Status

The results, findings, conclusions and recommendations in this document were derived through a structured Quality Assurance program. The purpose of the program is to assure the client that technical reviews, numerical analysis and resulting reports such as this are of sound technical and scientific quality, are useable, satisfy contract requirements and are supported by a traceable and accountable set of records.

Reporting occasionally require deliverables be transmitted prior to the completion of the required Quality Assurance technical review. This notice serves to inform the reader of the status of that review:

- ☐ No technical review.
- ☐ Preliminary technical review performed by project team members. Independent QA review to be performed at a later date.
- ☒ Independent QA review completed.

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1 EXECUTIVE SUMMARY

Data compiled from various governmental agencies, private consultants, and the Feed Materials Production Center (FMPC) were reviewed thoroughly for consistency and adequacy for use in a modeling study. The goal of the study was to evaluate the extent of groundwater contamination previously documented at the facility. The evaluation of existing contamination and analysis of potential future contamination was performed through construction and preliminary calibration of a three-dimensional groundwater flow model. The computer code SWIFT II was used for the simulations.

The hydrogeologic framework of the groundwater system near Fernald, Ohio consists of two distinct aquifer units. The main valley-fill aquifer is composed predominantly of sand and gravel with minor clay lenses. The main aquifer unit (Type I-A-1,2) is located in the vicinity of the Great Miami River. Results of preliminary model calibration suggest that the horizontal hydraulic conductivity of the main aquifer is 350 ft/day and the vertical conductivity is 35 ft/day; recharge is 15 in/yr. The second aquifer unit (Type III) extends westward from the Great Miami River. This unit is divided into two vertical sub-units by a laterally extensive clay layer located about 440 ft above mean sea level. The horizontal hydraulic conductivity of these aquifer units is 250 ft/day with a vertical hydraulic conductivity of 2.5 ft/day; recharge is 6 in/yr. Hydraulic conductivity of the intervening clay is 0.025 ft/day.

The primary contaminant discovered in the groundwater of the FMPC area is uranium; however, the water was not analyzed for other potential contaminants such as radium. Uranium concentrations range from below detection limit (approximately 0.4 ug/L) to about 578 ug/L. The greatest concentrations are located in a narrow zone adjacent to Paddy's Run Creek just south of the FMPC runoff outfall ditch. Limited contamination has been found to the east of FMPC; however, only a few samples were collected in this area.

The area east of FMPC is of concern because the calibrated model indicates that a groundwater divide exists, trending from southeast to northwest across the south-central portions of the facility. Thus,

contaminants infiltrating into the aquifer near the main waste pit would flow easterly toward the Great Miami River and the Southwestern Ohio Water Company. The Great Miami River in this setting does not necessarily act as a hydraulic barrier, especially for contaminants that migrate to deeper portions of the aquifer. Contaminants entering the aquifer near the outfall ditch would flow south toward Fernald. There is much evidence to document the existence of a southerly flowing plume. A potential easterly migrating plume, however, is not confirmed because limited wells in that area were sampled.

The groundwater velocity field calculated by SWIFT II for the calibrated model was used in a particle tracking analysis. Particle tracking is a simple method of determining contaminant migration pathways and average times of travel. The analysis does not take into account dispersion, dilution, retardation, radioactive decay, or contaminant chemical reactions. The analysis performed for the FMPC area indicates that contaminants infiltrating into the aquifer at and east of the main waste pit would travel east toward the Great Miami River. Contaminants infiltrating into the aquifer near the runoff outfall ditch would travel to the south, but would not discharge into Paddy's Run Creek; instead, they would discharge directly to the Great Miami River south of Fernald.

2 RECOMMENDATIONS

The following items are recommended for implementation at the site. The rationale and technical support for these actions are provided in the following sections of this report. In general the objective of these recommendations is to address data deficiencies and provide a baseline monitoring program. The purpose of the baseline monitoring is two-fold: (1) to fully define the extent and type of contaminants, and (2) to provide information necessary to begin the design of an effective remedial clean-up action.

(1) We recommend that additional water-level and geochemical data be collected for at least one water year in all available wells. Water levels should be measured monthly and samples should be collected quarterly.

(2) We recommend that an additional 36 monitoring wells be installed. These wells should be installed in clusters of three. Each of the wells in a cluster should be screened in different portions of the aquifer.

(3) We recommend that a survey be made of all available domestic wells. Those wells which have construction records and are accessible should be surveyed accurately for location and elevation.

(4) We recommend that water samples be collected from all wells prior to the one-year monitoring program. The samples should be analyzed for the EPA priority pollutants, radium, thorium, plutonium, and uranium. The purpose is to define all potential contaminants.

(5) We recommend that the quarterly water samples be analyzed for contaminants found in the priority scan.

(6) We recommend that the preliminary model developed in this study be refined after the completion of the proposed field testing and monitoring program.

3 INTRODUCTION

3.1 REPORT ORGANIZATION

This report is comprised of four major divisions: (1) Executive Summary, Recommendations, and Introduction, (2) Hydrogeologic Framework, (3) Model Construction and Calibration, and (4) Data Deficiencies and Monitoring Program Design. The description of hydrogeologic framework includes the observed existing conditions within the study area, including geologic materials, hydraulic parameters, fluid potentials, and source terms (concentration and groundwater pumpage). This data is integrated to form a conceptual model for the groundwater flow system. This conceptual model is the basis for the construction of the three-dimensional groundwater flow simulator. The calibration process and sensitivity analysis are described in Section 5 as well as the rationale for the final model configuration. Recommendations for additional field studies are presented in the final section of the report. Information about site characteristics is displayed graphically in plates found inside the back cover. An appendix of data base information is also included.

3.2 SITE DESCRIPTION AND HISTORY

The Feed Materials Production Center (FMPC) operated by National Lead of Ohio (NLO) for the United States Department of Energy (DOE) is the nation's only primary uranium processing plant. The plant serves as a foundry for uranium metals producing feed materials for other nuclear weapons production centers. The plant began operation in 1951. This large industrial complex is situated above a very productive aquifer and covers just over 1,000 acres. It is located 3/4 of a mile to the west of the Big Bend area on the Great Miami River and just north of the village of Fernald. The production facility itself covers approximately 136 acres. The foundry operations have produced process wastes which are presently stored in rubber and clay-lined lagoons as well as large above-ground tanks.

Water quality analyses of samples collected from wells located both on- and off-site have exhibited elevated levels of dissolved

uranium and other contaminants. In 1981, NLO sampled 12 off-site wells south of the facility. Five of twelve samples exhibited elevated levels of uranium. In August 1982, a cooperative study by DOE and the United States Geological Survey (USGS) also indicated the presence of off-site contamination.

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In May 1985, the Ohio Environmental Protection Ageny (OEPA) contracted with GeoTrans for a preliminary groundwater flow analysis of the FMPC area. This analysis included a critical review of available data to assess their adequacy with respect to:

(1) characterizing important hydrogeologic parameters controlling flow and contaminant transport, and

(2) documenting the extent of groundwater contamination and designing an effective remedial action.

Recommendations were made for gathering additional data where existing data was judged to be inadequate. The scope of work included the use of a three-dimensional groundwater flow model and particle tracking analysis to evaluate the groundwater flow system and the hydrologic significance of data uncertainties. This evaluation was done using sensitivity analysis. The numerical modeling results were used to:

(1) aid characterization of the groundwater flow system,

(2) estimate the potential extent of groundwater contamination, and

(3) identify critical data needs.

The results of our investigation, including recommendations for additional field studies and preliminary costs estimates for such studies are summarized in this report.

3.3 METHOD OF INVESTIGATION

Prior to construction of a numerical model, a detailed understanding of the groundwater flow system and extent of contamination must be developed to guide the model application. This is called a conceptual model. This conceptual understanding provides a definition of the most important characteristics of the particular system to be modeled and a systematic organization of the available data. The conceptual model describes the fundamental components of the flow system in sufficient detail that its unique characteristics are

evident. Inadequate consideration of these unique characteristics may result in erroneous formulation of the numerical model as well as invalid conclusions based on the calculated results.

In general, geohydrologic systems are comprised of four fundamental components: (1) the geologic framework, (2) fluid potentials and flow directions, (3) fluid transmission and storage properties, and (4) fluid source/sink terms, both natural and man-induced. The conceptual model and its supporting data must contain sufficient information to characterize each of these basic components.

Data base organization is a critical step in evaluating site conditions. An organized information base was developed specifically for the FMPC site. Figure 3.1 illustrates the various steps of this process. Initially, the data was technically reviewed and categorized by data type. The areal distribution of the data locations, from which the different types of data were compiled, was mapped. The locations of wells used in the data base are illustrated on Plate 3.1. The various pieces of information were incorporated into a data base management software program, dBase III. The utility of this approach is that various data compilations can be quickly developed. The data summaries and compilations can then be reviewed and interpretated by the hydrogeologist constructing the flow model.

Conceptual model development and data base organization are both fundamental to model construction. However, this effort represents only a portion of the tasks required to develop a three-dimensional flow model and perform particle tracking analyses. Figure 3.2 outlines the work required to construct a flow simulation model. The modeling process can be subdivided into several discrete, but related, subtasks. The work performed for this study can be summarized as an initial calibration and includes the following:

(1) code selection and initial model construction,
(2) conceptual model testing with steady-state calibration and limited sensitivity analysis to characterize the flow system,
(3) numerical evaluation through particle track analysis.

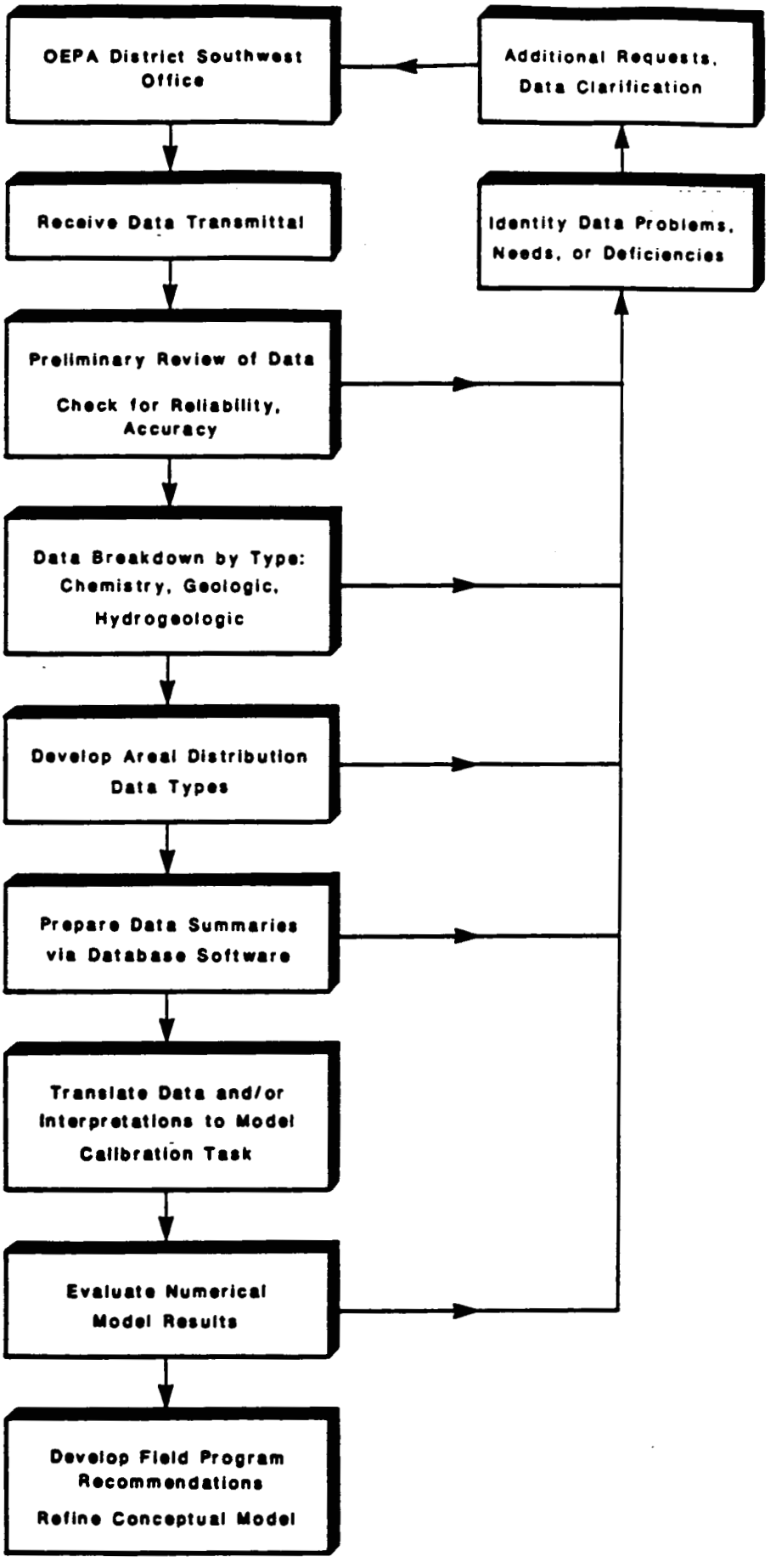


Figure 3.1. Schematic flow chart of data review and conceptual model tasks.

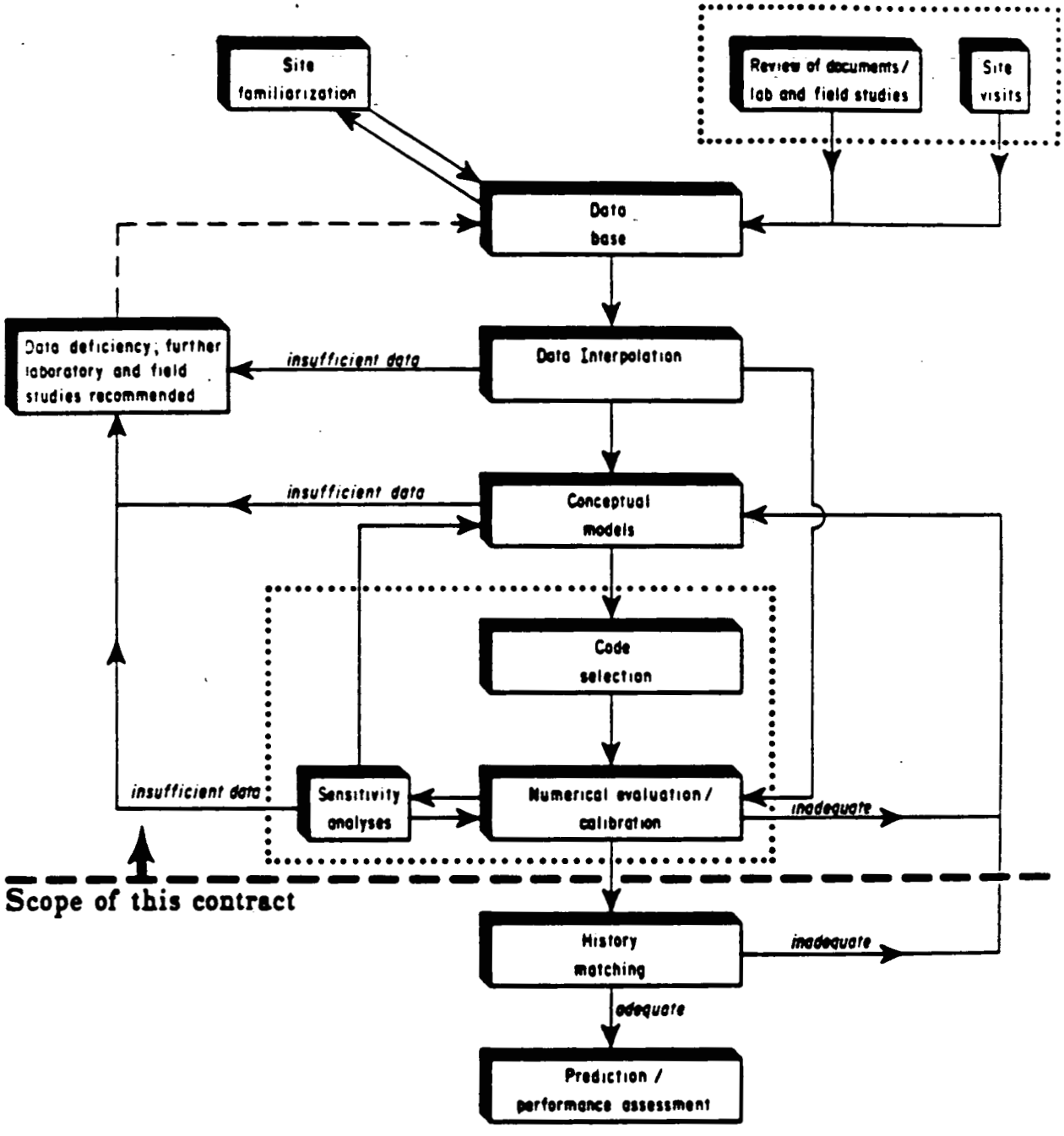


Figure 3.2. Major tasks required for model construction and calibration.

Figure 3.2 also illustrates the iterative nature of model construction and calibration activities. As the data base becomes more complete, refinements occur in the conceptual model as well as in the interpretations and conclusions based on the data. This may require changes in model configuration, boundary conditions, or hydrologic parameter values employed within the numerical simulator. This entire iterative process should result in calculated values of head (water elevation) similar to those observed within the aquifer system. A satisfactory model calibration occurs when model results agree with the observed data in areally and vertically distributed observation wells. The criterion for an acceptable match is based upon the experience of the hydrogeologist applying the model, the complexity of flow system modeled, and the level of detail of the observed data. Once a satisfactory calibration is obtained, a sensitivity analysis is performed to assess the hydrologic significance of the data uncertainties. This helps identify data deficiencies and permits an assessment of the primary factors controlling groundwater and contaminant movement. Particle tracking analysis is performed only after the model calibration process is complete.

The model calibration tasks and data base review result in delineation of data deficiencies and additional data requirements to improve the accuracy of model calculations. Through data base review and organization, conceptual model development, and model calibration, the groundwater flow system in the proximity of the FMPC facility is characterized.

3.4 SOURCES OF INFORMATION AND IMPORTANT PREVIOUS WORK

A series of data transmittals were received from OEPA Southwest District personnel during May, June, and July 1985. This information consists of summary memos prepared during various field visits to the Fernald area, raw water quality analyses, hydrogeologic consulting reports, data compilation reports of the Miami Conservancy District (MCD) and publicly available documents from various governmental agencies. These reports and published documents serve as the basis for developing a detailed understanding of the regional groundwater flow system and the potential extent of off-site contamination.

The USGS published a series of Professional Papers (605-A, B, C, D) related to the groundwater resources and the development potential of high capacity well fields within Lower Great Miami valley-fill aquifer. These papers describe the regional aquifer system between Hamilton and New Haven, Ohio. The studies emphasize the high water-producing capabilities of this aquifer system and delineate the hydraulic aquifer properties and groundwater flow directions.

Spieker (1968a) subdivides the aquifer into eleven hydrogeologic environments. He describes the unique characteristics of each, and maps their areal distribution for the Lower Great Miami River valley. The FMPC region included in this study consists of three of those hydrogeologic environments. Watkins and Spieker (1971) performed extensive seismic refraction surveys to determine the thickness of glacial drift infilling the bedrock valley. The seismic profiles and data are integrated with various well logs to provide a contour map of the bedrock surface. These contours delineate the aquifer distribution both areally and vertically, and ultimately delineate the model domain.

Spieker (1968b) constructed and calibrated an electric analog model of this aquifer system between Fairfield and New Baltimore. The analog model represents a 32-square-mile area including the FMPC facility. The limits of the modeled area encompass the valley-fill aquifer from the Hamilton-Fairfield area southwestward to the Dry Fork of the Whitewater River. Spieker's model domain includes the area which we are currently modeling. The purpose of this analog model investigation was to assess the effects of the development of the City of Cincinnati well field along the Great Miami River to the east of Ross. This study contains a compilation of hydraulic parameters and production history for the aquifer. The results of these simulations illustrate the high water yielding capacity and potential for groundwater development in the main portions of the aquifer. Spieker analyzes the hydrologic effects of various pumping schemes, including a 40 mgd (million gallons per day) extraction rate from the Cincinnati well field with a combined rate of 44 mgd at other locations. The aquifer system supported these extraction rates with no serious drawdown interference effects.

Several important facts were established by Spieker's model application. The model was verified or calibrated for transient pumping periods of 1952-1956 and 1956-1962, which provides a satisfactory history match. The model demonstrates the importance of induced infiltration as a source for sustaining high capacity production. Spieker reports that 75 percent of the pumped water was from induced infiltration. He estimates regional aquifer properties as follows: transmissivities range from 300,000 to 450,000 gal/day/ft; coefficient of storage is 0.2 in the main aquifer and 0.1 near FMPC.

The Miami Conservancy District (MCD) maintains hydrologic records and an extensive monitoring network for the entire Great Miami River Drainage Basin. The compiled data consists of stream flow, water-level observations, precipitation, and water quality analyses. A report based on this hydrologic data has been published annually by the Conservancy District since 1980. For this project, we reviewed data from a series of reports on the Hamilton-New Baltimore area (MCD, 1984).

The groundwater quality in the same area was assessed by Plummer (1982). This study summarizes the available groundwater quality data. Additionally, an in-depth analysis of travel time for potential contaminants in both surface water and groundwater was reported. The time of travel in groundwater was performed by application of Darcy's Law. Groundwater velocity in the FMPC area was estimated to be 2.2 ft/day. The time of travel from the FMPC waste pit lagoons to the Southwestern Ohio Water Company Collector well no. 2 was estimated to be 10 years.

Two additional published reports aided in developing an understanding of the groundwater contamination problems at FMPC: (1) the study by Sedam (1985), and (2) a consulting report prepared by Dames and Moore (1984) for National Lead of Ohio. Sedam (1985) evaluated the occurrence of uranium in groundwater in the area south of the facility near Fernald. This analysis was based upon one water quality sampling and water-level measurement event in a series of areally distributed wells of variable depth along Paddy's Run Creek to the west and south of the site. No wells were constructed for the

purpose of the study; existing wells were sampled as accessible. This report does not contain water quality and water-level measurement data for critical areas such as the shallow portions of the aquifer downgradient from the waste lagoons and the deeper portions of the aquifer below the FMPC facility. Water-level elevations were of limited accuracy (±5 ft) because casing elevations were estimated from the USGS topographic map. Wells of varying depth were assumed to be representative of one aquifer with no vertical flow. Additionally, the potentiometric surface map lacked control in critical areas to support the interpretations presented in Figure 4, page 6 of that report. This is especially true for the groundwater divide postulated by Sedam to exist to the east of the FMPC production facility. There appear to be inconsistencies between the reported groundwater flow directions and observed groundwater uranium concentrations (Sedam, 1984). This study states the need for further detailed investigations to delineate the extent of both on-site and off-site contamination.

Dames and Moore (1984) was retained by NLO to conduct an investigation of the contamination problem. The study had two major objectives: (1) to identify the sources of elevated uranium levels in off-site wells, and (2) to recommend remedial measures. Five potential sources were identified, all of which are located entirely within FMPC property boundaries. These potential sources include: (1) sediments and waters discharged to Paddy's Run Creek from the storm water outfall ditch, (2) covered and active flyash storage piles, (3) waste pit storage area, (4) plant production area, and (5) scrap waste pile. The report suggests that the background concentrations of uranium in groundwater should be zero. A search of the published literature confirms that no naturally occurring uranium exists within a 2-mile radius of the facility. Additionally, a travel time estimate was reported for soluble uranium entering groundwater. It was reported that uranium released from the sediments and waters contained in Paddy's Run Creek and the FMPC storm water outfall ditch could have migrated to off-site wells as little as 200 days after entering the groundwater system. The report recommends additional field studies and a phased approach to additional work at the facility.

Dames and Moore (1984) also performed a hydrogeological characterization of the FMPC site, which is consistent with the conceptual model presented in this study. A series of local cross sections are presented for the production and waste pit areas of the facility to illustrate the highly variable nature of the shallow surficial till, typical of ground moraine for this glacial setting. These sediments possess lenses of permeable gravel, sand, and silt dispersed within a predominantly clay matrix. These deposits contain perched water systems. The more permeable layers efficiently transmit locally perched groundwater and provide pathways of contaminant migration. Cross section D-D', Figure 9d of the report shows a waste pit lagoon bottom completed within a gravel lens that is vertically connected to the shallow aquifer. Thus, this surficial till layer has a crucial role in controlling migration of the uranium waste products to the groundwater system.

4 HYDROGEOLOGIC FRAMEWORK

The purpose of this section is to summarize the components of the conceptual flow model, the hydrologic, hydrogeologic, and geochemical conditions of the groundwater flow system in the vicinity of the FMPC facility, which were used to guide the construction and calibration of the numerical flow model.

4.1 GEOLOGIC FRAMEWORK

4.1.1 Bedrock Topography

Watkins and Spieker (1971) conducted an investigation of the bedrock surface within the lower Great Miami River valley and prepared a bedrock contour map of the area based on seismic surveys and well logs. Plate 4.1 is a modification of the Watkins and Spieker map prepared for this investigation based on updated data. This most prominent feature is approximately 2 miles wide and 200 to 300 ft deep. This wide valley represents the remnants of a preglacial drainage system which has experienced at least three episodes of ice advance and interglacial fluvial erosion.

The average gradient (slope of the bedrock floor) of this prominent buried valley, from West Carrollton to the Ohio River, is approximately 2 ft/mi. The definition of the bedrock surface is not sufficiently precise to determine the gradient in shorter segments (Watkins and Spieker, 1971). Just south of Hamilton, near Fairfield, the gradient flattens to approximately 1.3 ft per mile (Durrell, 1961). This gradient remains more or less constant across the remainder of the study area.

Locally, the buried valley system contains characteristics of two separate interglacial drainage systems. A single narrow deep trough has been incised in the floor of this prominent valley. This "Deep Stage" drainage, developed prior to Illinoian Glaciation, was cut into the bedrock surface to an elevation of less than 350 ft above mean sea level. Near the Southwestern Ohio Water Company, the bedrock valley bifurcates into two separate valleys. This valley represents a pre- or early-Wisconsin glacial stage drainage diversion. The lesser valley (about half a mile wide) is cut into bedrock to an elevation less than 450 ft above mean sea level. The present course of the

Great Miami River follows this valley. Early Wisconsin ice is interpreted to have blocked the south and west portions of the main valley causing the ancestral Great Miami River to cut a new course from New Baltimore to the present-day Ohio River.

The character of the bedrock valley which underlies the valley-fill aquifer system near FMPC is similar to that described on a regional scope by Watkins and Spieker (1971). These authors report bedrock elevations of approximately 350 to 400 ft above mean sea level within the main valley. The configuration of the bedrock surface upon which the valley-fill aquifer material rests can be described as a flat-bottomed trough with steep-walled sides that is inclined slightly (less than 2 ft per mile) toward the southwest. Over the rather limited area represented in the flow model, the aquifer is assumed to be horizontal. Two important features of the bedrock surface are noted on Plate 4.1 near the FMPC area. The bedrock island to the east of Fernald acts as a barrier to flow and diverts groundwater around it toward New Baltimore and Fernald. Near Fernald, the bedrock surface is observed to be shallow from less than 350 ft to 420 ft above mean sea level. This bedrock shelf is continuous to the south and southwest under the present valley of the Great Miami River.

The valley-fill aquifer was deposited within this bedrock valley system by repeated ice advances in combination with fluvial sediment transport processes during interglacial periods. The lateral aquifer boundaries of the valley-fill were defined from Spieker (1968a). These contacts generally coincide with an abrupt change in surface topography. Plate 4.1 identifies these aquifer limits.

4.1.2 Unconsolidated Materials

The unconsolidated materials that comprise the aquifer system in the Fernald region can be categorized into three major types: (1) ice-contact drift, (2) proglacial drift, and (3) till. The internal structure of these materials is a function of the proximity of the continental ice sheet at the time of deposition. The ice-contact and proglacial drift are highly stratified due to their transportation by a dynamic fluvial system of meltwaters running down the regional ice/land slope. By contrast, the till material was deposited directly

by ice. Till can be either lodgment or ablation till. These two types have different water transmitting properties. Lodgment till, formed during very active ice movement, is more compact and indurated as a result of glacial loading/compaction. Ablation till is normally more permeable, less compacted, and is associated with surficial ground moraine deposits. Ablation till results from ice melting during times of less active ice movement. In general, these till units are clay enriched and act only to retard water movement/ contaminant transport. The clay-enriched layers contain a predominance of silt and sand in their textural make-up. Hydraulically, the units or "zones" act as semiconfining beds which transmit water in response to a hydraulic gradient acting across their boundaries. At the FMPC site, lodgment and ablation till restrict both recharge from precipitation and the hydraulic connection between the upper and lower portions of the aquifer system.

Ice-contact drift has the following general characteristics: (1) an extreme range in grain size with abrupt changes in the vertical and horizontal directions, (2) individual strata of limited thickness and areal extent with highly stratified, sporadic lenses of clay-rich material, and (3) bedding which can exhibit steep dips due to penecontemporaneous deformation.

Proglacial drift materials are highly stratified sediments that consist mainly of silt, sand, and gravel which were transported beyond the immediate glacial terminus. Proglacial drift materials are better sorted with respect to grain size than the ice-contact drift, but they are still quite variable.

The valley-fill aquifer of the Great Miami River is an agglomeration of these three types of unconsolidated sediments. These drift materials have been integrated into a single, regional aquifer system. A close look at the internal character of this aquifer and its associated hydraulic properties suggests extreme heterogeneity on a local scale. Individual units or strata do not possess extensive lateral or vertical continuity (tens to hundreds of ft). The stratified orientation of bedding in combination with limited continuity of units imparts an anistropic direction to the fluid

transmission properties of the media. This magnitude of directional hydraulic conductivity varies naturally with the lithologic nature of the sediments and the scale at which the aquifer property is measured.

Within the Great Miami River valley-fill aquifer, Spieker (1968a) mapped, with reasonably well-defined boundaries and recognizable attributes, eleven different units that possess distinct physical and hydraulic properties. He used four criteria to classify these hydrogeologic environments: (1) lithologic nature of the aquifer, (2) potential for induced stream infiltration, (3) presence or absence of interstratified clay layers, and (4) aquifer thickness. Three distinct hydrogeologic environments have been delineated in the FMPC area, Type I-A-1, Type I-A-2, and Type III. The only difference between Types I-A-1 and 2 is aquifer thickness. Type I-A-1 environment is associated with the areas of greater than 150 ft thickness, and Type I-A-2 with areas of less than 150 ft thickness.

The Type I-A-1 and 2 environments are located within the main Great Miami River valley from the Cincinnati Bolton well field to the Big Bend area near the Southwestern Ohio Water Company and then southwestward to New Baltimore. Representative geologic sections were compiled for each of these hydrogeologic environments. Plate 3.1 illustrates the location of wells used for characterization. Figures 4.1 through 4.5 illustrate the lithologic composition of each environment. Note that these figures are drawn to scale in the vertical but not in the horizontal. They should be viewed as representative panels of the lithologic nature of the aquifer. In general, the I-A-1 hydrogeologic environment has the following characteristics: (1) predominantly sand and gravel lithology, 150 to 200 ft in thickness, (2) lack of interstratified clay layers, and (3) the presence of the Great Miami River for induced infiltration recharge. Spieker (1968a) reports that the coefficient of transmissivity ranges between 300,000 to 500,000 gal/day/ft with an unconfined storage coefficient (0.2). Commonly, well yields can be as large as 3,000 gal/min with specific capacities near 300 gal/min/ft of drawdown.

Figures 4.1 and 4.3 illustrate the lithologic character of the Type I-A-1 and 2 environments. All wells except H-106, 13-1, and 13-2

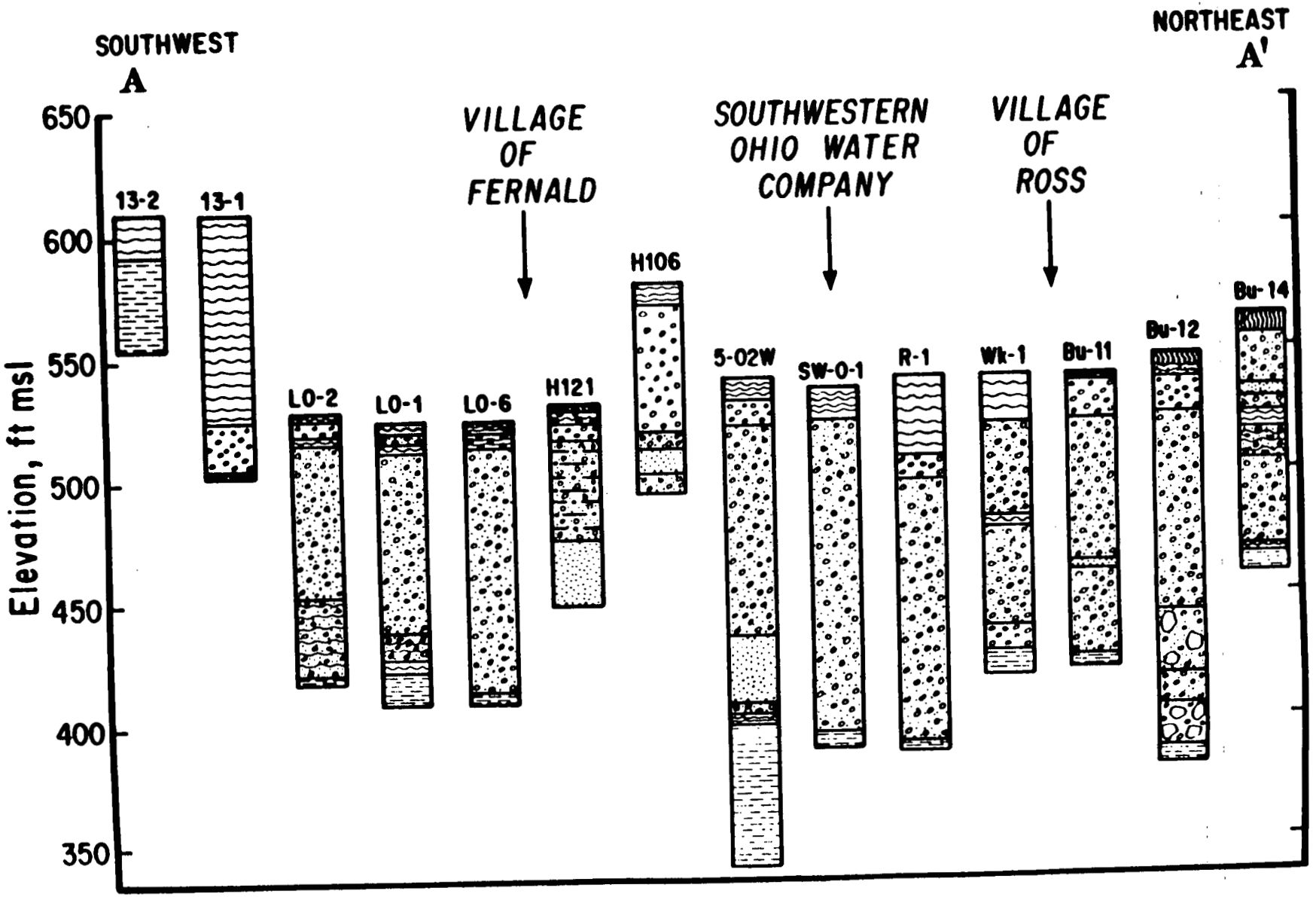


Figure 4.1. Geologic logs for wells located along the regional trend of the Type I-A-1 and 2 environments.

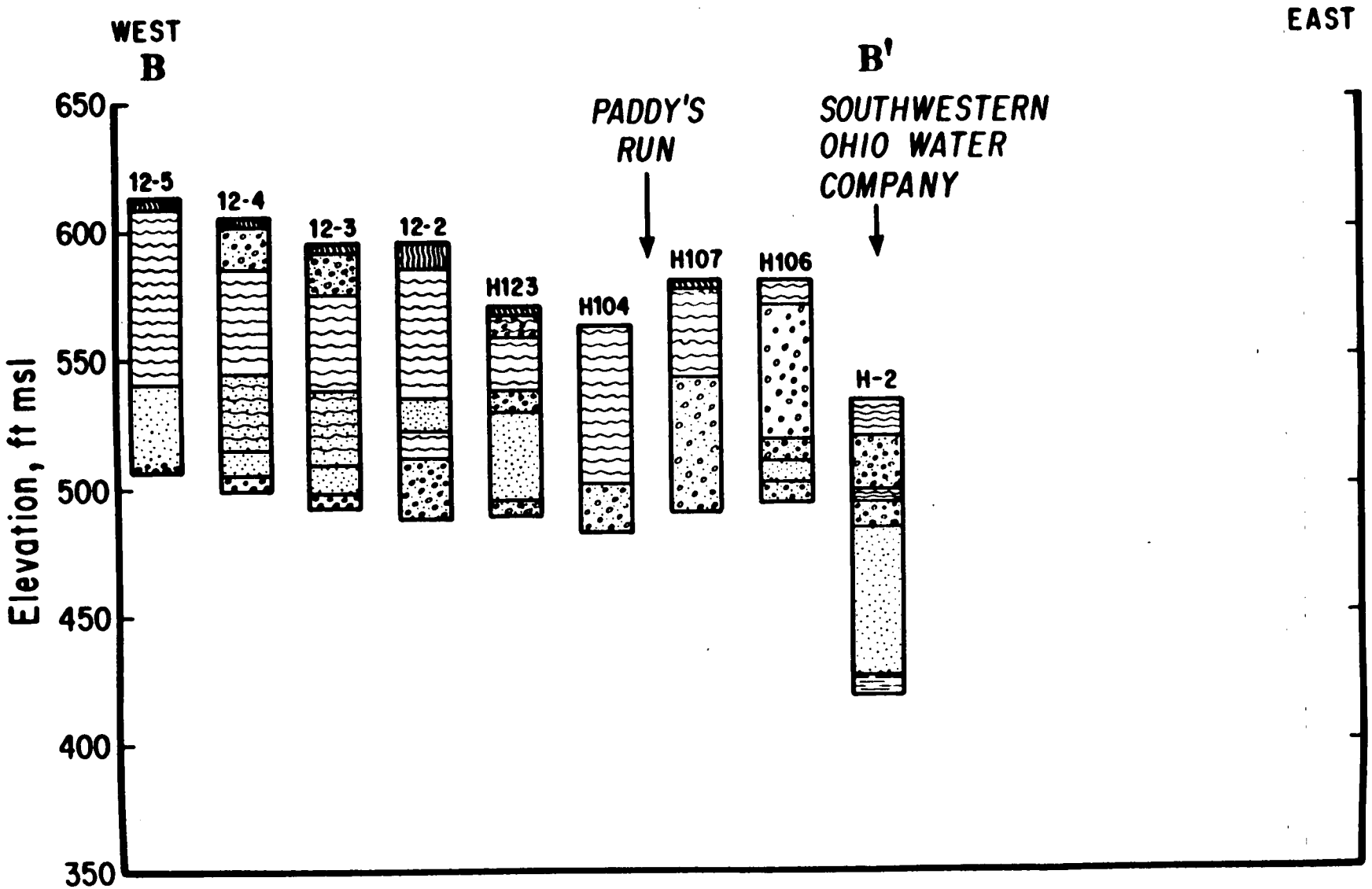


Figure 4.2. Geologic logs for wells located along Willey Road south of the FMPC facility in the Type III environment.

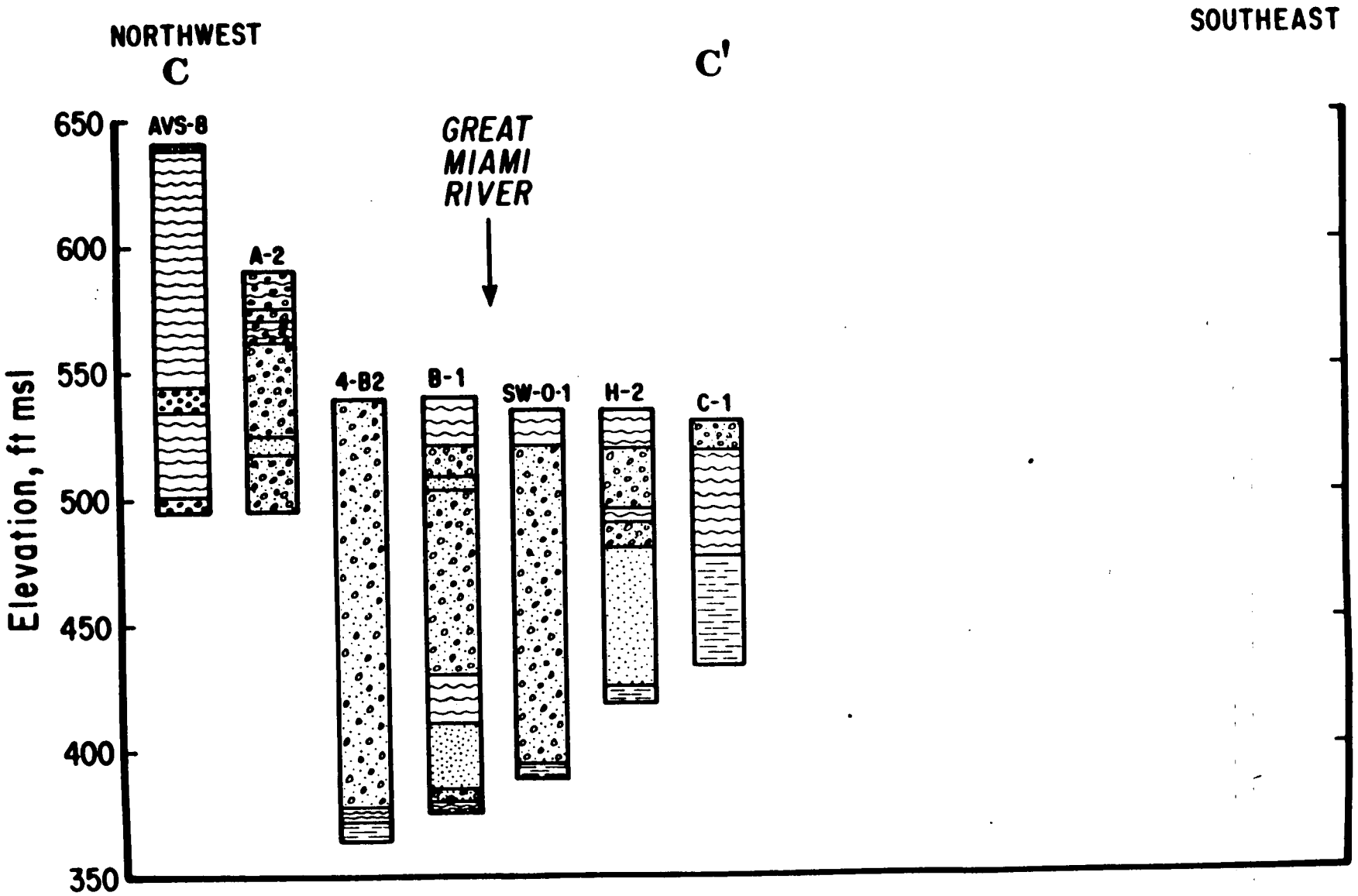


Figure 4.3. Geologic logs for wells located across the valley-fill aquifer near the Southwestern Ohio Water Company, Type I-A-1 environment.

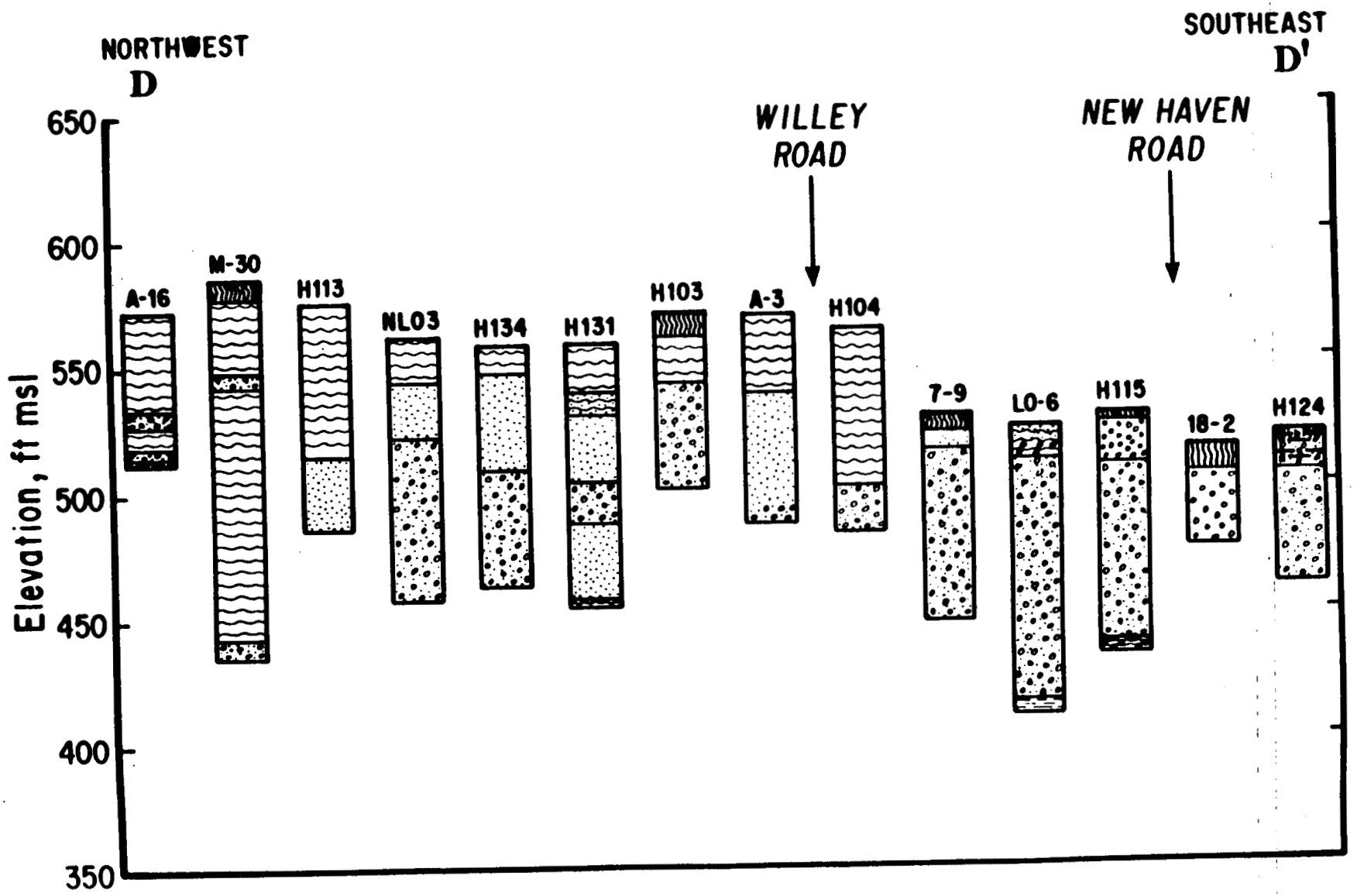


Figure 4.4. Geologic logs for wells located along Paddy's Run Creek, Type I-A-2 and Type III environments.

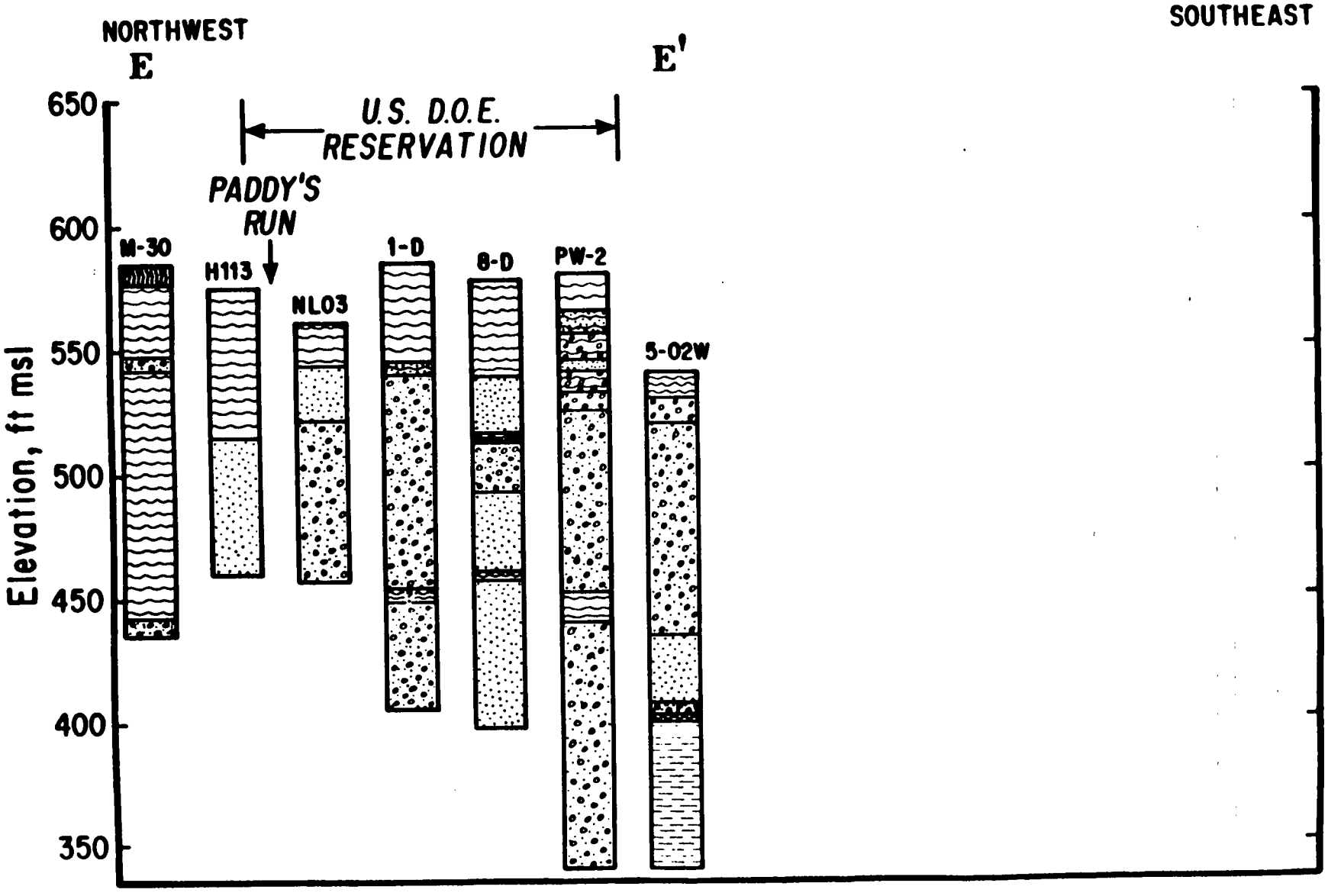


Figure 4.5. Geologic logs for wells located across the south-central production area of FMPC, Type III environment.

on Figure 4.1 and AVS-8 on Figure 4.3 are representative of these environments. These logs exhibit sporadic clay lenses in a thick sand and gravel. On a regional scale, it is not possible to correlate distinct lithologic units between wells. However, it can be demonstrated by aquifer testing that these sands and gravels behave hydraulically as a single hydrostratigraphic unit. Note the top of bedrock elevations in each of the wells. These logs show a total thickness of drift on the order of 140 ft except where the wells are located near the bedrock valley walls (i.e., C-1, Figure 4.3). The wells near the village of Fernald (LO-1, LO-2, LO-6) are located in a Type I-A-2 environment where the bedrock floor is more shallow than the main valley floor. The combined aquifer thickness shown here is close to 110 ft. In Figure 4.3, Well 4-B2, the bedrock surface is shown to be located at a greater depth. This well is located in the proximity of the deep bedrock channel observed on Plate 4.1. In this trough, the combined valley-fill thickness may approach more than 160 ft.

The Type III environment is characterized by the sand and gravel material overlain by more than 50 ft of clay material. The aquifer material in this environment shows a wide range in transmissivity (from 35,000 to 300,000 gal/day/ft). At the FMPC site, Norris and Spieker (1962) conducted aquifer tests that estimated values in the lower, less thick, portion of the fill to be 150,000 gal/day/ft. However, at this location the tests were run below a 10 to 20 ft thick clay confining bed which splits the aquifer into two separate units. The Type III environment at FMPC contains four distinct units. These units from surface to bedrock include: (1) surficial till (part of the Hartwell Moraine) of variable thickness (10 to 40 ft), (2) a shallow aquifer approximately 110 to 120 ft thick, (3) a blue clay confining bed between 10 and 20 ft thick, and (4) a lower sand and gravel aquifer at least 110 ft thick. Figure 4.5, Well PW-2, illustrates the full geologic section and character of these units.

Figures 4.2, 4.4, and 4.5 exhibit well logs principally in the Type III environment. Figure 4.2 follows an east-west direction along Willey Road. Note that wells west of well H-106 exhibit both a variable thickness for the surficial till unit as well as the presence of sand and silt lenses. Note the persistence of the sand and gravel

representing the shallow aquifer system beneath the till. Figure 4.4 is compiled along Paddy's Run Creek in a southeast-northwest trend. The well logs to the northwest of Willey Road (H-104) represent the Type III environment, and, to the southeast, the Type I-A-2 environment. Figure 4.5 illustrates the geologic materials across the south-central portion of the FMPC site.

4.2 SUMMARY OF HYDRAULIC PROPERTIES

Four basic methods are used to determine the hydraulic conductivity of aquifer materials. Each method measures a given volume of aquifer and in effect has a limited radius around the sampling point which is tested by the method. For example, falling or constant head permeameter tests on split-spoon samples have an effective radius limited to the spoon diameter and they measure only vertical conductivity. Slug injection tests measure only horizontal conductivity, and the effective volume of the aquifer tested is limited to a cylinder of several feet in diameter around the well. Long-term aquifer pumping tests measure a larger effective volume of the aquifer. The effective measurement of the pumping tests is limited by the duration of the test, pumping rate, and hydraulic properties that determine the "cone of influence" of the test. Normally, this effective volume of the aquifer measured is in tens to hundreds of feet. The properties determined from the test represent the bulk behavior of the aquifer within the "cone of influence." A fourth method is less commonly used to estimate aquifer properties. For this method, a calibrated flow model can be used to estimate aquifer properties of storage and hydraulic conductivity. The area effectively measured by the model is the area covered by the discretization. Again, if properly calibrated, the model measures the ✓ average aquifer properties within the grid block.

As discussed in the section on geologic materials (Section 4.1.2), the valley-fill aquifer of the Great Miami River is characterized by extreme variability over rather short spatial intervals. Thus, hydraulic testing methods are extremely scale-dependent. Pumping tests, flow net analysis, and numerical models

tend to better estimate the bulk hydraulic behavior of the aquifer and to average the extreme variation observed in these small spatial intervals.

Table 4.1 is a compilation of hydraulic properties for Spieker's (1968a) hydrogeologic environment I-A-1. These locations extend from Hamilton on the north to New Baltimore and Fernald on the south. Spieker states that this hydrogeologic environment has average transmissivities on the order of 300,000 to 500,000 gal/day/ft with a storage coefficient of 0.20. The range on the table includes this interval; although on the lower end, some values are as low as 150,000 gal/day/ft. Note that most of the pumping test results are within the same order of magnitude. This illustrates that, for an extremely heterogeneous system like the valley-fill aquifer, long-term pumping tests tend to average out the local variations in hydraulic properties.

Four aquifer tests have been completed in the direct vicinity of the FMPC facility. Spieker and Norris (1962) determined from unpublished data the transmissivity of the lower aquifer to be approximately 150,000 gal/day/ft. If one assumes the upper and lower aquifer to be similar, the composite transmissivity would be on the order of 300,000 gal/day/ft. Assuming a saturated thickness of 160 ft, the hydraulic conductivity would be 250 ft/day. Aquifer testing performed in the Southwestern Ohio Water Company well field by Kazmann (1950) and Schaefer and Walton (1956) exhibit transmissivity values between 280,000 to 330,000 gal/day/ft. The saturated thickness of the aquifer at this location is somewhat less, near 120 to 130 ft. Thus, hydraulic conductivity is in the range of 320 to 370 ft/day. Lewis (1968) also determined conductivity values near 300 to 350 ft/day. Klaer and Kazmann (1943) performed some early testing south of Hamilton, in an area of apparent higher hydraulic conductivity.

4.2.1 Importance of Induced Infiltration

A key factor in the ability of this aquifer to sustain large volumes of groundwater production is the potential for induced infiltration from surface water sources. Norris and Spieker (1966),

Table 4.1. Summary of hydraulic properties for the valley-fill aquifer of the Great Miami River near Hamilton, Ohio (Page 1 of 2).

Location	Method of testing	Aquifer hydraulic properties: Saturated thickness (ft)	Transmissivity (gpd/ft)	Hydraulic conductivity (gpd/ft²)	Coefficient of storage	Induced infiltration (gal/acre)	Source of data
Southwestern Ohio Water Co. Ross, Ohio	Flow-net analysis	150	370,000	2,466		240,000 avg. 735,000 max.	Dove (1961)
Cincinnati Bolton well field	3-day pumping test	105-183	158,000 258,000 400,000	2,460 900	.23	492,000 avg.	Smith (1962) Klaer (1968)
Baldwin-Lima Hamilton Plant Chem-Dyne Site	Pumping test		160,000 308,000		.001		Smith (1960)
Southwestern Ohio Water Co. Ross, Ohio	Pumping test	120-125	285,600 331,200	2,380 2,760			Kazmann (1950)
Southwestern Ohio Water Co. Ross, Ohio	Flow-net analysis	120	292,800 333,600	2,440 2,780			Schaefer and Walton (1956)
Hamilton - South well field	Pumping test	150+ 202+	350,000 450,000	2,340- 2,420			Klaer and Kazmann (1943)
Feed Materials AEC, Fernald, Ohio	Pumping test	70	140,000 300,000	2,000	.01		Spieker and Norris (1962) unpub. data
Southwestern Ohio Water Co. Ross, Ohio	Pumping test			2,500 3,020			Lewis (1968)

Table 4.1. Summary of hydraulic properties for the valley-fill aquifer of the Great Miami River near Hamilton, Ohio (Page 2 of 2).

Location	Method of testing	Aquifer hydraulic properties: Saturated thickness (ft.)	Transmissivity (gpd/ft)	Hydraulic conductivity (gpd/ft²)	Coefficient of storage	Induced infiltration (gal/acre)	Source of data
New Miami - Mouth of Four Mile Creek	Pumping Tests	90	521,000	5,790	.0003?		Smith (1960)
Ross Twp. Sec. 26 - West Bank, Great Miami River	Pumping Test	178	676,000	4,000			Smith (1962)
S.S. Papadopulos Chem-Dyne Site	Slug Injection Tests		450-75,000 6,400 median	750 median			Papadopulos (1984) 18 tests in 35 ft. wells
S.S. Papadopulos Chem-Dyne Site	Slug Injection Tests		2,000-56,000 21,000 median	2,100 median			Papadopulos (1984) 6 tests in 65 ft. wells
Conestoga-Rovers, Chem-Dyne Site	Falling Head Permeameter			$1x10^2$ to $1x10^8$			Conestoga-Rovers (1984) 9 tests; 2 runs on 5 samples. Permeability expressed in cm/sec @ 20°C.
CH2M-Hill Chem-Dyne Site	Pumping Test		30,000-700,000		.0005-0.3		Most values in the 100,000 - 300,000 range.

Dove (1961), Walton and Scudder (1960), and Schaefer and Walton (1956) have demonstrated the importance of induced infiltration as a source for groundwater pumpage. The phenomenon of induced stream infiltration is a seasonally-dependent factor. It is controlled by stream discharge (water elevation), stream velocity, water temperature, hydraulic conditions of the streambed, and hydraulic gradient between the river and the aquifer. Like transmissivity and other aquifer properties, induced infiltration exhibits spatial variation. Normally, induced infiltration along the Great Miami River is associated with or occurs near the high volume production centers. The production center significantly lowers the fluid potential in the aquifer adjacent to the river, resulting in reversal of gradients to the aquifer.

Walton and Scudder (1960) observed induced infiltration rates in the range of 170,000 to more than 320,000 gal/day/acre for the Mad River setting. This type of analysis was also performed by Dove (1961) for the Southwestern Ohio Water Company. Using a flow-net analysis, the average rate of stream infiltration was 240,000 gal/day/acre. Schaefer and Walton (1956) determined an average value of 168,000 gal/day/acre which comprised 62 percent of the pumped volume. The range of values was from 63,000 to 245,000 gal/day/acre. Smith (1962) at the Cincinnati Bolton well field determined an average infiltration rate of 492,000 gal/day/acre. Spieker (1968) utilized a value of 325,000 gal/day/acre for the calibration of the electric analog model. These high rates suggest that pumpage may derive a good portion of the water pumped from induced recharge. Spieker (1968) estimated that 75 percent of the total pumping is from the induced infiltration in his model area. These numbers suggest that the induced infiltration is variable and rather difficult to evaluate with respect to spatial distribution. The GeoTrans model was configured with the Great Miami River as a constant head boundary rather than an assigned leakage flux because both the spatial distribution and quantity of induced infiltration over the model domain is unknown. A constant head boundary is the most appropriate means of representation of this phenomena.

4.2.2 Precipitation, Runoff, and Recharge

Precipitation in the Great Miami River basin averages approximately 38 in/yr. The minimum and maximum for the 68 years of record are 24.43 and 51.11 inches, respectively. In 1983, the total precipitation for the entire basin equaled 37.59 inches. The Hamilton-New Baltimore area averages about 40 in/yr, slightly higher than the basin average. For 1983, precipitation at Hamilton was observed to be 37.48 inches. The minimum and maximum precipitation for the 73 years of record at Hamilton are 22.06 and 54.70 inches, respectively. The MCD maintains an observation station in New Baltimore to the south of the FMPC site which has a nine-year period of record. Table 4.2 exhibits the monthly precipitation measured at New Baltimore for 1983 along with the monthly minimum and maximum for the period of record. Total precipitation was 35.66 inches for 1983.

The MCD also maintains a very active surface water discharge monitoring network. As described by Spieker (1968a), this aquifer system has a direct and rather important relationship with the surface water system, especially the Great Miami River. Groundwater recharge to the aquifer is controlled in part by the stage and flow duration of the Great Miami River. The MCD has arbitrarily chosen 4,000 ft^3/s as the critical discharge for the Hamilton station stage relative to aquifer recharge. In 1983, the discharge at the Hamilton monitoring point exceeded 4,000 ft^3/s for a total of 56 days. At Hamilton, the runoff in the Great Miami River for 1983 amounted to 11.2 inches. This represents approximately 29.9 percent of the precipitation measured at Hamilton. The Great Miami River at Hamilton exhibited an average runoff per year value of 13.00 ± 3.4 inches. The values for this 20-year period of record (1964-1983) exhibited a minimum of 8.6 inches and a maximum of 20.48 inches.

Several estimates of groundwater recharge have been made in close proximity to the FMPC facility. These estimates have been made by a variety of methods within areas of the Type I-A-1 hydrogeologic environment. Spieker (1968a) reports that recharge varies from 6 to 21 in/yr. Smith (1962) estimates a recharge maximum of 21 in/yr in the Fairfield area. Spieker (1968b) utilized the annual water-level rise for the period of 1942-1962 for observation well Bu-7 located

Table 4.2. Monthly precipitation for 1983 at New Baltimore, Ohio.

Month	1983	Period of Record	
		Monthly minimum	Monthly maximum
JAN	1.38	0.17	6.05
FEB	0.62	0.19	3.94
MAR	2.37	1.10	6.19
APR	4.20	0.94	4.55
MAY	7.95	1.33	7.95
JUN	1.56	1.56	5.80
JUL	2.33	1.50	8.16
AUG	1.20	1.20	6.09
SEP	0.55	0.54	7.37
OCT	7.34	0.62	7.34
NOV	3.69	0.61	4.72
DEC	2.47	0.41	5.10
TOTAL 35.66			

All measurements are expressed in inches.

near the Hamilton South well field to estimate a recharge value of 15.2 in/yr. Spieker utilized this value in his electric analog model calibration.

Schaefer and Walton (1956) conducted a well field performance study and estimated that recharge in the area of the Southwestern Ohio Water Company was 8.5 in/yr. This is approximately 22 percent of the precipitation for that year.

An initial look at these recharge values might suggest overestimation. However, two factors may exert control on recharge and support the observed high values: (1) porous and permeable materials with a very flat surface would allow rapid infiltration, and (2) the water table is located at a depth below the effective root zone so that evapotranspiration losses are reduced.

4.3 WATER LEVELS

The data base of water levels for this complex hydrogeologic system is incomplete. Only two sources were available for the development of a potentiometric surface map, a report by Sedam (1985), and the continuous observation wells maintained by the Ohio Department of Natural Resources, the United States Geological Survey, and the Miami Conservancy District. The nature of the Sedam data precluded the development of a confirmed interpretation of the water table because the data consisted of only one measurement per well. In addition, the wells were of variable depth within the upper aquifer system, and thus, may not reflect the true water-table elevation. In addition, measuring point elevations were not surveyed, but were estimated from topographic maps. The available data does not justify the development of a potentiometric surface map for use in model calibration or delineation of groundwater flow directions.

The Sedam (1985) water-level data are summarized in Appendix A. A review of the observation wells with long term records was performed to delineate spatially distributed locations against which the preliminary model calibration was performed. Table 4.3 summarizes some of the data related to water elevations in these observation wells. The locations of these wells are illustrated on Plate 3.1. All of these wells are located within the Type I-A-1 environment. The

Table 4.3 Summary of water elevations in selected observation wells.

Well designation	Total depth (ft)	Average water elevation 6/83 - 6/84	Water elevation 1983 Minimum	Water elevation 1983 Maximum	Water elevation Period of record Minimum	Water elevation Period of record Maximum	Average[1] min. water elevation
BU-14	107	535.84±2.2	532.34	548.34	532.34	550.57	534.47
C2A	111	531.87±2.2	527.96	541.87	526.90	547.03	528.38
BU-12	157	530.08±2.4	526.25	546.80	524.83	550.28	528.72
BU-11	110	526.22±2.8	521.69	530.88	518.46	541.37	523.61
BU-80	93	532.31±2.5	527.17	535.82	526.74	543.12	528.87
BU-13	157	524.75±2.2	521.30	532.81	519.88	533.30	521.18
H-4	100	521.38±2.2	517.39	528.31	509.57	--	514.08
H-2	89	--	516.29	527.89	509.95	--	513.44

[1]This average minimum water elevation is for the period of record.

wells are representative of water levels within the intermediate and deep portions of the aquifer. The data have been reported in Table 4.3 from top to bottom for wells located from northeast to the southwest along the trend of the aquifer. The water elevations observed confirm the interpretation by Spieker (1968a). That is, the potentiometric surface and gradient are roughly perpendicular to the steep valley walls and oriented down the regional slope of the bedrock, respectively. Deviations from this generalized direction are apparent near high capacity pumping centers as the cone of influence refracts the potentiometric contours.

Spieker (1968a) showed potentiometric elevations ranging from 535 to 540 ft near the northern end of the Cincinnati well field (close to the boundary of this model) to 510-515 ft in the Fernald-New Baltimore area. Spieker postulated two groundwater divides within the Type III unit. The first was located just to the west of the Whitewater River and the other was located east of the FMPC production area between the site and the Southwestern Ohio Water Company. The well control utilized to draw these interpretations was limited. Only three wells were utilized to place the western most divide and these wells were completed in the shallow aquifer system. It may be possible that the shallow aquifer system exhibits a drainage divide in this area while the lower aquifer system does not. The divide located to the east of the FMPC was placed without good well control (see Plate 4.1). More adequate control both in the vertical and horizontal must be compiled before the exact divide locations can be confirmed.

The groundwater measurements taken by Sedam (1985) also suggest that a divide exists east of the FMPC site. General flow trends can be approximately drawn from this data. The water elevations show a ✓ southerly direction of flow from the FMPC facility to the Great Miami ✓ River through the shallow bedrock col near Fernald. A direct hydraulic connection between Paddy's Run Creek and the shallow water-table system is not confirmed based upon available water-level measurements. In the upper reaches of Paddy's Run west of FMPC and north of Willey Road, shallow water-level measurements are observed to be between 521 and 530 ft above mean sea level. The surface elevation of the Paddy's Run Creek stream channel north of Willey Road ranges

between 520 and 550 ft above mean sea level. Thus, the water-table remains below land surface along most of this stream reach. South of Willey Road, water levels in wells near Paddy's Run show water elevations close to the elevation of the stream channel. This suggests that north of Willey Road, Paddy's Run Creek is perched above the water-table and loses water and contaminants to the shallow aquifer system. South of Willey Road, Paddy's Run Creek has eroded through the surficial clay layer of the Type III hydrogeologic environment exposing the uppermost sands and gravels of the shallow aquifer. The stream reach between Willey Road and New Haven Road receives groundwater discharge from the upper aquifer system. This is confirmed by field observations that Paddy's Run Creek sustains baseflow throughout the year from just south of Willey Road. Above Willey Road, the stream flows only intermittently during runoff events.

In the Type III environment, limited water elevations suggest that vertical gradients exist in the upper and lower aquifer systems. Dames and Moore (1984) reported five well groupings for water quality monitoring. Some of these groupings are also helpful in definition of these vertical gradients. For example, wells 1-S (H-132) and 1-D are located adjacent to each other (Plate 3.1) and completed to a depth of 80 ft and 187 ft, respectively. These wells are completed above and below the blue clay confining unit. The reported water elevations for 1-S and 1-D exhibited a 0.90 ft difference in potential between upper and lower aquifer systems. Within an area influenced by pumping, wells 8-S and 8-D, also completed in the upper and lower aquifers, respectively, exhibit a 5.98 ft difference. Thus, the blue clay confining bed restricts leakage between the two aquifers. The clay unit acts as a leaky aquitard. This characteristic should be taken into consideration during model construction.

The average water-level elevations for June 1983 to June 1984 exhibit standard deviations between 2.0 and 2.5 ft (Table 4.3). Water-level elevations from this period of record were utilized as the model calibration targets within the Type I-A-1 environment because groundwater pumpage data for 1984 were used in the model simulations. A comparison of these June 1983-1984 data with other time periods and

records on Table 4.3 confirms their representativeness of regional aquifer behavior. These water elevations fall well above the minimum elevation for the period of record. Most wells show a water elevation close to the midpoint between the 1983 minimum and maximum water level.

4.4 GROUNDWATER PRODUCTION

Only four major groundwater extraction centers are located within the model domain: (1) Southwestern Ohio Water Company, (2) The Water Association, (3) Cincinnati Bolton Plant and (4) FMPC. These four major users extract on the average more than 34 mgd. This represents more than 68 percent of the total extraction in the Hamilton-New Baltimore area. Three of these pumping centers are located in the Type I-A-1 environment and support their high production rates through induced stream infiltration. Cones of influence exist around each of these pumping centers. Sufficient water-elevation data does not exist to present full contours of these features. Spieker (1968b) reported drawdowns in the range of 5 to 8 ft for various scenarios of pumping calculated by a two-dimensional electric analog model at FMPC production wells. This range of drawdown represents a maximum value expected at the FMPC site because the two-dimensional model configuration and pumping rate used for FMPC by Spieker was 1 mgd. For modeling, present pumping at the facility was input as 0.42 mgd.

Dames and Moore (1984) presented well groupings and associated water elevations. Wells 1D and 8D are completed in the lower sand and gravel aquifer to the same depth, 187 feet. Their locations are on a somewhat direct line from the major pumping well, PW-2 (Plate 3.1). The reported water elevations in wells 1D and 8D are 524.31 and 518.62 ft, respectively. This suggests a cone of depression around the FMPC production well of approximately several feet, with a 5 ft maximum. This is consistent with Spieker's analysis.

Table 4.4 summarizes the groundwater production data for these four major users. This 1984 average groundwater extraction rates were input into the numerical simulator.

4.5 DISTRIBUTION OF CONTAMINATION

A preliminary review of the geochemical data base has demonstrated elevated concentrations of various contaminants in soils, stream sediments, and groundwater. The purpose of this section is to summarize the documented locations of these elevated levels. Detailed additional studies are required to confirm the extent of both on- and off-site contamination. The present data base is limited in its spatial distribution, especially in the vertical direction. Also, the types of contaminants that have been analyzed are limited in scope. To further quantify the extent of contamination, a complete and integrated monitoring program should be implemented. This program must set well-defined objectives and a detailed scope of work to reach those objectives.

4.5.1 Technical Issues

What is the performance standard that the FMPC facility is required to meet? What is background? US DOE administrative order 5480.1A states the limit of $6X10^{-7}$uCi/mL or 1800 ug/L as the maximum permissible concentration for uranium released to an uncontrolled area. The greatest above background concentrations observed in offsite wells was 578 ug/L dissolved uranium. This concentration is well below the standard of 1800 ug/L.

Dames and Moore (1984) reported that a literature review of publications showed no natural occurrences of uranium, uranium minerals, or radioactive anomalies within a two-mile radius of FMPC. Thus, prior to operation of the facility, the background uranium concentrations in the groundwater should have been at a very low level. GeoTrans reviewed some literature to estimate the naturally occurring concentrations of uranium in groundwater. Fix (1956) observed concentrations of uranium under oxidizing conditions in the

Table 4.4 Summary of major groundwater production within the model domain.

Ground water user	# of wells	Production Rate MGD 1984	Average '80-'84	Remarks
Southwestern Ohio Water Co.	2	17.38	16.91	2 collector wells with effective radius of 400 ft
Cincinnati Bolton Plant	10	15.10	14.33	variable pumping rates distributed evenly across 3 wells
The Water Association	3	1.73	1.54	
Feed Materials Prod. Center	3	0.42	0.37	only 1 well pumps at a time; single recovery well discharges 100 gal/min

Source of Information: Miami Conservancy District, written communication, 1984.

range of 1 to 100 ug/L in uraniferous areas. Rumbaugh (1983) studied radon and uranium concentrations in groundwater in the Reading Prong Province of Pennsylvania. The hydrogeologic setting there was a granitic gneiss complex. Radiation anomalies were reported in the study area and groundwater associated with one of these anomalies was the target of the investigation. The area was known to be mineralized with uranium from pegmatitic phases. Table 4.5 reports the median values for various physical and chemical parameters. Note the concentrations of uranium in the three different lithologies. For an area of known mineralization, the median concentrations of uranium were less than 0.30 ug/L. Concentrations in groundwater near a known uranium source were close to 400 ug/L dissolved uranium. Thus, the concentrations of uranium in groundwater near FMPC are comparable to those in groundwater near an ore body.

Another technical issue is the laboratory analysis procedures and protocol. The present data base contains analytical determinations by FMPC, USGS, and OEPA from various sampling events. The results are not comparable. Thus, a standard sampling and analytical protocol must be established in the future to minimize the cost of invalid chemical information.

4.5.2 Mobility of Uranium

Uranium may occur in two valence states in natural waters: U(IV) and U(VI). Under reducing conditions, uranium is essentially insoluble. The concentrations of U(IV) in reducing waters seldom exceed 0.01 ppb between pH 3 and 7 (Langmuir, 1978). Conversely, uranium in an oxidized state is quite soluble. In oxidizing groundwater, uranium is stable as the uranyl ion (UO^{2+}) which commonly forms complexes with flouride, phosphate, carbonate, and hydroxide anions. The concentrations of uranium under such oxidizing conditions may range from 1 ppb to more than 100 ppb in uraniferous areas (Fix, 1956).

Langmuir (1978) presents a very detailed analysis of uranium solution-mineral equilibria at low temperatures with emphasis given to natural waters. At typical ligand concentrations (F=0.3 ppm; Cl=10 ppm; SO_4=100 ppm; PO_4=0.1 ppm; SiO=30 ppm) the uranyl ion forms

Table 4.5. Median values for the physical and chemical parameters for the Hardyston, Granitic gneiss, and Hornblende Gneiss.

	Hardyston	Granitic Gneiss	Hornblende Gneiss
Depth (m)	43.00	29.00	29.00
T ($cm^{2/s}$)	2.24	0.44	0.69
pH	5.90	5.90	6.14
Temp (°C)	12.60	12.60	12.90
Alk (mg/L $CaCO_3$)	23.00	18.00	28.00
Cond (mS)	110.00	106.00	180.00
D.O. (ppm)	5.85	5.40	5.80
Rn (pCi/L)	1100.00	3990.00	1360.00
U (ug/L)	0.20	0.27	0.30
Ca (mg/L)	20.40	25.30	31.80
Na (mg/L)	4.00	7.30	7.10
K (mg/L)	1.65	1.60	1.55
SO_4 (mg/L)*		19.30	
P (mg/L)*		0.03	
Cl (mg/L)*		2.00	

*Based on 10 analyses.

complexes with fluoride (pH 4.5), phosphate (4.5 pH 7.5), and carbonate (pH 7.5). Note that phosphate is the most stable complex of uranium under near neutral conditions even when the amount of phosphate in the water is only 0.1 ppm. This may have significance when viewing the reported groundwater contamination in the Fernald area. Analytical determinations should be made on these ligands because of the increased mobility of uranium complexes formed with these species.

Uranium may be taken out of solution by precipitation or by sorption. Van der Weijden and Langmuir (1976) reported that iron oxyhydroxide may adsorb uranium almost quantitatively from solution, but the uranyl ion may go back into solution upon better crystallization of the hydroxides. Schmitt-Colerus (1967) has found that uranium is strongly adsorbed by organic matter. Precipitation of uranium vanadate and phosphate minerals, such as autunite and uranophane, may also reduce the concentration or uranium in solution. Langmuir (1978) suggests, however, that at low temperatures, sorption is more important in controlling the uranium concentration in groundwater than mineral precipitation.

The most important factors influencing the concentration of uranium in groundwater are summarized as follows (Langmuir, 1978):

(1) uranium content of the source and its leachability
(2) proximity of water to uranium-bearing source (this relates to the degree of fracturing or porosity of the rock)
(3) amount of dilution by sources of fresh water, such as recharge
(4) climatic effects and seasonal variability, especially relating to evapo-transpiration
(5) pH and oxidation state of the water
(6) concentration of carbonate, phosphate, fluoride, silicate, vanadate, calcium, and sodium
(7) presence of sorptive materials (organic material, manganese oxyhydroxides, and clays)

4.5.3 Uranium in Soils, Sediments, and Groundwater

Characterization of the total extent of contamination by uranium in off-site materials is not possible because of data deficiencies in terms of spatial location as well as in analytical methods. However, the data base is sufficient to document the presence of uranium in a qualitative manner. The data show that elevated concentrations of uranium are present in the soils within the Production Areas, Stream and River Sediments, and on-site and off-site groundwater.

On-site soils in the production area exhibited concentrations as high as 500 ppm uranium in samples taken in 1966. Table 4.6 exhibits a summary of uranium quantities in the soil. Contours of uranium concentration have exhibited peak concentrations in the south-central portions of the facility. The average concentrations in soils apparently decreased during the period from 1964 to 1969. These average concentrations ranged from 79 to 163 ppm for the period.

Table 4.6. Estimated uranium quantities in the soil FMPC production area, 1964 - 1969.

Year	Average concentration of U in soil (ppm)	Volume of soil in production area (ft^3)	Kg of U in soil
1964	142	624,000	3,200
1965	163	624,000	3,700
1966	79	624,000	1,800
1967	---	No Samples Taken	---
1968	116	624,000	2,600
1969	87	624,000	2,000

Source: Dames and Moore (1984).

Uranium in stream sediments was also documented by an NLO sampling program. The Great Miami River was sampled in seven locations: two upstream (river mile 27.8 and 25.6), one directly

opposite the permitted discharge point (river mile 24.1), three downstream between the wastewater discharge point and the confluence of Paddy's Run Creek, and one immediately below the confluence. Figure 4.6 exhibits the uranium concentrations in Great Miami River sediments along the river. Note the increased concentration observed at the permitted discharge outfall from the site. The average concentrations increased from 2.2 ppm upstream to 3.9 ppm for the three-year sampling period. Dames and Moore (1984) report that there is a slight increase above the assumed background concentration of 2-4 ppm just below the outfall discharge pipe.

Stream sediments in the Paddy's Run Creek drainage were also sampled at five locations: (1) downstream of the waste pit areas, (2) downstream of the storm sewer outfall ditch, (3) upstream of the storm sewer outfall, (4) upstream of all site activity, and (5) opposite test well 9. A total of 22 stream sediment samples collected at these locations exhibited levels of uranium above background. Dames and Moore (1984) summarize the samples that exhibited elevated levels:

(1) All samples (10) collected upstream of the storm sewer outfall ditch exhibited concentration ranging from 7.5 ppm to 494 ppm with a mean of 175 ppm of uranium;

(2) All but two samples (8) collected at the Willey Road Bridge station (reported above background values in these samples range from 7.2 to 321 ppm with a mean of 61 ppm of uranium); and

(3) The remaining four above background values (ranging from 10-90 ppm) have been reported at the station opposite test well T-9.

Figure 4.7 exhibits the concentrations of uranium detected in groundwater for all samples taken at the site. The concentrations exhibited in this figure are the most recent values. Thus, the individual concentrations shown span the time period from 1982 to the present. From the reported analytical data, concentrations were converted, if necessary, to parts per billion values. The individual well depths are reported to illustrate the horizon of the aquifer from which the concentration value originated. Several features about the uranium concentrations distribution in groundwater can be

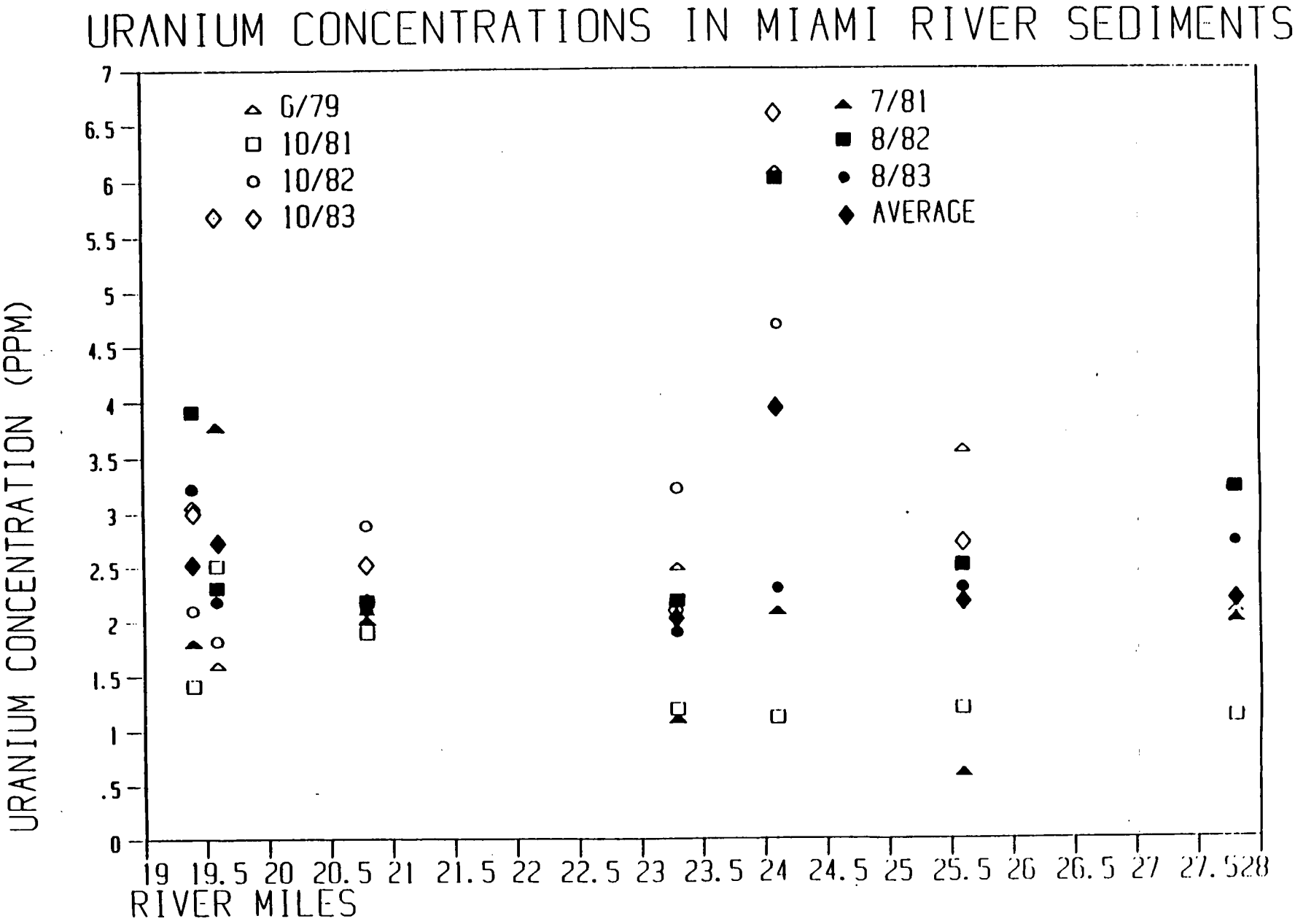
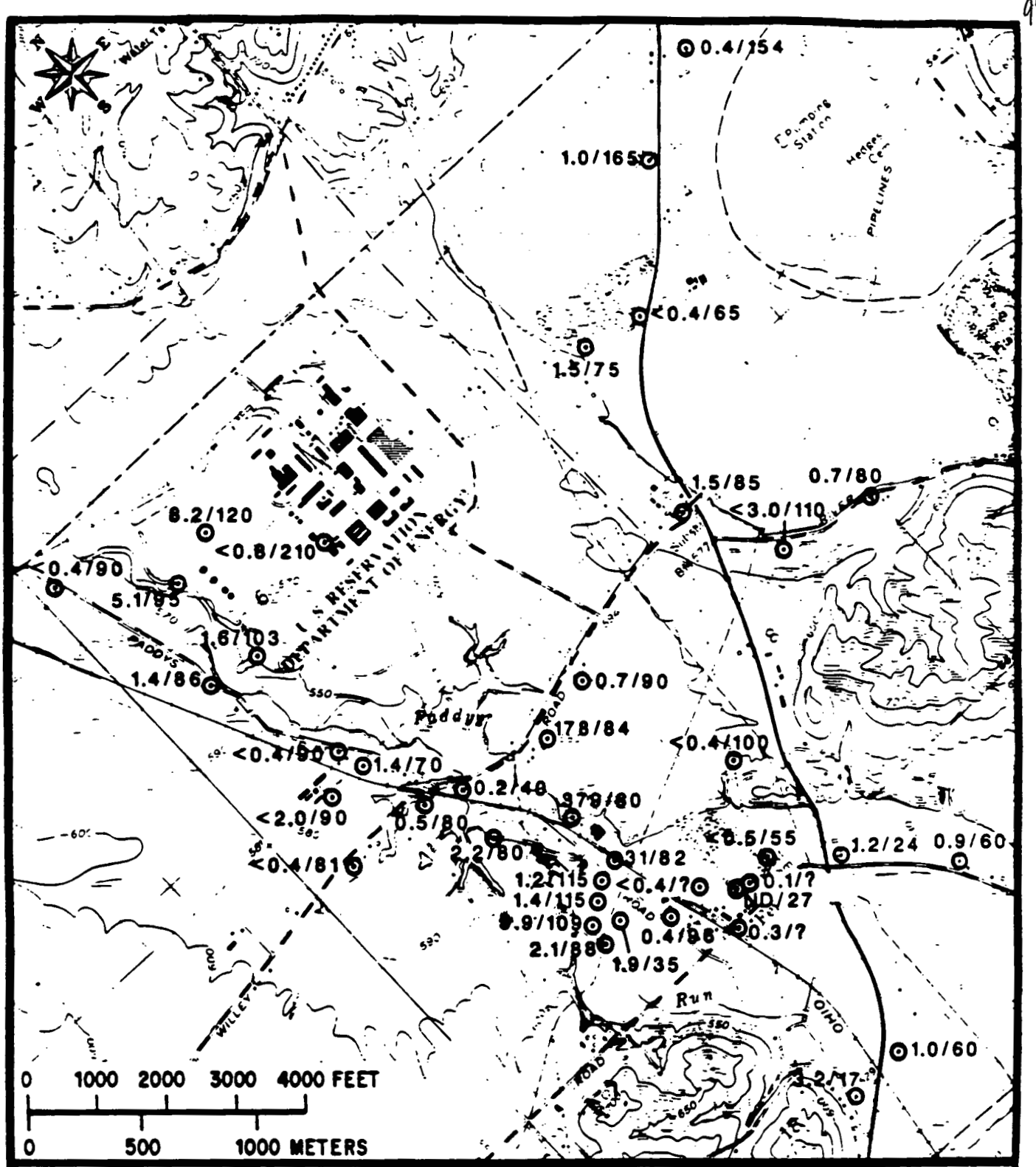


Figure 4.6. Uranium concentrations in stream sediments along the Great Miami River.



EXPLANATION

⊙ WELL LOCATION

0.5/55 — DEPTH OF WELL

URANIUM CONCENTRATION, PPB

ND - NOT DETECTED

GeoTrans
Ground Water Specialists

GEOTRANS, INC.
209 ELDEN STREET, SUITE 301
HERNDON, VIRGINIA 22070

FIGURE 4.7

CONCENTRATIONS OF URANIUM DETECTED IN GROUND WATER NEAR FERNALD, OHIO, 1982-1985

INTERPRETATION BY:	DRAWN BY:	DATE	PLATE

observed. The first is the rather limited areal distribution of sampling points. For example, the eastern portion of the FMPC has no monitoring wells. In the area of the waste pit lagoons, wells of intermediate depth exhibit elevated of uranium (8.2, 5.1 ppb). However, no shallow monitoring below the bottom of the lagoon is reported. Three wells exhibit rather high concentrations of uranium below the outfall of the ditch of FMPC facility. Note that these three wells possess intermediate depths (greater than 75 ft). The vertical distribution of sampling points needs to be increased in order to delineate the plume dimensions and depth. In the Fernald area, near the Mobil Oil facility and north of New Haven Road, wells of shallow depth possess concentrations below 1.0 ppb dissolved uranium. However, wells further to the south exhibit concentrations slightly higher than 1.0 ppb. Also, along the State Route 128 to north and east of the site, wells drilled to deep and intermediate depths exhibit concentrations greater than 1.0 ppb. To the northwest of Fernald, a series of intermediate depth wells have uranium concentrations in the 1.0 to 10.0 ppb range. These wells are located along the east bank of Paddy's Run Creek.

4.6 CONCEPTUAL MODEL OF THE STUDY AREA

The groundwater flow system near the FMPC facility consists of two major hydrogeologic environments. These environments mapped by Spieker (1968a), behave independently and can be characterized by more or less distinct hydraulic properties. Figure 4.8 illustrates the framework of the conceptual model utilized to guide this numerical model construction and application.

The valley-fill aquifer system was deposited within a deeply incised bedrock valley approximately 2 miles wide. The bedrock valley posseses rather steep vertical walls and a relatively flat valley bottom over which more than 200 ft of sands and gravels were deposited. The bedrock surface exhibits two significant features (Plate 4.1): (1) a deep trough incised to less than 350 ft in elevation along the general trend of the valley from Hamilton to west of FMPC; (2) a more shallow bench and channel starting near the

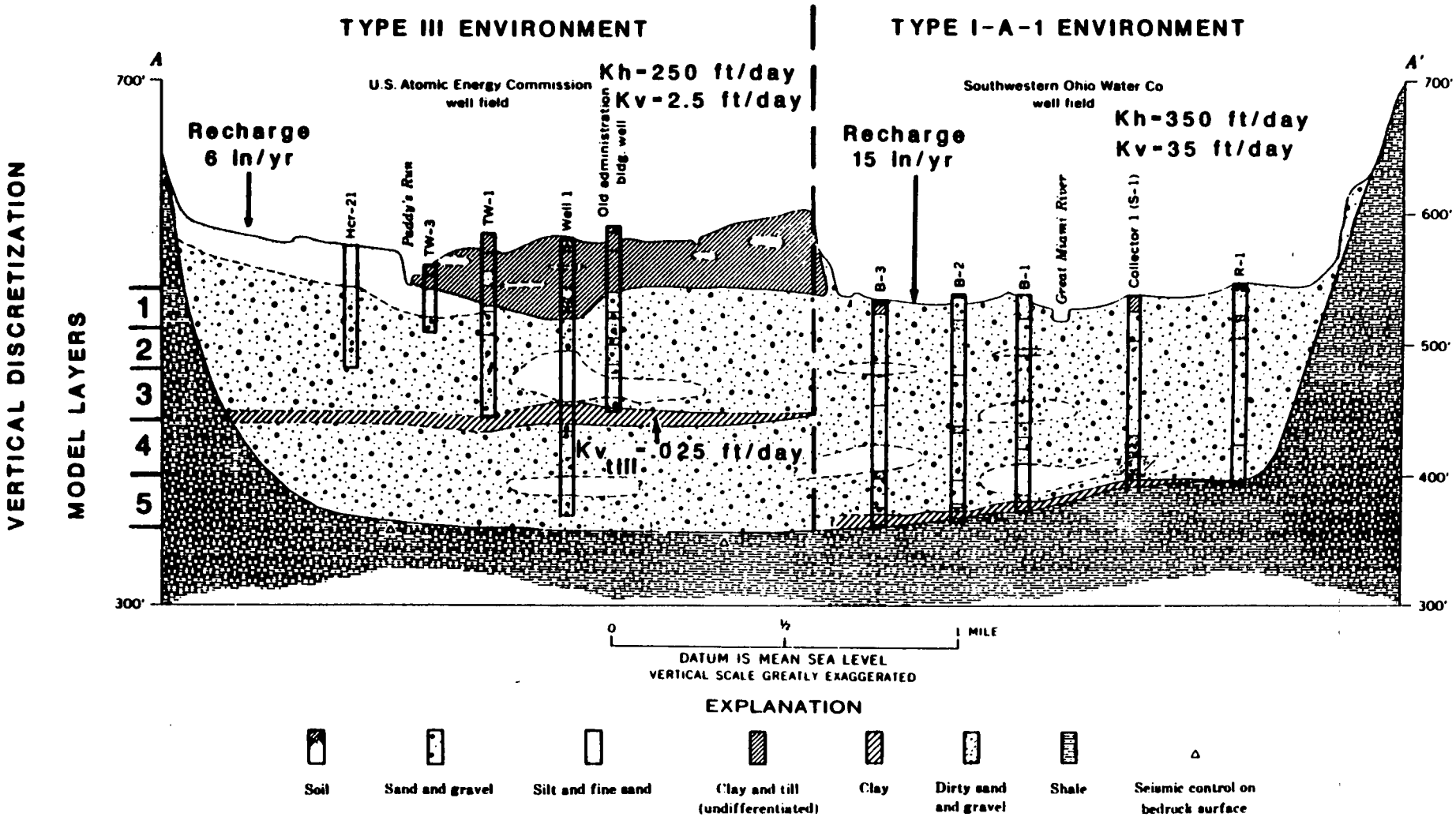


Figure 4.8. Summary of the conceptual model utilized to guide model application (modified after Spieker, 1968b).

Southwestern Ohio Water Company and Fernald which continues to the south along the present course of the Great Miami River.

The glacial system responsible for aquifer development deposited three distinct types of sediments within the bedrock valley: (1) ice-contact drift, (2) proglacial drift, and (3) till. These unconsolidated sediments are highly stratified and create directional changes in hydraulic properties over small spatial intervals. The aquifer has a composite fill of 200 to 250 ft in thickness. The saturated thickness is in the range of 110 to 160 ft. A close look at the internal character of this aquifer system suggests extreme heterogeneity on a local scale. Individual units or strata do not possess extensive lateral or vertical extent over large distances (tens of feet). However, these materials have been integrated into a single regional aquifer system. The integrated behavior of these strata are confirmed by the aquifer response during pump testing.

Near the FMPC facility, the aquifer framework consists of four distinct units including a surficial till, and a shallow and deep aquifer separated by a semiconfining bed of "blue" clay (Figure 4.8). Limited water-elevation data suggests that the blue clay acts as a leaky aquitard restricting the hydraulic communication between the upper and lower aquifer. The areal extent of the confining bed is not well established. Spieker's (1968a) interpretation of this type of environment shows many distinctive variations. Thus, additional drilling needs to be conducted to delineate this clay bed's areal extent and hydraulic behavior. The surficial till acts as a semipermeable cap in the Type III environment restricting recharge and the migration of contaminants. The bedrock valley walls are considered to be contributing negligible amounts of leakage to the unconsolidated materials for this model application.

The values of hydraulic parameters listed on Figure 4.8 are the values used for the calibrated model and in the particle tracking analysis. These values are in good agreement with the results of hydraulic parameters listed on Table 4.1. Spieker and Norris (1962) aquifer test results exhibited a hydraulic conductivity of 267 ft/day at FMPC. Aquifer test results at various locations (see Table 4.1) in the Type I-A-1 hydrogeologic environment exhibit a range in hydraulic

conductivity between 312 and 774 ft/day with an average of 393 ft/day. For aquifer tests conducted within the model domain, the hydraulic conductivity values ranged from 2380 to 3020 gal/day/ft^2 averaging 2,600 gal/day/ft^2 (347 ft/day). This aquifer system has an anisotropic distribution of hydraulic conductivity. This is due to the highly stratified character of the gravels, sands, silts, and clays contained in the aquifer. In materials of uniform texture, stratification alone imparts pathways of increased conductivity in the horizontal direction. If the clay content of the aquifer increases, further restrictions on vertical movement of water occur. Commonly, a 10:1 (horizontal to vertical) ratio of conductivity is used for models of uniform materials. For interlayered sands, silts, and clays, this ratio is greater because the horizontal flow is controlled by the more permeable laminae. Thus, an increase in the textural content of clays increases the anisotrophy ratio. GeoTrans' experience in model construction in similar stratified aquifers suggests that the anisotrophy ratio can range from 10:1 to over 200:1. The somewhat more uniform textural character (less clay content) of the Type I-A-1 environment suggests a first cut estimate should be less than the more clay-rich Type III unit. Appropriately designed field testing programs can quantify the anisotrophy ratio of these various aquifer environments.

In the main aquifer (Type I-A-1), recharge was estimated to be 15 in/yr by Spieker (1968a) in his analog model. A reduction in recharge to 6 in/yr was assumed for the Type III environment due to the presence of the surficial till. This value of 6 in/yr is the minimum estimated for the Great Miami River valley. These values are within the observed range for the aquifer system.

The water-level distribution of the groundwater flow system near the FMPC facility is influenced by several factors: the presence of surface water features such as Paddy's Run Creek, the Great Miami River, and possibly the Dry Fork of the Whitewater River, the location of major points of groundwater withdrawal such as the Southwestern Ohio Water Company, and the bedrock surface elevations near Fernald and New Baltimore.

The fluid potential (water level) distribution changes spatially and temporally in three-dimensions. These changes are an integrated

response to the interactions between physical framework (stratigraphy), the hydraulic property distribution (porosity, conductivity), hydrologic boundaries (recharge and discharge areas), and hydraulic stresses (pumping centers). In general, the observed flow direction is down the regional gradient of the drainage basin in the Type I-A-1 environment. The flow is from northeast to southwest, subparallel to the bedrock walls at the aquifer limits. Major deviations from this are noted in the proximity of pumping centers. A groundwater divide has been postulated by Spieker (1968a) in the western portion (west of Paddy's Run Creek) of the study area. This requires all groundwater flow from the main valley to be directed down the narrow valley(s) near Fernald and New Baltimore. The well control on this interpretation by Spieker is incomplete. An alternative interpretation may have the flow direction in the abandoned valley for the lower aquifer under FMPC to the west toward New Haven. In the shallow groundwater system, flow direction is controlled by topography, surface water features, and aquifer boundaries.

Based upon the present water-level data, the shallow groundwater near FMPC moves in both an easterly and southerly direction. This upper aquifer flow system has two groundwater divides, one each to the west and to the east of Paddy's Run Creek. Below New Haven Road, Paddy's Run Creek acts as a discharge area and receives groundwater from the shallow aquifer system for most of the year. Above Willey Road, the water-table elevations are below creek elevations and Paddy's Run assumes an influent relationship with the aquifer. The exact locations of the influent-effluent change of Paddy's Run Creek needs to be confirmed with more field analysis. Additional field measurements are also needed to confirm flow directions for both the upper and lower aquifer systems at FMPC.

This conceptual model suggests multiple potential groundwater pathways for migration of contaminants off the FMPC site. A potential pathway is south along the western edge of the facility toward Fernald and the Great Miami River. An additional pathway would be to the east or southeast either to and/or under the Great Miami River. Additional field evidence is necessary to confirm or reject these proposed

pathways. The three-dimensional flow model was constructed and initial boundary conditions formulated based upon this hydrogeologic framework.

5 NUMERICAL FLOW MODELING

5.1 CODE SELECTION

The computer code SWIFT II was chosen to model the groundwater flow system in the vicinity of the FMPC site. SWIFT II is a thoroughly documented, verified, and validated numerical model capable of simulating groundwater flow and contaminant transport in three dimensions (Cranwell and Reeves, 1981; Reeves et al., 1984a; Reeves et al., 1984b). The code has evolved through a structured quality assurance program (Ward et al., 1984) and has been used to evaluate a variety of hydrogeologic problems (Finley and Reeves, 1982; Reeves et al, 1984c). GeoTrans has made extensive use of SWIFT II in providing a defensible analysis of hydrogeologic systems ranging from contaminant transport at hazardous waste sites to seawater intrusion studies.

5.2 FLOW MODEL CONFIGURATION

5.2.1 Discretization

The area included in the FMPC model extended from the Whitewater River on the west to a north-south stretch of the Great Miami River located 1.5 miles east of Ross, Ohio. The bedrock valley walls formed the remaining model boundaries. The model domain extended 41,100 ft along the length of the Great Miami River valley and 26,400 ft across the valley. The model boundaries are shown in Plate 5.1 for the top layers of the model.

The model domain was divided into blocks that are defined by the finite-difference grid. Finite-difference theory, the basis for SWIFT II, assumes that both water levels and aquifer properties are constant within each grid block. Because of this assumption, areas exhibiting steep water-table gradients or areas of interest should be discretized into smaller blocks than areas far from the point of interest. The focus for this study was the Feed Materials Production Center. Grid blocks in the vicinity of FMPC had dimensions of 400 by 400 ft. The largest grid blocks were located at the outer edges of the model and had maximum dimensions of 2,000 by 2,000 ft. The finite-difference grid is shown in detail on Plate 5.1.

The aquifer was discretized into five layers in the vertical direction. Three-dimensional modeling was performed at the FMPC site for two reasons: (1) a thick, laterally continuous clay layer divides the aquifer into two aquifer units near FMPC; and (2) previous hydrogeologic studies performed by GeoTrans in the Great Miami River valley and similar hydrogeologic settings indicate that the vertical to horizontal anisotropy of hydraulic conductivity was a significant factor controlling the fluid potential distribution and groundwater flow.

The top two model layers were 30 ft in thickness and the bottom three layers were 40 ft in thickness. The overall aquifer thickness was 180 ft. The elevation of the top of layer 1, which is the top layer of the model, was 540 ft above mean sea level.

The finite-difference grid contained 41 rows and 41 columns of blocks. The actual blocks used in layers 1, 2, and 3 of the model are shown in Plate 5.1. Layers 4 and 5 did not contain all blocks shown on this Plate. Some blocks were removed from layers 4 and 5, because they were below the bedrock surface elevation. Blocks were removed in the vertical layers if the bedrock surface elevation was above the grid block center. The bedrock topography map shown in Plate 3.1 was used to define the model bottom.

In general, all layers were kept at a constant thickness of 30 or 40 ft. The one area that deviated from this rule was a narrow trough in the bedrock surface which extended the length of the model (see Plate 3.1). Blocks in layer 5 which crossed this deep trough were "stretched" an additional 30 ft in the vertical direction.

5.2.2 Boundary Conditions

Two types of boundary conditions were used in this numerical model. These included specified pressure (water level) and specified flux (flow rate) boundary conditions. Constant pressure boundary conditions are normally used to simulate rivers and consist of fixing the water elevation in a specified grid block for the duration of the simulation. Constant flux boundary conditions are used to simulate wells and areas receiving recharge. Constant flux consists of

specifying an amount of water entering or leaving a block from an external source or sink. Plate 5.1 summarizes the boundary conditions employed in the final calibrated model. Constant pressure nodes (a node is the center of a grid block) were used to simulate the Great Miami River, Whitewater River, and Paddy's Run Creek (south of Willy's Road) in the upper layer of the model. In addition to the river nodes, constant pressure conditions were maintained at hydrostatic pressure along the northeastern edge of the model in all five layers. Hydrostatic conditions were also maintained where the Great Miami River exits the study area near the southwest corner of the grid. Finally, a constant head of 500 ft was defined for the western edge of the model in layers 4 and 5 only. In all cases, the constant pressures assigned were identical to the value calculated for each grid block. This results in the river node being in total hydraulic connection to the aquifer. No leakage term was imposed on the river bottom.

The most common specified flux boundary condition imposed on the model was a no-flow boundary. No-flow boundaries are a special form of a constant flux boundary condition in which no water is allowed to pass through a particular block face. Thus, a no-flow boundary has a specified flux of zero. No-flow conditions were applied at the interface between the glacio-fluvial deposits and bedrock, both on the bottom of the aquifer and along the bedrock valley walls. Note the locations of the no-flow boundary on Plate 5.1.

Other constant flux nodes were located at pumping wells. A total of eight pumping centers were simulated. These included two wells at FMPC (one deep and one shallow), two collector wells at the Southwestern Ohio Water Company well field, three wells at Cincinnati's Boulton plant, and one well at the Water Association well field. Flow rates used in the model were yearly averages for 1984 as reported by The Miami Conservancy District (1985). Production rates and the grid location of these wells are shown on Plate 5.1. Note that the flux conditions used to simulate well fields are specified for only certain model layers.

The two collector wells used by the Southwestern Ohio Water Company were treated in a different manner from other wells, because the effective radius of each well was approximately 400 ft. The total flow rate of 16.6 mgd (averaged over several years) was divided evenly between the collector wells. The flow rate for each collector well was then uniformly applied to four adjacent blocks as shown in Plate 5.1 and in only two layers to more accurately simulate the effect of each large collector well.

The final constant flux boundary condition was a recharge rate applied to the upper layer of the model. Two different recharge areas were simulated. The main river valley received 15 in/yr while the area near FMPC underlain by the surficial glacial till received 6 in/yr. Both rates were within the range of recharge estimates for the Great Miami River valley reported by various researchers. The two recharge areas are shown on Plate 5.1.

5.2.3 Aquifer Properties

Aquifer properties necessary to simulate groundwater flow in three dimensions include hydraulic conductivity in the x-, y-, and z-directions and porosity for each grid block (porosity is only used in the particle tracking analysis). In most modeling applications, data are not sufficient to assign unique values of hydraulic conductivity and porosity to each grid block. Therefore, these properties are assigned in zones. Only two zones of hydraulic conductivity were justified in this application because of the limited water level, geologic, and hydraulic property data. The two hydraulic conductivity zones used in the FMPC model are coincident with the two recharge zones.

Hydraulic conductivity for the main river valley was 350 ft/day in both the x- and y-grid directions and 35 ft/day in the vertical (z-) direction. In the area near FMPC which received a recharge rate of 6 in/yr, the horizontal hydraulic conductivity was 250 ft/day and the vertical hydraulic conductivity was 2.5 ft/day. Porosity was specified at a 0.20 value for the entire aquifer. This porosity value has not been confirmed by field testing but is representative of similar aquifer systems.

The laterally continuous clay layer penetrated by FMPC boreholes was simulated by reducing the vertical hydraulic conductivity between layers 3 and 4 to 0.025 ft/day in the till area. By simulating a clay layer in this manner, storage in the confining zone is not included in the analysis. However, storage is unimportant in a steady-state model formulation.

5.3 FLOW MODEL CALIBRATION AND SENSITIVITY ANALYSIS

5.3.1 Calibration

Model calibration is the process whereby aquifer parameters and boundary conditions are systematically adjusted until the calculated water levels approximate the observed water levels within a given tolerance or error. The calibration results are a measure of how well the modeled system represents the physical conditions. The calibration can be transient or steady-state. In a transient calibration water levels are matched for specific times during the period of simulation. A steady-state calibration approximates the average yearly conditions. In a steady-state model, the assumption is made that the long-term water level changes are negligible for the system being modeled. The FMPC model uses the steady-state formulation.

A crucial step in the calibration process is the selection of an acceptable tolerance between calculated water levels and the observed water levels for the aquifer system(s). Selection of an acceptable tolerance is a function the complexity of the flow system (fluid potential distribution) and the amount and reliability of data supporting the conceptual model. In most instances, this is a subjective process requiring extensive experience. It should also be understood that the tolerance criteria may vary throughout the model domain based upon the reliability of the data and the area of primary interest of the model. For example in this application, the FMPC area is of primary concern whereas areas to northeast, near the Cincinnati Bolton well field, are of secondary importance and can have a larger acceptable deviation.

Hydraulic parameters are adjusted within a range based upon observed field tests or representative data so that the calculated values are within the acceptable tolerance. The range of hydraulic parameters should be consistent with the conceptual model and with the range observed for similar hydrogeologic systems (glacio-fluvial valley-fill aquifers in this case).

Appropriately calibrated models have parameters grouped by zones based upon a conceptual model of the hydrogeologic system. The conceptual model is based on all available data for the area being modeled. The amount of data compiled for this model application at FMPC justified at best only two material zones and the use of only selected observation wells with wide areal distribution as the calibration target. The data base could not support the development of a potentiometric surface map as the calibration target, nor could the existing hydrogeologic data base support varying aquifer properties in more than two zones.

The tolerance criteria used for this steady-state calibration were based on the standard deviation of the observed water levels within the modeled area. An accurate analysis of water-level trends requires continuous recording of water levels over time. Four wells equipped with continuous recorders were located within the model boundaries. These include BU-80, BU-13, H-4, and H-2 (see Plate 3.1). The standard deviations from the average water levels recorded between June 1983 and June 1984 were 2.54 ft, 2.25 ft, 2.20 ft and 2.20 ft, respectively. Therefore, for the FMPC steady-state simulations a difference between observed and calculated water levels of ±2.5 ft was considered to be acceptable for wells BU-80, BU-13, H-4, and H-2.

The remaining wells used for model calibration had only single measurements taken in August, 1984. No statistical tolerance could be used for these wells, but an attempt was made to calibrate within ±2.5 ft of those observed levels based on long-term observations at the previously mentioned wells. Water-level measurements from domestic water wells were used with caution in this study, because the tops of casing were not surveyed to determine precise elevations. Elevations for these wells were estimated from a topographic map. Consequently, these measurements may be in error by as much as ±5 ft (one-half of one contour interval).

A total of 24 wells were used for model calibration. Ten were in layer 1 (shallow) and fourteen were in layer 4. The final calculated and observed water levels are listed in Tables 5.1 and 5.2 for layers 1 and 4, respectively. Eight of ten water levels in layer 1 and twelve of fourteen water levels in layer 4 were within a tolerance of 2.5 ft. Fourteen of the 24 calculated water levels used for calibration were within 1.5 ft of the observed water level. The largest difference between observed and calculated water levels was -4.3 ft at well H-113 in layer 4. Well H-113 is too shallow (only 90 ft deep) to be truly representative of layer 4. Because of known vertical gradients in the aquifer system, the calculated model values in layer 4 should be less than the observed water level at H-113. Water levels measured in well H-113 were considered to define a maximum water level in layer 4.

The boundary conditions and aquifer properties used in the final calibrated model were described in the previous section. In summary, the horizontal hydraulic conductivities were 350 ft/day in the main river valley (Type I-A-1) and 250 ft/day in the area underlain by surficial till (Type III). The vertical hydraulic conductivities were 35 ft/day and 2.5 ft/day, respectively. The till area received 6 inches of recharge per year, while the main valley received 15 in/yr. A constant head of 500 ft was fixed in layers 4 and 5 along the western boundary. The potentiometric contours calculated by the model for layers 1 and 4 are shown on Plates 5.2 and 5.3, respectively.

The groundwater flow directions calculated by the calibrated model are generally consistent with those of Spieker (1968a) and Sedam (1985). Most data collected to date support the presence of a groundwater divide in the vicinity of the site. Both Spieker and Sedam interpreted the divide to be east of the FMPC boundary site. This preliminary modeling analysis, however, shows a divide with a curvilinear trace from southeast to northwest. In general, the divide runs from the bedrock island to the intersection of Willey Road and the FMPC access road and then across the southwestern corner of the production area to the south of the waste pit lagoons (Plate 5.2). This divide calculated by the model was observed south of the waste

Table 5.1. Calibration results for layer 1.

Well number	Observed water level	Calclated water level	Residual*
H-113	530.2	528.9	-1.3
#4	525.9	527.5	+1.6
H-134	526.3	527.1	+0.8
H-102	523.3	525.7	+2.4
H-105	520.9	522.5	+1.6
H-115	515.2	512.8	-2.4
9-LO-1	515.2	518.1	+2.9
17-3	504.4	507.5	+3.1
H-126	510.2	509.5	-0.7
H-124	504.3	505.2	+0.9

*observed water level minus calculated water level

Table 5.2. Calibration results for layer 4.

Well number	Observed water level	Calibrated water level	Residual**
BU-80*	532.3	531.0	-1.3
BU-13*	524.8	526.2	+1.4
BU-204	524.6	523.4	-1.2
H-4*	521.4	519.2	-2.2
H-114	518.6	519.9	+1.3
H-2*	519.3	518.3	-1.0
H-109	517.0	518.5	+1.5
H-113	530.2	525.9	-4.3
NLO/1-D	524.4	524.1	-0.3
PW-3	523.7	522.0	-1.7
H-115	515.2	513.7	-1.5
18-4	506.0	507.0	+1.0
H-124	504.3	505.2	+0.9
17-3	504.4	507.5	+3.1

*wells with continuous recorders

**observed water level minus calculated water level

pit area in both the upper and lower aquifers, layers 1 to 3 and 4 to 5, respectively (Plates 5.2 and 5.3). In either case, groundwater flows in a southerly direction south and west of the divide through the bedrock col near Fernald toward the present Great Miami River. East of the divide, groundwater flows to the southeast toward the Southwestern Ohio well field and the Great Miami River. It is important to note that in intermediate and deeper portions of the aquifer, the Great Miami River does not necessarily act as a hydraulic barrier. Thus groundwater flow under the river does occur especially in areas influenced by heavy production. The field data collected to date are not sufficient to define the location of this important groundwater divide. See the discussion in Section 5.4 for a better definition of the divide location.

Limited field data are available for the area west of Paddy's Run. Spieker (1968a) interpreted the area near the Whitewater River to be a regional groundwater divide. In this model, the Whitewater River was formulated as a constant head boundary. This formulation produced steep gradients east of Whitewater River (Plate 5.2). Water levels in the lower aquifer were also assigned a constant head of 500 ft along the western boundary of the model (Plate 5.1). This boundary condition is consistent with the regional potentiometric contours as reported by Spieker. However, no shallow water-level data were available for this western portion of the model. The model with this boundary produced a divide in the lower aquifer (Plate 5.3).

This divide trends in a north-south direction more or less coincident with Crosby Road and the cross valley hilltop between the Whitewater River and Paddy's Run. Thus, consistent with the Spieker data, the model exhibits flow to the west in the lower aquifer system west of Crosby Road. To the east of Crosby Road, the model exhibits flow directions to the southeast toward Fernald (Plate 5.3). In the shallow aquifer (Plate 5.2), the flow direction in the western portion of the model domain is entirely to the east through the bedrock valley col at Fernald. Additional field data should be collected in order to confirm the model results for this western-most portion of the flow system.

5.3.2 Sensitivity Analysis

The sensitivity of the model to changes in aquifer properties and boundary conditions was analyzed to better define data base deficiencies and to assess model uncertainty. A formal sensitivity analysis is performed by systematically changing the value of one model parameter or boundary condition and observing the reaction of the calibrated model to the change. The impact of this change on system behavior is assessed by a comparison of the calculated water elevations for the calibrated model to the water levels calculated by the model with the single parameter change. Those parameters exerting a controlling influence on the system usually result in a large change. Those parameters that cause large changes in model results then become the focus for additional data collection and further analysis.

The parameters varied in the FMPC model were horizontal hydraulic conductivity, vertical hydraulic conductivity, and the boundary condition imposed on the western boundary near the Whitewater River. Recharge was not varied because estimates for the area covered a narrow range of values, much less than one order of magnitude. Variations in recharge also produce the same effects on water levels as varying hydraulic conductivity. For example, an increase in water elevations can be reproduced by either increasing the recharge rate or decreasing hydraulic conductivity. Four sensitivity runs will be presented in detail, as shown in Table 5.3.

This table exhibits the observed water elevations at selected points in model layer numbers 1 and 4 as well as the calculated water elevations for the final calibration run and their differences from the observed data. For the following discussion, compare the observed water level and the calibration run value with each particular sensitivity run value in order to evaluate the change on system behavior.

The vertical hydraulic conductivity in the main aquifer environment was reduced by a factor of ten in sensitivity run 1 (Table 5.3). The reduction was specified in Type I-A-1 and Type I-A-2 environments (Figure 4.8), but not in the area west of the Big Bend (Type III). The change showed only minor effects in the upper 3

Table 5.3. Calculated water levels and deviation from observed water levels for the calibration and sensitivity runs.

Well number	Observed water level	Calibration run	Sensitivity Run #1	#2	#3	#4
		Model layer 1				
H-113	530.2	528.9 (-1.3)	528.7 (-1.5)	528.2 (-2.0)	528.5 (-1.7)	527.1 (-3.1)
H-134	526.3	527.1 (+0.8)	526.8 (+0.5)	526.6 (+0.3)	526.6 (+0.3)	529.9 (-0.4)
H-105	520.9	522.5 (+1.6)	523.2 (+2.3)	522.5 (+1.6)	522.2 (+1.3)	521.5 (+0.6)
H-126	510.2	509.5 (-0.7)	509.8 (-0.4)	510.7 (+0.5)	509.3 (-0.9)	509.5 (-0.7)
		Model layer 4				
BU-80	532.3	531.0 (-1.3)	530.5 (-1.8)	530.3 (-2.0)	531.0 (-1.3)	531.0 (-1.3)
BU-13	524.8	526.2 (+1.4)	525.9 (+1.1)	525.7 (+0.9)	526.2 (+1.4)	526.2 (+1.4)
BU-204	524.6	523.4 (-1.2)	523.6 (-1.0)	522.9 (-1.7)	523.4 (-1.2)	523.4 (-1.2)
H-114	518.6	519.9 (+1.3)	518.3 (-0.3)	516.9 (-1.7)	519.9 (+1.3)	519.9 (+1.3)
NLO/1-D	524.4	524.1 (-0.3)	520.4 (-4.0)	519.7 (-4.7)	523.4 (-1.0)	522.2 (-2.2)
H-2	519.3	518.3 (-1.0)	515.1 (-4.2)	512.8 (-6.5)	518.3 (-1.0)	518.3 (-1.0)

Sensitivity run changes

#1 - $K_x = K_y = 350$ ft/day $K_z = 3.5$ ft/day

#2 - $K_x = K_y = 225$ ft/day $K_z = 2.25$ ft/day

#3 - Western boundary condition altered to constant head of 490 ft in lower aquifer.

#4 - Western boundary condition altered to no-flow boundary without Whitewater River.
Note that aquifer parameters were changed to $K_x = K_y = 100$ ft/day $K_z = 1$ ft/day.
Recharge = 15 inches/year throughout the model domain.

layers near FMPC; however, water levels declined significantly (4.0 ft) in the lower aquifer at FMPC (see Table 5.3, NLO/1-D). Similar declines were noted near the Southwestern Ohio Water Company's collector well no. 1 (see Table 5.3, H-2). The main effect of reducing vertical conductivity was to reduce the rate of induced infiltration, causing more drawdown in the lower aquifer from which production occurs. The upper aquifer was only moderately affected by this change.

In the second sensitivity run (Run #2), the horizontal hydraulic conductivity was reduced to 225 ft/day in the entire aquifer. The hydraulic conductivity anisotropy ratio was kept at 100:1 as in the first run. Similar to results of the first run, water levels in the upper aquifer at FMPC were not greatly affected. However, water-level declines in the lower aquifer were greater.

The sensitivity of the calibrated model to the value of constant head in the lower aquifer on the western boundary was tested in sensitivity run no. 3. The water levels in this run deviated by no more than 0.5 ft from the calibration run. This suggests that the flow system at FMPC is not sensitive to the western boundary condition specified in this model.

An extreme test of the significance of the western boundary was conducted by removing the Whitewater River from the model and assigning a no-flow boundary in all layers along the western edge. This is similar to that condition imposed by Spieker (1968b) for his electric analog model. In general, the heads at FMPC dropped significantly in layers 1 and 4. The water levels in the main river valley were relatively unaffected by this boundary change. Thus, the significant impact of this boundary condition change necessitated recalibration of the model.

The model was recalibrated keeping the western edge as a no-flow boundary in all layers and the constant head condition representing the Whitewater River was removed from the model. The results of the recalibration are shown in Table 5.3, run no. 4. Although the water elevations were generally within the 2.5 ft of acceptable tolerance, the hydraulic conductivity of the upper 3 layers (shallow aquifer-Type III environment) had to be reduced to 100 ft/day. This conductivity

is lower than the observed field tests. However, the overall groundwater flow directions remained the same as in those of the initially calibrated model. In addition, in order to match the observed water elevations, the recharge rate to the water table had to be increased from 6 in/yr to 15 in/yr for the Type III environment. This increase in recharge was necessitated because the constant head boundary condition simulating the connection of the Whitewater River with the shallow aquifer was removed. Thus the lack of constant head specification did not supply leakage to the shallow aquifer to keep water levels elevated in the western portion of the model.

The calibrated model configuration and boundary conditions described in Section 5.2.2 and Plate 5.1 are the most appropriate formulation because of the following:

(1) The Whitewater River sustains flow throughout the year. This suggests hydraulic connection with the shallow aquifer system. The inclusion of the White River in the model would apparently better represent the physical features of the hydrologic system.

(2) The hydraulic conductivity and recharge rate values utilized in the model are consistent with observed field data and the expected range for this type of aquifer system.

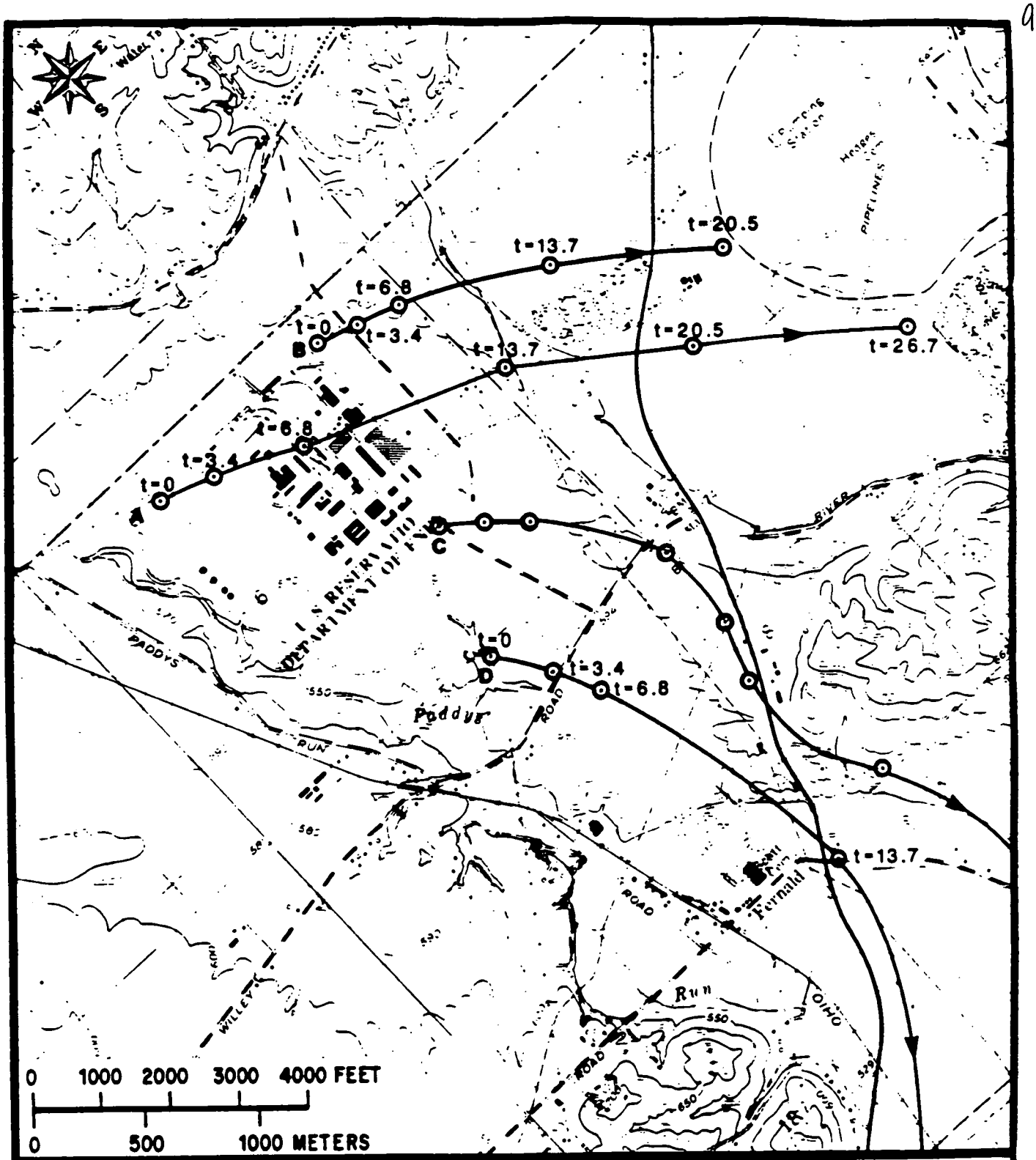
5.4 PARTICLE TRACKING ANALYSIS

Particle tracking is a simplistic method of illustrating the potential transport pathways of contaminants. Particle tracking is a worst case approach in that no retardation (adsorption on clays, chemical or radioactive decay, or chemical reactions), dispersion, or dilution are considered in the analysis. The method is useful because the general migration paths and travel times are based on the velocity field from a calibrated flow model. The individual particles can be started in any grid block of the model domain. The program calculates the migration path of the particle over a given time interval.

The particle track represents the center of mass of a contaminant plume which emanates from the specified source location. The calculated travel times are representative of first arrival times of non-reactive chemical species. The effects of chemical reactions, adsorption, radioactive decay, dispersion, and dilution are not included in the analysis.

Groundwater velocities calculated by the SWIFT II code for the FMPC calibrated flow model were input into the STLINE program for particle tracking. Particles were started in layer 1 at four locations around the FMPC site (Figure 5.1). Particle A was initialized at the main waste pit area of FMPC production area. Particle B was started near the northeastern edge of the production area. Particle C was started near the southeastern edge of the production area. Particle D was started at the water table beneath the outfall ditch just east of Paddy's Run Creek. Particles A and D were started in areas of known contamination. Particles B and C were used to further describe the flow system and to illustrate the location of the groundwater divide calculated by the calibrated model.

The particle flow paths from an areal viewpoint clearly show a northwest-southeast trending groundwater divide in the vicinity of the FMPC site (Figure 5.1). Particles A and B travel to the southeast and discharge in the Great Miami River. Particles C and D travel to the south also discharging into the Great Miami River west of New Baltimore. The travel times for these particles to their ultimate discharge points was on the order of 20 to 30 years. In the vertical cross section along each particle trace, the particles did move in a vertical direction. Particles A and B, started in the northern most corners, migrated to at least 85 ft below the water table. In the numerical model, this corresponds to layer number 3, the lower most part of the upper aquifer system. The vertical trace exhibits upward flow on the westward side of the Great Miami River. This analysis suggests no underflow below the Great Miami River. Water level measurements to document vertical gradients are lacking within the data base. Previous compilation of water-level data for the same aquifer system near the Chem-Dyne hazardous waste site in Hamilton, Ohio shows that vertical hydraulic gradients are created near high production centers (greater than 1.0 mgd). Increased vertical gradients near the river as well as below the FMPC facility could set up a deeper flow path within the system and result in particle flow underneath the Great Miami River to the discharge wells at the Southwestern Ohio Water Company. Further detailed model analysis as



EXPLANATION

⊙ PARTICLE LOCATION, TIME, t, IN YEARS

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FIGURE 5.1

PARTICLE TRACES FOR CALIBRATED MODEL VELOCITY FIELD

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well as field investigation is required to substantiate this potential flow direction.

Sedam (1985) observed that three wells (H-114, 120, 106) located on the eastern and southeastern perimeter of the FMPC facility (Plate 1.1) exhibited dissolved uranium concentrations of 1.0, 1.5, and 1.5 ug/L, respectively. These wells also have total depths of 165, 75, and 85 ft, respectively. The reported concentrations were located outside the main area of elevated concentrations below the outfall discharge ditch.

This model analysis presents an alternative explanation for the concentrations in these three wells. The predicted groundwater divide would mean that these wells are in the same drainage basin and downgradient from a potential contamination source (FMPC production area and waste pits). In addition, the vertical trace of particles suggests migration to lower portions of the upper aquifer. This may be the reason for relatively deep wells (H-114, 165 ft; H-120, 75 ft; H-106, 85 ft) exhibiting above background concentrations of uranium. To suggest that the source of these uranium concentrations is from air emissions is probably erroneous because of the depth of the open interval of the well. These observed concentrations are the result of groundwater transport introduced into the groundwater upgradient from the stated well locations. However, this does not discount air emissions in general as a potential source of groundwater contamination. The vertical traces of Particles C and D, the two southern most particles, migrate to a maximum depth of 45 ft below the water table. This is coincident to the interface of model layers 2 and 3. This is below the depths of wells H-108, -111, -121 which exhibited the highest concentrations of dissolved uranium. These particles were observed to migrate upward in response to the top of bedrock surface (Plate 3.1) south of the Village of Fernald. Note that the particle tracking analysis suggests vertically upward migration south of New Haven Road to the northwest of New 3altimore. This is the same area where the top of bedrock elevation increases to approximately 420 ft. This is consistent with the observation that wells sampled to the south of New Haven Road exhibited concentrations

of uranium above that of deeper wells in the Fernald area (Table 5.4) north of New Haven Road. Except for H-128, these wells are located east of Paddy's Run.

Two significant conclusions can be drawn from this preliminary modeling and particle tracking analysis: (1) it is possible that contaminants released from the main waste pit could travel toward the Great Miami River and possibly the Southwestern Ohio Water Company well field; and (2) contaminants seeping into the aquifer near the outfall ditch would not necessarily discharge directly into Paddy's Run Creek, but would travel south toward the Great Miami River below Fernald and west of New Baltimore. A conservative species travel time to these two areas is estimated to be approximately 20 to 30 years.

Table 5.4. Concentrations of uranium in wells between Fernald and New Baltimore.

Well designation	Depth (ft)	Uranium (ug/L)
North of New Haven Road		
H-118	?	0.4
H-115	96	0.5
H-117	27	0.4
H-119	55	0.5
H-125	80	2.0
South of New Haven Road		
H-126	24	1.2
H-129	60	0.9
H-124	60	0.6
H-128	17	3.2

Source of data: Sedam (1985)

6 DATA ASSESSMENT, DEFICIENCIES, AND RECOMMENDATIONS

6.1 DATA BASE DEFICIENCIES

The primary deficiencies in the hydrogeologic data base for the FMPC site can be categorized into three subsets: fluid potential distribution data, data about the distribution of contaminants within the aquifer, and data about the distribution of aquifer properties. These areas of deficiency should be compiled three-dimensionally throughout the site.

6.1.1 Water-Level Data

The principle hydrogeologic deficiency is the limited water-level monitoring data. Water-level data are fundamental to identifying groundwater flow directions and seasonal variations in flow direction. In order to adequately characterize this flow system, accurate water-level or potentiometric measurements must be taken at regular intervals over time. In addition, measuring points should be well distributed in space in both the horizontal and vertical directions.

The existing water-level data base for the area surrounding the FMPC site consists of only single measurements taken by the USGS in August 1984 or other much earlier measurements. Thus, no analysis of water levels over time could be made to determine the yearly average water elevations and their seasonal variations.

Water-level measurements made in domestic wells were of limited use because the casing elevations were not accurately surveyed and because measured water levels may also be subject to residual effects of pumping. The well elevations were estimated from a USGS topographic map. The contour interval of the map was 10 ft. The accuracy of such an estimate would normally be ±5.0 ft. The distribution of wells used in the previous survey (Sedam, 1985) would have been adequate in most areas of the shallow aquifer had the casing elevations been properly surveyed. Very few water-level measurements were available to define groundwater flow directions in the intermediate and deep aquifers underneath the FMPC facility.

Two key geographic areas lack sufficient control for both the upper and lower aquifer. These include the area north and west of the

site toward the Whitewater River and the area immediately east of the site between FMPC and the Southwestern Ohio Water Company well field. The latter is the most critical area because of the importance of a groundwater divide between the well field and FMPC. The USGS interpretation of a major divide east of the site is not supported by either existing water-level data or this modeling study. Location of the groundwater divide is important to evaluate the potential for eastward contaminant migration.

Additional data west of the site is also necessary. These data are necessary to assess the nature of the hydraulic connection between Whitewater River and the shallow aquifer system. These data would be valuable in more accurately defining horizontal and vertical gradients across the study area and would result in better model boundary condition specification. This would lead to a more refined analysis.

Detailed analysis of vertical hydraulic gradients at the site could not be assessed due to the lack of cluster wells. Cluster wells consist of several closely spaced wells drilled and hydraulically isolated at various depths. Quantification of vertical hydraulic gradients is critical in a stratified aquifer if contaminant migration pathways are to be accurately defined.

6.1.2 Water Quality Data

The groundwater geochemical data base exhibits deficiencies similar to those in the hydrogeologic data base. The distribution of data is not adequate to allow confirmation or rejection of the presence of potential contaminant plumes at the site. The areas in which water quality data needs to be collected are the same as for water-level data. This would be taken into account when adding to the monitoring well network through single well tests and associated water quality sampling.

The other main deficiency in the groundwater quality data base is the lack of analyses for other elements besides uranium. Other chemicals of concern would be radium, plutonium, lead, thorium, nitrate, sulfate, and organic solvents. Some of these elements could be part of the FMPC waste stream and would be of greater concern with respect to public health than uranium.

6.1.3 Aquifer Properties

Only one aquifer test has been conducted at the FMPC site. Several detailed pumping tests are required to determine aquifer hydraulic conductivity, storage, and anisotrophy ratios of the various hydrostratigraphic units below FMPC. These values would be necessary to confirm the hydraulic properties used in the preliminary model calibration process. The role and areal extent of the blue clay confining bed is undefined. On the whole, the spatial distribution in aquifer properties and their variation is poorly defined.

6.2 MONITORING PROGRAM DESIGN

GeoTrans has designed a monitoring program to address deficiencies in the hydrogeologic and chemical data bases. The goals of the new program are: (1) to better define groundwater flow directions through a more complete water-level monitoring program; (2) to more accurately determine aquifer hydraulic properties; (3) to better define the existing uranium plume; and (4) to determine whether uranium is the only element or chemical of concern in the existing contaminant plume(s). This program does take into account all drilling and testing completed by Dames and Moore for their Task C Final Report submitted July 29, 1985.

6.2.1 New Monitoring Wells

We recommend that new monitoring wells be drilled in clusters of three wells each, classified as shallow, intermediate, and deep. All monitoring wells will be screened over a ten foot interval. The top of the shallow screen will be 10 ft below the water table. The top of the intermediate screen will be 10 ft above the major clay layer or half way between the water table and bedrock where the clay is absent. The top of the deep screen will be 20 ft above the aquifer bottom. The deep well will be drilled first so that depths of the shallow and intermediate wells can be accurately determined. During the installation of each well and well cluster, appropriate well logging and changes in stratigraphy should be noted. This stratigraphic data should be integrated with existing well logs to construct a complete understanding of the textural and lithologic

framework of the aquifer near FMPC. This is especially critical to the areal extent and thickness of the blue clay confining bed in the Type III environment.

During the well drilling program appropriate aquifer tests should be conducted. These tests should be designed with multiple observation wells and configurations in order to evaluate the parameters of hydraulic conductivity, anisotropy ratio, effective porosity, confining bed leakance, and coefficient of storage and/or specific yield.

Locations of the new monitoring wells were chosen to fill in data gaps to the south and east of the site as well as to the west. A total of 11 additional shallow wells, 11 intermediate wells, and 14 deep wells are proposed. The locations of the shallow, intermediate, and deep wells are shown in Figures 6.1, 6.2, and 6.3 respectively.

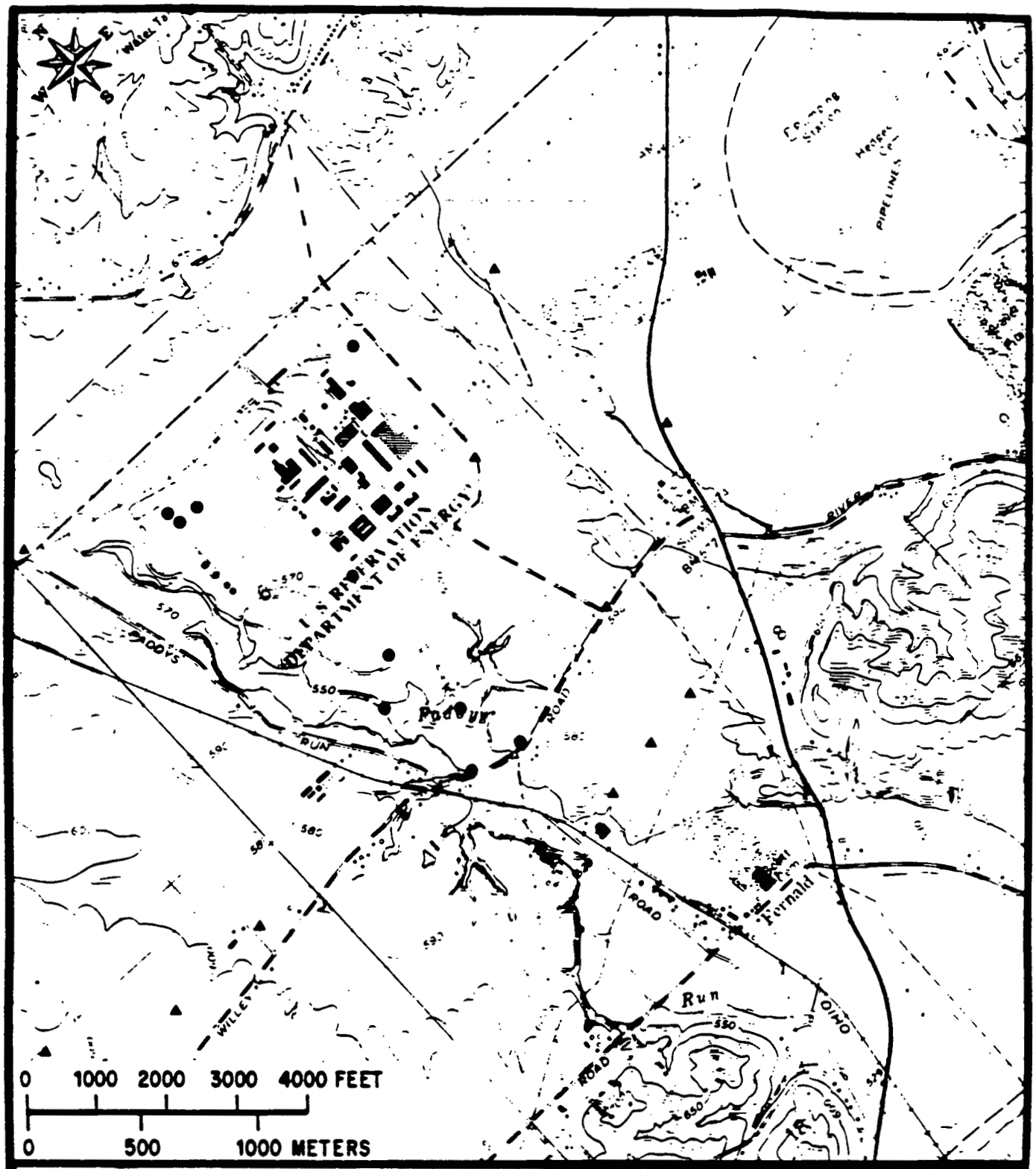
6.2.2 Water Level Monitoring

We recommend that water levels be measured monthly in all monitoring wells. Continuous water-level recording devices should be installed in each well of two cluster locations, or a total of six wells.

An inventory of all domestic wells in the area should also be conducted. All wells which are accessible and which have construction records should be added to the monthly water-level monitoring program. Once all domestic wells have been located, the surface casing elevations should be accurately measured by a registered surveyor. The well elevations should be tied in to the NLO benchmark(s) utilized for their monitoring wells.

6.2.3 Geochemical Monitoring

GeoTrans recommends a phased approach to water quality monitoring. Phase I will be conducted with a complete EPA priority pollutant scan for water samples collected from all monitoring wells. Included in the priority pollutant scan will be uranium, radium, thorium, and plutonium. The priority pollutant scan will be performed only once. The goal of this phase is to define the presence of all potential contaminants.



EXPLANATION

● EXISTING SHALLOW MONITORING POINT

▲ PROPOSED SHALLOW MONITORING POINT

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FIGURE 6.1
PROPOSED LOCATIONS
OF SHALLOW MONITORING WELLS

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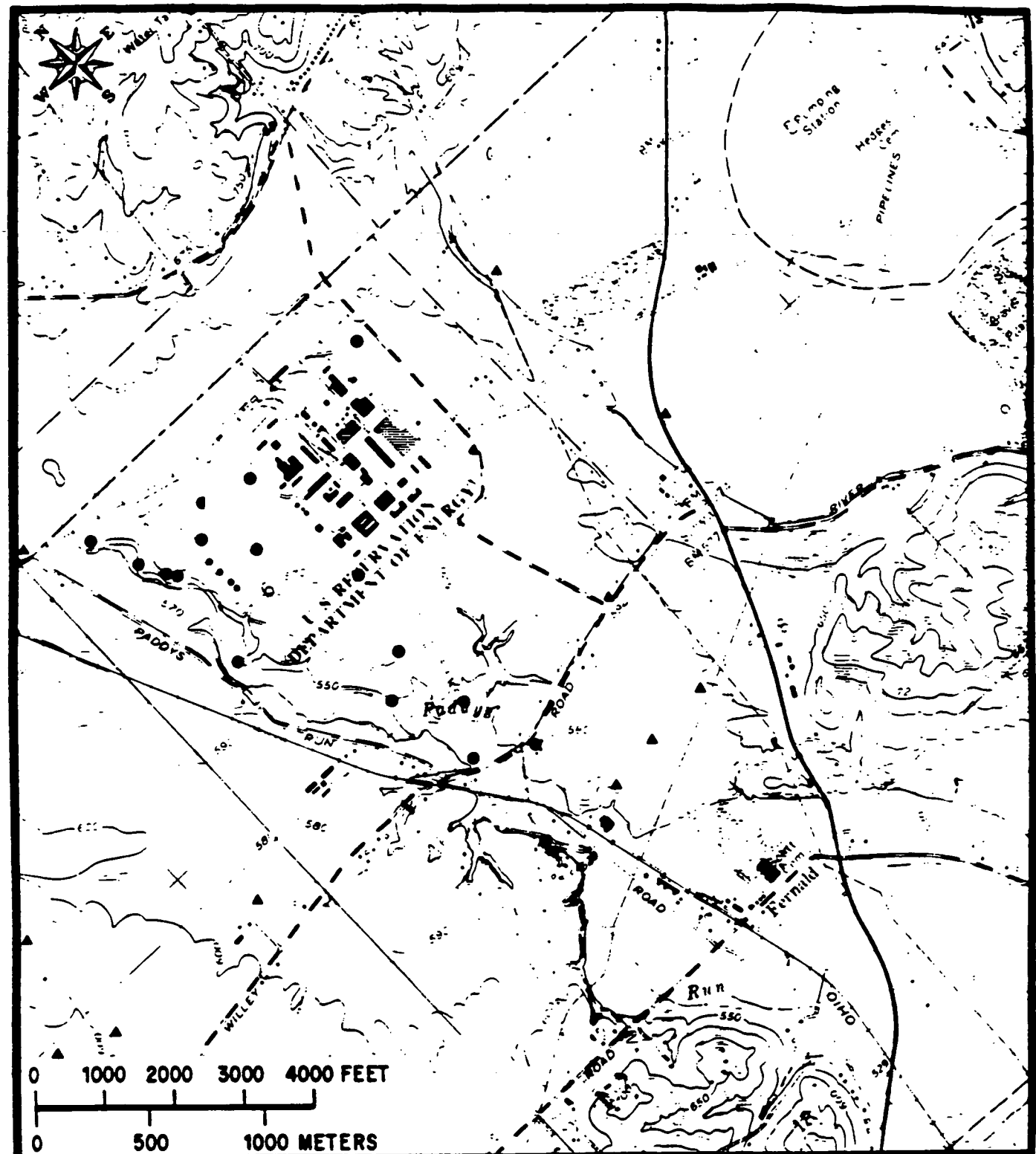

EXPLANATION

- ● EXISTING INTERMEDIATE MONITORING POINT
- ▲ PROPOSED INTERMEDIATE MONITORING POINT

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FIGURE 6.2
PROPOSED LOCATIONS OF
INTERMEDIATE MONITORING WELLS

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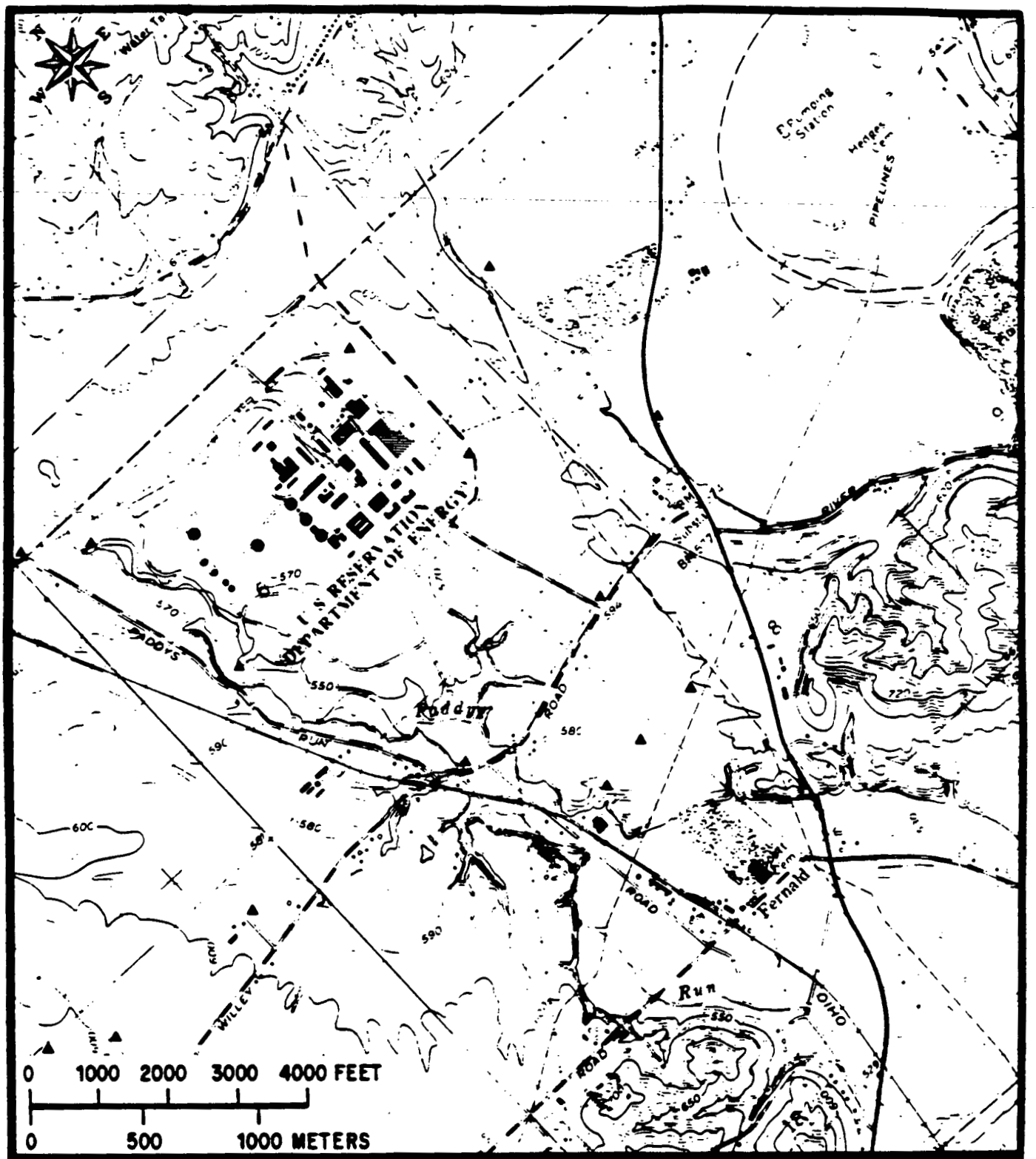

EXPLANATION

● EXISTING DEEP MONITORING POINT

▲ PROPOSED DEEP MONITORING POINT

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FIGURE 6.3
PROPOSED LOCATIONS OF
DEEP MONITORING WELLS

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After the list of contaminants has been completed, samples will be collected quarterly from all monitoring and domestic wells used in the water-level monitoring program. The samples will be analyzed for contaminants identified in the US EPA priority pollutant scan. Quarterly monitoring will continue for one year, after which the frequency of monitoring will be reevaluated.

6.3 ESTIMATED COST OF PROPOSED MONITORING PROGRAM

The cost of implementing the new monitoring and drilling program as previously described is estimated at $698,500. The costs for each phase are summarized in Table 6.1. The following assumptions were used in estimating the total cost:

(1) Shallow wells are 80 ft deep; intermediate wells are 120 ft deep; and deep wells are 220 ft deep.

(2) Prices quoted by Dames & Moore in their Task B Work Plan for NLO are valid.

(3) NLO personnel would be qualified to conduct the water-level monitoring program at no additional cost.

(4) Access to off-site property will not be a problem.

Some costs including laboratory analysis, surveying, and aquifer testing are estimated based on past experience in similar studies. Even when applying a modest contingency factor to the cost, the total estimated cost of the proposed program would not exceed $1,000,000.

Table 6.1. Estimated costs to implement proposed monitoring program.

Well Construction Costs	
- Mobilization/demobilization	$ 2,250
- 8" mud rotary with split spoon samples every 5 ft @ $26/ft (5,280 ft)	$137,280
- Well construction (4" PVC casing, silica sand pack, bentonite, steel cap, cement collar) $750/well first 10 ft + $4.50/ft	$ 49,140
- Well development (1.5 hrs/well @ $120/hr)	$ 6,480
- Clean rig between wells ($950/well)	$ 34,200
- Field Engineer (25 man days @ $650/day)	$ 16,250
Subtotal	$245,600
Aquifer Testing	
- Pumping test equipment (10 days @ $200/day)	$ 2,000
- Field Engineer (30 may days @ $650/day)	$ 19,500
Subtotal	$ 21,500
Sampling and Analyses	
- 75 samples for EPA priority scan (estimated $1,200/sample)	$ 90,000
- 75 samples/quarter for 1 year for final test (estimated $500/sample)	$150,000
- Field Engineer (14 man days/quarter x 4 quarters @ $650/day)	$ 36,400
Subtotal	$276,400
Surveying	
- Estimated lump sum for 50 wells	$ 5,000
Data Analyses and Recalibration of Model	
- Estimated GeoTrans cost	$150,000
TOTAL	$698,500

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APPENDIX A
SUMMARY OF WELL CONSTRUCTION DETAILS

Key for Appendix A

Units of Measurement	land surface elevation, ft msl
	depth of well, ft
	water level, ft msl
	measuring point elevation, ft msl

FERNALD WELL INFORMATION 68.2

COUNTY WELL#	OTHER WELL#	DEPTH	MP ELEV.	SURFACE ELEV.	LOGED (Y/N)	WATER LEVEL	DATE	REFERANCE	WELL USE
H-103	DG#,7-2	70.00		570.00	1	542.00	04-Apr-59	USGS OF 85-099	DOMESTIC
H-104	7-3	80.00		562.00	1	511.00	18-Aug-65	USGS OF 85-099	DOMESTIC
H-105	7-4	80.00		569.00		520.89	03-Aug-82	USGS OF 85-099	DOMESTIC
H-122	7-5	80.00		540.00		524.97	02-Aug-82	USGS OF 85-099	DOMESTIC
H-108	MK#,7-6	84.00		575.00	1	515.60	03-Aug-82	USGS OF 85-099	DOMESTIC
H-111	DS#,7-7	60.00		565.00		529.35	02-Aug-82	USGS OF 85-099	COMMERCIAL
H-121	MC#,7-8	82.00		530.00	1	510.67	02-Aug-82	USGS OF 85-099	INDUSTRIAL
	7-8A	48.00		529.50		520.88	02-Aug-82	USGS OF 85-099	UNUSED, TEST
	7-9	83.00		529.00	1			USGS OF 85-099	INDUSTRIAL
H-115	7-10	96.00		528.50	1	515.22	02-Aug-82	USGS OF 85-099	INDUSTRIAL
H-118	RE#,7-11			527.50		517.08	30-Jul-82	USGS OF 85-099	COMMERCIAL
H-117	JS#,7-12	27.00		528.00				USGS OF 85-099	DOMESTIC
	7-13	60.00		526.00	1	516.48	30-Jul-82	USGS OF 85-099	UNUSED
	7-14	80.00		529.00	1	516.78	30-Jul-82	USGS OF 85-099	UNUSED
H-125	7-15	80.00		529.00	1	516.20	06-Dec-74	USGS OF 85-099	FIRE PROTECTION
H-119	MVRM#,7-16	55.00		528.00		519.96	30-Jul-82	USGS OF 85-099	INDUSTRIAL
H-116	KY#,7-17	40.00		533.00				USGS OF 85-099	DOMESTIC
	12-2	108.00		595.00	1	520.50	23-May-59	USGS OF 85-099	DOMESTIC
	12-3	103.00		595.00	1	526.00	28-Oct-60	USGS OF 85-099	DOMESTIC
	12-4	106.00		605.00	1	535.00	26-Sep-60	USGS OF 85-099	DOMESTIC
	12-5	107.00		613.00	1	531.00	08-Apr-68	USGS OF 85-099	DOMESTIC
	12-7	101.00		595.00	1	527.00	05-Nov-68	USGS OF 85-099	DOMESTIC
	13-1	105.00		609.00	1	521.00	02-Aug-55	USGS OF 85-099	DOMESTIC
	13-2	54.00		610.00	1	591.00	26-Apr-61	USGS OF 85-099	DOMESTIC
	GT-1	79.00						OHIO EPA	
	GT-2	79.00						OHIO EPA	
	GT-3	65.00						OHIO EPA	
	GT-4	25.00						OHIO EPA	
	GT-5	20.00						OHIO EPA	
	06-1							DAMES & MOORE	DOMESTIC
	06-2							DAMES & MOORE	DOMESTIC
	06-3							DAMES & MOORE	DOMESTIC
	06-4							DAMES & MOORE	DOMESTIC
	06-5							DAMES & MOORE	DOMESTIC
	06-6	50.00						DAMES & MOORE	DOMESTIC
	06-7	58.00						DAMES & MOORE	DOMESTIC
	06-10	90.00	* 575			522.00		DAMES & MOORE	COMMERCIAL
	06-11							DAMES & MOORE	DOMESTIC
	06-12	84.00	* 575			516.00		DAMES & MOORE	DOMESTIC
	06-13	90.00	* 580			517.00		DAMES & MOORE	DOMESTIC
	06-14	85.00	* 580			580.00		DAMES & MOORE	DOMESTIC
	06-15							DAMES & MOORE	COMMERCIAL
	06-16	110.00	* 570			515.00		DAMES & MOORE	PUBLIC SUPPLY
	06-17	83.00	* 530			518.50		DAMES & MOORE	COMMERCIAL
	06-18							DAMES & MOORE	COMMERCIAL
	06-19							DAMES & MOORE	DOMESTIC
	06-20							DAMES & MOORE	DOMESTIC
	06-21							DAMES & MOORE	INDUSTRIAL
	LO-1	110						LAYNE OHIO	
	LO-2	110						LAYNE OHIO	
	LO-3	110						LAYNE OHIO	
	LO-4A	40						LAYNE OHIO	
	LO-4B	40						LAYNE OHIO	
	LO-6	110						LAYNE OHIO	

FERNALD WELL INFORMATION 68.2

COUNTY WELL#	OTHER WELL#	DEPTH	MP ELEV.	SURFACE ELEV.	LOGED (Y/N)	WATER LEVEL	DATE	REFERANCE	WELL USE
	M-30	144.00		585.00	1	533.00		USGS OF 85-099	INDUSTRIAL
	R-31	42.00		574.00	1	537.00	31-Oct-73	USGS OF 85-099	DOMESTIC
	R-70	50.00		615.00	1	585.00	01-Nov-54	USGS OF 85-099	DOMESTIC
	R-59	95.00		625.00	1	577.00		USGS OF 85-099	DOMESTIC
	R-69	58.00		565.00	1	553.00		USGS OF 85-099	DOMESTIC
	CONE H.	45.00		613.00		599.60	30-Jul-82	USGS OF 85-099	OBSERVATION
BU-204	SW-0-3					524.59	29-Jul-82	USGS OF 85-099	OBSERVATION
	NLO/PW-1	210.00		578.91		523.74	30-Jul-82	USGS OF 85-099	INDUSTRIAL
	NLO/PW-2	210.00		579.64		523.78	30-Jul-82	USGS OF 85-099	INDUSTRIAL
H-130	NLO/PW-3	210.00		579.84		523.66	30-Jul-82	USGS OF 85-099	INDUSTRIAL
H-132	NLO/1-5	120.00		585.55		485.+	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/1-0	180.00		585.31		524.36	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/3	105.00		560.86	1	525.25	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/4	43.00		566.85		525.87	30-Jul-82	USGS OF 85-099	TEST WELL
H-134	NLO/5	95.00		557.09	1	526.27	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/8-5	116.00		576.60		524.75	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/8-0	180.00		576.62		524.10	30-Jul-82	USGS OF 85-099	TEST WELL
H-131	NLO/9	103.00		557.23		526.38	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/10	130.00		580.00		515.60	30-Jul-82	USGS OF 85-099	TEST WELL
	NLO/11	130.00		596.??			30-Jul-82	USGS OF 85-099	TEST WELL
	O.A.B.	141.00		589.96		521.89	30-Jul-82	USGS OF 85-099	TEST WELL
H-113	6-1	90.00		575.00	1	530.22	02-Aug-82	USGS OF 85-099	DOMESTIC
H-101	BPH#,6-2	90.00		575.00	1	522.80	03-Aug-82	USGS OF 85-099	COMMERCIAL
H-102	6-3	90.00		568.00		523.27	03-Aug-82	USGS OF 85-099	DOMESTIC
H-112	6-4	85.00		580.00				USGS OF 85-099	DOMESTIC
H-127	5-1	65.00		540.00	1	519.84	27-Aug-82	USGS OF 85-099	COMMERCIAL
	5-2	120.00		540.00	1	522.83	20-Aug-64	USGS OF 85-099	IRRIGATION
	5-02E	42.00		540.00		525.92	02-Aug-82	USGS OF 85-099	OBSERVATION
	5-02W	131.00		540.00		526.12	02-Aug-82	USGS OF 85-099	OBSERVATION
	5-83	171.00		539.00		524.20	03-Aug-82	USGS OF 85-099	OBSERVATION
H-120		75.00		560.00				USGS OF 85-099	DOMESTIC
H-114	4-81	165.00		540.00		518.61	03-Aug-82	USGS OF 85-099	DOMESTIC
	4-82	174.00		539.00		524.42	03-Aug-82	USGS OF 85-099	OBSERVATION
	4-83			537.00		514.00	03-Aug-82	USGS OF 85-099	OBSERVATION
H-4		100.00		541.57		519.69	04-Aug-82	USGS OF 85-099	OBSERVATION
	9/LO-1	42.00		532.00		515.15	02-Aug-82	USGS OF 85-099	OBSERVATION
	9-2	25.00		536.00		522.23	04-Aug-82	USGS OF 85-099	DOMESTIC
H-133	9-3	80.00		560.00				USGS OF 85-099	DOMESTIC
H-110	DE#,8-1	100.00		605.00		524.44	03-Aug-82	USGS OF 85-099	COMMERCIAL
H-109	BHMP#,8-2	110.00		572.00	1	517.30	04-Aug-82	USGS OF 85-099	PUBLIC SUPPLY
H-106	BLK#,8-4	85.00		579.00	1	526.00	02-Aug-82	USGS OF 85-099	DOMESTIC
H-107	WK#,8-5	90.00		580.00	1	517.00	03-Aug-66	USGS OF 85-099	DOMESTIC
	17-1			534.00		501.39	04-Aug-82	USGS OF 85-099	DOMESTIC
	17-2	33.00		525.00	1	503.40	05-May-56	USGS OF 85-099	DOMESTIC
	17-3	99.00		565.00		504.43	04-Aug-82	USGS OF 85-099	COMMERCIAL
H-126	17-4	24.00		531.00		510.23	27-Aug-82	USGS OF 85-099	DOMESTIC
H-129		60.00		532.00	1	504.50	04-May-56	USGS OF 85-099	FARM
	16-1	70.00		545.00	1	503.00	10-Dec-64	USGS OF 85-099	DOMESTIC
	16-2	50.00		525.00	1	501.00	02-Oct-63	USGS OF 85-099	DOMESTIC
	18-1	145.00		530.00	1	511.00	27-Mar-73	USGS OF 85-099	UNUSED
	18-2	40.00		515.00	1	507.00	01-Feb-53	USGS OF 85-099	DOMESTIC
H-124	16-3	60.00		519.50	1	504.31	30-Jul-82	USGS OF 85-099	COMMERCIAL
	18-4			520.00		506.22	30-Jul-82	USGS OF 85-099	COMMERCIAL
H-128	18-6	17.00		510.00				USGS OF 85-099	DOMESTIC
H-123	7-1	81.00		570.00	1	515.86	04-Aug-82	USGS OF 85-099	DOMESTIC

APPENDIX B
CHEMISTRY AND WATER QUALITY DATA

Key

Units of measurement	mg/L	= milligrams per liter
	DEG.C	= degrees centigrade
	umhos/cm	= micromhos per cm
	STD	= standard pH units
	pCi/L	= picocuries per liter
	PPB (ppb)	= parts per billion
Other (qualifies zero concentration values)	BMDL	= below method detection limit
	ND	= not detected
	NA	= not analyzed
	MNA	= maybe not analyzed
Source of Data	ODOH	= Ohio Dept. Health
	OEPA	= Ohio Environ. Protect. Agency
	USGA	= U.S. Geological Survey

NOTE: Entries of zero for detection limit or depth indicate data not available.

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	7-14	10/16/80	ALKALINITY	MG/L	263.000		0.0000		80.0
	7-14	10/06/81	ALKALINITY	MG/L	262.000		0.0000		80.0
	7-14	04/23/82	ALKALINITY	MG/L	279.000		0.0000		80.0
	7-14	09/17/82	ALKALINITY	MG/L	279.000		0.0000		80.0
	7-14	10/16/80	AMMONIA AS N	MG/L	0.070		0.0000		80.0
	7-14	04/23/82	AMMONIA AS N	MG/L	0.100		0.0000		80.0
	7-14	09/17/82	AMMONIA AS N	MG/L	0.090		0.0000		80.0
	7-14	10/09/79	CHEMICAL OXYGEN DEMAND (COD)	MG/L	4.000		0.0000		80.0
	7-14	10/16/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	4.000		0.0000		80.0
	7-14	10/06/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		80.0
	7-14	04/23/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		80.0
	7-14	09/17/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		80.0
	7-14	10/09/79	CHLORIDE	MG/L	13.000		0.0000		80.0
	7-14	10/16/80	CHLORIDE	MG/L	17.000		0.0000		80.0
	7-14	10/06/81	CHLORIDE	MG/L	17.000		0.0000		80.0
	7-14	04/23/82	CHLORIDE	MG/L	22.000		0.0000		80.0
	7-14	09/17/82	CHLORIDE	MG/L	17.000		0.0000		80.0
	7-14	10/16/80	FLUORIDE	MG/L	0.080		0.0000		80.0
	7-14	10/06/81	FLUORIDE	MG/L	0.120		0.0000		80.0
	7-14	09/17/82	FLUORIDE	MG/L	0.100		0.0000		80.0
	7-14	10/09/79	NITRATE	MG/L	0.050		0.0000		80.0
	7-14	10/16/80	NITRATE	MG/L	0.050		0.0000		80.0
	7-14	04/23/82	NITRATE	MG/L	0.050		0.0000		80.0
	7-14	09/17/82	NITRATE	MG/L	0.050		0.0000		80.0
	7-14	10/09/79	PHOSPHOROUS	MG/L	10.600		0.0000		80.0
	7-14	10/16/80	PHOSPHOROUS	MG/L	9.500		0.0000		80.0
	7-14	10/06/81	PHOSPHOROUS	MG/L	9.650		0.0000		80.0
	7-14	04/23/82	PHOSPHOROUS	MG/L	8.600		0.0000		80.0
	7-14	09/17/82	PHOSPHOROUS	MG/L	9.530		0.0000		80.0
	7-14	10/09/79	RESIDUE TOTAL FILTERED (DISS.)	MG/L	436.000		0.0000		80.0
	7-14	10/16/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	436.000		0.0000		80.0
	7-14	10/06/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	451.000		0.0000		80.0
	7-14	04/23/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	441.000		0.0000		80.0
	7-14	09/17/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	445.000		0.0000		80.0
	7-14	10/09/79	SULFATE (SO4)	MG/L	199.000		0.0000		80.0
	7-14	10/16/80	SULFATE (SO4)	MG/L	99.000		0.0000		80.0
	7-14	10/06/81	SULFATE (SO4)	MG/L	91.000		0.0000		80.0
	7-14	04/23/82	SULFATE (SO4)	MG/L	82.000		0.0000		80.0
	7-14	09/17/82	SULFATE (SO4)	MG/L	80.000		0.0000		80.0
	7-14	10/06/81	TEMPERATURE	DEG C	13.300		0.0000		80.0
	7-14	09/17/82	TEMPERATURE	DEG C	14.000		0.0000		80.0
	7-14	10/16/80	TOTAL KJELDAHL N (TKN)	MG/L	0.120		0.0000		80.0
	7-14	10/16/80	TOTAL ORGANIC CARBON (TOC)	MG/L	9.000		0.0000		80.0
	7-14	10/06/81	TOTAL ORGANIC CARBON (TOC)	MG/L	5.000		0.0000		80.0
	7-14	04/23/82	pH		6.000		0.0000		80.0
	GT-1		ALKALINITY	MG/L	300.000		0.0000		79.0
	GT-1		AMMONIA AS N	MG/L	0.420		0.0000		79.0
	GT-1		ARSENIC (AS)	MG/L	0.016		0.0000		79.0
	GT-1		BARIUM (BA)	MG/L	0.300		0.0000		79.0
	GT-1		CALCIUM (CA)	MG/L	88.000		0.0000		79.0
	GT-1		CHLORIDE	MG/L	10.000		0.0000		79.0
	GT-1		COPPER (CU)	MG/L	0.030		0.0000		79.0
	GT-1		FLUORIDE	MG/L	0.200		0.0000		79.0
	GT-1		GROSS ALPHA	PC/L	3.000		0.0000		79.0
	GT-1		GROSS BETA	PC/L	4.000		0.0000		79.0
	GT-1		LEAD (PB)	MG/L	0.005		0.0000		79.0
	GT-1		MANGANESE (MN)	MG/L	22.300		0.0000		79.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-1		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		79.0
	GT-1		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.050		0.0000		79.0
	GT-1		PHOSPHOROUS	MG/L	0.360		0.0000		79.0
	GT-1		POTASSIUM (K)	MG/L	1.100		0.0000		79.0
	GT-1		POTASSIUM - 40 (K40)	PC/L	25.600		0.0000		79.0
	GT-1		SODIUM (NA)	MG/L	5.000		0.0000		79.0
	GT-1		STRONTIUM - 90 (SR90)	PC/L	0.000		0.0000		79.0
	GT-1		SULFATE (SO4)	MG/L	17.000		0.0000		79.0
	GT-1		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	328.000		0.0000		79.0
	GT-1		TOTAL IRON (FE)	MG/L	5.700		0.0000		79.0
	GT-1		URANIUM (U)	PC/L	0.000		0.0000		79.0
	GT-1		ZINC	MG/L	0.040		0.0000		79.0
	GT-2		ALKALINITY	MG/L	302.000		0.0000		79.0
	GT-2		AMMONIA AS N	MG/L	0.470		0.0000		79.0
	GT-2		ARSENIC (AS)	MG/L	0.016		0.0000		79.0
	GT-2		BARIUM (BA)	MG/L	0.300		0.0000		79.0
	GT-2		CALCIUM (CA)	MG/L	92.000		0.0000		79.0
	GT-2		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		79.0
	GT-2		CHLORIDE	MG/L	10.000		0.0000		79.0
	GT-2		COPPER (CU)	MG/L	0.030		0.0000		79.0
	GT-2		FLUORIDE	MG/L	0.210		0.0000		79.0
	GT-2		GROSS ALPHA	PC/L	3.000		0.0000		79.0
	GT-2		GROSS BETA	PC/L	4.000		0.0000		79.0
	GT-2		LEAD (PB)	MG/L	0.005		0.0000		79.0
	GT-2		MANGANESE (MN)	MG/L	22.700		0.0000		79.0
	GT-2		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		79.0
	GT-2		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.050		0.0000		79.0
	GT-2		PHOSPHOROUS	MG/L	0.350		0.0000		79.0
	GT-2		POTASSIUM (K)	MG/L	1.000		0.0000		79.0
	GT-2		POTASSIUM - 40 (K40)	PC/L	78.000		0.0000		79.0
	GT-2		SODIUM (NA)	MG/L	5.000		0.0000		79.0
	GT-2		STRONTIUM - 90 (SR90)	PC/L	0.000		0.0000		79.0
	GT-2		SULFATE (SO4)	MG/L	18.000		0.0000		79.0
	GT-2		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	326.000		0.0000		79.0
	GT-2		TOTAL IRON (FE)	MG/L	5.700		0.0000		79.0
	GT-2		URANIUM (U)	PC/L	0.100		0.0000		79.0
	GT-2		ZINC	MG/L	0.040		0.0000		79.0
	GT-3		ALKALINITY	MG/L	317.000		0.0000		65.0
	GT-3		AMMONIA AS N	MG/L	5.120		0.0000		65.0
	GT-3		ARSENIC (AS)	MG/L	0.019		0.0000		65.0
	GT-3		BARIUM (BA)	MG/L	0.300		0.0000		65.0
	GT-3		CALCIUM (CA)	MG/L	79.000		0.0000		65.0
	GT-3		CHLORIDE	MG/L	73.000		0.0000		65.0
	GT-3		COPPER (CU)	MG/L	0.080		0.0000		65.0
	GT-3		FLUORIDE	MG/L	0.370		0.0000		65.0
	GT-3		GROSS ALPHA	PC/L	3.000		0.0000		65.0
	GT-3		GROSS BETA	PC/L	5.000		0.0000		65.0
	GT-3		LEAD (PB)	MG/L	0.018		0.0000		65.0
	GT-3		MANGANESE (MN)	MG/L	25.400		0.0000		65.0
	GT-3		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		65.0
	GT-3		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.050		0.0000		65.0
	GT-3		PHOSPHOROUS	MG/L	0.180		0.0000		65.0
	GT-3		POTASSIUM (K)	MG/L	1.500		0.0000		65.0
	GT-3		POTASSIUM - 40 (K40)	PC/L	91.400		0.0000		65.0
	GT-3		SODIUM (NA)	MG/L	43.000		0.0000		65.0
	GT-3		STRONTIUM - 90 (SR90)	PC/L	0.000		0.0000		65.0
	GT-3		SULFATE (SO4)	MG/L	10.000		0.0000		65.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-3		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	428.000		0.0000		65.0
	GT-3		TOTAL IRON (FE)	MG/L	4.140		0.0000		65.0
	GT-3		URANIUM (U)	PC/L	0.000		0.0000		65.0
	GT-3		ZINC	MG/L	0.260		0.0000		65.0
	GT-4		ALKALINITY	MG/L	594.000		0.0000		25.0
	GT-4	04/06/76	ALKALINITY	MG/L	952.000		0.0000	OEPA	25.0
	GT-4	11/29/76	ALKALINITY	MG/L	976.000		0.0000	OEPA	25.0
	GT-4	06/14/77	ALKALINITY	MG/L	728.000		0.0000	OOOH	25.0
	GT-4	10/03/77	ALKALINITY	MG/L	652.000		0.0000	OEPA	25.0
	GT-4	05/09/78	ALKALINITY	MG/L	448.000		0.0000	OEPA	25.0
	GT-4	09/27/78	ALKALINITY	MG/L	378.000		0.0000	OEPA	25.0
	GT-4	04/10/79	ALKALINITY	MG/L	635.000		0.0000	OEPA	25.0
	GT-4	10/09/79	ALKALINITY	MG/L	700.000		0.0000	OEPA	25.0
	GT-4	04/17/80	ALKALINITY	MG/L	595.000		0.0000	OEPA	25.0
	GT-4	10/16/80	ALKALINITY	MG/L	387.000		0.0000	OEPA	25.0
	GT-4	03/31/81	ALKALINITY	MG/L	381.000		0.0000	OEPA	25.0
	GT-4	10/06/81	ALKALINITY	MG/L	412.000		0.0000	OEPA	25.0
	GT-4	11/06/81	ALKALINITY	MG/L	412.000		0.0000	OEPA	25.0
	GT-4	04/23/82	ALKALINITY	MG/L	347.000		0.0000	OEPA	25.0
	GT-4	09/17/82	ALKALINITY	MG/L	313.000		0.0000	OEPA	25.0
	GT-4	05/17/83	ALKALINITY	MG/L	628.000		0.0000	OEPA	25.0
	GT-4	03/31/81	ALKALINITY (CACO3)	MG/L	386.000		0.0000	OEPA	25.0
	GT-4	10/06/81	ALKALINITY (CACO3)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	ALKALINITY (CACO3)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	ALUMINUM (AL)	MG/L	0.000		0.0000	OEPA	25.0
	GT-4	11/06/81	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		AMMONIA AS N	MG/L	0.450		0.0000		25.0
	GT-4	04/06/76	AMMONIA AS N	MG/L	1.110		0.0000	OEPA	25.0
	GT-4	11/29/76	AMMONIA AS N	MG/L	0.560		0.0000	OEPA	25.0
	GT-4	06/14/77	AMMONIA AS N	MG/L	0.350		0.0000	OOOH	25.0
	GT-4	10/03/77	AMMONIA AS N	MG/L	0.410		0.0000	OEPA	25.0
	GT-4	05/09/78	AMMONIA AS N	MG/L	0.390		0.0000	OEPA	25.0
	GT-4	09/27/78	AMMONIA AS N	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	AMMONIA AS N	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	AMMONIA AS N	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	AMMONIA AS N	MG/L	0.780		0.0000	OEPA	25.0
	GT-4	10/16/80	AMMONIA AS N	MG/L	1.140		0.0000	OEPA	25.0
	GT-4	03/31/81	AMMONIA AS N	MG/L	0.980		0.0000	OEPA	25.0
	GT-4	10/06/81	AMMONIA AS N	MG/L	0.830		0.0000	OEPA	25.0
	GT-4	11/06/81	AMMONIA AS N	MG/L	0.910		0.0000	OEPA	25.0
	GT-4	04/23/82	AMMONIA AS N	MG/L	0.590		0.0000	OEPA	25.0
	GT-4	09/17/82	AMMONIA AS N	MG/L	0.370		0.0000	OEPA	25.0
	GT-4	05/17/83	AMMONIA AS N	MG/L	0.580		0.0000	OEPA	25.0
	GT-4		ARSENIC (AS)	MG/L	0.057		0.0000		25.0
	GT-4		ARSENIC (AS)	MG/L	0.070		0.0000		25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	04/06/76	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	ODOH	25.0
	GT-4	10/03/77	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	ARSENIC (AS)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	04/10/79	ARSENIC (AS)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	10/09/79	ARSENIC (AS)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	04/17/80	ARSENIC (AS)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	10/16/80	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	ARSENIC (AS)	MG/L	0.014		0.0000	OEPA	25.0
	GT-4	10/06/81	ARSENIC (AS)	MG/L	0.035		0.0000	OEPA	25.0
	GT-4	11/06/81	ARSENIC (AS)	MG/L	0.031		0.0000	OEPA	25.0
	GT-4	04/23/82	ARSENIC (AS)	MG/L	0.044		0.0000	OEPA	25.0
	GT-4	09/17/82	ARSENIC (AS)	MG/L	0.042		0.0000	OEPA	25.0
	GT-4	05/17/83	ARSENIC (AS)	MG/L	0.056		0.0000	OEPA	25.0
	GT-4		BARIUM (BA)	MG/L	0.300		0.0000		25.0
	GT-4	04/06/76	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	ODOH	25.0
	GT-4	10/03/77	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	25.0
	GT-4	05/09/78	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	25.0
	GT-4	04/17/80	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	25.0
	GT-4	03/31/81	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	CADMIUM	MG/L	0.000	MNA	0.0000	ODOH	25.0
	GT-4	10/03/77	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	CADMIUM	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	09/27/78	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		CALCIUM (CA)	MG/L	72.000		0.0000		25.0
	GT-4	04/06/76	CALCIUM (CA)	MG/L	30.000		0.0000	OEPA	25.0
	GT-4	11/29/76	CALCIUM (CA)	MG/L	16.000		0.0000	OEPA	25.0
	GT-4	06/14/77	CALCIUM (CA)	MG/L	13.000		0.0000	ODOH	25.0
	GT-4	10/03/77	CALCIUM (CA)	MG/L	11.000		0.0000	OEPA	25.0
	GT-4	05/09/78	CALCIUM (CA)	MG/L	11.000		0.0000	OEPA	25.0
	GT-4	09/27/78	CALCIUM (CA)	MG/L	22.000		0.0000	OEPA	25.0
	GT-4	04/10/79	CALCIUM (CA)	MG/L	103.000		0.0000	OEPA	25.0
	GT-4	10/09/79	CALCIUM (CA)	MG/L	68.000		0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	04/17/80	CALCIUM (CA)	MG/L	63.000		0.0000	OEPA	25.0
	GT-4	10/16/80	CALCIUM (CA)	MG/L	45.000		0.0000	OEPA	25.0
	GT-4	03/31/81	CALCIUM (CA)	MG/L	42.000		0.0000	OEPA	25.0
	GT-4	10/06/81	CALCIUM (CA)	MG/L	57.000		0.0000	OEPA	25.0
	GT-4	11/06/81	CALCIUM (CA)	MG/L	58.000		0.0000	OEPA	25.0
	GT-4	04/23/82	CALCIUM (CA)	MG/L	39.000		0.0000	OEPA	25.0
	GT-4	09/17/82	CALCIUM (CA)	MG/L	63.000		0.0000	OEPA	25.0
	GT-4	05/17/83	CALCIUM (CA)	MG/L	129.000		0.0000	OEPA	25.0
	GT-4		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		25.0
	GT-4	04/06/76	CHEMICAL OXYGEN DEMAND (COD)	MG/L	16.000		0.0000	OEPA	25.0
	GT-4	11/29/76	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	25.0
	GT-4	06/14/77	CHEMICAL OXYGEN DEMAND (COD)	MG/L	7.000		0.0000	ODOH	25.0
	GT-4	10/03/77	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	CHEMICAL OXYGEN DEMAND (COD)	MG/L	9.000		0.0000	OEPA	25.0
	GT-4	09/27/78	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	25.0
	GT-4	04/10/79	CHEMICAL OXYGEN DEMAND (COD)	MG/L	103.000		0.0000	OEPA	25.0
	GT-4	10/09/79	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	15.000		0.0000	OEPA	25.0
	GT-4	10/16/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	25.0
	GT-4	03/31/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	25.0
	GT-4	10/06/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	6.0000	OEPA	25.0
	GT-4	11/06/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	6.0000	OEPA	25.0
	GT-4	04/23/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	8.000		0.0000	OEPA	25.0
	GT-4	09/17/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		CHLORIDE	MG/L	50.000		0.0000		25.0
	GT-4	04/06/76	CHLORIDE	MG/L	120.000		0.0000	OEPA	25.0
	GT-4	11/29/76	CHLORIDE	MG/L	75.000		0.0000	OEPA	25.0
	GT-4	06/14/77	CHLORIDE	MG/L	42.000		0.0000	ODOH	25.0
	GT-4	10/03/77	CHLORIDE	MG/L	30.000		0.0000	OEPA	25.0
	GT-4	05/09/78	CHLORIDE	MG/L	14.000		0.0000	OEPA	25.0
	GT-4	09/27/78	CHLORIDE	MG/L	30.000		0.0000	OEPA	25.0
	GT-4	04/10/79	CHLORIDE	MG/L	155.000		0.0000	OEPA	25.0
	GT-4	10/09/79	CHLORIDE	MG/L	153.000		0.0000	OEPA	25.0
	GT-4	04/17/80	CHLORIDE	MG/L	113.000		0.0000	OEPA	25.0
	GT-4	10/16/80	CHLORIDE	MG/L	3.000		0.0000	OEPA	25.0
	GT-4	03/31/81	CHLORIDE	MG/L	22.000		0.0000	OEPA	25.0
	GT-4	10/06/81	CHLORIDE	MG/L	53.000		0.0000	OEPA	25.0
	GT-4	11/06/81	CHLORIDE	MG/L	53.000		0.0000	OEPA	25.0
	GT-4	04/23/82	CHLORIDE	MG/L	30.000		0.0000	OEPA	25.0
	GT-4	09/17/82	CHLORIDE	MG/L	80.000		0.0000	OEPA	25.0
	GT-4	05/17/83	CHLORIDE	MG/L	219.000		0.0000	OEPA	25.0
	GT-4	04/06/76	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	06/14/77	CHROMIUM	MG/L	0.000	BMDL	0.0300	ODOH	25.0
	GT-4	10/03/77	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	09/27/78	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	04/06/76	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	11/29/76	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	06/14/77	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OOOH	25.0
	GT-4	10/03/77	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	05/09/78	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	09/27/78	CONDUCTIVITY	uhmos/cm	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	10/16/80	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	03/31/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	10/06/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	11/06/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	04/23/82	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	09/17/82	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4	05/17/83	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	25.0
	GT-4		COPPER (CU)	MG/L	0.030		0.0000		25.0
	GT-4	04/06/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	COPPER (CU)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	04/10/79	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	04/17/80	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	10/16/80	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	COPPER (CU)	MG/L	0.030		0.0000	OEPA	25.0
	GT-4	11/06/81	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	04/23/82	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	CYANIDE	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		FLUORIDE	MG/L	0.070		0.0000		25.0
	GT-4	04/06/76	FLUORIDE	MG/L	0.410		0.0000	OEPA	25.0
	GT-4	11/29/76	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	FLUORIDE	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	FLUORIDE	MG/L	0.400		0.0000	OEPA	25.0
	GT-4	05/09/78	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	FLUORIDE	MG/L	0.380		0.0000	OEPA	25.0
	GT-4	04/10/79	FLUORIDE	MG/L	0.100		0.0000	OEPA	25.0
	GT-4	10/09/79	FLUORIDE	MG/L	0.090		0.0000	OEPA	25.0
	GT-4	04/17/80	FLUORIDE	MG/L	0.160		0.0000	OEPA	25.0
	GT-4	10/16/80	FLUORIDE	MG/L	0.110		0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	03/31/81	FLUORIDE	MG/L	0.100		0.0000	OEPA	25.0
	GT-4	10/06/81	FLUORIDE	MG/L	0.140		0.0000	OEPA	25.0
	GT-4	11/06/81	FLUORIDE	MG/L	0.140		0.0000	OEPA	25.0
	GT-4	04/23/82	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	FLUORIDE	MG/L	0.060		0.0000	OEPA	25.0
	GT-4		GROSS ALPHA	PC/L	3.000		0.0000		20.0
	GT-4		GROSS ALPHA	PC/L	3.000		0.0000		25.0
	GT-4		GROSS BETA	PC/L	239.000		0.0000		25.0
	GT-4	04/06/76	HARDNESS NONCARBONATE	MG/L	2840.000		0.0000	OEPA	25.0
	GT-4	11/29/76	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/03/77	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	HARDNESS NONCARBONATE	MG/L	184.000		0.0000	OEPA	25.0
	GT-4	10/06/81	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	HARDNESS NONCARBONATE	MG/L	532.000		0.0000	OEPA	25.0
	GT-4		LEAD (PB)	MG/L	0.005		0.0000		25.0
	GT-4	04/06/76	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	LEAD (PB)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	LEAD (PB)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	05/09/78	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	09/27/78	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	04/10/79	LEAD (PB)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	10/09/79	LEAD (PB)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	04/17/80	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	10/16/80	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	11/06/81	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	04/23/82	LEAD (PB)	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	09/17/82	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	MAGNESIUM (MG)	MG/L	24.000		0.0000	OEPA	25.0
	GT-4	11/29/76	MAGNESIUM (MG)	MG/L	17.000		0.0000	OEPA	25.0
	GT-4	06/14/77	MAGNESIUM (MG)	MG/L	10.000		0.0000	OOOH	25.0
	GT-4	10/03/77	MAGNESIUM (MG)	MG/L	9.000		0.0000	OEPA	25.0
	GT-4	05/09/78	MAGNESIUM (MG)	MG/L	6.000		0.0000	OEPA	25.0
	GT-4	09/27/78	MAGNESIUM (MG)	MG/L	9.000		0.0000	OEPA	25.0
	GT-4	04/10/79	MAGNESIUM (MG)	MG/L	44.000		0.0000	OEPA	25.0
	GT-4	10/09/79	MAGNESIUM (MG)	MG/L	33.000		0.0000	OEPA	25.0
	GT-4	04/17/80	MAGNESIUM (MG)	MG/L	32.000		0.0000	OEPA	25.0
	GT-4	10/16/80	MAGNESIUM (MG)	MG/L	20.000		0.0000	OEPA	25.0
	GT-4	03/31/81	MAGNESIUM (MG)	MG/L	18.000		0.0000	OEPA	25.0
	GT-4	10/06/81	MAGNESIUM (MG)	MG/L	26.000		0.0000	OEPA	25.0
	GT-4	11/06/81	MAGNESIUM (MG)	MG/L	27.000		0.0000	OEPA	25.0
	GT-4	04/23/82	MAGNESIUM (MG)	MG/L	18.000		0.0000	OEPA	25.0
	GT-4	09/17/82	MAGNESIUM (MG)	MG/L	29.000		0.0000	OEPA	25.0
	GT-4	05/17/83	MAGNESIUM (MG)	MG/L	62.000		0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4		MANGANESE (MN)	MG/L	54.500		0.0000		25.0
	GT-4	04/06/76	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	MANGANESE (MN)	MG/L	0.040		0.0000	OEPA	25.0
	GT-4	09/27/78	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	MANGANESE (MN)	MG/L	0.130		0.0000	OEPA	25.0
	GT-4	10/16/80	MANGANESE (MN)	MG/L	0.090		0.0000	OEPA	25.0
	GT-4	03/31/81	MANGANESE (MN)	MG/L	0.090		0.0000	OEPA	25.0
	GT-4	10/06/81	MANGANESE (MN)	MG/L	0.120		0.0000	OEPA	25.0
	GT-4	11/06/81	MANGANESE (MN)	MG/L	0.130		0.0000	OEPA	25.0
	GT-4	04/23/82	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	MANGANESE (MN)	MG/L	0.290		0.0000	OEPA	25.0
	GT-4		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		25.0
	GT-4	04/06/76	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.070		0.0000	OEPA	25.0
	GT-4	11/29/76	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.070		0.0000	OEPA	25.0
	GT-4	06/14/77	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.070		0.0000	OOOH	25.0
	GT-4	10/03/77	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.090		0.0000	OEPA	25.0
	GT-4	05/09/78	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.060		0.0000	OEPA	25.0
	GT-4	09/27/78	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	04/10/79	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	2.980		0.0000	OEPA	25.0
	GT-4	10/09/79	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.860		0.0000	OEPA	25.0
	GT-4	04/17/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.080		0.0000	OEPA	25.0
	GT-4	10/16/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.090		0.0000	OEPA	25.0
	GT-4	03/31/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000	OEPA	25.0
	GT-4	11/06/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.060		0.0000	OEPA	25.0
	GT-4	04/23/82	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.060		0.0000	OEPA	25.0
	GT-4	09/17/82	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	05/17/83	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.460		0.0000	OEPA	25.0
	GT-4	04/06/76	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	MERCURY (HG)	MG/L	0.000	BMDL	0.0005	OEPA	25.0
	GT-4	04/17/80	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	04/17/80	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	11/29/76	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	NITRATE	MG/L	0.000	BMDL	0.1000	ODOH	25.0
	GT-4	10/03/77	NITRATE	MG/L	0.200		0.0000	OEPA	25.0
	GT-4	05/09/78	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	09/27/78	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	04/10/79	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	10/06/81	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	11/06/81	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	11/06/81	NITRATE	MG/L	0.010		0.0000	OEPA	25.0
	GT-4	04/23/82	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4	05/17/83	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	25.0
	GT-4		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.050		0.0000		25.0
	GT-4	04/06/76	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	PHENOL	MG/L	0.000	MNA	0.0000	ODOH	25.0
	GT-4	10/03/77	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	PHENOL	MG/L	0.000	BMDL	0.0020	OEPA	25.0
	GT-4	04/17/80	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	PHENOL	MG/L	0.000	BMDL	0.0020	OEPA	25.0
	GT-4	03/31/81	PHENOL	MG/L	0.000	BMDL	0.0020	OEPA	25.0
	GT-4	10/06/81	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	PHENOL	MG/L	0.000	BMDL	0.0020	OEPA	25.0
	GT-4	04/23/82	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	ODOH	25.0
	GT-4	10/03/77	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	PHOSPHATE O/R	MG/L	157.000		0.0000	OEPA	25.0
	GT-4	09/27/78	PHOSPHATE O/R	MG/L	66.600		0.0000	OEPA	25.0
	GT-4	04/10/79	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	05/17/83	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	PHOSPHATE TOTAL	MG/L	1008.000		0.0000	OEPA	25.0
	GT-4	11/29/76	PHOSPHATE TOTAL	MG/L	551.000		0.0000	OEPA	25.0
	GT-4	06/14/77	PHOSPHATE TOTAL	MG/L	666.000		0.0000	ODOH	25.0
	GT-4	10/03/77	PHOSPHATE TOTAL	MG/L	3.100		0.0000	OEPA	25.0
	GT-4	05/09/78	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		PHOSPHOROUS	MG/L	79.600		0.0000		25.0
	GT-4	04/06/76	PHOSPHOROUS	MG/L	333.000		0.0000	OEPA	25.0
	GT-4	11/29/76	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	ODOH	25.0
	GT-4	10/03/77	PHOSPHOROUS	MG/L	7.360		0.0000	OEPA	25.0
	GT-4	05/09/78	PHOSPHOROUS	MG/L	52.500		0.0000	OEPA	25.0
	GT-4	09/27/78	PHOSPHOROUS	MG/L	32.000		0.0000	OEPA	25.0
	GT-4	04/10/79	PHOSPHOROUS	MG/L	14.200		0.0000	OEPA	25.0
	GT-4	10/09/79	PHOSPHOROUS	MG/L	48.000		0.0000	OEPA	25.0
	GT-4	04/17/80	PHOSPHOROUS	MG/L	69.000		0.0000	OEPA	25.0
	GT-4	10/16/80	PHOSPHOROUS	MG/L	64.200		0.0000	OEPA	25.0
	GT-4	03/31/81	PHOSPHOROUS	MG/L	55.900		0.0000	OEPA	25.0
	GT-4	10/06/81	PHOSPHOROUS	MG/L	42.800		0.0000	OEPA	25.0
	GT-4	11/06/81	PHOSPHOROUS	MG/L	42.400		0.0000	OEPA	25.0
	GT-4	04/23/82	PHOSPHOROUS	MG/L	50.600		0.0000	OEPA	25.0
	GT-4	09/17/82	PHOSPHOROUS	MG/L	29.500		0.0000	OEPA	25.0
	GT-4	05/17/83	PHOSPHOROUS	MG/L	29.600		0.0000	OEPA	25.0
	GT-4		POTASSIUM (K)	MG/L	184.000		0.0000		25.0
	GT-4	04/06/76	POTASSIUM (K)	MG/L	54.000		0.0000	OEPA	25.0
	GT-4	11/29/76	POTASSIUM (K)	MG/L	45.000		0.0000	OEPA	25.0
	GT-4	06/14/77	POTASSIUM (K)	MG/L	45.000		0.0000	ODOH	25.0
	GT-4	10/03/77	POTASSIUM (K)	MG/L	45.000		0.0000	OEPA	25.0
	GT-4	05/09/78	POTASSIUM (K)	MG/L	41.000		0.0000	OEPA	25.0
	GT-4	09/27/78	POTASSIUM (K)	MG/L	64.000		0.0000	OEPA	25.0
	GT-4	04/10/79	POTASSIUM (K)	MG/L	102.000		0.0000	OEPA	25.0
	GT-4	10/09/79	POTASSIUM (K)	MG/L	76.000		0.0000	OEPA	25.0
	GT-4	04/17/80	POTASSIUM (K)	MG/L	104.000		0.0000	OEPA	25.0
	GT-4	10/16/80	POTASSIUM (K)	MG/L	156.000		0.0000	OEPA	25.0
	GT-4	03/31/81	POTASSIUM (K)	MG/L	165.000		0.0000	OEPA	25.0
	GT-4	10/06/81	POTASSIUM (K)	MG/L	240.000		0.0000	OEPA	25.0
	GT-4	11/06/81	POTASSIUM (K)	MG/L	240.000		0.0000	OEPA	25.0
	GT-4	04/23/82	POTASSIUM (K)	MG/L	225.000		0.0000	OEPA	25.0
	GT-4	09/17/82	POTASSIUM (K)	MG/L	200.000		0.0000	OEPA	25.0
	GT-4	05/17/83	POTASSIUM (K)	MG/L	330.000		0.0000	OEPA	25.0
	GT-4		POTASSIUM - 40 (K40)	PC/L	298.100		0.0000		25.0
	GT-4	04/06/76	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2790.000		0.0000	OEPA	25.0
	GT-4	11/29/76	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1977.000		0.0000	OEPA	25.0
	GT-4	06/14/77	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1440.000		0.0000	ODOH	25.0
	GT-4	10/03/77	RESIDUE TOTAL FILTERED (DISS.)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	RESIDUE TOTAL FILTERED (DISS.)	MG/L	874.000		0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	09/27/78	RESIDUE TOTAL FILTERED (DISS.)	MG/L	658.000		0.0000	OEPA	25.0
	GT-4	04/10/79	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1170.000		0.0000	OEPA	25.0
	GT-4	10/09/79	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1200.000		0.0000	OEPA	25.0
	GT-4	04/17/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1130.000		0.0000	OEPA	25.0
	GT-4	10/16/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	807.000		0.0000	OEPA	25.0
	GT-4	03/31/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	830.000		0.0000	OEPA	25.0
	GT-4	10/06/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	678.000		0.0000	OEPA	25.0
	GT-4	11/06/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	885.000		0.0000	OEPA	25.0
	GT-4	04/23/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	768.000		0.0000	OEPA	25.0
	GT-4	09/17/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	726.000		0.0000	OEPA	25.0
	GT-4	05/17/83	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1320.000		0.0000	OEPA	25.0
	GT-4	04/06/76	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	SELENIUM	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	SELENIUM	MG/L	0.000	BMDL	0.0100	OEPA	25.0
	GT-4	09/17/82	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		SODIUM (NA)	MG/L	26.000		0.0000		25.0
	GT-4	04/06/76	SODIUM (NA)	MG/L	940.000		0.0000	OEPA	25.0
	GT-4	11/29/76	SODIUM (NA)	MG/L	650.000		0.0000	OEPA	25.0
	GT-4	06/14/77	SODIUM (NA)	MG/L	455.000		0.0000	OOOH	25.0
	GT-4	10/03/77	SODIUM (NA)	MG/L	380.000		0.0000	OEPA	25.0
	GT-4	05/09/78	SODIUM (NA)	MG/L	256.000		0.0000	OEPA	25.0
	GT-4	09/27/78	SODIUM (NA)	MG/L	163.000		0.0000	OEPA	25.0
	GT-4	04/10/79	SODIUM (NA)	MG/L	171.000		0.0000	OEPA	25.0
	GT-4	10/09/79	SODIUM (NA)	MG/L	265.000		0.0000	OEPA	25.0
	GT-4	04/17/80	SODIUM (NA)	MG/L	245.000		0.0000	OEPA	25.0
	GT-4	10/16/80	SODIUM (NA)	MG/L	93.000		0.0000	OEPA	25.0
	GT-4	03/31/81	SODIUM (NA)	MG/L	62.000		0.0000	OEPA	25.0
	GT-4	10/06/81	SODIUM (NA)	MG/L	45.000		0.0000	OEPA	25.0
	GT-4	11/06/81	SODIUM (NA)	MG/L	45.000		0.0000	OEPA	25.0
	GT-4	04/23/82	SODIUM (NA)	MG/L	44.000		0.0000	OEPA	25.0
	GT-4	09/17/82	SODIUM (NA)	MG/L	24.000		0.0000	OEPA	25.0
	GT-4	05/17/83	SODIUM (NA)	MG/L	57.000		0.0000	OEPA	25.0
	GT-4	04/06/76	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/27/78	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	STRONTIUM (SR)	MG/L	0.000	BMDL	0.2000	OEPA	25.0
	GT-4	10/16/80	STRONTIUM (SR)	MG/L	0.000	BMDL	0.2000	OEPA	25.0
	GT-4	03/31/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/06/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	04/23/82	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		STRONTIUM - 90 (SR90)	PC/L	0.000		0.0000		25.0
	GT-4		SULFATE (SO4)	MG/L	104.000		0.0000		25.0
	GT-4	04/06/76	SULFATE (SO4)	MG/L	250.000		0.0000	OEPA	25.0
	GT-4	11/29/76	SULFATE (SO4)	MG/L	113.000		0.0000	OEPA	25.0
	GT-4	06/14/77	SULFATE (SO4)	MG/L	104.000		0.0000	OOOH	25.0
	GT-4	10/03/77	SULFATE (SO4)	MG/L	101.000		0.0000	OEPA	25.0
	GT-4	05/09/78	SULFATE (SO4)	MG/L	105.000		0.0000	OEPA	25.0
	GT-4	09/27/78	SULFATE (SO4)	MG/L	92.000		0.0000	OEPA	25.0
	GT-4	04/10/79	SULFATE (SO4)	MG/L	125.000		0.0000	OEPA	25.0
	GT-4	10/09/79	SULFATE (SO4)	MG/L	69.000		0.0000	OEPA	25.0
	GT-4	04/17/80	SULFATE (SO4)	MG/L	110.000		0.0000	OEPA	25.0
	GT-4	10/16/80	SULFATE (SO4)	MG/L	104.000		0.0000	OEPA	25.0
	GT-4	03/31/81	SULFATE (SO4)	MG/L	87.000		0.0000	OEPA	25.0
	GT-4	10/06/81	SULFATE (SO4)	MG/L	95.000		0.0000	OEPA	25.0
	GT-4	11/06/81	SULFATE (SO4)	MG/L	95.000		0.0000	OEPA	25.0
	GT-4	04/23/82	SULFATE (SO4)	MG/L	82.000		0.0000	OEPA	25.0
	GT-4	09/17/82	SULFATE (SO4)	MG/L	81.000		0.0000	OEPA	25.0
	GT-4	05/17/83	SULFATE (SO4)	MG/L	95.000		0.0000	OEPA	25.0
	GT-4	04/06/76	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	25.0
	GT-4	11/29/76	TEMPERATURE	deg C	0.000	NA	0.0000	OEPA	25.0
	GT-4	06/14/77	TEMPERATURE	DEG C	0.000	NA	0.0000	OOOH	25.0
	GT-4	10/03/77	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	25.0
	GT-4	05/09/78	TEMPERATURE	DEG C	15.500		0.0000	OEPA	25.0
	GT-4	09/27/78	TEMPERATURE	DEG C	17.000		0.0000	OEPA	25.0
	GT-4	04/10/79	TEMPERATURE	DEG C	14.000		0.0000	OEPA	25.0
	GT-4	10/09/79	TEMPERATURE	DEG C	13.000		0.0000	OEPA	25.0
	GT-4	04/17/80	TEMPERATURE	DEG C	14.000		0.0000	OEPA	25.0
	GT-4	10/16/80	TEMPERATURE	DEG C	15.000		0.0000	OEPA	25.0
	GT-4	03/31/81	TEMPERATURE	DEG C	15.000		0.0000	OEPA	25.0
	GT-4	10/06/81	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	25.0
	GT-4	11/06/81	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	25.0
	GT-4	04/23/82	TEMPERATURE	DEG C	13.900		0.0000	OEPA	25.0
	GT-4	09/17/82	TEMPERATURE	DEG C	16.000		0.0000	OEPA	25.0
	GT-4	05/17/83	TEMPERATURE	DEG C	14.500		0.0000	OEPA	25.0
	GT-4		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	1152.000		0.0000		25.0
	GT-4		TOTAL IRON (FE)	MG/L	1.850		0.0000		25.0
	GT-4	04/06/76	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	TOTAL IRON (FE)	MG/L	0.450		0.0000	OEPA	25.0
	GT-4	05/09/78	TOTAL IRON (FE)	MG/L	0.350		0.0000	OEPA	25.0
	GT-4	09/27/78	TOTAL IRON (FE)	MG/L	0.710		0.0000	OEPA	25.0
	GT-4	04/10/79	TOTAL IRON (FE)	MG/L	3.700		0.0000	OEPA	25.0
	GT-4	10/09/79	TOTAL IRON (FE)	MG/L	2.100		0.0000	OEPA	25.0
	GT-4	04/17/80	TOTAL IRON (FE)	MG/L	1.310		0.0000	OEPA	25.0
	GT-4	10/16/80	TOTAL IRON (FE)	MG/L	0.670		0.0000	OEPA	25.0
	GT-4	03/31/81	TOTAL IRON (FE)	MG/L	0.670		0.0000	OEPA	25.0
	GT-4	10/06/81	TOTAL IRON (FE)	MG/L	1.130		0.0000	OEPA	25.0
	GT-4	11/06/81	TOTAL IRON (FE)	MG/L	1.180		0.0000	OEPA	25.0
	GT-4	04/23/82	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	TOTAL IRON (FE)	MG/L	2.460		0.0000	OEPA	25.0
	GT-4	04/06/76	TOTAL KJELDAHL N (TKN)	MG/L	1.700		0.0000	OEPA	25.0
	GT-4	11/29/76	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	06/14/77	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	TOTAL KJELDAHL N (TKN)	MG/L	0.560		0.0000	OEPA	25.0
	GT-4	09/27/78	TOTAL KJELDAHL N (TKN)	MG/L	0.820		0.0000	OEPA	25.0
	GT-4	04/10/79	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	TOTAL KJELDAHL N (TKN)	MG/L	1.150		0.0000	OEPA	25.0
	GT-4	10/06/81	TOTAL KJELDAHL N (TKN)	MG/L	1.140		0.0000	OEPA	25.0
	GT-4	11/06/81	TOTAL KJELDAHL N (TKN)	MG/L	1.330		0.0000	OEPA	25.0
	GT-4	04/23/82	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/06/76	TOTAL ORGANIC CARBON (TOC)	MG/L	32.000		0.0000	OEPA	25.0
	GT-4	11/29/76	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	BMDL	1.0000	OEPA	25.0
	GT-4	06/14/77	TOTAL ORGANIC CARBON (TOC)	MG/L	7.000		0.0000	OOOH	25.0
	GT-4	10/03/77	TOTAL ORGANIC CARBON (TOC)	MG/L	9.000		0.0000	OEPA	25.0
	GT-4	05/09/78	TOTAL ORGANIC CARBON (TOC)	MG/L	24.900		0.0000	OEPA	25.0
	GT-4	09/27/78	TOTAL ORGANIC CARBON (TOC)	MG/L	14.000		0.0000	OEPA	25.0
	GT-4	04/10/79	TOTAL ORGANIC CARBON (TOC)	MG/L	48.400		0.0000	OEPA	25.0
	GT-4	10/09/79	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	TOTAL ORGANIC CARBON (TOC)	MG/L	10.000		0.0000	OEPA	25.0
	GT-4	03/31/81	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	ND	0.0000	OEPA	25.0
	GT-4	10/06/81	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	BMDL	5.0000	OEPA	25.0
	GT-4	11/06/81	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	BMDL	5.0000	OEPA	25.0
	GT-4	04/23/82	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	BMDL	6.0000	OEPA	25.0
	GT-4	05/17/83	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4		URANIUM (U)	PC/L	0.200		0.0000		25.0
	GT-4		ZINC	MG/L	0.050		0.0000		25.0
	GT-4	04/06/76	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/29/76	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	06/14/77	ZINC	MG/L	0.000	MNA	0.0000	OOOH	25.0
	GT-4	10/03/77	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/09/78	ZINC	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	05/09/78	ZINC	MG/L	0.000	BMDL	0.0050	OEPA	25.0
	GT-4	09/27/78	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/17/80	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	03/31/81	ZINC	MG/L	0.000	BMDL	0.0300	OEPA	25.0
	GT-4	10/06/81	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	11/06/81	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/23/82	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	09/17/82	ZINC	MG/L	0.000	MNA	0.0000	OEPA	25.0
	GT-4	05/17/83	ZINC	MG/L	0.030		0.0000	OEPA	25.0
	GT-4	04/06/76	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	11/29/76	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	06/14/77	pH	STD	0.000	NA	0.0000	OOOH	25.0
	GT-4	10/03/77	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	05/09/78	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	09/27/78	pH	STD	0.000	MNA	0.0000	OEPA	25.0
	GT-4	04/10/79	pH	STD	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/09/79	pH	STD	0.000	NA	0.0000	OEPA	25.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETEC-TION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-4	04/17/80	pH	STD	0.000	MNA	0.0000	OEPA	25.0
	GT-4	10/16/80	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	03/31/81	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	10/06/81	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	11/06/81	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	04/23/82	pH	STD	7.000		0.0000	OEPA	25.0
	GT-4	09/17/82	pH	STD	0.000	NA	0.0000	OEPA	25.0
	GT-4	05/17/83	pH	STD	6.700		0.0000	OEPA	25.0
	GT-5		BARIUM (BA)	MG/L	0.300		0.0000		20.0
	GT-5		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		20.0
	GT-5		COPPER (CU)	MG/L	0.030		0.0000		20.0
	GT-5		LEAD (PB)	MG/L	0.005		0.0000		20.0
	GT-5		TOTAL IRON (FE)	MG/L	0.080		0.0000		20.0
	GT-5		ZINC	MG/L	0.030		0.0000		20.0
	GT-6	03/19/73	ALKALINITY	MG/L	790.000		0.0000	OEPA	0.0
	GT-6	03/19/73	ALKALINITY	MG/L	870.000		0.0000	OEPA	0.0
	GT-6	05/02/73	ALKALINITY	MG/L	720.000		0.0000	OEPA	0.0
	GT-6	05/22/74	ALKALINITY	MG/L	960.000		0.0000	OEPA	0.0
	GT-6	11/19/74	ALKALINITY	MG/L	930.000		0.0000	OEPA	0.0
	GT-6	04/30/75	ALKALINITY	MG/L	1025.000		0.0000	OEPA	0.0
	GT-6	04/07/76	ALKALINITY	MG/L	1096.000		0.0000	OEPA	0.0
	GT-6	03/19/73	ALUMINUM (AL)	MG/L	2.420		0.0000	OEPA	0.0
	GT-6	03/19/73	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	AMMONIA AS N	MG/L	112.000		0.0000	OEPA	0.0
	GT-6	03/19/73	AMMONIA AS N	MG/L	120.000		0.0000	OEPA	0.0
	GT-6	05/02/73	AMMONIA AS N	MG/L	68.800		0.0000	OEPA	0.0
	GT-6	05/22/74	AMMONIA AS N	MG/L	28.800		0.0000	OEPA	0.0
	GT-6	11/19/74	AMMONIA AS N	MG/L	7.720		0.0000	OEPA	0.0
	GT-6	04/30/75	AMMONIA AS N	MG/L	4.940		0.0000	OEPA	0.0
	GT-6	04/07/76	AMMONIA AS N	MG/L	6.610		0.0000	OEPA	0.0
	GT-6	03/19/73	ARSENIC (AS)	MG/L	0.000	BMDL	0.0100	OEPA	0.0
	GT-6	03/19/73	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	BARIUM (BA)	MG/L	1.920		0.0000	OEPA	0.0
	GT-6	03/19/73	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	CADMIUM	MG/L	0.000	BMDL	0.0100	OEPA	0.0
	GT-6	03/19/73	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	CALCIUM (CA)	MG/L	34.000		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETEC-TION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-6	03/19/73	CALCIUM (CA)	MG/L	82.000		0.0000	OEPA	0.0
	GT-6	05/02/73	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	CALCIUM (CA)	MG/L	25.000		0.0000	OEPA	0.0
	GT-6	03/19/73	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	CHEMICAL OXYGEN DEMAND (COD)	MG/L	7560.000		0.0000	OEPA	0.0
	GT-6	05/02/73	CHEMICAL OXYGEN DEMAND (COD)	MG/L	1240.000		0.0000	OEPA	0.0
	GT-6	05/22/74	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	CHEMICAL OXYGEN DEMAND (COD)	MG/L	24.000		0.0000	OEPA	0.0
	GT-6	04/30/75	CHEMICAL OXYGEN DEMAND (COD)	MG/L	32.000		0.0000	OEPA	0.0
	GT-6	04/07/76	CHEMICAL OXYGEN DEMAND (COD)	MG/L	40.000		0.0000	OEPA	0.0
	GT-6	03/19/73	CHLORIDE	MG/L	34.000		0.0000	OEPA	0.0
	GT-6	03/19/73	CHLORIDE	MG/L	76.000		0.0000	OEPA	0.0
	GT-6	05/02/73	CHLORIDE	MG/L	81.000		0.0000	OEPA	0.0
	GT-6	05/22/74	CHLORIDE	MG/L	57.000		0.0000	OEPA	0.0
	GT-6	11/19/74	CHLORIDE	MG/L	99.000		0.0000	OEPA	0.0
	GT-6	04/30/75	CHLORIDE	MG/L	240.000		0.0000	OEPA	0.0
	GT-6	04/07/76	CHLORIDE	MG/L	160.000		0.0000	OEPA	0.0
	GT-6	03/19/73	CHROMIUM	MG/L	0.860		0.0000	OEPA	0.0
	GT-6	03/19/73	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	0.0
	GT-6	05/22/74	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	CONDUCTIVITY	uhmos/cm	3236.000		0.0000	OEPA	0.0
	GT-6	03/19/73	CONDUCTIVITY	uhmos/cm	3400.000		0.0000	OEPA	0.0
	GT-6	05/02/73	CONDUCTIVITY	uhmos/cm	2650.000		0.0000	OEPA	0.0
	GT-6	05/22/74	CONDUCTIVITY	uhmos/cm	2100.000		0.0000	OEPA	0.0
	GT-6	11/19/74	CONDUCTIVITY	uhmos/cm	2100.000		0.0000	OEPA	0.0
	GT-6	04/30/75	CONDUCTIVITY	uhmos/cm	2300.000		0.0000	OEPA	0.0
	GT-6	04/07/76	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-6	03/19/73	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	0.0
	GT-6	03/19/73	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	CYANIDE	MG/L	0.000	BMDL	0.0100	OEPA	0.0
	GT-6	03/19/73	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	FLUORIDE	MG/L	0.240		0.0000	OEPA	0.0
	GT-6	04/30/75	FLUORIDE	MG/L	0.360		0.0000	OEPA	0.0
	GT-6	04/07/76	FLUORIDE	MG/L	0.280		0.0000	OEPA	0.0
	GT-6	03/19/73	HARDNESS NONCARBONATE	MG/L	130.000		0.0000	OEPA	0.0
	GT-6	03/19/73	HARDNESS NONCARBONATE	MG/L	236.000		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-6	05/02/73	HARDNESS NONCARBONATE	MG/L	158.000		0.0000	OEPA	0.0
	GT-6	05/22/74	HARDNESS NONCARBONATE	MG/L	346.000		0.0000	OEPA	0.0
	GT-6	11/19/74	HARDNESS NONCARBONATE	MG/L	354.000		0.0000	OEPA	0.0
	GT-6	04/30/75	HARDNESS NONCARBONATE	MG/L	234.000		0.0000	OEPA	0.0
	GT-6	04/07/76	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	LEAD (PB)	MG/L	0.000	BMDL	0.0100	OEPA	0.0
	GT-6	03/19/73	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	MAGNESIUM (MG)	MG/L	22.000		0.0000	OEPA	0.0
	GT-6	03/19/73	MAGNESIUM (MG)	MG/L	27.000		0.0000	OEPA	0.0
	GT-6	05/02/73	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	MAGNESIUM (MG)	MG/L	14.000		0.0000	OEPA	0.0
	GT-6	03/19/73	MANGANESE (MN)	MG/L	2.490		0.0000	OEPA	0.0
	GT-6	03/19/73	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	130.000		0.0000	OEPA	0.0
	GT-6	05/02/73	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	110.000		0.0000	OEPA	0.0
	GT-6	05/22/74	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	37.000		0.0000	OEPA	0.0
	GT-6	11/19/74	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.210		0.0000	OEPA	0.0
	GT-6	04/30/75	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.210		0.0000	OEPA	0.0
	GT-6	04/07/76	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	1.140		0.0000	OEPA	0.0
	GT-6	03/19/73	MERCURY (HG)	MG/L	0.000	BMDL	0.0005	OEPA	0.0
	GT-6	03/19/73	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	NITRATE	MG/L	0.000	BMDL	0.1000	OEPA	0.0
	GT-6	03/19/73	NITRATE	MG/L	0.000	BMDL	0.1000	OEPA	0.0
	GT-6	05/02/73	NITRATE	MG/L	0.000	BMDL	0.1000	OEPA	0.0
	GT-6	05/22/74	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	NITRATE	MG/L	0.090		0.0000	OEPA	0.0
	GT-6	04/30/75	NITRATE	MG/L	0.100		0.0000	OEPA	0.0
	GT-6	04/07/76	NITRATE	MG/L	16.000		0.0000	OEPA	0.0
	GT-6	03/19/73	PHENOL	MG/L	0.027		0.0000	OEPA	0.0
	GT-6	03/19/73	PHENOL	MG/L	0.022		0.0000	OEPA	0.0
	GT-6	05/02/73	PHENOL	MG/L	0.060		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-6	05/22/74	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	PHOSPHATE TOTAL	MG/L	0.600		0.0000	OEPA	0.0
	GT-6	05/02/73	PHOSPHATE TOTAL	MG/L	71.000		0.0000	OEPA	0.0
	GT-6	05/22/74	PHOSPHATE TOTAL	MG/L	4.000		0.0000	OEPA	0.0
	GT-6	11/19/74	PHOSPHATE TOTAL	MG/L	22.000		0.0000	OEPA	0.0
	GT-6	04/30/75	PHOSPHATE TOTAL	MG/L	267.000		0.0000	OEPA	0.0
	GT-6	04/07/76	PHOSPHATE TOTAL	MG/L	879.000		0.0000	OEPA	0.0
	GT-6	03/19/73	PHOSPHOROUS	MG/L	0.100		0.0000	OEPA	0.0
	GT-6	03/19/73	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	PHOSPHOROUS	MG/L	224.000		0.0000	OEPA	0.0
	GT-6	03/19/73	POTASSIUM (K)	MG/L	20.300		0.0000	OEPA	0.0
	GT-6	03/19/73	POTASSIUM (K)	MG/L	600.000		0.0000	OEPA	0.0
	GT-6	05/02/73	POTASSIUM (K)	MG/L	460.000		0.0000	OEPA	0.0
	GT-6	05/22/74	POTASSIUM (K)	MG/L	162.500		0.0000	OEPA	0.0
	GT-6	11/19/74	POTASSIUM (K)	MG/L	80.000		0.0000	OEPA	0.0
	GT-6	04/30/75	POTASSIUM (K)	MG/L	74.000		0.0000	OEPA	0.0
	GT-6	04/07/76	POTASSIUM (K)	MG/L	70.000		0.0000	OEPA	0.0
	GT-6	03/19/73	RESIDUE TOTAL	MG/L	5594.000		0.0000	OEPA	0.0
	GT-6	03/19/73	RESIDUE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	RESIDUE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	RESIDUE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	RESIDUE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	RESIDUE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	RESIDUE TOTAL	MG/L	3100.000		0.0000	OEPA	0.0
	GT-6	03/19/73	RESIDUE TOTAL FILTERED (DISS.)	MG/L	5469.000		0.0000	OEPA	0.0
	GT-6	03/19/73	RESIDUE TOTAL FILTERED (DISS.)	MG/L	5660.000		0.0000	OEPA	0.0
	GT-6	05/02/73	RESIDUE TOTAL FILTERED (DISS.)	MG/L	4510.000		0.0000	OEPA	0.0
	GT-6	05/22/74	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2100.000		0.0000	OEPA	0.0
	GT-6	11/19/74	RESIDUE TOTAL FILTERED (DISS.)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2250.000		0.0000	OEPA	0.0
	GT-6	04/07/76	RESIDUE TOTAL FILTERED (DISS.)	MG/L	3045.000		0.0000	OEPA	0.0
	GT-6	03/19/73	SELENIUM	MG/L	0.000	BMDL	0.0000	OEPA	0.0
	GT-6	03/19/73	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	SILVER	MG/L	0.000	BMDL	0.0300	OEPA	0.0
	GT-6	03/19/73	SILVER	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	SILVER	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	SILVER	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETEC-TION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-6	03/19/73	SODIUM (NA)	MG/L	256.000		0.0000	OEPA	0.0
	GT-6	03/19/73	SODIUM (NA)	MG/L	410.000		0.0000	OEPA	0.0
	GT-6	05/02/73	SODIUM (NA)	MG/L	345.000		0.0000	OEPA	0.0
	GT-6	05/22/74	SODIUM (NA)	MG/L	360.000		0.0000	OEPA	0.0
	GT-6	11/19/74	SODIUM (NA)	MG/L	500.000		0.0000	OEPA	0.0
	GT-6	04/30/75	SODIUM (NA)	MG/L	770.000		0.0000	OEPA	0.0
	GT-6	04/07/76	SODIUM (NA)	MG/L	1060.000		0.0000	OEPA	0.0
	GT-6	03/19/73	STRONTIUM (SR)	MG/L	0.210		0.0000	OEPA	0.0
	GT-6	03/19/73	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	SULFATE (SO4)	MG/L	20.000		0.0000	OEPA	0.0
	GT-6	03/19/73	SULFATE (SO4)	MG/L	0.000	BMDL	0.0000	OEPA	0.0
	GT-6	05/02/73	SULFATE (SO4)	MG/L	80.000		0.0000	OEPA	0.0
	GT-6	05/22/74	SULFATE (SO4)	MG/L	146.000		0.0000	OEPA	0.0
	GT-6	11/19/74	SULFATE (SO4)	MG/L	288.000		0.0000	OEPA	0.0
	GT-6	04/30/75	SULFATE (SO4)	MG/L	340.000		0.0000	OEPA	0.0
	GT-6	04/07/76	SULFATE (SO4)	MG/L	430.000		0.0000	OEPA	0.0
	GT-6	03/19/73	TEMPERATURE	DEG C	16.000		0.0000	OEPA	0.0
	GT-6	03/19/73	TEMPERATURE	DEG C	16.000		0.0000	OEPA	0.0
	GT-6	05/02/73	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-6	05/22/74	TEMPERATURE	DEG C	14.400		0.0000	OEPA	0.0
	GT-6	11/19/74	TEMPERATURE	DEG C	17.200		0.0000	OEPA	0.0
	GT-6	04/30/75	TEMPERATURE	DEG C	16.700		0.0000	OEPA	0.0
	GT-6	04/07/76	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-6	03/19/73	TOTAL IRON (FE)	MG/L	1.160		0.0000	OEPA	0.0
	GT-6	03/19/73	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	TOTAL KJELDAHL N (TKN)	MG/L	7.500		0.0000	OEPA	0.0
	GT-6	03/19/73	TOTAL ORGANIC CARBON (TOC)	MG/L	1000.000		0.0000	OEPA	0.0
	GT-6	03/19/73	TOTAL ORGANIC CARBON (TOC)	MG/L	1520.000		0.0000	OEPA	0.0
	GT-6	05/02/73	TOTAL ORGANIC CARBON (TOC)	MG/L	1750.000		0.0000	OEPA	0.0
	GT-6	05/22/74	TOTAL ORGANIC CARBON (TOC)	MG/L	355.000		0.0000	OEPA	0.0
	GT-6	11/19/74	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	TOTAL ORGANIC CARBON (TOC)	MG/L	28.000		0.0000	OEPA	0.0
	GT-6	03/19/73	ZINC	MG/L	0.022		0.0000	OEPA	0.0
	GT-6	03/19/73	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/02/73	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	05/22/74	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	11/19/74	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/30/75	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	04/07/76	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-6	03/19/73	pH	STD	7.900		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-6	03/19/73	pH	STD	7.900		0.0000	OEPA	0.0
	GT-6	05/02/73	pH	STD	7.200		0.0000	OEPA	0.0
	GT-6	05/22/74	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-6	11/19/74	pH	STD	7.400		0.0000	OEPA	0.0
	GT-6	04/30/75	pH	STD	7.500		0.0000	OEPA	0.0
	GT-6	04/07/76	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	07/25/72	ALKALINITY	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	ALKALINITY	MG/L	770.000		0.0000	OEPA	0.0
	GT-7	05/22/74	ALKALINITY	MG/L	640.000		0.0000	OEPA	0.0
	GT-7	11/14/74	ALKALINITY	MG/L	890.000		0.0000	OEPA	0.0
	GT-7	04/30/75	ALKALINITY	MG/L	975.000		0.0000	OEPA	0.0
	GT-7	11/04/75	ALKALINITY	MG/L	883.000		0.0000	OEPA	0.0
	GT-7	05/17/76	ALKALINITY	MG/L	816.000		0.0000	OEPA	0.0
	GT-7	11/29/76	ALKALINITY	MG/L	776.000		0.0000	OEPA	0.0
	GT-7	06/14/77	ALKALINITY	MG/L	656.000		0.0000	OEPA	0.0
	GT-7	10/03/77	ALKALINITY	MG/L	523.000		0.0000	OEPA	0.0
	GT-7	05/09/78	ALKALINITY	MG/L	628.000		0.0000	OEPA	0.0
	GT-7	09/27/78	ALKALINITY	MG/L	530.000		0.0000	OEPA	0.0
	GT-7	04/10/79	ALKALINITY	MG/L	645.000		0.0000	OEPA	0.0
	GT-7	10/09/79	ALKALINITY	MG/L	540.000		0.0000	OEPA	0.0
	GT-7	04/17/80	ALKALINITY	MG/L	571.000		0.0000	OEPA	0.0
	GT-7	10/16/80	ALKALINITY	MG/L	562.000		0.0000	OEPA	0.0
	GT-7	03/31/81	ALKALINITY	MG/L	588.000		0.0000	OEPA	0.0
	GT-7	10/06/81	ALKALINITY	MG/L	567.000		0.0000	OEPA	0.0
	GT-7	07/25/72	ALUMINUM (AL)	MG/L	0.000		0.0000	OEPA	0.0
	GT-7	04/10/73	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	ALUMINUM (AL)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
	GT-7	05/09/78	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	ALUMINUM (AL)	MG/L	0.200		0.0000	OEPA	0.0
	GT-7	07/25/72	AMMONIA AS N	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	AMMONIA AS N	MG/L	117.000		0.0000	OEPA	0.0
	GT-7	05/22/74	AMMONIA AS N	MG/L	65.500		0.0000	OEPA	0.0
	GT-7	11/14/74	AMMONIA AS N	MG/L	57.400		0.0000	OEPA	0.0
	GT-7	04/30/75	AMMONIA AS N	MG/L	32.000		0.0000	OEPA	0.0
	GT-7	11/04/75	AMMONIA AS N	MG/L	22.700		0.0000	OEPA	0.0
	GT-7	05/17/76	AMMONIA AS N	MG/L	17.550		0.0000	OEPA	0.0
	GT-7	11/29/76	AMMONIA AS N	MG/L	20.700		0.0000	OEPA	0.0
	GT-7	06/14/77	AMMONIA AS N	MG/L	18.900		0.0000	OEPA	0.0
	GT-7	10/03/77	AMMONIA AS N	MG/L	15.700		0.0000	OEPA	0.0
	GT-7	05/09/78	AMMONIA AS N	MG/L	19.400		0.0000	OEPA	0.0
	GT-7	09/27/78	AMMONIA AS N	MG/L	13.900		0.0000	OEPA	0.0
	GT-7	04/10/79	AMMONIA AS N	MG/L	23.600		0.0000	OEPA	0.0
	GT-7	10/09/79	AMMONIA AS N	MG/L	20.300		0.0000	OEPA	0.0
	GT-7	04/17/80	AMMONIA AS N	MG/L	22.600		0.0000	OEPA	0.0
	GT-7	10/16/80	AMMONIA AS N	MG/L	14.300		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	03/31/81	AMMONIA AS N	MG/L	21.000		0.0000	OEPA	0.0
	GT-7	10/09/81	AMMONIA AS N	MG/L	31.900		0.0000	OEPA	0.0
	GT-7	07/25/72	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	ARSENIC (AS)	MG/L	0.056		0.0000	OEPA	0.0
	GT-7	04/10/79	ARSENIC (AS)	MG/L	0.030		0.0000	OEPA	0.0
	GT-7	10/09/79	ARSENIC (AS)	MG/L	0.048		0.0000	OEPA	0.0
	GT-7	04/17/80	ARSENIC (AS)	MG/L	0.065		0.0000	OEPA	0.0
	GT-7	10/16/80	ARSENIC (AS)	MG/L	0.055		0.0000	OEPA	0.0
	GT-7	03/31/81	ARSENIC (AS)	MG/L	0.060		0.0000	OEPA	0.0
	GT-7	10/09/81	ARSENIC (AS)	MG/L	0.029		0.0000	OEPA	0.0
	GT-7	07/25/72	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
	GT-7	10/03/77	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
	GT-7	05/09/78	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
	GT-7	03/31/81	BARIUM (BA)	MG/L	0.200		0.0000	OEPA	0.0
	GT-7	10/09/81	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	CADMIUM	MG/L	0.000	BMDL	0.0050	OEPA	0.0
	GT-7	09/27/78	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	11/14/74	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	CALCIUM (CA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	CALCIUM (CA)	MG/L	44.000		0.0000	OEPA	0.0
	GT-7	05/17/76	CALCIUM (CA)	MG/L	95.000		0.0000	OEPA	0.0
	GT-7	11/29/76	CALCIUM (CA)	MG/L	67.000		0.0000	OEPA	0.0
	GT-7	06/14/77	CALCIUM (CA)	MG/L	38.000		0.0000	OEPA	0.0
	GT-7	10/03/77	CALCIUM (CA)	MG/L	38.000		0.0000	OEPA	0.0
	GT-7	05/09/78	CALCIUM (CA)	MG/L	68.000		0.0000	OEPA	0.0
	GT-7	09/27/78	CALCIUM (CA)	MG/L	70.000		0.0000	OEPA	0.0
	GT-7	04/10/79	CALCIUM (CA)	MG/L	85.000		0.0000	OEPA	0.0
	GT-7	10/09/79	CALCIUM (CA)	MG/L	85.000		0.0000	OEPA	0.0
	GT-7	04/17/80	CALCIUM (CA)	MG/L	100.000		0.0000	OEPA	0.0
	GT-7	10/16/80	CALCIUM (CA)	MG/L	93.000		0.0000	OEPA	0.0
	GT-7	03/31/81	CALCIUM (CA)	MG/L	104.000		0.0000	OEPA	0.0
	GT-7	10/09/81	CALCIUM (CA)	MG/L	112.000		0.0000	OEPA	0.0
	GT-7	07/25/72	CHEMICAL OXYGEN DEMAND (COD)	MG/L	7000.000		0.0000	OEPA	0.0
	GT-7	04/10/73	CHEMICAL OXYGEN DEMAND (COD)	MG/L	6840.000		0.0000	OEPA	0.0
	GT-7	05/22/74	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	CHEMICAL OXYGEN DEMAND (COD)	MG/L	3060.000		0.0000	OEPA	0.0
	GT-7	04/30/75	CHEMICAL OXYGEN DEMAND (COD)	MG/L	1240.000		0.0000	OEPA	0.0
	GT-7	11/04/75	CHEMICAL OXYGEN DEMAND (COD)	MG/L	1307.000		0.0000	OEPA	0.0
	GT-7	05/17/76	CHEMICAL OXYGEN DEMAND (COD)	MG/L	642.000		0.0000	OEPA	0.0
	GT-7	11/29/76	CHEMICAL OXYGEN DEMAND (COD)	MG/L	316.000		0.0000	OEPA	0.0
	GT-7	06/14/77	CHEMICAL OXYGEN DEMAND (COD)	MG/L	267.000		0.0000	OEPA	0.0
	GT-7	10/03/77	CHEMICAL OXYGEN DEMAND (COD)	MG/L	258.000		0.0000	OEPA	0.0
	GT-7	05/09/78	CHEMICAL OXYGEN DEMAND (COD)	MG/L	1310.000		0.0000	OEPA	0.0
	GT-7	09/27/78	CHEMICAL OXYGEN DEMAND (COD)	MG/L	710.000		0.0000	OEPA	0.0
	GT-7	04/10/79	CHEMICAL OXYGEN DEMAND (COD)	MG/L	746.000		0.0000	OEPA	0.0
	GT-7	10/09/79	CHEMICAL OXYGEN DEMAND (COD)	MG/L	604.000		0.0000	OEPA	0.0
	GT-7	04/17/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	711.000		0.0000	OEPA	0.0
	GT-7	10/16/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	654.000		0.0000	OEPA	0.0
	GT-7	03/31/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	1550.000		0.0000	OEPA	0.0
	GT-7	10/09/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	1480.000		0.0000	OEPA	0.0
	GT-7	07/25/72	CHLORIDE	MG/L	72.000		0.0000	OEPA	0.0
	GT-7	04/10/73	CHLORIDE	MG/L	115.000		0.0000	OEPA	0.0
	GT-7	05/22/74	CHLORIDE	MG/L	130.000		0.0000	OEPA	0.0
	GT-7	11/14/74	CHLORIDE	MG/L	205.000		0.0000	OEPA	0.0
	GT-7	04/30/75	CHLORIDE	MG/L	140.000		0.0000	OEPA	0.0
	GT-7	11/04/75	CHLORIDE	MG/L	110.000		0.0000	OEPA	0.0
	GT-7	05/17/76	CHLORIDE	MG/L	140.000		0.0000	OEPA	0.0
	GT-7	11/29/76	CHLORIDE	MG/L	103.000		0.0000	OEPA	0.0
	GT-7	06/14/77	CHLORIDE	MG/L	57.000		0.0000	OEPA	0.0
	GT-7	10/03/77	CHLORIDE	MG/L	53.000		0.0000	OEPA	0.0
	GT-7	05/09/78	CHLORIDE	MG/L	89.000		0.0000	OEPA	0.0
	GT-7	09/27/78	CHLORIDE	MG/L	105.000		0.0000	OEPA	0.0
	GT-7	04/10/79	CHLORIDE	MG/L	107.000		0.0000	OEPA	0.0
	GT-7	10/09/79	CHLORIDE	MG/L	107.000		0.0000	OEPA	0.0
	GT-7	04/17/80	CHLORIDE	MG/L	263.000		0.0000	OEPA	0.0
	GT-7	10/16/80	CHLORIDE	MG/L	243.000		0.0000	OEPA	0.0
	GT-7	03/31/81	CHLORIDE	MG/L	136.000		0.0000	OEPA	0.0
	GT-7	10/09/81	CHLORIDE	MG/L	111.000		0.0000	OEPA	0.0
	GT-7	07/25/72	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	CHROMIUM	MG/L	0.010		0.0000	OEPA	0.0
	GT-7	05/22/74	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	05/17/76	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	0.0
	GT-7	06/14/77	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	0.0
	GT-7	10/03/77	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	0.0
	GT-7	05/09/78	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	CONDUCTIVITY	uhmos/cm	3430.000		0.0000	OEPA	0.0
	GT-7	04/10/73	CONDUCTIVITY	uhmos/cm	3250.000		0.0000	OEPA	0.0
	GT-7	05/22/74	CONDUCTIVITY	uhmos/cm	1750.000		0.0000	OEPA	0.0
	GT-7	11/14/74	CONDUCTIVITY	uhmos/cm	3000.000		0.0000	OEPA	0.0
	GT-7	04/30/75	CONDUCTIVITY	uhmos/cm	2000.000		0.0000	OEPA	0.0
	GT-7	11/04/75	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/17/76	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	11/29/76	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	06/14/77	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/03/77	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/09/78	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	09/27/78	CONDUCTIVITY	uhmos/cm	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/09/79	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	04/17/80	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/16/80	CONDUCTIVITY	uhmos/cm	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/06/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
	GT-7	07/25/72	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	COPPER (CU)	MG/L	0.015		0.0000	OEPA	0.0
	GT-7	04/10/79	COPPER (CU)	MG/L	0.270		0.0000	OEPA	0.0
	GT-7	10/09/79	COPPER (CU)	MG/L	0.340		0.0000	OEPA	0.0
	GT-7	04/17/80	COPPER (CU)	MG/L	2.750		0.0000	OEPA	0.0
	GT-7	10/16/80	COPPER (CU)	MG/L	0.790		0.0000	OEPA	0.0
	GT-7	03/31/81	COPPER (CU)	MG/L	1.310		0.0000	OEPA	0.0
	GT-7	10/09/81	COPPER (CU)	MG/L	1.620		0.0000	OEPA	0.0
	GT-7	07/25/72	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	10/03/77	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/06/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	FLUORIDE	MG/L	2.700		0.0000	OEPA	0.0
	GT-7	04/10/73	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	FLUORIDE	MG/L	0.010		0.0000	OEPA	0.0
	GT-7	04/30/75	FLUORIDE	MG/L	0.070		0.0000	OEPA	0.0
	GT-7	11/04/75	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	FLUORIDE	MG/L	0.060		0.0000	OEPA	0.0
	GT-7	11/29/76	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	FLUORIDE	MG/L	0.120		0.0000	OEPA	0.0
	GT-7	05/09/78	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	FLUORIDE	MG/L	0.070		0.0000	OEPA	0.0
	GT-7	04/10/79	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	FLUORIDE	MG/L	0.100		0.0000	OEPA	0.0
	GT-7	10/16/80	FLUORIDE	MG/L	0.050		0.0000	OEPA	0.0
	GT-7	03/31/81	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	FLUORIDE	MG/L	0.100		0.0000	OEPA	0.0
	GT-7	10/09/79	HARDNESS CARBONATE	MG/L	54.000		0.0000	OEPA	0.0
	GT-7	07/25/72	HARDNESS NONCARBONATE	MG/L	140.000		0.0000	OEPA	0.0
	GT-7	04/10/73	HARDNESS NONCARBONATE	MG/L	104.000		0.0000	OEPA	0.0
	GT-7	05/22/74	HARDNESS NONCARBONATE	MG/L	152.000		0.0000	OEPA	0.0
	GT-7	11/14/74	HARDNESS NONCARBONATE	MG/L	360.000		0.0000	OEPA	0.0
	GT-7	04/30/75	HARDNESS NONCARBONATE	MG/L	282.000		0.0000	OEPA	0.0
	GT-7	11/04/75	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
	GT-7	11/29/76	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/09/78	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/16/80	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/06/81	HARDNESS NONCARBONATE	MG/L	463.000		0.0000	OEPA	0.0
	GT-7	07/25/72	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	LEAD (PB)	MG/L	0.095		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	09/27/78	LEAD (PB)	MG/L	0.000	BMDL	0.0000	OEPA	0.0
	GT-7	04/10/79	LEAD (PB)	MG/L	0.014		0.0000	OEPA	0.0
	GT-7	10/09/79	LEAD (PB)	MG/L	0.017		0.0000	OEPA	0.0
	GT-7	04/17/80	LEAD (PB)	MG/L	0.120		0.0000	OEPA	0.0
	GT-7	10/16/80	LEAD (PB)	MG/L	0.033		0.0000	OEPA	0.0
	GT-7	03/31/81	LEAD (PB)	MG/L	0.060		0.0000	OEPA	0.0
	GT-7	10/09/81	LEAD (PB)	MG/L	0.024		0.0000	OEPA	0.0
	GT-7	07/25/72	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	MAGNESIUM (MG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	MAGNESIUM (MG)	MG/L	24.000		0.0000	OEPA	0.0
	GT-7	05/17/76	MAGNESIUM (MG)	MG/L	26.000		0.0000	OEPA	0.0
	GT-7	11/29/76	MAGNESIUM (MG)	MG/L	24.000		0.0000	OEPA	0.0
	GT-7	06/14/77	MAGNESIUM (MG)	MG/L	20.000		0.0000	OEPA	0.0
	GT-7	10/03/77	MAGNESIUM (MG)	MG/L	20.000		0.0000	OEPA	0.0
	GT-7	05/09/78	MAGNESIUM (MG)	MG/L	49.000		0.0000	OEPA	0.0
	GT-7	09/27/78	MAGNESIUM (MG)	MG/L	43.000		0.0000	OEPA	0.0
	GT-7	04/10/79	MAGNESIUM (MG)	MG/L	54.000		0.0000	OEPA	0.0
	GT-7	04/17/80	MAGNESIUM (MG)	MG/L	53.000		0.0000	OEPA	0.0
	GT-7	10/16/80	MAGNESIUM (MG)	MG/L	45.000		0.0000	OEPA	0.0
	GT-7	03/31/81	MAGNESIUM (MG)	MG/L	49.000		0.0000	OEPA	0.0
	GT-7	10/09/81	MAGNESIUM (MG)	MG/L	58.000		0.0000	OEPA	0.0
	GT-7	07/25/72	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	MANGANESE (MN)	MG/L	0.290		0.0000	OEPA	0.0
	GT-7	05/22/74	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	MANGANESE (MN)	MG/L	0.880		0.0000	OEPA	0.0
	GT-7	09/27/78	MANGANESE (MN)	MG/L	0.500		0.0000	OEPA	0.0
	GT-7	04/10/79	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	MANGANESE (MN)	MG/L	0.520		0.0000	OEPA	0.0
	GT-7	10/16/80	MANGANESE (MN)	MG/L	0.450		0.0000	OEPA	0.0
	GT-7	03/31/81	MANGANESE (MN)	MG/L	0.740		0.0000	OEPA	0.0
	GT-7	10/09/81	MANGANESE (MN)	MG/L	0.620		0.0000	OEPA	0.0
	GT-7	07/25/72	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	46.000		0.0000	OEPA	0.0
	GT-7	04/10/73	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	126.000		0.0000	OEPA	0.0
	GT-7	05/22/74	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	22.000		0.0000	OEPA	0.0
	GT-7	11/14/74	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	67.000		0.0000	OEPA	0.0
	GT-7	04/30/75	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	38.000		0.0000	OEPA	0.0
	GT-7	11/04/75	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	51.000		0.0000	OEPA	0.0
	GT-7	05/17/76	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	18.000		0.0000	OEPA	0.0
	GT-7	06/14/77	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	12.000		0.0000	OEPA	0.0
	GT-7	10/03/77	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	69.000		0.0000	OEPA	0.0
	GT-7	05/09/78	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	24.500		0.0000	OEPA	0.0
	GT-7	09/27/78	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	23.000		0.0000	OEPA	0.0
	GT-7	04/10/79	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	34.000		0.0000	OEPA	0.0
	GT-7	10/09/79	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	16.000		0.0000	OEPA	0.0
	GT-7	04/17/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	9.700		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETEC-TION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	10/16/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	9.100		0.0000	OEPA	0.0
	GT-7	03/31/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	25.000		0.0000	OEPA	0.0
	GT-7	10/06/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	28.700		0.0000	OEPA	0.0
	GT-7	07/25/72	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	MERCURY (HG)	MG/L	0.000		0.0000	OEPA	0.0
	GT-7	05/17/76	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	MERCURY (HG)	MG/L	0.000	BMDL	0.0000	OEPA	0.0
	GT-7	10/09/81	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	NITRATE	MG/L	0.400		0.0000	OEPA	0.0
	GT-7	04/10/73	NITRATE	MG/L	0.000	BMDL	0.1000	OEPA	0.0
	GT-7	05/22/74	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	NITRATE	MG/L	0.090		0.0000	OEPA	0.0
	GT-7	04/30/75	NITRATE	MG/L	0.100		0.0000	OEPA	0.0
	GT-7	11/04/75	NITRATE	MG/L	0.000	BMDL	0.1000	OEPA	0.0
	GT-7	11/29/76	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	10/03/77	NITRATE	MG/L	0.050		0.0000	OEPA	0.0
	GT-7	05/09/78	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	09/27/78	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	10/09/79	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	04/17/80	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	03/31/81	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	10/09/81	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	07/25/72	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	04/10/73	NITRITE	MG/L	0.000	BMDL	0.0100	OEPA	0.0
	GT-7	05/22/74	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	NITRITE	MG/L	0.300		0.0000	OEPA	0.0
	GT-7	11/29/76	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	NITRITE	MG/L	0.010		0.0000	OEPA	0.0
	GT-7	07/25/72	PHENOL	MG/L	0.170		0.0000	OEPA	0.0
	GT-7	04/10/73	PHENOL	MG/L	0.080		0.0000	OEPA	0.0
	GT-7	05/22/74	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	PHENOL	MG/L	0.038		0.0000	OEPA	0.0
	GT-7	05/09/78	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	PHENOL	MG/L	0.002		0.0000	OEPA	0.0
	GT-7	10/09/79	PHENOL	MG/L	0.029		0.0000	OEPA	0.0
	GT-7	04/17/80	PHENOL	MG/L	0.023		0.0000	OEPA	0.0
	GT-7	10/16/80	PHENOL	MG/L	0.020		0.0000	OEPA	0.0
	GT-7	03/31/81	PHENOL	MG/L	0.029		0.0000	OEPA	0.0
	GT-7	10/06/81	PHENOL	MG/L	0.019		0.0000	OEPA	0.0
	GT-7	07/25/72	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	PHOSPHATE O/R	MG/L	0.700		0.0000	OEPA	0.0
	GT-7	09/27/78	PHOSPHATE O/R	MG/L	0.000	BMDL	0.0500	OEPA	0.0
	GT-7	04/10/79	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	PHOSPHATE TOTAL	MG/L	2.700		0.0000	OEPA	0.0
	GT-7	04/10/73	PHOSPHATE TOTAL	MG/L	9.400		0.0000	OEPA	0.0
	GT-7	05/22/74	PHOSPHATE TOTAL	MG/L	8.200		0.0000	OEPA	0.0
	GT-7	11/14/74	PHOSPHATE TOTAL	MG/L	7.400		0.0000	OEPA	0.0
	GT-7	04/30/75	PHOSPHATE TOTAL	MG/L	29.000		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	11/04/75	PHOSPHATE TOTAL	MG/L	11.300		0.0000	OEPA	0.0
	GT-7	05/17/76	PHOSPHATE TOTAL	MG/L	8.950		0.0000	OEPA	0.0
	GT-7	11/29/76	PHOSPHATE TOTAL	MG/L	6.900		0.0000	OEPA	0.0
	GT-7	06/14/77	PHOSPHATE TOTAL	MG/L	5.100		0.0000	OEPA	0.0
	GT-7	10/03/77	PHOSPHATE TOTAL	MG/L	5.700		0.0000	OEPA	0.0
	GT-7	05/09/78	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	PHOSPHOROUS	MG/L	0.870		0.0000	OEPA	0.0
	GT-7	04/10/73	PHOSPHOROUS	MG/L	3.100		0.0000	OEPA	0.0
	GT-7	05/22/74	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	PHOSPHOROUS	MG/L	1.950		0.0000	OEPA	0.0
	GT-7	05/09/78	PHOSPHOROUS	MG/L	4.000		0.0000	OEPA	0.0
	GT-7	09/27/78	PHOSPHOROUS	MG/L	2.720		0.0000	OEPA	0.0
	GT-7	04/10/79	PHOSPHOROUS	MG/L	0.890		0.0000	OEPA	0.0
	GT-7	10/09/79	PHOSPHOROUS	MG/L	0.890		0.0000	OEPA	0.0
	GT-7	04/17/80	PHOSPHOROUS	MG/L	4.900		0.0000	OEPA	0.0
	GT-7	10/16/80	PHOSPHOROUS	MG/L	4.660		0.0000	OEPA	0.0
	GT-7	03/31/81	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	PHOSPHOROUS	MG/L	2.810		0.0000	OEPA	0.0
	GT-7	07/25/72	POTASSIUM (K)	MG/L	500.000		0.0000	OEPA	0.0
	GT-7	04/10/73	POTASSIUM (K)	MG/L	570.000		0.0000	OEPA	0.0
	GT-7	05/22/74	POTASSIUM (K)	MG/L	285.000		0.0000	OEPA	0.0
	GT-7	11/14/74	POTASSIUM (K)	MG/L	370.000		0.0000	OEPA	0.0
	GT-7	04/30/75	POTASSIUM (K)	MG/L	245.000		0.0000	OEPA	0.0
	GT-7	11/04/75	POTASSIUM (K)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	POTASSIUM (K)	MG/L	230.000		0.0000	OEPA	0.0
	GT-7	11/29/76	POTASSIUM (K)	MG/L	18.000		0.0000	OEPA	0.0
	GT-7	06/14/77	POTASSIUM (K)	MG/L	160.000		0.0000	OEPA	0.0
	GT-7	10/03/77	POTASSIUM (K)	MG/L	240.000		0.0000	OEPA	0.0
	GT-7	05/09/78	POTASSIUM (K)	MG/L	125.000		0.0000	OEPA	0.0
	GT-7	09/27/78	POTASSIUM (K)	MG/L	80.000		0.0000	OEPA	0.0
	GT-7	04/10/79	POTASSIUM (K)	MG/L	114.000		0.0000	OEPA	0.0
	GT-7	10/09/79	POTASSIUM (K)	MG/L	96.000		0.0000	OEPA	0.0
	GT-7	04/17/80	POTASSIUM (K)	MG/L	96.000		0.0000	OEPA	0.0
	GT-7	10/16/80	POTASSIUM (K)	MG/L	88.000		0.0000	OEPA	0.0
	GT-7	03/31/81	POTASSIUM (K)	MG/L	94.000		0.0000	OEPA	0.0
	GT-7	10/09/81	POTASSIUM (K)	MG/L	102.000		0.0000	OEPA	0.0
	GT-7	07/25/72	RESIDUE TOTAL FILTERED (DISS.)	MG/L	5340.000		0.0000	OEPA	0.0
	GT-7	04/10/73	RESIDUE TOTAL FILTERED (DISS.)	MG/L	5200.000		0.0000	OEPA	0.0
	GT-7	05/22/74	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1520.000		0.0000	OEPA	0.0
	GT-7	11/14/74	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2992.000		0.0000	OEPA	0.0
	GT-7	04/30/75	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2490.000		0.0000	OEPA	0.0
	GT-7	11/04/75	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1820.000		0.0000	OEPA	0.0
	GT-7	05/17/76	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1774.000		0.0000	OEPA	0.0
	GT-7	11/29/76	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1311.000		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	06/14/77	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1040.000		0.0000	OEPA	0.0
	GT-7	10/03/77	RESIDUE TOTAL FILTERED (DISS.)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1790.000		0.0000	OEPA	0.0
	GT-7	09/27/78	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1490.000		0.0000	OEPA	0.0
	GT-7	04/10/79	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1970.000		0.0000	OEPA	0.0
	GT-7	10/09/79	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1660.000		0.0000	OEPA	0.0
	GT-7	04/17/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1320.000		0.0000	OEPA	0.0
	GT-7	10/16/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1400.000		0.0000	OEPA	0.0
	GT-7	03/31/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1641.000		0.0000	OEPA	0.0
	GT-7	10/06/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1910.000		0.0000	OEPA	0.0
	GT-7	07/25/72	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	SELENIUM	MG/L	0.000	BMDL	0.0000	OEPA	0.0
	GT-7	04/10/79	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	SODIUM (NA)	MG/L	360.000		0.0000	OEPA	0.0
	GT-7	04/10/73	SODIUM (NA)	MG/L	408.000		0.0000	OEPA	0.0
	GT-7	05/22/74	SODIUM (NA)	MG/L	195.000		0.0000	OEPA	0.0
	GT-7	11/14/74	SODIUM (NA)	MG/L	350.000		0.0000	OEPA	0.0
	GT-7	04/30/75	SODIUM (NA)	MG/L	320.000		0.0000	OEPA	0.0
	GT-7	11/04/75	SODIUM (NA)	MG/L	270.000		0.0000	OEPA	0.0
	GT-7	05/17/76	SODIUM (NA)	MG/L	218.000		0.0000	OEPA	0.0
	GT-7	11/29/76	SODIUM (NA)	MG/L	190.000		0.0000	OEPA	0.0
	GT-7	06/14/77	SODIUM (NA)	MG/L	168.000		0.0000	OEPA	0.0
	GT-7	10/03/77	SODIUM (NA)	MG/L	162.000		0.0000	OEPA	0.0
	GT-7	05/09/78	SODIUM (NA)	MG/L	205.000		0.0000	OEPA	0.0
	GT-7	09/27/78	SODIUM (NA)	MG/L	149.000		0.0000	OEPA	0.0
	GT-7	04/10/79	SODIUM (NA)	MG/L	189.000		0.0000	OEPA	0.0
	GT-7	10/09/79	SODIUM (NA)	MG/L	189.000		0.0000	OEPA	0.0
	GT-7	04/17/80	SODIUM (NA)	MG/L	201.000		0.0000	OEPA	0.0
	GT-7	10/16/80	SODIUM (NA)	MG/L	218.000		0.0000	OEPA	0.0
	GT-7	03/31/81	SODIUM (NA)	MG/L	194.000		0.0000	OEPA	0.0
	GT-7	10/09/81	SODIUM (NA)	MG/L	160.000		0.0000	OEPA	0.0
	GT-7	07/25/72	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	05/09/78	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	09/27/78	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	STRONTIUM (SR)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
	GT-7	10/16/80	STRONTIUM (SR)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
	GT-7	03/31/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/06/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	SULFATE (SO4)	MG/L	0.000	BMDL	0.0000	OEPA	0.0
	GT-7	05/22/74	SULFATE (SO4)	MG/L	8.000		0.0000	OEPA	0.0
	GT-7	11/14/74	SULFATE (SO4)	MG/L	10.000		0.0000	OEPA	0.0
	GT-7	04/30/75	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	11/04/75	SULFATE (SO4)	MG/L	10.000		0.0000	OEPA	0.0
	GT-7	05/17/76	SULFATE (SO4)	MG/L	32.000		0.0000	OEPA	0.0
	GT-7	11/29/76	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	06/14/77	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	10/03/77	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	05/09/78	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	09/27/78	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	04/10/79	SULFATE (SO4)	MG/L	25.000		0.0000	OEPA	0.0
	GT-7	10/09/79	SULFATE (SO4)	MG/L	1.000		0.0000	OEPA	0.0
	GT-7	04/17/80	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	10/16/80	SULFATE (SO4)	MG/L	158.000		0.0000	OEPA	0.0
	GT-7	03/31/81	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	10/09/81	SULFATE (SO4)	MG/L	0.000	BMDL	10.0000	OEPA	0.0
	GT-7	07/25/72	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	04/10/73	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/22/74	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	11/14/74	TEMPERATURE	DEG C	16.000		0.0000	OEPA	0.0
	GT-7	04/30/75	TEMPERATURE	DEG C	15.000		0.0000	OEPA	0.0
	GT-7	11/04/75	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/17/76	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	11/29/76	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	06/14/77	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/03/77	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/09/78	TEMPERATURE	DEG C	13.500		0.0000	OEPA	0.0
	GT-7	09/27/78	TEMPERATURE	MG/L	19.000		0.0000	OEPA	0.0
	GT-7	09/27/78	TEMPERATURE	DEG C	19.000		0.0000	OEPA	0.0
	GT-7	04/10/79	TEMPERATURE	DEG C	13.000		0.0000	OEPA	0.0
	GT-7	10/09/79	TEMPERATURE	MG/L	12.000		0.0000	OEPA	0.0
	GT-7	04/17/80	TEMPERATURE	DEG C	12.000		0.0000	OEPA	0.0
	GT-7	10/16/80	TEMPERATURE	DEG C	12.000		0.0000	OEPA	0.0
	GT-7	03/31/81	TEMPERATURE	DEG C	13.300		0.0000	OEPA	0.0
	GT-7	10/06/81	TEMPERATURE	DEG C	14.400		0.0000	OEPA	0.0
	GT-7	05/09/78	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	0.062		0.0000	OEPA	0.0
	GT-7	07/25/72	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	TOTAL IRON (FE)	MG/L	18.400		0.0000	OEPA	0.0
	GT-7	05/09/78	TOTAL IRON (FE)	MG/L	25.000		0.0000	OEPA	0.0
	GT-7	09/27/78	TOTAL IRON (FE)	MG/L	7.000		0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	04/10/79	TOTAL IRON (FE)	MG/L	19.400		0.0000	OEPA	0.0
	GT-7	10/09/79	TOTAL IRON (FE)	MG/L	17.500		0.0000	OEPA	0.0
	GT-7	04/17/80	TOTAL IRON (FE)	MG/L	14.600		0.0000	OEPA	0.0
	GT-7	10/16/80	TOTAL IRON (FE)	MG/L	10.800		0.0000	OEPA	0.0
	GT-7	03/31/81	TOTAL IRON (FE)	MG/L	18.500		0.0000	OEPA	0.0
	GT-7	10/09/81	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	07/25/72	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	TOTAL KJELDAHL N (TKN)	MG/L	21.000		0.0000	OEPA	0.0
	GT-7	09/27/78	TOTAL KJELDAHL N (TKN)	MG/L	15.000		0.0000	OEPA	0.0
	GT-7	04/10/79	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/09/79	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/17/80	TOTAL KJELDAHL N (TKN)	MG/L	22.000		0.0000	OEPA	0.0
	GT-7	10/16/80	TOTAL KJELDAHL N (TKN)	MG/L	15.500		0.0000	OEPA	0.0
	GT-7	03/31/81	TOTAL KJELDAHL N (TKN)	MG/L	23.600		0.0000	OEPA	0.0
	GT-7	10/09/81	TOTAL KJELDAHL N (TKN)	MG/L	37.400		0.0000	OEPA	0.0
	GT-7	07/25/72	TOTAL ORGANIC CARBON (TOC)	MG/L	238.000		0.0000	OEPA	0.0
	GT-7	04/10/73	TOTAL ORGANIC CARBON (TOC)	MG/L	2018.000		0.0000	OEPA	0.0
	GT-7	05/22/74	TOTAL ORGANIC CARBON (TOC)	MG/L	290.000		0.0000	OEPA	0.0
	GT-7	11/14/74	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	TOTAL ORGANIC CARBON (TOC)	MG/L	225.000		0.0000	OEPA	0.0
	GT-7	05/17/76	TOTAL ORGANIC CARBON (TOC)	MG/L	255.000		0.0000	OEPA	0.0
	GT-7	11/29/76	TOTAL ORGANIC CARBON (TOC)	MG/L	116.000		0.0000	OEPA	0.0
	GT-7	06/14/77	TOTAL ORGANIC CARBON (TOC)	MG/L	26.000		0.0000	OEPA	0.0
	GT-7	10/03/77	TOTAL ORGANIC CARBON (TOC)	MG/L	162.000		0.0000	OEPA	0.0
	GT-7	05/09/78	TOTAL ORGANIC CARBON (TOC)	MG/L	698.000		0.0000	OEPA	0.0
	GT-7	09/27/78	TOTAL ORGANIC CARBON (TOC)	MG/L	418.000		0.0000	OEPA	0.0
	GT-7	04/10/79	TOTAL ORGANIC CARBON (TOC)	MG/L	665.000		0.0000	OEPA	0.0
	GT-7	04/10/79	TOTAL ORGANIC CARBON (TOC)	MG/L	665.000		0.0000	OEPA	0.0
	GT-7	10/09/79	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	ND	0.0000	OEPA	0.0
	GT-7	04/17/80	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	TOTAL ORGANIC CARBON (TOC)	MG/L	240.000		0.0000	OEPA	0.0
	GT-7	03/31/81	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	ND	0.0000	OEPA	0.0
	GT-7	10/09/81	TOTAL ORGANIC CARBON (TOC)	MG/L	603.000		0.0000	OEPA	0.0
	GT-7	07/25/72	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/73	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/22/74	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/14/74	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/30/75	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/04/75	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/17/76	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	11/29/76	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	06/14/77	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/03/77	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	05/09/78	ZINC	MG/L	3.120		0.0000	OEPA	0.0
	GT-7	09/27/78	ZINC	MG/L	2.000		0.0000	OEPA	0.0
	GT-7	04/10/79	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0

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COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
	GT-7	10/09/79	ZINC	MG/L	1.430		0.0000	OEPA	0.0
	GT-7	04/17/80	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
	GT-7	10/16/80	ZINC	MG/L	1.320		0.0000	OEPA	0.0
	GT-7	03/31/81	ZINC	MG/L	1.900		0.0000	OEPA	0.0
	GT-7	10/06/81	ZINC	MG/L	1.650		0.0000	OEPA	0.0
	GT-7	07/25/72	pH	STD	7.800		0.0000	OEPA	0.0
	GT-7	04/10/73	pH	STD	7.600		0.0000	OEPA	0.0
	GT-7	05/22/74	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	11/14/74	pH	STD	7.500		0.0000	OEPA	0.0
	GT-7	04/30/75	pH	STD	7.400		0.0000	OEPA	0.0
	GT-7	11/04/75	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/17/76	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	11/29/76	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	06/14/77	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/03/77	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	05/09/78	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	09/27/78	pH	STD	0.000	MNA	0.0000	OEPA	0.0
	GT-7	04/10/79	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/09/79	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	04/17/80	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/16/80	pH	STD	0.000	MNA	0.0000	OEPA	0.0
	GT-7	03/31/81	pH	STD	0.000	NA	0.0000	OEPA	0.0
	GT-7	10/06/81	pH	STD	0.000	NA	0.0000	OEPA	0.0
	LO-1		URANIUM (U)	PPB	1.400		0.0000		110.0
	LO-2		URANIUM (U)	PPB	9.900		0.0000		110.0
	LO-3		URANIUM (U)	PPB	2.140		0.0000		110.0
	LO-3		URANIUM (U)	PPB	1.340		0.0000		110.0
	LO-3		URANIUM (U)	PPB	1.100		0.0000		110.0
	LO-4A		URANIUM (U)	PPB	1.920		0.0000		40.0
	LO-4A		URANIUM (U)	PPB	1.830		0.0000		40.0
	LO-4A		URANIUM (U)	PPB	1.710		0.0000		40.0
	LO-4B		URANIUM (U)	PPB	0.850		0.0000		40.0
	LO-4B		URANIUM (U)	PPB	0.540		0.0000		40.0
	LO-4B		URANIUM (U)	PPB	0.480		0.0000		40.0
	LO-4B		URANIUM (U)	PPB	0.450		0.0000		40.0
	LO-6		URANIUM (U)	PPB	1.180		0.0000		110.0
	LO-6		URANIUM (U)	PPB	1.130		0.0000		110.0
	LO-6		URANIUM (U)	PPB	1.130		0.0000		110.0
	LO-6		URANIUM (U)	PPB	1.130		0.0000		110.0
	LO-6		URANIUM (U)	PPB	1.080		0.0000		110.0
	OS-10	4/77	CHLORIDE	?	27.000		0.0000		90.0
	OS-10	4/77	NITRATE	?	0.000		0.0000		90.0
	OS-10	4/77	SULFATE (SO4)	?	71.000		0.0000		90.0
	OS-14	4/73	CHLORIDE	?	16.000		0.0000		85.0
	OS-14	4/73	NITRATE	?	0.010		0.0000		85.0
	OS-14	4/73	SULFATE (SO4)	?	98.000		0.0000		85.0
	OS-14	4/73	pH	?	7.700		0.0000		85.0
	OS-15	7/81	CHLORIDE	?	41.000		0.0000		0.0
	OS-15	7/81	GROSS ALPHA	?	1.000		0.0000		0.0
	OS-15	11/81	GROSS ALPHA	?	86.000		0.0000		0.0
	OS-15	7/81	GROSS BETA	?	2.000		0.0000		0.0
	OS-15	11/81	GROSS BETA	?	31.000		0.0000		0.0
	OS-15	7/81	NITRATE	?	1.790		0.0000		0.0
	OS-15	7/81	SULFATE (SO4)	?	93.000		0.0000		0.0
	OS-16	11/81	ALKALINITY (CACO3)	?	37.000		0.0000		110.0
	OS-16	7/81	CHLORIDE	?	46.000		0.0000		110.0
	OS-16	8/81	CHLORIDE	?	41.000		0.0000		110.0

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	06-16	7/81	GROSS ALPHA	?	1.000	0.0000		110.0
	06-16	9/81	GROSS ALPHA	?	3.000	0.0000		110.0
	06-16	11/81	GROSS ALPHA	?	3.000	0.0000		110.0
	06-16	7/81	GROSS BETA	?	39.000	0.0000		110.0
	06-16	9/81	GROSS BETA	?	28.000	0.0000		110.0
	06-16	10/81	GROSS BETA	?	33.000	0.0000		110.0
	06-16	7/81	NITRATE	?	4.990	0.0000		110.0
	06-16	8/81	NITRATE	?	4.770	0.0000		110.0
	06-16	9/81	NITRATE	?	4.840	0.0000		110.0
	06-16	11/81	NITRATE	?	4.670	0.0000		110.0
	06-16	7/81	SULFATE (SO4)	?	71.000	0.0000		110.0
	06-17	6/83	CHLORIDE	?	21.000	0.0000		83.0
	06-17	6/83	NITRATE	?	1.000	0.0000		83.0
	06-17	6/83	SULFATE (SO4)	?	75.000	0.0000		83.0
	06-17	6/83	pH	?	7.400	0.0000		83.0
	06-18	5/78	CHLORIDE	?	41.000	0.0000		0.0
	06-18	4/80	CHLORIDE	?	29.000	0.0000		0.0
	06-18	4/81	CHLORIDE	?	22.000	0.0000		0.0
	06-18	10/81	CHLORIDE	?	98.000	0.0000		0.0
	06-18	4/82	CHLORIDE	?	86.000	0.0000		0.0
	06-18	10/81	GROSS ALPHA	?	5.000	0.0000		0.0
	06-18	11/81	GROSS ALPHA	?	3.000	0.0000		0.0
	06-18	4/82	GROSS ALPHA	?	3.000	0.0000		0.0
	06-18	10/81	GROSS BETA	?	99.000	0.0000		0.0
	06-18	11/81	GROSS BETA	?	99.000	0.0000		0.0
	06-18	4/82	GROSS BETA	?	61.300	0.0000		0.0
	06-18	5/78	NITRATE	?	0.050	0.0000		0.0
	06-18	4/80	NITRATE	?	0.170	0.0000		0.0
	06-18	4/81	NITRATE	?	0.180	0.0000		0.0
	06-18	10/81	NITRATE	?	0.050	0.0000		0.0
	06-18	4/82	NITRATE	?	0.050	0.0000		0.0
	06-18	5/78	SULFATE (SO4)	?	115.000	0.0000		0.0
	06-18	4/79	SULFATE (SO4)	?	182.000	0.0000		0.0
	06-18	4/80	SULFATE (SO4)	?	98.000	0.0000		0.0
	06-18	4/81	SULFATE (SO4)	?	81.000	0.0000		0.0
	06-18	10/81	SULFATE (SO4)	?	85.000	0.0000		0.0
	06-18	4/82	SULFATE (SO4)	?	85.000	0.0000		0.0
	06-18	4/82	pH	?	7.000	0.0000		0.0
	06-19	4/73	CHLORIDE	?	80.000	0.0000		0.0
	06-19	3/81	CHLORIDE	?	224.000	0.0000		0.0
	06-19	10/80	CHLORIDE	?	111.000	0.0000		0.0
	06-19	4/82	CHLORIDE	?	147.000	0.0000		0.0
	06-19	11/81	GROSS ALPHA	?	0.000	0.0000		0.0
	06-19	4/82	GROSS ALPHA	?	6.700	0.0000		0.0
	06-19	11/81	GROSS BETA	?	274.000	0.0000		0.0
	06-19	4/82	GROSS BETA	?	170.600	0.0000		0.0
	06-19	4/73	NITRATE	?	0.000	0.0000		0.0
	06-19	3/81	NITRATE	?	0.060	0.0000		0.0
	06-19	10/80	NITRATE	?	0.050	0.0000		0.0
	06-19	4/82	NITRATE	?	0.050	0.0000		0.0
	06-19	4/73	SULFATE (SO4)	?	204.000	0.0000		0.0
	06-19	3/81	SULFATE (SO4)	?	94.000	0.0000		0.0
	06-19	10/80	SULFATE (SO4)	?	110.000	0.0000		0.0
	06-19	4/82	SULFATE (SO4)	?	98.000	0.0000		0.0
	06-19	4/82	pH	?	7.000	0.0000		0.0
	06-20	9/80	CHLORIDE	?	313.000	0.0000		0.0
	06-20	12/80	CHLORIDE	?	202.000	0.0000		0.0

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	05-20	5/82	CHLORIDE	?	70.000		0.0000		0.0
	05-20	9/82	CHLORIDE	?	48.000		0.0000		0.0
	05-20	4/82	GROSS ALPHA	?	3.000		0.0000		0.0
	05-20	9/82	GROSS ALPHA	?	3.000		0.0000		0.0
	05-20	4/82	GROSS BETA	?	409.500		0.0000		0.0
	05-20	9/82	GROSS BETA	?	4.000		0.0000		0.0
	05-20	9/80	NITRATE	?	0.910		0.0000		0.0
	05-20	5/82	NITRATE	?	0.050		0.0000		0.0
	05-20	9/80	SULFATE (SO4)	?	181.000		0.0000		0.0
	05-20	12/80	SULFATE (SO4)	?	166.000		0.0000		0.0
	05-20	5/82	SULFATE (SO4)	?	104.000		0.0000		0.0
	05-20	9/82	SULFATE (SO4)	?	96.000		0.0000		0.0
	05-20	5/82	pH	?	7.000		0.0000		0.0
	05-20	9/82	pH	?	6.500		0.0000		0.0
	05-21	4/77	CHLORIDE	?	25.000		0.0000		0.0
	05-21	4/77	NITRATE	?	0.000		0.0000		0.0
	05-21	4/77	SULFATE (SO4)	?	90.000		0.0000		0.0
	05-22	1/80	GROSS ALPHA	?	1.000		0.0000		0.0
	05-22	1/80	GROSS BETA	?	2.000		0.0000		0.0
	05-22	4/77	NITRATE	?	0.060		0.0000		0.0
H-101	BPH#,6-2	08/24/82	CALCIUM (CA)	MG/L	110.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	HARDNESS CARBONATE	MG/L	390.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	HARDNESS NONCARBONATE	MG/L	119.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	MANGANESE (MN)	MG/L	28.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	POTASSIUM (K)	MG/L	1.700		0.0000		90.0
H-101	BPH#,6-2	08/24/82	SODIUM (NA)	MG/L	13.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	TEMPERATURE	DEG C	13.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	775.000		0.0000		90.0
H-101	BPH#,6-2	08/24/82	pH		7.400		0.0000		90.0
H-102	6-3	08/24/82	TEMPERATURE	DEG C	15.000		0.0000		90.0
H-102	6-3	08/24/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	610.000		0.0000		90.0
H-102	6-3	08/24/82	pH		7.400		0.0000		90.0
H-103	DG#,7-2	08/24/82	CALCIUM (CA)	MG/L	87.000		0.0000		70.0
H-103	DG#,7-2	08/24/82	HARDNESS CARBONATE	MG/L	304.000		0.0000		70.0
H-103	DG#,7-2	08/24/82	HARDNESS NONCARBONATE	MG/L	50.000		0.0000		70.0
H-103	DG#,7-2	08/24/82	MANGANESE (MN)	MG/L	21.000		0.0000		70.0
H-103	DG#,7-2	08/24/82	POTASSIUM (K)	MG/L	2.600		0.0000		70.0
H-103	DG#,7-2	08/24/82	SODIUM (NA)	MG/L	12.000		0.0000		70.0
H-103	DG#,7-2	08/24/82	TEMPERATURE	DEG C	13.000		0.0000		70.0
H-103	DG#,7-2	08/24/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	650.000		0.0000		70.0
H-103	DG#,7-2		URANIUM (U)	MG/L	0.001		0.0000		70.0
H-103	DG#,7-2	08/24/82	pH		7.600		0.0000		70.0
H-104	7-3	08/24/82	CALCIUM (CA)	MG/L	110.000		0.0000		80.0
H-104	7-3	08/24/82	HARDNESS CARBONATE	MG/L	387.000		0.0000		80.0
H-104	7-3	08/24/82	HARDNESS NONCARBONATE	MG/L	59.000		0.0000		80.0
H-104	7-3	08/24/82	MANGANESE (MN)	MG/L	27.000		0.0000		80.0
H-104	7-3	08/24/82	POTASSIUM (K)	MG/L	0.700		0.0000		80.0
H-104	7-3	08/24/82	SODIUM (NA)	MG/L	6.800		0.0000		80.0
H-104	7-3	08/24/82	TEMPERATURE	DEG C	12.500		0.0000		80.0
H-104	7-3	08/24/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	755.000		0.0000		80.0
H-104	7-3	08/24/82	pH		7.300		0.0000		80.0
H-105	7-4	08/24/82	TEMPERATURE	DEG C	12.500		0.0000		80.0
H-105	7-4	08/24/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	790.000		0.0000		80.0
H-105	7-4	08/24/82	pH		7.400		0.0000		80.0
H-106	BLK#,8-4	08/25/82	CALCIUM (CA)	MG/L	120.000		0.0000		85.0
H-106	BLK#,8-4	08/25/82	HARDNESS CARBONATE	MG/L	427.000		0.0000		85.0
H-106	BLK#,8-4	08/25/82	MANGANESE (MN)	MG/L	31.000		0.0000		85.0

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H-106	BLK*,8-4	08/25/82	POTASSIUM (K)	MG/L	4.100		0.0000		85.0
H-106	BLK*,8-4	08/25/82	SODIUM (NA)	MG/L	12.000		0.0000		85.0
H-106	BLK*,8-4	08/25/82	TEMPERATURE	DEG C	13.000		0.0000		85.0
H-106	BLK*,8-4	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	880.000		0.0000		85.0
H-106	BLK*,8-4	08/25/82	pH		7.300		0.0000		85.0
H-107	WK*,8-5	08/25/82	CALCIUM (CA)	MG/L	93.000		0.0000		90.0
H-107	WK*,8-5	08/25/82	HARDNESS CARBONATE	MG/L	344.000		0.0000		90.0
H-107	WK*,8-5	08/25/82	HARDNESS NONCARBONATE	MG/L	24.000		0.0000		90.0
H-107	WK*,8-5	08/25/82	MANGANESE (MN)	MG/L	27.000		0.0000		90.0
H-107	WK*,8-5	08/25/82	POTASSIUM (K)	MG/L	2.900		0.0000		90.0
H-107	WK*,8-5	08/25/82	SODIUM (NA)	MG/L	10.000		0.0000		90.0
H-107	WK*,8-5	08/25/82	TEMPERATURE	DEG C	11.500		0.0000		90.0
H-107	WK*,8-5	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	720.000		0.0000		90.0
H-107	WK*,8-5		URANIUM (U)	MG/L	0.001		0.0000		90.0
H-107	WK*,8-5	08/25/82	pH		7.600		0.0000		90.0
H-108	HK*,7-6		ALKALINITY	MG/L	229.000		0.0000		84.0
H-108	HK*,7-6		AMMONIA AS N	MG/L	0.050		0.0000		84.0
H-108	HK*,7-6		ARSENIC (AS)	MG/L	0.010		0.0000		84.0
H-108	HK*,7-6		BARIUM (BA)	MG/L	0.300		0.0000		84.0
H-108	HK*,7-6		CALCIUM (CA)	MG/L	88.000		0.0000		84.0
H-108	HK*,7-6	08/25/82	CALCIUM (CA)	MG/L	86.000		0.0000		84.0
H-108	HK*,7-6		CHEMICAL OXYGEN DEMAND (COD)	MG/LC	6.000		0.0000		84.0
H-108	HK*,7-6		CHLORIDE	MG/L	16.000		0.0000		84.0
H-108	HK*,7-6		COPPER (CU)	MG/L	0.030		0.0000		84.0
H-108	HK*,7-6		FLUORIDE	MG/L	0.450		0.0000		84.0
H-108	HK*,7-6		GROSS ALPHA	PC/L	138.000		0.0000		84.0
H-108	HK*,7-6		GROSS BETA	PC/L	83.000		0.0000		84.0
H-108	HK*,7-6	08/25/82	HARDNESS CARBONATE	MG/L	310.000		0.0000		84.0
H-108	HK*,7-6	08/25/82	HARDNESS NONCARBONATE	MG/L	56.000		0.0000		84.0
H-108	HK*,7-6		LEAD (PB)	MG/L	0.005		0.0000		84.0
H-108	HK*,7-6		MANGANESE (MN)	MG/L	20.900		0.0000		84.0
H-108	HK*,7-6	08/25/82	MANGANESE (MN)	MG/L	23.000		0.0000		84.0
H-108	HK*,7-6		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		84.0
H-108	HK*,7-6		NITRATE - NITRITE (NO2 - NO3)	MG/L	6.890		0.0000		84.0
H-108	HK*,7-6		PHOSPHOROUS	MG/L	0.050		0.0000		84.0
H-108	HK*,7-6		POTASSIUM (K)	MG/L	3.200		0.0000		84.0
H-108	HK*,7-6	08/25/82	POTASSIUM (K)	MG/L	3.000		0.0000		84.0
H-108	HK*,7-6		POTASSIUM - 40 (K40)	PC/L	74.000		0.0000		84.0
H-108	HK*,7-6		SODIUM (NA)	MG/L	9.000		0.0000		84.0
H-108	HK*,7-6	08/25/82	SODIUM (NA)	MG/L	11.000		0.0000		84.0
H-108	HK*,7-6		STRONTIUM - 90 (SR90)	PC/L	0.600		0.0000		84.0
H-108	HK*,7-6		SULFATE (SO4)	MG/L	54.000		0.0000		84.0
H-108	HK*,7-6	08/25/82	TEMPERATURE	MG/L	12.500		0.0000		84.0
H-108	HK*,7-6		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	348.000		0.0000		84.0
H-108	HK*,7-6	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	650.000		0.0000		84.0
H-108	HK*,7-6		TOTAL IRON (FE)	MG/L	0.100		0.0000		84.0
H-108	HK*,7-6		URANIUM (U)	PC/L	121.000		0.0000		84.0
H-108	HK*,7-6		ZINC	MG/L	0.060		0.0000		84.0
H-108	HK*,7-6	08/25/82	pH	MG/L	7.400		0.0000		84.0
H-110	DE*,8-1	08/25/82	CALCIUM (CA)	MG/L	110.000		0.0000		100.0
H-110	DE*,8-1	08/25/82	HARDNESS CARBONATE	MG/L	390.000		0.0000		100.0
H-110	DE*,8-1	08/25/82	HARDNESS NONCARBONATE	MG/L	103.000		0.0000		100.0
H-110	DE*,8-1	08/25/82	MANGANESE (MN)	MG/L	28.000		0.0000		100.0
H-110	DE*,8-1	08/25/82	POTASSIUM (K)	MG/L	1.900		0.0000		100.0
H-110	DE*,8-1	08/25/82	SODIUM (NA)	MG/L	6.300		0.0000		100.0
H-110	DE*,8-1	08/25/82	TEMPERATURE	DEG C	12.500		0.0000		100.0
H-110	DE*,8-1	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	770.000		0.0000		100.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-110	DE*,8-1	08/25/82	pH		7.300		0.0000		100.0
H-111	DS*,7-7		ALKALINITY	MG/L	271.000		0.0000		60.0
H-111	DS*,7-7		AMMONIA AS N	MG/L	0.050		0.0000		60.0
H-111	DS*,7-7		ARSENIC (AS)	MG/L	0.010		0.0000		60.0
H-111	DS*,7-7		BARIUM (BA)	MG/L	0.300		0.0000		60.0
H-111	DS*,7-7		CALCIUM (CA)	MG/L	100.000		0.0000		60.0
H-111	DS*,7-7	08/25/82	CALCIUM (CA)	MG/L	94.000		0.0000		60.0
H-111	DS*,7-7		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		60.0
H-111	DS*,7-7		CHLORIDE	MG/L	26.000		0.0000		60.0
H-111	DS*,7-7		COPPER (CU)	MG/L	0.200		0.0000		60.0
H-111	DS*,7-7		FLUORIDE	MG/L	0.230		0.0000		60.0
H-111	DS*,7-7		GROSS ALPHA	PC/L	256.000		0.0000		60.0
H-111	DS*,7-7		GROSS BETA	PC/L	84.000		0.0000		60.0
H-111	DS*,7-7	08/25/82	HARDNESS CARBONATE	MG/L	334.000		0.0000		0.0
H-111	DS*,7-7	08/25/82	HARDNESS NONCARBONATE	MG/L	55.000		0.0000		0.0
H-111	DS*,7-7		LEAD (PB)	MG/L	0.005		0.0000		60.0
H-111	DS*,7-7		MANGANESE (MN)	MG/L	25.200		0.0000		60.0
H-111	DS*,7-7	08/25/82	MANGANESE (MN)	MG/L	24.000		0.0000		60.0
H-111	DS*,7-7		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		60.0
H-111	DS*,7-7		NITRATE - NITRITE (NO2 - NO3)	MG/L	6.090		0.0000		60.0
H-111	DS*,7-7		PHOSPHOROUS	MG/L	0.020		0.0000		60.0
H-111	DS*,7-7		POTASSIUM (K)	MG/L	3.400		0.0000		60.0
H-111	DS*,7-7	08/25/82	POTASSIUM (K)	MG/L	3.100		0.0000		60.0
H-111	DS*,7-7		POTASSIUM - 40 (K40)	PC/L	78.000		0.0000		60.0
H-111	DS*,7-7		SODIUM (NA)	MG/L	12.000		0.0000		60.0
H-111	DS*,7-7	08/25/82	SODIUM (NA)	MG/L	14.000		0.0000		60.0
H-111	DS*,7-7		STRONTIUM - 90 (SR90)	PC/L	0.000		0.0000		60.0
H-111	DS*,7-7		SULFATE (SO4)	MG/L	62.000		0.0000		60.0
H-111	DS*,7-7	08/25/82	TEMPERATURE	DEG C	14.500		0.0000		60.0
H-111	DS*,7-7		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	424.000		0.0000		60.0
H-111	DS*,7-7	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	720.000		0.0000		60.0
H-111	DS*,7-7		TOTAL IRON (FE)	MG/L	0.120		0.0000		60.0
H-111	DS*,7-7		URANIUM (U)	PC/L	258.000		0.0000		60.0
H-111	DS*,7-7		ZINC	MG/L	0.030		0.0000		60.0
H-111	DS*,7-7	08/25/82	pH		7.600		0.0000		60.0
H-112	6-4	08/25/82	TEMPERATURE	DEG C	15.000		0.0000		85.0
H-112	6-4	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	720.000		0.0000		85.0
H-112	6-4	08/25/82	pH		7.600		0.0000		85.0
H-113	6-1	08/25/82	TEMPERATURE	DEG C	14.000		0.0000		90.0
H-113	6-1	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	840.000		0.0000		90.0
H-113	6-1	08/25/82	pH		7.800		0.0000		90.0
H-114	4-81	08/30/82	TEMPERATURE	DEG C	14.000		0.0000		165.0
H-114	4-81	08/30/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	770.000		0.0000		165.0
H-114	4-81	08/30/82	pH		7.600		0.0000		165.0
H-115	7-10		ALKALINITY	MG/L	423.000		0.0000		96.0
H-115	7-10	04/17/80	ALKALINITY	MG/L	831.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	ALKALINITY	MG/L	806.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	ALKALINITY	MG/L	699.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	ALKALINITY	MG/L	667.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	ALKALINITY	MG/L	743.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	ALKALINITY	MG/L	625.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	ALKALINITY	MG/L	658.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	ALKALINITY	MG/L	388.000		0.0000	OEPA	0.0
H-115	7-10	04/17/80	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-115	7-10	04/23/82	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10		AMMONIA AS N	MG/L	0.370		0.0000		96.0
H-115	7-10	04/17/80	AMMONIA AS N	MG/L	0.910		0.0000	OEPA	0.0
H-115	7-10	10/16/80	AMMONIA AS N	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	AMMONIA AS N	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	AMMONIA AS N	MG/L	0.790		0.0000	OEPA	0.0
H-115	7-10	04/23/82	AMMONIA AS N	MG/L	0.670		0.0000	OEPA	0.0
H-115	7-10	09/17/82	AMMONIA AS N	MG/L	0.570		0.0000	OEPA	0.0
H-115	7-10	05/17/83	AMMONIA AS N	MG/L	0.540		0.0000	OEPA	0.0
H-115	7-10	01/10/84	AMMONIA AS N	MG/L	0.340		0.0000	OEPA	0.0
H-115	7-10		ARSENIC (AS)	MG/L	0.070		0.0000		96.0
H-115	7-10	04/17/80	ARSENIC (AS)	MG/L	0.030		0.0000	OEPA	0.0
H-115	7-10	10/16/80	ARSENIC (AS)	MG/L	0.090		0.0000	OEPA	0.0
H-115	7-10	03/31/81	ARSENIC (AS)	MG/L	0.080		0.0000	OEPA	0.0
H-115	7-10	10/06/81	ARSENIC (AS)	MG/L	0.070		0.0000	OEPA	0.0
H-115	7-10	04/23/82	ARSENIC (AS)	MG/L	0.104		0.0000	OEPA	0.0
H-115	7-10	09/17/82	ARSENIC (AS)	MG/L	0.120		0.0000	OEPA	0.0
H-115	7-10	05/17/83	ARSENIC (AS)	MG/L	0.074		0.0000	OEPA	0.0
H-115	7-10	01/10/84	ARSENIC (AS)	MG/L	0.056		0.0000	OEPA	0.0
H-115	7-10		BARIUM (BA)	MG/L	0.300		0.0000		96.0
H-115	7-10	04/17/80	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
H-115	7-10	03/31/81	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	BARIUM (BA)	MG/L	0.200		0.0000	OEPA	0.0
H-115	7-10	09/17/82	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
H-115	7-10	04/17/80	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	CADMIUM	MG/L	0.000	BMDL	0.0050	OEPA	0.0
H-115	7-10	10/06/81	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	CADMIUM	MG/L	0.000	BMDL	0.0010	OEPA	0.0
H-115	7-10		CALCIUM (CA)	MG/L	72.000		0.0000		96.0
H-115	7-10	04/17/80	CALCIUM (CA)	MG/L	72.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	CALCIUM (CA)	MG/L	49.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	CALCIUM (CA)	MG/L	52.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	CALCIUM (CA)	MG/L	48.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	CALCIUM (CA)	MG/L	47.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	CALCIUM (CA)	MG/L	62.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	CALCIUM (CA)	MG/L	76.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	CALCIUM (CA)	MG/L	65.000		0.0000	OEPA	0.0
H-115	7-10		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		96.0
H-115	7-10	04/17/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	31.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	0.0
H-115	7-10	03/31/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	12.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	6.0000	OEPA	0.0
H-115	7-10	04/23/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	6.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-115	7-10		CHLORIDE	MG/L	50.000		0.0000		96.0
H-115	7-10	04/17/80	CHLORIDE	MG/L	313.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	CHLORIDE	MG/L	202.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	CHLORIDE	MG/L	264.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	CHLORIDE	MG/L	202.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	CHLORIDE	MG/L	70.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	CHLORIDE	MG/L	48.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	CHLORIDE	MG/L	67.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	CHLORIDE	MG/L	37.000		0.0000	OEPA	0.0
H-115	7-10	04/17/80	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	0.0
H-115	7-10	03/31/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	CHROMIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	0.0
H-115	7-10		COPPER (CU)	MG/L	0.030		0.0000		96.0
H-115	7-10	04/17/80	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	0.0
H-115	7-10	10/16/80	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	COPPER (CU)	MG/L	0.000	BMDL	0.0300	OEPA	0.0
H-115	7-10	10/06/81	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10		FLUORIDE	MG/L	0.070		0.0000		96.0
H-115	7-10	04/17/80	FLUORIDE	MG/L	0.100		0.0000	OEPA	0.0
H-115	7-10	10/16/80	FLUORIDE	MG/L	0.070		0.0000	OEPA	0.0
H-115	7-10	03/31/81	FLUORIDE	MG/L	0.060		0.0000	OEPA	0.0
H-115	7-10	10/06/81	FLUORIDE	MG/L	0.100		0.0000	OEPA	0.0
H-115	7-10	04/23/82	FLUORIDE	MG/L	0.100		0.0000	OEPA	0.0
H-115	7-10	09/17/82	FLUORIDE	MG/L	0.090		0.0000	OEPA	0.0
H-115	7-10	05/17/83	FLUORIDE	MG/L	0.080		0.0000	OEPA	0.0
H-115	7-10	01/10/84	FLUORIDE	MG/L	0.060		0.0000	OEPA	0.0
H-115	7-10		GROSS ALPHA	PC/L	3.000		0.0000		96.0
H-115	7-10		GROSS BETA	PC/L	183.000		0.0000		96.0
H-115	7-10	04/17/80	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	HARDNESS NONCARBONATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-115	7-10	04/23/82	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	HARDNESS NONCARBONATE	MG/L	467.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	HARDNESS NONCARBONATE	MG/L	0.000	NA	0.0000	OEPA	0.0
H-115	7-10		LEAD (PB)	MG/L	0.005		0.0000		96.0
H-115	7-10	04/17/80	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	0.0
H-115	7-10	10/16/80	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	0.0
H-115	7-10	03/31/81	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	0.0
H-115	7-10	04/23/82	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	LEAD (PB)	MG/L	0.000	BMDL	0.0250	OEPA	0.0
H-115	7-10	01/10/84	LEAD (PB)	MG/L	0.000	BMDL	0.0050	OEPA	0.0
H-115	7-10	04/17/80	MAGNESIUM (MG)	MG/L	485.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	MAGNESIUM (MG)	MG/L	58.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	MAGNESIUM (MG)	MG/L	72.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	MAGNESIUM (MG)	MG/L	75.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	MAGNESIUM (MG)	MG/L	64.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	MAGNESIUM (MG)	MG/L	57.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	MAGNESIUM (MG)	MG/L	71.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	MAGNESIUM (MG)	MG/L	55.000		0.0000	OEPA	0.0
H-115	7-10		MANGANESE (MN)	MG/L	54.500		0.0000		96.0
H-115	7-10	04/17/80	MANGANESE (MN)	MG/L	0.840		0.0000	OEPA	0.0
H-115	7-10	10/16/80	MANGANESE (MN)	MG/L	0.660		0.0000	OEPA	0.0
H-115	7-10	03/31/81	MANGANESE (MN)	MG/L	0.650		0.0000	OEPA	0.0
H-115	7-10	10/06/81	MANGANESE (MN)	MG/L	0.670		0.0000	OEPA	0.0
H-115	7-10	04/23/82	MANGANESE (MN)	MG/L	580.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	MANGANESE (MN)	MG/L	0.940		0.0000	OEPA	0.0
H-115	7-10	01/10/84	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		96.0
H-115	7-10	04/17/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.110		0.0000	OEPA	0.0
H-115	7-10	10/16/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000	OEPA	0.0
H-115	7-10	03/31/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000	OEPA	0.0
H-115	7-10	10/06/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000	OEPA	0.0
H-115	7-10	04/23/82	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.110		0.0000	OEPA	0.0
H-115	7-10	09/17/82	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	0.0
H-115	7-10	05/17/83	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	0.0
H-115	7-10	01/10/84	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	0.0
H-115	7-10	04/17/80	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	MERCURY (HG)	MG/L	0.000	BMDL	0.5000	OEPA	0.0
H-115	7-10	09/17/82	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-115	7-10	03/31/81	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
H-115	7-10	04/23/82	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	NITRATE	MG/L	0.000	BMDL	0.0500	OEPA	0.0
H-115	7-10		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.050		0.0000		96.0
H-115	7-10	09/17/82	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	NITRITE	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	PHOSPHATE TOTAL	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10		PHOSPHOROUS	MG/L	79.600		0.0000		96.0
H-115	7-10	04/17/80	PHOSPHOROUS	MG/L	319.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	PHOSPHOROUS	MG/L	246.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	PHOSPHOROUS	MG/L	233.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	PHOSPHOROUS	MG/L	240.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	PHOSPHOROUS	MG/L	141.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	PHOSPHOROUS	MG/L	154.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	PHOSPHOROUS	MG/L	96.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	PHOSPHOROUS	MG/L	83.000		0.0000	OEPA	0.0
H-115	7-10		POTASSIUM (K)	MG/L	184.000		0.0000		96.0
H-115	7-10	04/17/80	POTASSIUM (K)	MG/L	750.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	POTASSIUM (K)	MG/L	640.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	POTASSIUM (K)	MG/L	660.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	POTASSIUM (K)	MG/L	590.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	POTASSIUM (K)	MG/L	510.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	POTASSIUM (K)	MG/L	445.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	POTASSIUM (K)	MG/L	320.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	POTASSIUM (K)	MG/L	190.000		0.0000	OEPA	0.0
H-115	7-10		POTASSIUM - 40 (K40)	PC/L	217.600		0.0000		96.0
H-115	7-10		POTASSIUM - 40 (K40)	PC/L	217.600		0.0000		96.0
H-115	7-10	04/17/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2720.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2350.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2280.000		0.0000	OEPA	0.0

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COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-115	7-10	10/06/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	2090.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1560.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1440.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1190.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	RESIDUE TOTAL FILTERED (DISS.)	MG/L	830.000		0.0000	OEPA	0.0
H-115	7-10	04/17/80	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	SELENIUM	MG/L	0.000	BMDL	0.0250	OEPA	0.0
H-115	7-10	09/17/82	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	SELENIUM	MG/L	0.000	BMDL	0.0250	OEPA	0.0
H-115	7-10		SODIUM (NA)	MG/L	26.000		0.0000		96.0
H-115	7-10	04/17/80	SODIUM (NA)	MG/L	163.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	SODIUM (NA)	MG/L	129.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	SODIUM (NA)	MG/L	102.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	SODIUM (NA)	MG/L	129.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	SODIUM (NA)	MG/L	73.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	SODIUM (NA)	MG/L	58.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	SODIUM (NA)	MG/L	42.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	SODIUM (NA)	MG/L	28.000		0.0000	OEPA	0.0
H-115	7-10	04/17/80	STRONTIUM (SR)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
H-115	7-10	10/16/80	STRONTIUM (SR)	MG/L	0.000	BMDL	0.2000	OEPA	0.0
H-115	7-10	03/31/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10		STRONTIUM - 90 (SR90)	PC/L	0.000	ND	0.0000		96.0
H-115	7-10		SULFATE (SO4)	MG/L	93.000		0.0000		96.0
H-115	7-10	04/17/80	SULFATE (SO4)	MG/L	181.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	SULFATE (SO4)	MG/L	166.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	SULFATE (SO4)	MG/L	123.000		0.0000	OEPA	0.0
H-115	7-10	10/06/81	SULFATE (SO4)	MG/L	118.000		0.0000	OEPA	0.0
H-115	7-10	04/23/82	SULFATE (SO4)	MG/L	104.000		0.0000	OEPA	0.0
H-115	7-10	09/17/82	SULFATE (SO4)	MG/L	96.000		0.0000	OEPA	0.0
H-115	7-10	05/17/83	SULFATE (SO4)	MG/L	86.000		0.0000	OEPA	0.0
H-115	7-10	01/10/84	SULFATE (SO4)	MG/L	89.000		0.0000	OEPA	0.0
H-115	7-10	08/31/82	TEMPERATURE	DEG C	18.500		0.0000		96.0
H-115	7-10	04/17/80	TEMPERATURE	DEG C	15.000		0.0000	OEPA	0.0
H-115	7-10	10/16/80	TEMPERATURE	DEG C	14.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	TEMPERATURE	DEG C	16.700		0.0000	OEPA	0.0
H-115	7-10	10/06/81	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	TEMPERATURE	DEG C	16.100		0.0000	OEPA	0.0
H-115	7-10	09/17/82	TEMPERATURE	DEG C	15.800		0.0000	OEPA	0.0
H-115	7-10	05/17/83	TEMPERATURE	DEG C	15.600		0.0000	OEPA	0.0
H-115	7-10	01/10/84	TEMPERATURE	DEG C	16.100		0.0000	OEPA	0.0
H-115	7-10		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	860.000		0.0000		96.0
H-115	7-10	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	2100.000		0.0000		96.0
H-115	7-10		TOTAL IRON (FE)	MG/L	2.560		0.0000		96.0
H-115	7-10	04/17/80	TOTAL IRON (FE)	MG/L	4.450		0.0000	OEPA	0.0
H-115	7-10	10/16/80	TOTAL IRON (FE)	MG/L	2.840		0.0000	OEPA	0.0
H-115	7-10	03/31/81	TOTAL IRON (FE)	MG/L	2.220		0.0000	OEPA	0.0
H-115	7-10	10/06/81	TOTAL IRON (FE)	MG/L	2.110		0.0000	OEPA	0.0
H-115	7-10	04/23/82	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-115	7-10	09/17/82	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	TOTAL IRON (FE)	MG/L	3.010		0.0000	OEPA	0.0
H-115	7-10	01/10/84	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	TOTAL KJELDAHL N (TKN)	MG/L	1.110		0.0000	OEPA	0.0
H-115	7-10	04/23/82	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/17/80	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	TOTAL ORGANIC CARBON (TOC)	MG/L	2.000		0.0000	OEPA	0.0
H-115	7-10	03/31/81	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	TOTAL ORGANIC CARBON (TOC)	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10		URANIUM (U)	PC/L	0.300		0.0000		96.0
H-115	7-10		ZINC	MG/L	0.030		0.0000		96.0
H-115	7-10	04/17/80	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	ZINC	MG/L	0.000	BMDL	0.0300	OEPA	0.0
H-115	7-10	10/06/81	ZINC	MG/L	0.000	BMDL	0.0300	OEPA	0.0
H-115	7-10	04/23/82	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	ZINC	MG/L	0.000	MNA	0.0000	OEPA	0.0
H-115	7-10	08/31/82	pH		6.800		0.0000		96.0
H-115	7-10	04/17/80	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	10/16/80	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	03/31/81	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	10/06/81	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	04/23/82	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	09/17/82	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	05/17/83	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-115	7-10	01/10/84	pH	STD	0.000	NA	0.0000	OEPA	0.0
H-116	KY#,7-17		ALKALINITY	MG/L	202.000		0.0000		40.0
H-116	KY#,7-17		AMMONIA AS N	MG/L	0.020		0.0000		40.0
H-116	KY#,7-17		ARSENIC (AS)	MG/L	0.010		0.0000		40.0
H-116	KY#,7-17		BARIUM (BA)	MG/L	0.300		0.0000		40.0
H-116	KY#,7-17		CALCIUM (CA)	MG/L	78.000		0.0000		40.0
H-116	KY#,7-17		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		40.0
H-116	KY#,7-17		CHLORIDE	MG/L	37.000		0.0000		40.0
H-116	KY#,7-17		COPPER (CU)	MG/L	0.030		0.0000		40.0
H-116	KY#,7-17		FLUORIDE	MG/L	0.180		0.0000		40.0
H-116	KY#,7-17		GROSS ALPHA	PC/L	3.000		0.0000		40.0
H-116	KY#,7-17		GROSS BETA	PC/L	9.000		0.0000		40.0
H-116	KY#,7-17		LEAD (PB)	MG/L	0.005		0.0000		40.0
H-116	KY#,7-17		MANGANESE (MN)	MG/L	22.600		0.0000		40.0
H-116	KY#,7-17		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.040		0.0000		40.0
H-116	KY#,7-17		NITRATE - NITRITE (NO2 - NO3)	MG/L	15.500		0.0000		40.0
H-116	KY#,7-17		PHOSPHOROUS	MG/L	0.040		0.0000		40.0
H-116	KY#,7-17		POTASSIUM (K)	MG/L	2.100		0.0000		40.0
H-116	KY#,7-17		POTASSIUM - 40 (K40)	PC/L	78.000		0.0000		40.0
H-116	KY#,7-17		SODIUM (NA)	MG/L	14.000		0.0000		40.0

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H-116	KY*,7-17		STRONTIUM - 90 (SR90)	PC/L	78.000	0.0000		40.0
H-116	KY*,7-17		SULFATE (SO4)	MG/L	52.000	0.0000		40.0
H-116	KY*,7-17	08/27/82	TEMPERATURE	DEG C	12.500	0.0000		40.0
H-116	KY*,7-17		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	386.000	0.0000		40.0
H-116	KY*,7-17	08/27/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	1050.000	0.0000		40.0
H-116	KY*,7-17		TOTAL IRON (FE)	MG/L	0.080	0.0000		40.0
H-116	KY*,7-17		URANIUM (U)	PC/L	0.100	0.0000		40.0
H-116	KY*,7-17		ZINC	MG/L	0.030	0.0000		40.0
H-116	KY*,7-17	08/27/82	pH		7.500	0.0000		40.0
H-117	JS*,7-12	04/10/73	ALKALINITY	MG/L	750.000	0.0000		27.0
H-117	JS*,7-12	10/18/80	ALKALINITY	MG/L	566.000	0.0000		27.0
H-117	JS*,7-12	03/31/81	ALKALINITY	MG/L	651.000	0.0000		27.0
H-117	JS*,7-12	04/23/82	ALKALINITY	MG/L	454.000	0.0000		27.0
H-117	JS*,7-12	05/17/83	ALKALINITY	MG/L	765.000	0.0000		27.0
H-117	JS*,7-12	01/10/84	ALKALINITY	MG/L	699.000	0.0000		27.0
H-117	JS*,7-12		AMMONIA AS N	MG/L	0.140	0.0000		27.0
H-117	JS*,7-12	04/10/73	AMMONIA AS N	MG/L	1.320	0.0000		27.0
H-117	JS*,7-12	10/18/80	AMMONIA AS N	MG/L	0.050	0.0000		27.0
H-117	JS*,7-12	03/31/81	AMMONIA AS N	MG/L	0.050	0.0000		27.0
H-117	JS*,7-12	04/23/82	AMMONIA AS N	MG/L	0.050	0.0000		27.0
H-117	JS*,7-12	05/17/83	AMMONIA AS N	MG/L	0.050	0.0000		27.0
H-117	JS*,7-12	01/10/84	AMMONIA AS N	MG/L	0.050	0.0000		27.0
H-117	JS*,7-12		ARSENIC (AS)	MG/L	0.039	0.0000		27.0
H-117	JS*,7-12	10/18/80	ARSENIC (AS)	MG/L	0.040	0.0000		27.0
H-117	JS*,7-12	11/28/80	ARSENIC (AS)	MG/L	0.045	0.0000		27.0
H-117	JS*,7-12	03/31/81	ARSENIC (AS)	MG/L	0.034	0.0000		27.0
H-117	JS*,7-12	10/06/81	ARSENIC (AS)	MG/L	0.100	0.0000		27.0
H-117	JS*,7-12	04/23/82	ARSENIC (AS)	MG/L	0.066	0.0000		27.0
H-117	JS*,7-12	05/17/83	ARSENIC (AS)	MG/L	0.026	0.0000		27.0
H-117	JS*,7-12	01/10/84	ARSENIC (AS)	MG/L	0.058	0.0000		27.0
H-117	JS*,7-12		BARIUM (BA)	MG/L	0.300	0.0000		27.0
H-117	JS*,7-12	10/18/80	BARIUM (BA)	MG/L	0.200	0.0000		27.0
H-117	JS*,7-12	01/10/84	BARIUM (BA)	MG/L	0.200	0.0000		27.0
H-117	JS*,7-12	10/18/80	CADMIUM	MG/L	0.010	0.0000		27.0
H-117	JS*,7-12		CALCIUM (CA)	MG/L	44.000	0.0000		27.0
H-117	JS*,7-12	10/18/80	CALCIUM (CA)	MG/L	29.000	0.0000		27.0
H-117	JS*,7-12	11/28/80	CALCIUM (CA)	MG/L	31.000	0.0000		27.0
H-117	JS*,7-12	03/31/81	CALCIUM (CA)	MG/L	56.000	0.0000		27.0
H-117	JS*,7-12	10/06/81	CALCIUM (CA)	MG/L	66.000	0.0000		27.0
H-117	JS*,7-12	04/23/82	CALCIUM (CA)	MG/L	59.000	0.0000		27.0
H-117	JS*,7-12	05/17/83	CALCIUM (CA)	MG/L	52.000	0.0000		27.0
H-117	JS*,7-12	01/10/84	CALCIUM (CA)	MG/L	44.000	0.0000		27.0
H-117	JS*,7-12		CHEMICAL OXYGEN DEMAND (COD)	MG/L	17.000	0.0000		27.0
H-117	JS*,7-12	04/10/73	CHEMICAL OXYGEN DEMAND (COD)	MG/L	332.000	0.0000		27.0
H-117	JS*,7-12	10/18/80	CHEMICAL OXYGEN DEMAND (COD)	MG/L	4.000	0.0000		27.0
H-117	JS*,7-12	03/31/81	CHEMICAL OXYGEN DEMAND (COD)	MG/L	8.000	0.0000		27.0
H-117	JS*,7-12	04/23/82	CHEMICAL OXYGEN DEMAND (COD)	MG/L	13.000	0.0000		27.0
H-117	JS*,7-12	05/17/83	CHEMICAL OXYGEN DEMAND (COD)	MG/L	36.000	0.0000		27.0
H-117	JS*,7-12	01/10/84	CHEMICAL OXYGEN DEMAND (COD)	MG/L	7.000	0.0000		27.0
H-117	JS*,7-12		CHLORIDE	MG/L	76.000	0.0000		27.0
H-117	JS*,7-12	04/10/73	CHLORIDE	MG/L	80.000	0.0000		27.0
H-117	JS*,7-12	10/18/80	CHLORIDE	MG/L	111.000	0.0000		27.0
H-117	JS*,7-12	03/31/81	CHLORIDE	MG/L	224.000	0.0000		27.0
H-117	JS*,7-12	04/23/82	CHLORIDE	MG/L	147.000	0.0000		27.0
H-117	JS*,7-12	05/17/83	CHLORIDE	MG/L	111.000	0.0000		27.0
H-117	JS*,7-12	01/10/84	CHLORIDE	MG/L	86.000	0.0000		27.0
H-117	JS*,7-12	04/10/73	CHROMIUM	MG/L	0.030	0.0000		27.0

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H-117	JS#,7-12	10/18/80	CHROMIUM	MG/L	0.030		0.0000		27.0
H-117	JS#,7-12	04/10/73	CONDUCTIVITY	MG/L	1900.000		0.0000		27.0
H-117	JS#,7-12		COPPER (CU)	MG/L	0.030		0.0000		27.0
H-117	JS#,7-12	10/18/80	COPPER (CU)	MG/L	0.030		0.0000		27.0
H-117	JS#,7-12	11/28/80	COPPER (CU)	MG/L	0.030		0.0000		27.0
H-117	JS#,7-12		FLUORIDE	MG/L	0.050		0.0000		27.0
H-117	JS#,7-12	10/18/80	FLUORIDE	MG/L	0.050		0.0000		27.0
H-117	JS#,7-12	03/31/81	FLUORIDE	MG/L	0.030		0.0000		27.0
H-117	JS#,7-12	04/23/82	FLUORIDE	MG/L	0.050		0.0000		27.0
H-117	JS#,7-12	05/17/83	FLUORIDE	MG/L	0.050		0.0000		27.0
H-117	JS#,7-12	01/10/84	FLUORIDE	MG/L	0.050		0.0000		27.0
H-117	JS#,7-12		GROSS ALPHA	PC/L	3.000		0.0000		27.0
H-117	JS#,7-12	11/24/81	GROSS ALPHA	MG/L	0.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	GROSS ALPHA	MG/L	6.200		0.0000		27.0
H-117	JS#,7-12	05/17/83	GROSS ALPHA	MG/L	6.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	GROSS ALPHA	MG/L	3.000		0.0000		27.0
H-117	JS#,7-12		GROSS BETA	PC/L	391.000		0.0000		27.0
H-117	JS#,7-12	11/24/81	GROSS BETA	MG/L	274.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	GROSS BETA	MG/L	171.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	GROSS BETA	MG/L	417.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	GROSS BETA	MG/L	613.000		0.0000		27.0
H-117	JS#,7-12		LEAD (PB)	MG/L	0.005		0.0000		27.0
H-117	JS#,7-12	10/18/80	LEAD (PB)	MG/L	0.010		0.0000		27.0
H-117	JS#,7-12	11/28/80	LEAD (PB)	MG/L	0.005		0.0000		27.0
H-117	JS#,7-12	04/23/82	LEAD (PB)	MG/L	0.005		0.0000		27.0
H-117	JS#,7-12	05/17/83	LEAD (PB)	MG/L	0.025		0.0000		27.0
H-117	JS#,7-12	01/10/84	LEAD (PB)	MG/L	0.005		0.0000		27.0
H-117	JS#,7-12	10/18/80	MAGNESIUM (MG)	MG/L	54.000		0.0000		27.0
H-117	JS#,7-12	11/28/80	MAGNESIUM (MG)	MG/L	46.000		0.0000		27.0
H-117	JS#,7-12	03/31/81	MAGNESIUM (MG)	MG/L	90.000		0.0000		27.0
H-117	JS#,7-12	10/06/81	MAGNESIUM (MG)	MG/L	105.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	MAGNESIUM (MG)	MG/L	80.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	MAGNESIUM (MG)	MG/L	82.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	MAGNESIUM (MG)	MG/L	70.000		0.0000		27.0
H-117	JS#,7-12		MANGANESE (MN)	MG/L	61.200		0.0000		27.0
H-117	JS#,7-12	04/10/73	MANGANESE (MN)	MG/L	0.600		0.0000		27.0
H-117	JS#,7-12	10/18/80	MANGANESE (MN)	MG/L	0.270		0.0000		27.0
H-117	JS#,7-12	11/28/80	MANGANESE (MN)	MG/L	0.270		0.0000		27.0
H-117	JS#,7-12	03/31/81	MANGANESE (MN)	MG/L	0.440		0.0000		27.0
H-117	JS#,7-12	04/23/82	MANGANESE (MN)	MG/L	0.360		0.0000		27.0
H-117	JS#,7-12	05/17/83	MANGANESE (MN)	MG/L	0.560		0.0000		27.0
H-117	JS#,7-12		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.130		0.0000		27.0
H-117	JS#,7-12	04/10/73	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	7.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.060		0.0000		27.0
H-117	JS#,7-12	03/31/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.120		0.0000		27.0
H-117	JS#,7-12	04/23/82	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.210		0.0000		27.0
H-117	JS#,7-12	05/17/83	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.090		0.0000		27.0
H-117	JS#,7-12	04/10/73	NITRATE	MG/L	0.100		0.0000		27.0
H-117	JS#,7-12	10/18/80	NITRATE	MG/L	0.530		0.0000		27.0
H-117	JS#,7-12	03/31/81	NITRATE	MG/L	0.280		0.0000		27.0
H-117	JS#,7-12	04/23/82	NITRATE	MG/L	0.550		0.0000		27.0
H-117	JS#,7-12	05/17/83	NITRATE	MG/L	0.610		0.0000		27.0
H-117	JS#,7-12	01/10/84	NITRATE	MG/L	0.440		0.0000		27.0
H-117	JS#,7-12		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.400		0.0000		27.0
H-117	JS#,7-12	04/10/73	NITRITE	MG/L	0.010		0.0000		27.0
H-117	JS#,7-12	04/10/73	PHENOL	MG/L	0.010		0.0000		27.0
H-117	JS#,7-12	10/18/80	PHENOL	MG/L	0.002		0.0000		27.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETEC-TION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-117	JS#,7-12	01/10/84	PHENOL	MG/L	0.002		0.0000		27.0
H-117	JS#,7-12		PHOSPHOROUS	MG/L	104.800		0.0000		27.0
H-117	JS#,7-12	10/18/80	PHOSPHOROUS	MG/L	91.000		0.0000		27.0
H-117	JS#,7-12	03/31/81	PHOSPHOROUS	MG/L	75.200		0.0000		27.0
H-117	JS#,7-12	04/23/82	PHOSPHOROUS	MG/L	119.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	PHOSPHOROUS	MG/L	148.300		0.0000		27.0
H-117	JS#,7-12	01/10/84	PHOSPHOROUS	MG/L	106.000		0.0000		27.0
H-117	JS#,7-12		POTASSIUM (K)	MG/L	441.000		0.0000		27.0
H-117	JS#,7-12	04/10/73	POTASSIUM (K)	MG/L	120.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	POTASSIUM (K)	MG/L	300.000		0.0000		27.0
H-117	JS#,7-12	11/28/80	POTASSIUM (K)	MG/L	250.000		0.0000		27.0
H-117	JS#,7-12	03/31/81	POTASSIUM (K)	MG/L	250.000		0.0000		27.0
H-117	JS#,7-12	10/06/81	POTASSIUM (K)	MG/L	225.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	POTASSIUM (K)	MG/L	400.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	POTASSIUM (K)	MG/L	460.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	POTASSIUM (K)	MG/L	430.000		0.0000		27.0
H-117	JS#,7-12		POTASSIUM - 40 (K40)	PC/L	345.200		0.0000		27.0
H-117	JS#,7-12	11/24/81	POTASSIUM - 40 (K40)	MG/L	305.000		0.0000		27.0
H-117	JS#,7-12	04/10/73	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1583.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1270.000		0.0000		27.0
H-117	JS#,7-12	03/31/81	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1380.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1630.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1640.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	RESIDUE TOTAL FILTERED (DISS.)	MG/L	1478.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	SELENIUM	MG/L	0.025		0.0000		27.0
H-117	JS#,7-12	01/10/84	SELENIUM	MG/L	0.010		0.0000		27.0
H-117	JS#,7-12		SODIUM (NA)	MG/L	66.000		0.0000		27.0
H-117	JS#,7-12	04/10/73	SODIUM (NA)	MG/L	304.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	SODIUM (NA)	MG/L	96.000		0.0000		27.0
H-117	JS#,7-12	11/28/80	SODIUM (NA)	MG/L	56.000		0.0000		27.0
H-117	JS#,7-12	03/31/81	SODIUM (NA)	MG/L	108.000		0.0000		27.0
H-117	JS#,7-12	10/06/81	SODIUM (NA)	MG/L	145.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	SODIUM (NA)	MG/L	134.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	SODIUM (NA)	MG/L	106.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	SODIUM (NA)	MG/L	82.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	STRONTIUM (SR)	MG/L	0.200		0.0000		27.0
H-117	JS#,7-12	11/24/81	STRONTIUM - 90 (SR90)	MG/L	2.300		0.0000		27.0
H-117	JS#,7-12		SULFATE (SO4)	MG/L	81.000		0.0000		27.0
H-117	JS#,7-12	04/10/73	SULFATE (SO4)	MG/L	204.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	SULFATE (SO4)	MG/L	110.000		0.0000		27.0
H-117	JS#,7-12	03/31/81	SULFATE (SO4)	MG/L	94.000		0.0000		27.0
H-117	JS#,7-12	04/23/82	SULFATE (SO4)	MG/L	98.000		0.0000		27.0
H-117	JS#,7-12	05/17/83	SULFATE (SO4)	MG/L	98.000		0.0000		27.0
H-117	JS#,7-12	01/10/84	SULFATE (SO4)	MG/L	90.000		0.0000		27.0
H-117	JS#,7-12	08/31/82	TEMPERATURE	DEG C	17.000		0.0000		27.0
H-117	JS#,7-12	10/18/80	TEMPERATURE	DEG C	13.000		0.0000		27.0
H-117	JS#,7-12	11/28/80	TEMPERATURE	DEG C	14.700		0.0000		27.0
H-117	JS#,7-12	03/31/81	TEMPERATURE	DEG C	13.300		0.0000		27.0
H-117	JS#,7-12	10/06/81	TEMPERATURE	DEG C	16.700		0.0000		27.0
H-117	JS#,7-12	04/23/82	TEMPERATURE	DEG C	14.400		0.0000		27.0
H-117	JS#,7-12	05/17/83	TEMPERATURE	DEG C	13.300		0.0000		27.0
H-117	JS#,7-12	01/10/84	TEMPERATURE	DEG C	14.400		0.0000		27.0
H-117	JS#,7-12		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	1336.000		0.0000		27.0
H-117	JS#,7-12	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	2050.000		0.0000		27.0
H-117	JS#,7-12		TOTAL IRON (FE)	MG/L	0.460		0.0000		27.0
H-117	JS#,7-12	10/18/80	TOTAL IRON (FE)	MG/L	0.190		0.0000		27.0
H-117	JS#,7-12	11/28/80	TOTAL IRON (FE)	MG/L	0.200		0.0000		27.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-117	JS*,7-12	03/31/81	TOTAL IRON (FE)	MG/L	0.280		0.0000		27.0
H-117	JS*,7-12	10/06/81	TOTAL IRON (FE)	MG/L	0.190		0.0000		27.0
H-117	JS*,7-12	05/17/83	TOTAL IRON (FE)	MG/L	0.740		0.0000		27.0
H-117	JS*,7-12	10/18/80	TOTAL KJELDAHL N (TKN)	MG/L	0.800		0.0000		27.0
H-117	JS*,7-12	03/31/81	TOTAL KJELDAHL N (TKN)	MG/L	0.140		0.0000		27.0
H-117	JS*,7-12	04/10/73	TOTAL ORGANIC CARBON (TOC)	MG/L	110.000		0.0000		27.0
H-117	JS*,7-12	10/18/80	TOTAL ORGANIC CARBON (TOC)	MG/L	7.000		0.0000		27.0
H-117	JS*,7-12		URANIUM (U)	PC/L	0.000		0.0000		27.0
H-117	JS*,7-12		ZINC	MG/L	0.040		0.0000		27.0
H-117	JS*,7-12	10/18/80	ZINC	MG/L	0.030		0.0000		27.0
H-117	JS*,7-12	05/17/83	ZINC	MG/L	0.070		0.0000		27.0
H-117	JS*,7-12	08/31/82	pH		7.200		0.0000		27.0
H-117	JS*,7-12	04/10/73	pH	MG/L	7.300		0.0000		27.0
H-118	RE*,7-11	08/31/82	CALCIUM (CA)	MG/L	97.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	HARDNESS CARBONATE	MG/L	469.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	HARDNESS NONCARBONATE	MG/L	108.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	MANGANESE (MN)	MG/L	55.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	POTASSIUM (K)	MG/L	57.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	SODIUM (NA)	MG/L	17.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	TEMPERATURE	DEG C	13.500		0.0000		0.0
H-118	RE*,7-11	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	110.000		0.0000		0.0
H-118	RE*,7-11	08/31/82	pH		7.300		0.0000		0.0
H-119	MURM*,7-16	08/27/82	CALCIUM (CA)	MG/L	100.000		0.0000		55.0
H-119	MURM*,7-16	08/27/82	HARDNESS CARBONATE	MG/L	353.000		0.0000		55.0
H-119	MURM*,7-16	08/27/82	HARDNESS NONCARBONATE	MG/L	58.000		0.0000		55.0
H-119	MURM*,7-16	08/27/82	MANGANESE (MN)	MG/L	25.000		0.0000		55.0
H-119	MURM*,7-16	08/27/82	POTASSIUM (K)	MG/L	1.700		0.0000		55.0
H-119	MURM*,7-16	08/27/82	SODIUM (NA)	MG/L	5.700		0.0000		55.0
H-119	MURM*,7-16	08/27/82	TEMPERATURE	DEG C	13.500		0.0000		55.0
H-119	MURM*,7-16	08/27/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	695.000		0.0000		55.0
H-119	MURM*,7-16	08/27/82	pH		7.700		0.0000		55.0
H-120		08/30/82	TEMPERATURE	DEG C	17.000		0.0000		25.0
H-120		08/30/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	960.000		0.0000		25.0
H-120		08/30/82	pH		7.500		0.0000		25.0
H-121	MC*,7-8		ALKALINITY	MG/L	249.000		0.0000		82.0
H-121	MC*,7-8		AMMONIA AS N	MG/L	0.130		0.0000		82.0
H-121	MC*,7-8		ARSENIC (AS)	MG/L	0.010		0.0000		82.0
H-121	MC*,7-8		BARIUM (BA)	MG/L	0.300		0.0000		82.0
H-121	MC*,7-8		CALCIUM (CA)	MG/L	92.000		0.0000		82.0
H-121	MC*,7-8	08/31/82	CALCIUM (CA)	MG/L	100.000		0.0000		82.0
H-121	MC*,7-8		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		82.0
H-121	MC*,7-8		CHLORIDE	MG/L	25.000		0.0000		82.0
H-121	MC*,7-8		COPPER (CU)	MG/L	0.030		0.0000		82.0
H-121	MC*,7-8		FLUORIDE	MG/L	0.240		0.0000		82.0
H-121	MC*,7-8		GROSS ALPHA	PC/L	20.000		0.0000		82.0
H-121	MC*,7-8		GROSS BETA	PC/L	10.000		0.0000		82.0
H-121	MC*,7-8	08/31/82	HARDNESS CARBONATE	MG/L	361.000		0.0000		82.0
H-121	MC*,7-8	08/31/82	HARDNESS NONCARBONATE	MG/L	66.000		0.0000		82.0
H-121	MC*,7-8		LEAD (PB)	MG/L	0.005		0.0000		82.0
H-121	MC*,7-8		MANGANESE (MN)	MG/L	23.100		0.0000		82.0
H-121	MC*,7-8	08/31/82	MANGANESE (MN)	MG/L	27.000		0.0000		82.0
H-121	MC*,7-8		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.160		0.0000		82.0
H-121	MC*,7-8		PHOSPHOROUS	MG/L	0.020		0.0000		82.0
H-121	MC*,7-8		POTASSIUM (K)	MG/L	3.000		0.0000		82.0
H-121	MC*,7-8	08/31/82	POTASSIUM (K)	MG/L	2.400		0.0000		82.0
H-121	MC*,7-8		POTASSIUM - 40 (K40)	PC/L	65.800		0.0000		82.0
H-121	MC*,7-8		SODIUM (NA)	MG/L	11.000		0.0000		82.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-121	MC*,7-8	08/31/82	SODIUM (NA)	MG/L	15.000		0.0000		82.0
H-121	MC*,7-8		STRONTIUM - 90 (SR90)	PC/L	0.800		0.0000		82.0
H-121	MC*,7-8		SULFATE (SO4)	MG/L	71.000		0.0000		82.0
H-121	MC*,7-8	08/31/82	TEMPERATURE	DEG C	12.500		0.0000		82.0
H-121	MC*,7-8		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	348.000		0.0000		82.0
H-121	MC*,7-8	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	695.000		0.0000		82.0
H-121	MC*,7-8		TOTAL IRON (FE)	MG/L	1.020		0.0000		82.0
H-121	MC*,7-8		URANIUM (U)	PC/L	20.900		0.0000		82.0
H-121	MC*,7-8		ZINC	MG/L	0.040		0.0000		82.0
H-121	MC*,7-8	08/31/82	pH		7.800		0.0000		82.0
H-122	7-5	08/25/82	CALCIUM (CA)	MG/L	110.000		0.0000		80.0
H-122	7-5	08/25/82	HARDNESS CARBONATE	MG/L	399.000		0.0000		80.0
H-122	7-5	08/25/82	HARDNESS NONCARBONATE	MG/L	87.000		0.0000		80.0
H-122	7-5	08/25/82	MANGANESE (MN)	MG/L	30.000		0.0000		80.0
H-122	7-5	08/25/82	POTASSIUM (K)	MG/L	2.300		0.0000		80.0
H-122	7-5	08/25/82	SODIUM (NA)	MG/L	10.000		0.0000		80.0
H-122	7-5	08/25/82	TEMPERATURE	DEG C	12.000		0.0000		80.0
H-122	7-5	08/25/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	775.000		0.0000		80.0
H-122	7-5	08/25/82	pH		7.500		0.0000		80.0
H-123	7-1	08/30/82	TEMPERATURE	DEG C	13.000		0.0000		81.0
H-123	7-1	08/30/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	585.000		0.0000		81.0
H-123	7-1	08/30/82	pH		7.600		0.0000		81.0
H-124	18-3		ALKALINITY	MG/L	563.000		0.0000		60.0
H-124	18-3		AMMONIA AS N	MG/L	2.930		0.0000		60.0
H-124	18-3		ARSENIC (AS)	MG/L	0.010		0.0000		60.0
H-124	18-3		BARIUM (BA)	MG/L	0.380		0.0000		60.0
H-124	18-3		CALCIUM (CA)	MG/L	74.000		0.0000		60.0
H-124	18-3		CHEMICAL OXYGEN DEMAND (COD)	MG/L	58.000		0.0000		60.0
H-124	18-3		CHLORIDE	MG/L	89.000		0.0000		60.0
H-124	18-3		COPPER (CU)	MG/L	0.200		0.0000		60.0
H-124	18-3		FLUORIDE	MG/L	0.190		0.0000		60.0
H-124	18-3		GROSS ALPHA	PC/L	9.000		0.0000		60.0
H-124	18-3		GROSS BETA	PC/L	66.000		0.0000		60.0
H-124	18-3		LEAD (PB)	MG/L	0.005		0.0000		60.0
H-124	18-3		MANGANESE (MN)	MG/L	30.300		0.0000		60.0
H-124	18-3		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	1.300		0.0000		60.0
H-124	18-3		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.060		0.0000		60.0
H-124	18-3		PHOSPHOROUS	MG/L	0.020		0.0000		60.0
H-124	18-3		POTASSIUM (K)	MG/L	65.400		0.0000		60.0
H-124	18-3		POTASSIUM - 40 (K40)	PC/L	120.500		0.0000		60.0
H-124	18-3		SODIUM (NA)	MG/L	144.000		0.0000		60.0
H-124	18-3		STRONTIUM - 90 (SR90)	PC/L	0.100		0.0000		60.0
H-124	18-3		SULFATE (SO4)	MG/L	25.000		0.0000		60.0
H-124	18-3		TEMPERATURE	DEG C	15.500		0.0000		60.0
H-124	18-3		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	812.000		0.0000		60.0
H-124	18-3		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	1050.000		0.0000		60.0
H-124	18-3		TOTAL IRON (FE)	MG/L	2.880		0.0000		60.0
H-124	18-3		URANIUM (U)	PC/L	0.700		0.0000		60.0
H-124	18-3		ZINC	MG/L	0.300		0.0000		60.0
H-124	18-3		pH		7.600		0.0000		60.0
H-125	7-15	11/29/76	ALKALINITY	MG/L	266.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	ALKALINITY	MG/L	276.000		0.0000	OEPA	80.0
H-125	7-15	10/3/77	ALUMINUM (AL)	MG/L	0.200		0.0000		80.0
H-125	7-15	11/29/76	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	ALUMINUM (AL)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	AMMONIA AS N	MG/L	0.180		0.0000	OEPA	80.0
H-125	7-15	06/77/77	AMMONIA AS N	MG/L	0.110		0.0000	OEPA	80.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

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H-125	7-15	09/27/78	ARSENIC (AS)	MG/L	0.010		0.0000		80.0
H-125	7-15	04/10/79	ARSENIC (AS)	MG/L	0.010		0.0000		80.0
H-125	7-15	10/16/80	ARSENIC (AS)	MG/L	0.010		0.0000		80.0
H-125	7-15	03/31/81	ARSENIC (AS)	MG/L	0.010		0.0000		80.0
H-125	7-15	05/17/83	ARSENIC (AS)	MG/L	0.020		0.0000		80.0
H-125	7-15	11/29/76	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	ARSENIC (AS)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	03/31/81	BARIUM (BA)	MG/L	0.200		0.0000		80.0
H-125	7-15	11/29/76	BARIUM (BA)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	BARIUM (BA)	MG/L	0.000	BMDL	0.2000	OEPA	80.0
H-125	7-15	09/27/78	CADMIUM	MG/L	0.005		0.0000		80.0
H-125	7-15	10/16/80	CADMIUM	MG/L	0.005		0.0000		80.0
H-125	7-15	11/29/76	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	CADMIUM	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	10/3/77	CALCIUM (CA)	MG/L	93.000		0.0000		80.0
H-125	7-15	09/27/78	CALCIUM (CA)	MG/L	103.000		0.0000		80.0
H-125	7-15	10/16/80	CALCIUM (CA)	MG/L	104.000		0.0000		80.0
H-125	7-15	03/31/81	CALCIUM (CA)	MG/L	107.000		0.0000		80.0
H-125	7-15	05/17/83	CALCIUM (CA)	MG/L	102.000		0.0000		80.0
H-125	7-15	11/29/76	CALCIUM (CA)	MG/L	93.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	CALCIUM (CA)	MG/L	97.000		0.0000	OEPA	80.0
H-125	7-15	11/29/76	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	80.0
H-125	7-15	06/14/77	CHEMICAL OXYGEN DEMAND (COD)	MG/L	0.000	BMDL	4.0000	OEPA	80.0
H-125	7-15	11/29/76	CHLORIDE	MG/L	14.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	CHLORIDE	MG/L	11.000		0.0000	OEPA	80.0
H-125	7-15	10/3/77	CHROMIUM	MG/L	0.030		0.0000		80.0
H-125	7-15	10/16/80	CHROMIUM	MG/L	0.030		0.0000		80.0
H-125	7-15	11/29/76	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	80.0
H-125	7-15	06/14/77	CHROMIUM	MG/L	0.000	BMDL	0.0300	OEPA	80.0
H-125	7-15	11/29/76	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	CONDUCTIVITY	uhmos/cm	0.000	NA	0.0000	OEPA	80.0
H-125	7-15	10/16/80	COPPER (CU)	MG/L	0.030		0.0000		80.0
H-125	7-15	11/29/76	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	COPPER (CU)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	CYANIDE	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	FLUORIDE	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	10/3/77	LEAD (PB)	MG/L	0.005		0.0000		80.0
H-125	7-15	10/3/77	LEAD (PB)	MG/L	0.005		0.0000		80.0
H-125	7-15	09/27/78	LEAD (PB)	MG/L	0.005		0.0000		80.0
H-125	7-15	04/10/79	LEAD (PB)	MG/L	0.011		0.0000		80.0
H-125	7-15	10/16/80	LEAD (PB)	MG/L	0.005		0.0000		80.0
H-125	7-15	03/31/81	LEAD (PB)	MG/L	0.005		0.0000		80.0
H-125	7-15	05/17/83	LEAD (PB)	MG/L	0.005		0.0000		80.0
H-125	7-15	11/29/76	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	LEAD (PB)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	10/3/77	MAGNESIUM (MG)	MG/L	25.000		0.0000		80.0
H-125	7-15	09/27/78	MAGNESIUM (MG)	MG/L	24.000		0.0000		80.0
H-125	7-15	10/16/80	MAGNESIUM (MG)	MG/L	25.000		0.0000		80.0
H-125	7-15	03/31/81	MAGNESIUM (MG)	MG/L	26.000		0.0000		80.0
H-125	7-15	05/17/83	MAGNESIUM (MG)	MG/L	28.000		0.0000		80.0
H-125	7-15	11/29/76	MAGNESIUM (MG)	MG/L	22.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	MAGNESIUM (MG)	MG/L	23.000		0.0000	OEPA	80.0
H-125	7-15	09/27/78	MANGANESE (MN)	MG/L	0.270		0.0000		80.0
H-125	7-15	10/16/80	MANGANESE (MN)	MG/L	0.230		0.0000		80.0
H-125	7-15	03/31/81	MANGANESE (MN)	MG/L	0.250		0.0000		80.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-125	7-15	05/17/83	MANGANESE (MN)	MG/L	0.280		0.0000		80.0
H-125	7-15	11/29/76	MANGANESE (MN)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	10/3/77	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-125	7-15	09/27/78	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-125	7-15	04/10/79	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-125	7-15	10/16/80	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-125	7-15	03/31/81	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-125	7-15	05/17/83	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-125	7-15	11/29/76	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	80.0
H-125	7-15	06/14/77	MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.000	BMDL	0.0500	OEPA	80.0
H-125	7-15	11/29/76	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	MERCURY (HG)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	NICKEL (NI)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	NITRATE	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	NITRATE	MG/L	0.000	BMDL	0.1000	OEPA	80.0
H-125	7-15	10/16/80	PHENOL	MG/L	0.002		0.0000		80.0
H-125	7-15	11/29/76	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	PHENOL	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	PHOSPHATE O/R	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	PHOSPHATE TOTAL	MG/L	90.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	PHOSPHATE TOTAL	MG/L	48.000		0.0000	OEPA	80.0
H-125	7-15	11/29/76	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	PHOSPHOROUS	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	10/3/77	POTASSIUM (K)	MG/L	1.800		0.0000		80.0
H-125	7-15	09/27/78	POTASSIUM (K)	MG/L	1.800		0.0000		80.0
H-125	7-15	04/10/79	POTASSIUM (K)	MG/L	2.000		0.0000		80.0
H-125	7-15	10/16/80	POTASSIUM (K)	MG/L	1.600		0.0000		80.0
H-125	7-15	03/31/81	POTASSIUM (K)	MG/L	1.600		0.0000		80.0
H-125	7-15	05/17/83	POTASSIUM (K)	MG/L	1.900		0.0000		80.0
H-125	7-15	11/29/76	POTASSIUM (K)	MG/L	1.500		0.0000	OEPA	80.0
H-125	7-15	06/14/77	POTASSIUM (K)	MG/L	1.600		0.0000	OEPA	80.0
H-125	7-15	11/29/76	RESIDUE TOTAL FILTERED (DISS.)	MG/L	402.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	RESIDUE TOTAL FILTERED (DISS.)	MG/L	420.000		0.0000	OEPA	80.0
H-125	7-15	11/29/76	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	SELENIUM	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	10/3/77	SODIUM (NA)	MG/L	17.000		0.0000		80.0
H-125	7-15	09/27/78	SODIUM (NA)	MG/L	17.000		0.0000		80.0
H-125	7-15	04/10/79	SODIUM (NA)	MG/L	15.000		0.0000		80.0
H-125	7-15	10/16/80	SODIUM (NA)	MG/L	9.000		0.0000		80.0
H-125	7-15	03/31/81	SODIUM (NA)	MG/L	9.000		0.0000		80.0
H-125	7-15	05/17/83	SODIUM (NA)	MG/L	8.000		0.0000		80.0
H-125	7-15	11/29/76	SODIUM (NA)	MG/L	16.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	SODIUM (NA)	MG/L	18.000		0.0000	OEPA	80.0
H-125	7-15	10/16/80	STRONTIUM (SR)	MG/L	0.200		0.0000		80.0
H-125	7-15	11/29/76	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	STRONTIUM (SR)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	SULFATE (SO4)	MG/L	74.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	SULFATE (SO4)	MG/L	75.000		0.0000	OEPA	80.0
H-125	7-15	08/27/82	TEMPERATURE	DEG C	16.000		0.0000		80.0
H-125	7-15	11/29/76	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	TEMPERATURE	DEG C	0.000	NA	0.0000	OEPA	80.0
H-125	7-15	08/27/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	690.000		0.0000		80.0
H-125	7-15	10/3/77	TOTAL IRON (FE)	MG/L	2.200		0.0000		80.0
H-125	7-15	09/27/78	TOTAL IRON (FE)	MG/L	4.200		0.0000		80.0
H-125	7-15	04/10/79	TOTAL IRON (FE)	MG/L	2.390		0.0000		80.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

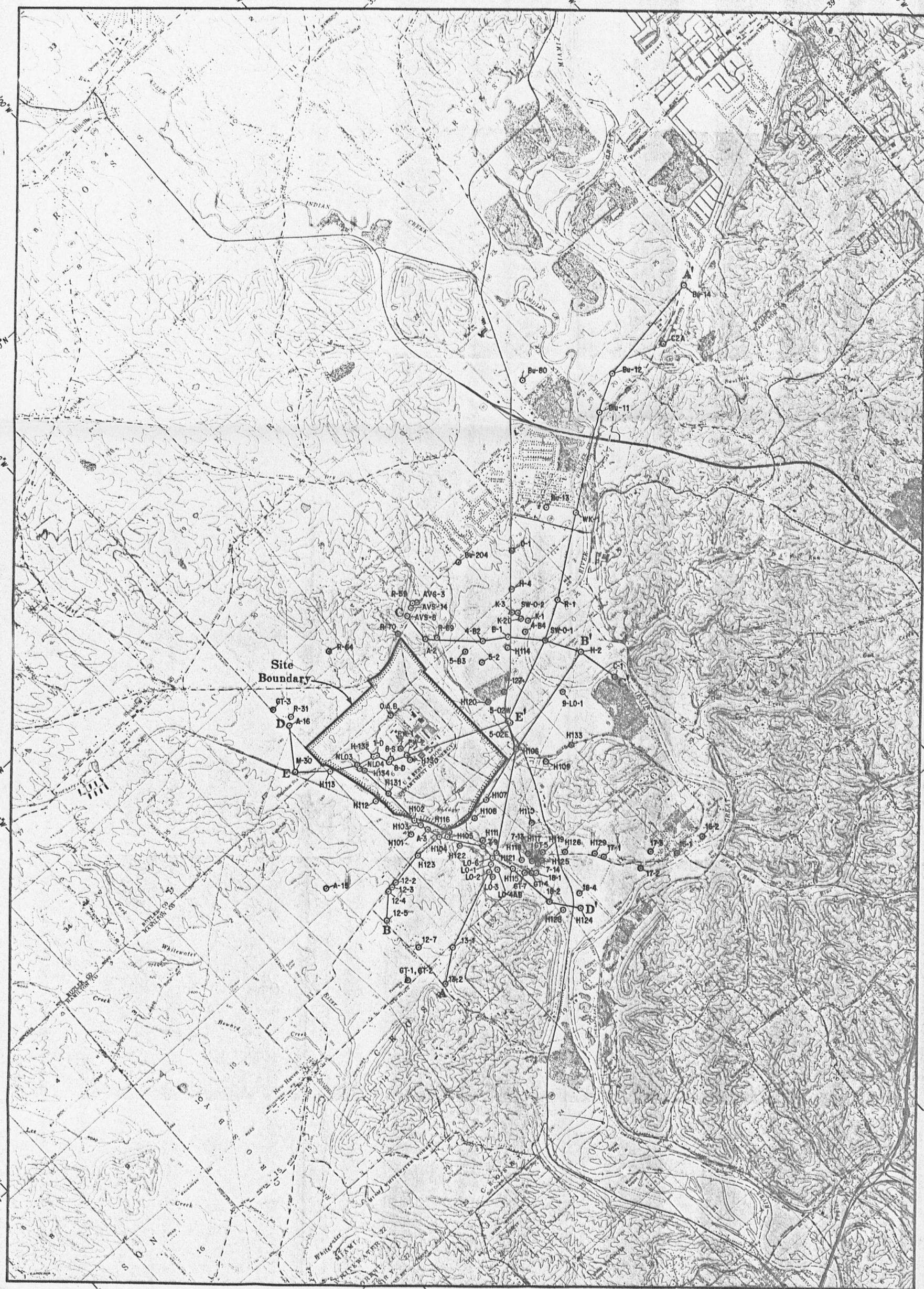
COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-125	7-15	10/16/80	TOTAL IRON (FE)	MG/L	2.040		0.0000		80.0
H-125	7-15	03/31/81	TOTAL IRON (FE)	MG/L	2.200		0.0000		80.0
H-125	7-15	05/17/83	TOTAL IRON (FE)	MG/L	3.800		0.0000		80.0
H-125	7-15	11/29/76	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	TOTAL IRON (FE)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	TOTAL KJELDAHL N (TKN)	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	11/29/76	TOTAL ORGANIC CARBON (TOC)	MG/L	2.000		0.0000	OEPA	80.0
H-125	7-15	06/14/77	TOTAL ORGANIC CARBON (TOC)	MG/L	10.000		0.0000	OEPA	80.0
H-125	7-15	09/27/78	ZINC	MG/L	0.550		0.0000		80.0
H-125	7-15	10/16/80	ZINC	MG/L	0.040		0.0000		80.0
H-125	7-15	05/17/83	ZINC	MG/L	0.120		0.0000		80.0
H-125	7-15	11/29/76	ZINC	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	ZINC	MG/L	0.000	MNA	0.0000	OEPA	80.0
H-125	7-15	08/27/82	pH		7.600		0.0000		80.0
H-125	7-15	11/29/76	pH	STD	0.000	NA	0.0000	OEPA	80.0
H-125	7-15	06/14/77	pH	STD	0.000	NA	0.0000	OEPA	80.0
H-126	17-4	08/27/82	TEMPERATURE	DEG C	13.500		0.0000		24.0
H-126	17-4	08/27/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	785.000		0.0000		24.0
H-126	17-4	08/27/82	pH		7.600		0.0000		24.0
H-127	5-1	08/27/82	TEMPERATURE	DEG C	16.500		0.0000		65.0
H-127	5-1	08/27/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	765.000		0.0000		65.0
H-127	5-1	08/27/82	pH		7.600		0.0000		65.0
H-128	18-6	08/30/82	TEMPERATURE	DEG C	19.000		0.0000		17.0
H-128	18-6	08/30/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	1100.000		0.0000		17.0
H-128	18-6	08/30/82	pH		7.200		0.0000		17.0
H-129		08/31/82	TEMPERATURE	DEG C	13.500		0.0000		60.0
H-129		08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	730.000		0.0000		60.0
H-129		08/31/82	pH		7.400		0.0000		60.0
H-130	NLO/PW-3	08/31/82	TEMPERATURE	DEG C	14.500		0.0000		210.0
H-130	NLO/PW-3	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	580.000		0.0000		210.0
H-130	NLO/PW-3	08/31/82	pH		7.400		0.0000		210.0
H-131	NLO-9	08/31/82	HARDNESS CARBONATE	MG/L	301.000		0.0000		103.0
H-131	NLO-9	08/31/82	HARDNESS NONCARBONATE	MG/L	104.000		0.0000		103.0
H-131	NLO/9	08/31/82	CALCIUM (CA)	MG/L	84.000		0.0000		103.0
H-131	NLO/9	08/31/82	MANGANESE (MN)	MG/L	22.000		0.0000		103.0
H-131	NLO/9	08/31/82	POTASSIUM (K)	MG/L	2.000		0.0000		103.0
H-131	NLO/9	08/31/82	SODIUM (NA)	MG/L	11.000		0.0000		103.0
H-131	NLO/9	08/31/82	TEMPERATURE	DEG C	10.000		0.0000		103.0
H-131	NLO/9	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	610.000		0.0000		103.0
H-131	NLO/9	08/31/82	pH		7.600		0.0000		103.0
H-132	NLO/1-5	08/31/82	TEMPERATURE	DEG C	13.000		0.0000		120.0
H-132	NLO/1-5	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	750.000		0.0000		120.0
H-132	NLO/1-5	08/31/82	pH		7.600		0.0000		120.0
H-133	9-3		ALKALINITY	MG/L	418.000		0.0000		80.0
H-133	9-3		AMMONIA AS N	MG/L	0.070		0.0000		80.0
H-133	9-3		ARSENIC (AS)	MG/L	0.010		0.0000		80.0
H-133	9-3		BARIUM (BA)	MG/L	0.300		0.0000		80.0
H-133	9-3		CALCIUM (CA)	MG/L	135.000		0.0000		80.0
H-133	9-3		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		80.0
H-133	9-3		CHLORIDE	MG/L	146.000		0.0000		80.0
H-133	9-3		COPPER (CU)	MG/L	0.030		0.0000		80.0
H-133	9-3		FLUORIDE	MG/L	0.090		0.0000		80.0
H-133	9-3		GROSS ALPHA	PC/L	5.000		0.0000		80.0
H-133	9-3		GROSS BETA	PC/L	5.000		0.0000		80.0
H-133	9-3		LEAD (PB)	MG/L	0.005		0.0000		80.0
H-133	9-3		MANGANESE (MN)	MG/L	42.200		0.0000		80.0

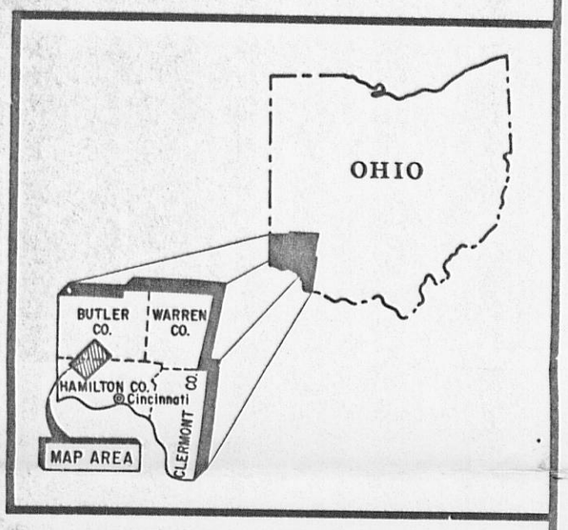
CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE	OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
H-133	9-3		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.050		0.0000		80.0
H-133	9-3		NITRATE - NITRITE (NO2 - NO3)	MG/L	0.150		0.0000		80.0
H-133	9-3		PHOSPHOROUS	MG/L	0.030		0.0000		80.0
H-133	9-3		POTASSIUM (K)	MG/L	6.500		0.0000		80.0
H-133	9-3		POTASSIUM - 40 (K40)	PC/L	38.500		0.0000		80.0
H-133	9-3		SODIUM (NA)	MG/L	93.000		0.0000		80.0
H-133	9-3		STRONTIUM - 90 (SR90)	PC/L	0.200		0.0000		80.0
H-133	9-3		SULFATE (SO4)	MG/L	117.000		0.0000		80.0
H-133	9-3	08/25/82	TEMPERATURE	DEG C	14.000		0.0000		80.0
H-133	9-3		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	834.000		0.0000		80.0
H-133	9-3		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	1300.000		0.0000		80.0
H-133	9-3		TOTAL IRON (FE)	MG/L	9.700		0.0000		80.0
H-133	9-3		URANIUM (U)	PC/L	0.500		0.0000		80.0
H-133	9-3		ZINC	MG/L	1.400		0.0000		80.0
H-133	9-3		pH		7.400		0.0000		80.0
H-134	NLO/5	08/31/82	TEMPERATURE	DEG C	12.000		0.0000		95.0
H-134	NLO/5	08/31/82	TOTAL DISSOLVED SOLIDS (TDS)	MG/L	660.000		0.0000		95.0
H-134	NLO/5	08/31/82	pH		7.500		0.0000		95.0
S.R.128	SW-0-2		ALKALINITY	MG/L	269.000		0.0000		135.0
S.R.128	SW-0-2		AMMONIA AS N	MG/L	0.020		0.0000		135.0
S.R.128	SW-0-2		CALCIUM (CA)	MG/L	93.000		0.0000		135.0
S.R.128	SW-0-2		CHEMICAL OXYGEN DEMAND (COD)	MG/L	6.000		0.0000		135.0
S.R.128	SW-0-2		CHLORIDE	MG/L	33.000		0.0000		135.0
S.R.128	SW-0-2		FLUORIDE	MG/L	0.220		0.0000		135.0
S.R.128	SW-0-2		GROSS BETA	PC/L	4.000		0.0000		135.0
S.R.128	SW-0-2		MANGANESE (MN)	MG/L	28.200		0.0000		135.0
S.R.128	SW-0-2		MBAS (METHYLENE BLUE ACTIVE SUB.)	MG/L	0.070		0.0000		135.0
S.R.128	SW-0-2		NITRATE - NITRITE (NO2 - NO3)	MG/L	7.070		0.0000		135.0
S.R.128	SW-0-2		PHOSPHOROUS	MG/L	0.020		0.0000		135.0
S.R.128	SW-0-2		POTASSIUM (K)	MG/L	2.700		0.0000		135.0
S.R.128	SW-0-2		POTASSIUM - 40 (K40)	PC/L	83.000		0.0000		135.0
S.R.128	SW-0-2		SODIUM (NA)	MG/L	16.000		0.0000		135.0
S.R.128	SW-0-2		STRONTIUM - 90 (SR90)	PC/L	0.200		0.0000		135.0
S.R.128	SW-0-2		SULFATE (SO4)	MG/L	67.000		0.0000		135.0
S.R.128	SW-0-2		TOTAL DISSOLVED SOLIDS (TDS)	PC/L	3.000		0.0000		135.0
S.R.128	SW-0-2		TOTAL DISSOLVED SOLIDS (TDS)	MG/L	444.000		0.0000		135.0
S.R.128	SW-0-2		URANIUM (U)	PC/L	0.300		0.0000		135.0
S.R.128	SW-0-2	10/56	CHLORIDE	?	7.500		0.0000		135.0
S.R.128	SW-0-2	11/56	CHLORIDE	?	11.000		0.0000		135.0
S.R.128	SW-0-2	3/57	CHLORIDE	?	9.200		0.0000		135.0
S.R.128	SW-0-2	6/58	CHLORIDE	?	9.000		0.0000		135.0
S.R.128	SW-0-2	10/58	CHLORIDE	?	7.500		0.0000		135.0
S.R.128	SW-0-2	2/59	CHLORIDE	?	8.000		0.0000		135.0
S.R.128	SW-0-2	6/83	CHLORIDE	?	12.000		0.0000		135.0
S.R.128	SW-0-2	1/65	CHLORIDE	?	16.000		0.0000		135.0
S.R.128	SW-0-2	10/56	NITRATE	?	1.040		0.0000		135.0
S.R.128	SW-0-2	11/56	NITRATE	?	0.440		0.0000		135.0
S.R.128	SW-0-2	3/57	NITRATE	?	1.270		0.0000		135.0
S.R.128	SW-0-2	6/58	NITRATE	?	1.710		0.0000		135.0
S.R.128	SW-0-2	10/58	NITRATE	?	1.040		0.0000		135.0
S.R.128	SW-0-2	2/59	NITRATE	?	1.170		0.0000		135.0
S.R.128	SW-0-2	6/83	NITRATE	?	1.930		0.0000		135.0
S.R.128	SW-0-2	1/65	NITRATE	?	1.170		0.0000		135.0
S.R.128	SW-0-2	10/56	SULFATE (SO4)	?	52.000		0.0000		135.0
S.R.128	SW-0-2	11/56	SULFATE (SO4)	?	50.000		0.0000		135.0
S.R.128	SW-0-2	3/57	SULFATE (SO4)	?	44.000		0.0000		135.0
S.R.128	SW-0-2	6/58	SULFATE (SO4)	?	59.000		0.0000		135.0

CHEMISTRY AND WATER QUALITY DATA FOR FERNALD, OHIO

COUNTY WELL ID	OTHER WELL ID	DATE OF SAMPLE	PARAMETER MEASURED	UNIT	VALUE OTHER	DETECTION LIMIT	SOURCE OF DATA	DEPTH OF SAMPLE
S.R.128	SW-0-2	10/58	SULFATE (SO4)	?	52.000	0.0000		135.0
S.R.128	SW-0-2	2/59	SULFATE (SO4)	?	51.000	0.0000		135.0
S.R.128	SW-0-2	6/83	SULFATE (SO4)	?	56.000	0.0000		135.0
S.R.128	SW-0-2	1/65	SULFATE (SO4)	?	64.000	0.0000		135.0
S.R.128	SW-0-2	10/56	pH	?	7.300	0.0000		135.0
S.R.128	SW-0-2	11/56	pH	?	7.400	0.0000		135.0
S.R.128	SW-0-2	3/57	pH	?	7.700	0.0000		135.0
S.R.128	SW-0-2	6/58	pH	?	7.400	0.0000		135.0
S.R.128	SW-0-2	10/58	pH	?	7.300	0.0000		135.0
S.R.128	SW-0-2	2/59	pH	?	7.200	0.0000		135.0
S.R.128	SW-0-2	6/83	pH	?	7.400	0.0000		135.0
S.R.128	SW-0-2	1/65	pH	?	7.400	0.0000		135.0
S.W.128	SW-0-2		ARSENIC (AS)	MG/L	0.010	0.0000		135.0
S.W.128	SW-0-2		BARIUM (BA)	MG/L	0.300	0.0000		135.0
S.W.128	SW-0-2		COPPER (CU)	MG/L	0.030	0.0000		135.0
S.W.128	SW-0-2		LEAD (PB)	MG/L	0.005	0.0000		135.0
S.W.128	SW-0-2		TOTAL IRON (FE)	MG/L	0.080	0.0000		135.0
S.W.128	SW-0-2		ZINC	MG/L	0.030	0.0000		135.0





94

EXPLANATION

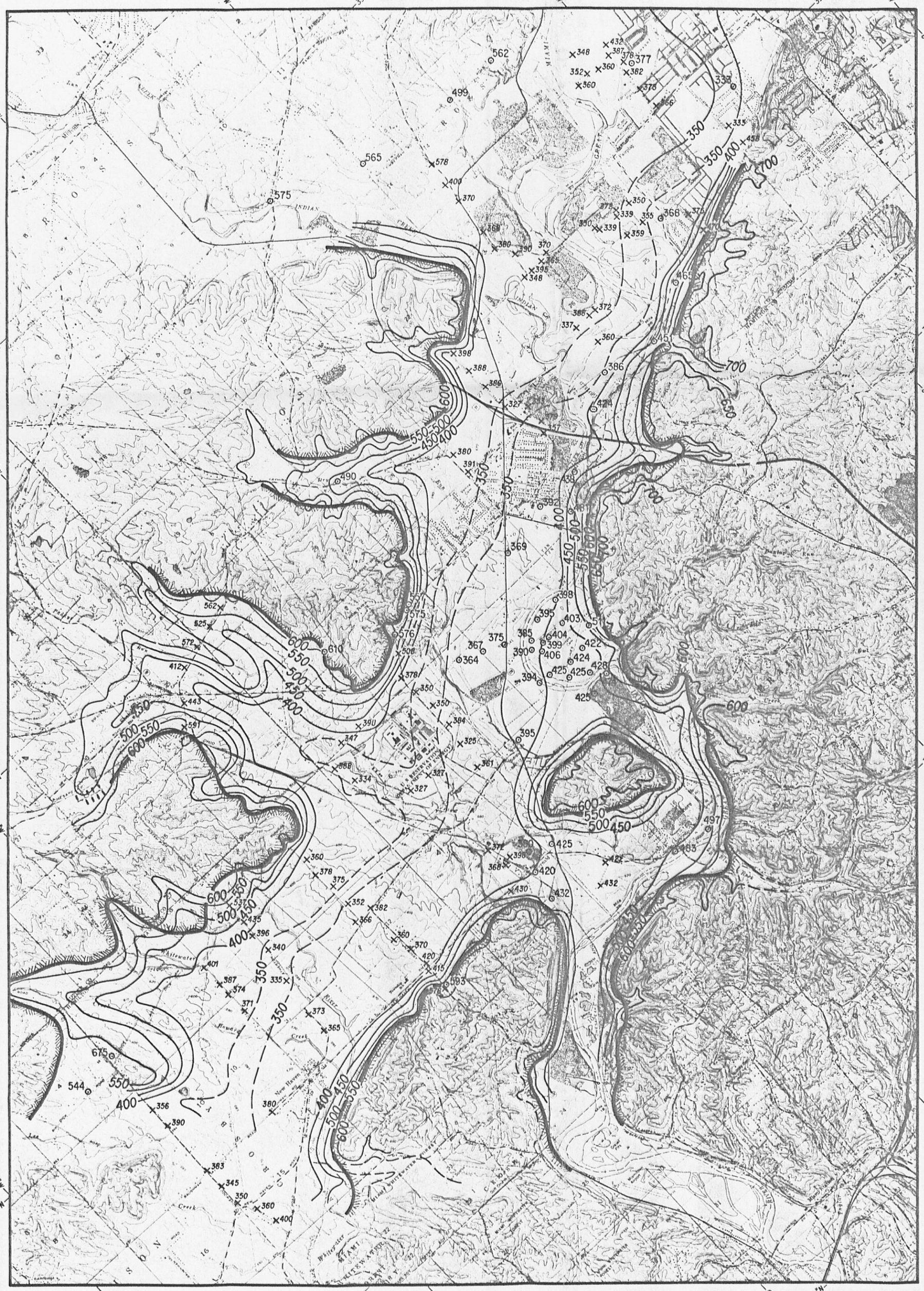
Well Location and Number Bu-14

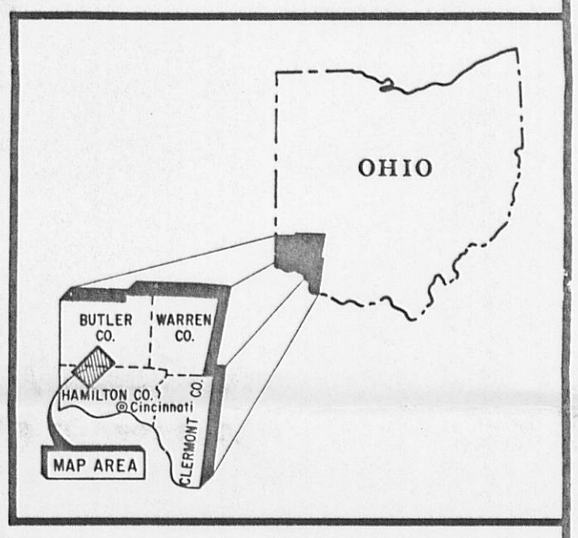
Location of Geologic Section ..... A — A'

REDUCED DRAWING
DO NOT SCALE

0 2000 4000 6000 8000 FEET
0 500 1000 1500 2000 METERS

GeoTrans Ground Water Specialists	GEOTRANS, INC. 209 ELDEN STREET, SUITE 301 HERNDON, VIRGINIA 22070		
WELL DISTRIBUTION IN PROJECT AREA			
106516_1			149
INTERPRETATION BY:	DRAWN BY:	DATE	PLATE 3.1





94

EXPLANATION

Well Location _____ (Elevation of Bedrock, Ft MSL) 497 ⊙

Approximate Bedrock Elevation, Ft MSL Determined by Seismic Methods _____ 337 ×

Contour on Bedrock Surface, Ft MSL ___ 600

Approximate Boundary of Buried Valley _____

NOTE: SOURCES OF INFORMATION

1) Watkins and Spieker (1971)
2) ODNR Well Log Records

REDUCED DRAWING
DO NOT SCALE

0 2000 4000 6000 8000 FEET
0 500 1000 1500 2000 METERS

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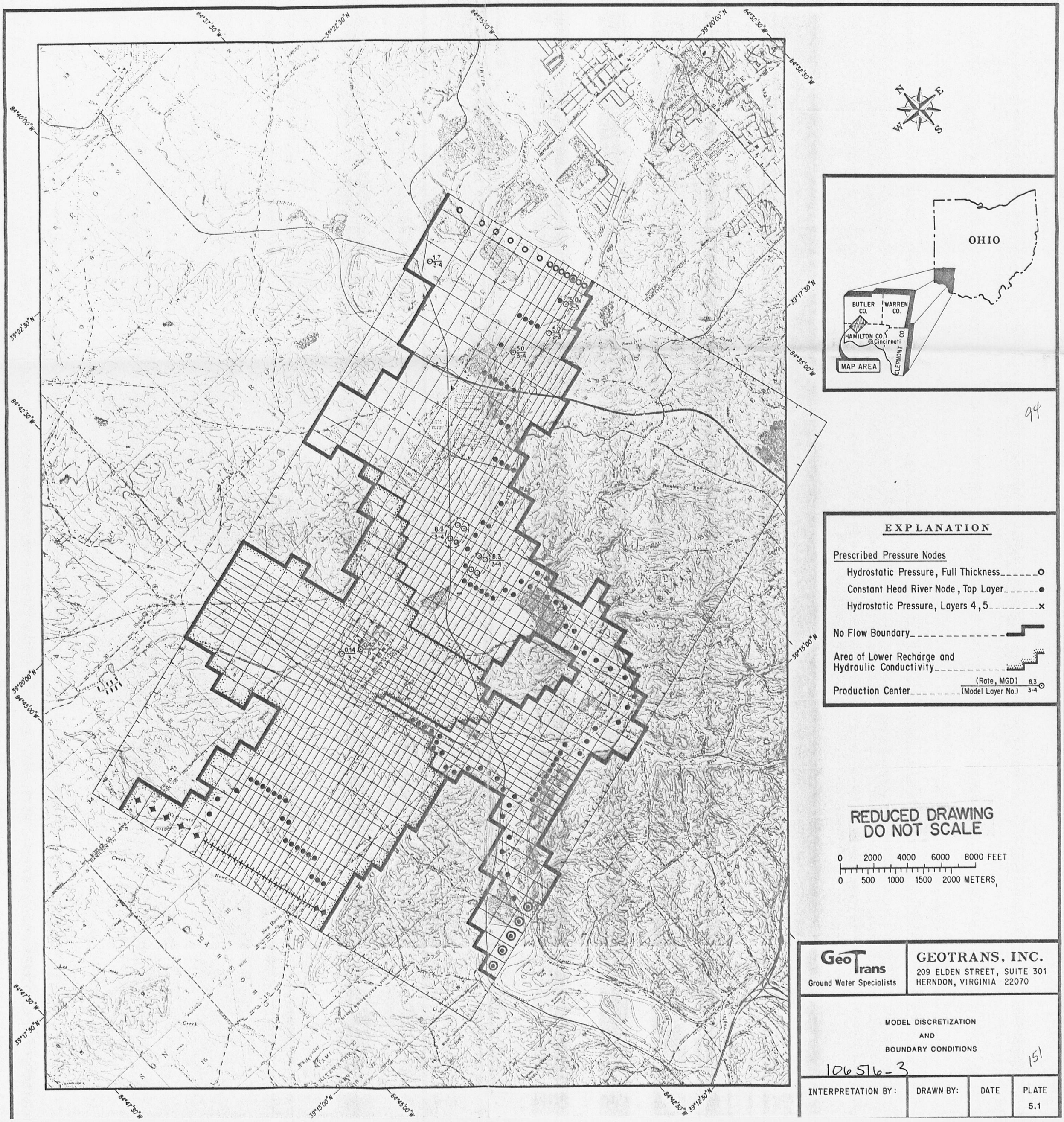
BEDROCK SURFACE CONTOURS,
GREAT MIAMI RIVER VALLEY
ROSS TO NEW HAVEN, OHIO

106 516-2

150

INTERPRETATION BY:	DRAWN BY:	DATE	PLATE
			4.1


84°37'30"W
39°22'30"N
84°35'00"W
39°20'00"N
84°32'30"W
84°40'00"W
39°22'30"N
84°42'30"W
39°20'00"N
84°45'00"W
39°17'30"N
84°47'30"W
39°17'30"N
84°35'00"W
39°15'00"N
84°47'30"W
39°15'00"N
84°45'00"W
84°42'30"W
39°12'30"N
N
E
S
W
OHIO
BUTLER CO.
WARREN CO.
HAMILTON CO.
Cincinnati
CLERMONT CO.
MAP AREA
1.7
3-4
5.0
3
5.0
3-4
6.3
3-4
8.3
3-4
0.14
3
EXPLANATION
Prescribed Pressure Nodes
Hydrostatic Pressure, Full Thickness
Constant Head River Node, Top Layer
Hydrostatic Pressure, Layers 4, 5
No Flow Boundary
Area of Lower Recharge and Hydraulic Conductivity
Production Center
(Rate, MGD)
(Model Layer No.)
REDUCED DRAWING
DO NOT SCALE
0 2000 4000 6000 8000 FEET
0 500 1000 1500 2000 METERS
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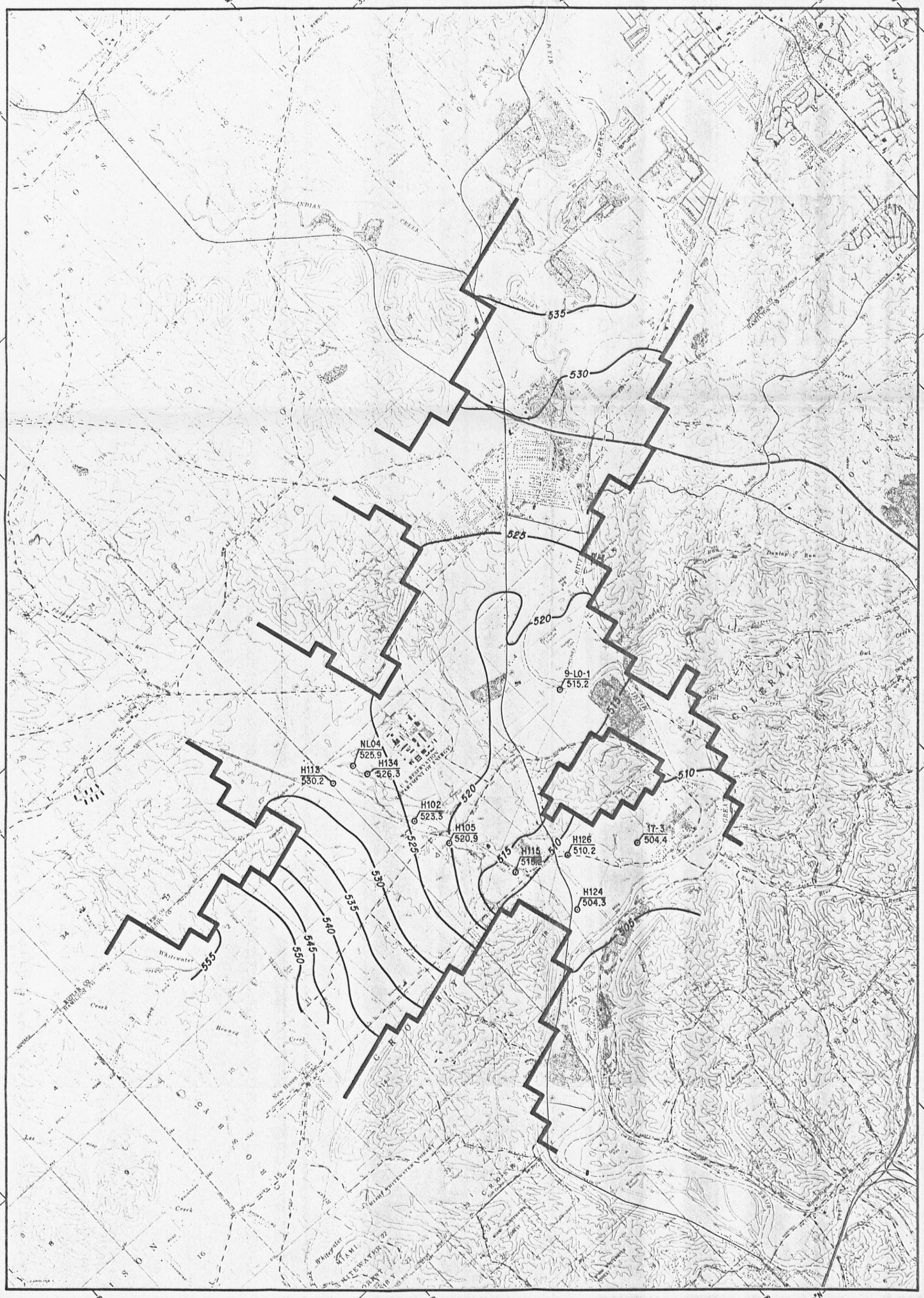
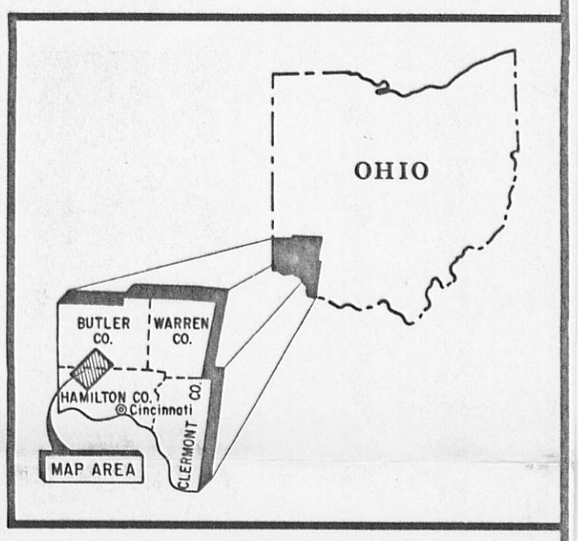
HERNDON, VIRGINIA 22070
MODEL DISCRETIZATION
AND
BOUNDARY CONDITIONS
106516-3
INTERPRETATION BY:
DRAWN BY:
DATE
PLATE
5.1





94

EXPLANATION

Calibration Points — (Well Number) H113 / (Observed Water Elevation, ft msl) 530.2

Water Elevation Contour, Ft MSL — 520

Model No Flow Boundary

REDUCED DRAWING
DO NOT SCALE

0 2000 4000 6000 8000 FEET
0 500 1000 1500 2000 METERS

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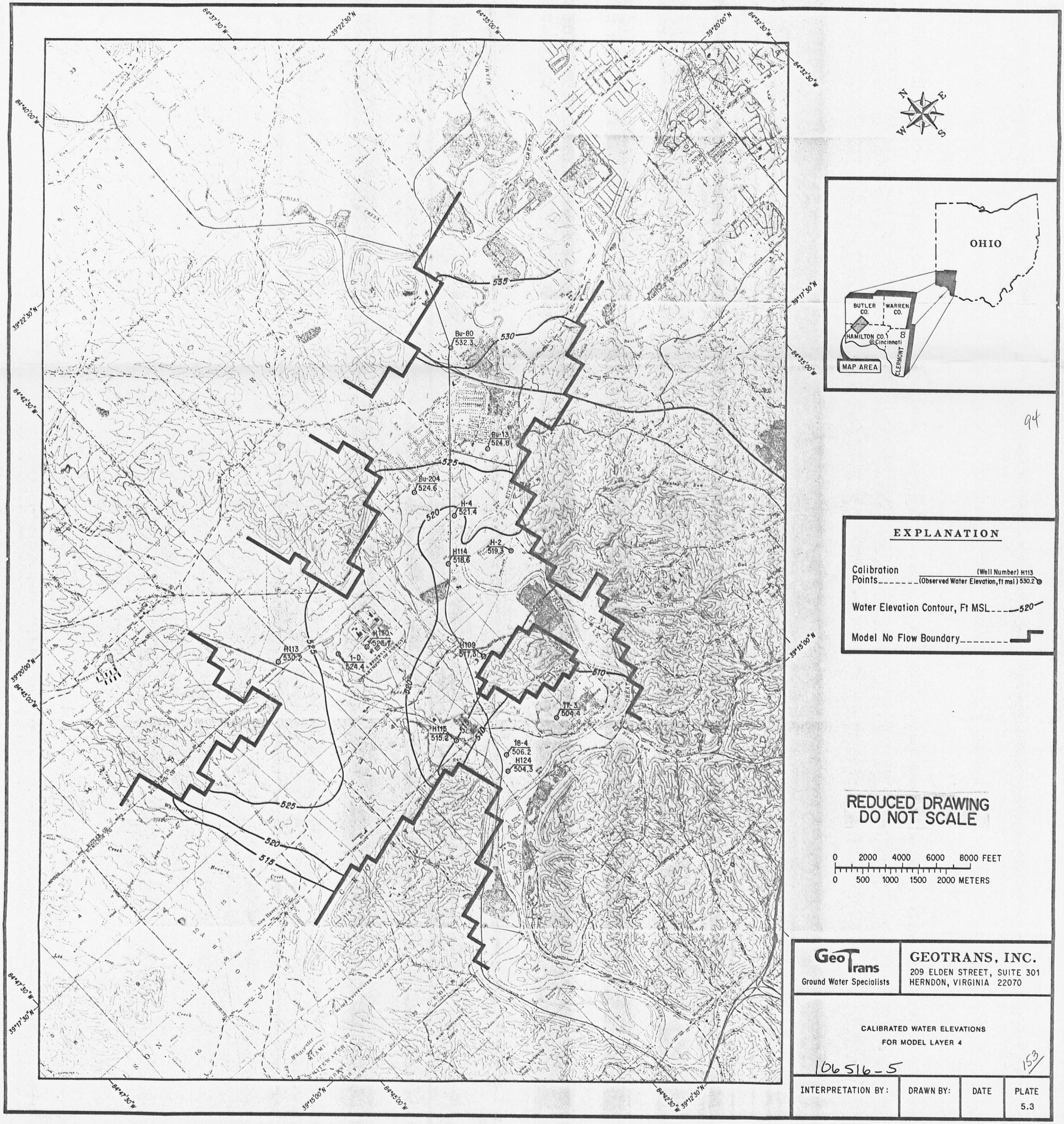
CALIBRATED WATER ELEVATIONS
FOR MODEL LAYER 1

106516-4

158

INTERPRETATION BY:	DRAWN BY:	DATE	PLATE 5.2


84°37'30"W
39°22'30"N
84°35'00"W
39°20'00"N
84°32'30"W
84°40'00"W
39°22'30"N
84°42'30"W
39°20'00"N
84°45'00"W
39°17'30"N
84°35'00"W
39°15'00"N
84°47'30"W
39°17'30"N
84°47'30"W
39°15'00"N
84°45'00"W
84°42'30"W
39°12'30"N
535
530
525
520
515
510
Bu-80
532.3
Bu-13
524.8
Bu-204
524.6
H-4
521.4
H-2
519.3
H114
518.6
H109
517.8
H130
526.7
1-D
524.4
H113
530.2
H115
515.2
TT-3
504.4
18-4
506.2
H124
504.3
N
E
S
W
OHIO
BUTLER CO.
WARREN CO.
HAMILTON CO.
Cincinnati
CLERMONT CO.
MAP AREA
EXPLANATION
Calibration Points (Well Number) H113 (Observed Water Elevation, ft msl) 530.2
Water Elevation Contour, Ft MSL 520
Model No Flow Boundary
REDUCED DRAWING
DO NOT SCALE
0 2000 4000 6000 8000 FEET
0 500 1000 1500 2000 METERS
GeoTrans
Ground Water Specialists
GEOTRANS, INC.
209 ELDEN STREET, SUITE 301
HERNDON, VIRGINIA 22070
CALIBRATED WATER ELEVATIONS
FOR MODEL LAYER 4
106516-5
153
INTERPRETATION BY:
DRAWN BY:
DATE
PLATE
5.3