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GROUNDWATER TECHNOLOGY ®

Groundwater Technology, Inc.
2501 Yale Boulevard S.E., Suite 204, Albuquerque, NM 87106 USA

UPPERMOST AQUIFER HYDRAULIC TESTING AND MODELING
BLOOMFIELD REFINING COMPANY
50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

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Prepared for:
Bloomfield Refining Company
50 County Road 4990
Bloomfield, New Mexico

Prepared by:
Groundwater Technology, Inc.
2501 Yale Boulevard Southeast
Suite 204
Albuquerque, New Mexico 87106

Groundwater Technology, Inc.
Written/Submitted by

F. Daoud Alsawaf, Ph.D.
Certified Groundwater Professional No. 355

Groundwater Technology, Inc.
Reviewed/Approved by

Cymantha Liakos
Project Manager
Certified Professional Geologist No. 8906

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1.0 INTRODUCTION

Groundwater Technology, Inc. was retained by the Bloomfield Refining Company (BRC) to perform a groundwater pumping test and groundwater modeling in the western portion of the BRC refinery, located at 50 County Road 4990, Bloomfield, New Mexico (Figure 1).

The scope of work for the pump test included a short-term step-drawdown test, followed by a long-term pumping test, data reduction, and interpretation. Field testing began June 6, 1994, and concluded June 10, 1994. The aquifer was stressed by pumping groundwater from wells RW-19 and RW-22. The response of the aquifer to the pumping was monitored by recording water levels in selected observation wells (MP-3 through MP-5) in the vicinity of the pumping well. Figure 2 shows well locations.

2.0 ENVIRONMENTAL SETTING

2.1 Geology

The BRC facility is located within the San Juan Basin, a subprovince of the Colorado Plateau physiographic province. The site is underlain by Quaternary Jackson Lake terrace deposits, consisting of 10 to 15 feet of unsaturated fines (clay and silt) to coarse-grained fluvioglacial outwash and loess. A permeable saturated cobble and sand layer directly overlies the bedrock at the site (the Tertiary Nacimiento Formation). The Nacimiento Formation is an interbedded, black carbonaceous mudstone/claystone with white, medium to coarse-grained sandstones approximately 570 feet thick in this area. A bluff cropping out along the San Juan River near the site is similarly composed of these materials. Underlying the Nacimiento Formation are the Ojo Alamo, Kirtland Shale, and Fruitland Formations (USEPA, 1987).

2.2 Hydrology

Surface waters in the vicinity of the facility include the San Juan River (to the north) and the Hammond Ditch (Figure 1). The Town of Bloomfield, and surrounding areas, derive their potable water from the San Juan River, which is controlled by the Navajo Dam (ERM, 1991). The San Juan River level is approximately 75 feet lower than Hammond Ditch, and Hammond Ditch in turn is approximately 25 feet lower than the grade level in the northwestern part of the refinery. Water within Hammond Ditch, an unlined man-made channel used for irrigation and watering of livestock, is not intended for human consumption.

The Hammond Ditch, along with the surface impoundments that are part of refinery operations, contribute to local groundwater recharge at the site. As the elevation of the Nacimiento Formation increases toward the southern portion of the site, the perched water table dissipates (well MW-6 in this area has been dry since 1984). The Hammond Ditch (unlined in the vicinity of BRC) is actively flowing during the irrigation season (April 15 through October 15), but is diked

by BRC during the non-irrigation season. When full, the Hammond Ditch creates a mounding effect, reducing groundwater flow. Seepage from the ditch has not been quantified at this time but is known to be substantial based on numerous seeps along the San Juan River bluff.

Stormwater is collected in the curbed, concrete paved process areas connected to sewers leading to the wastewater treatment system. Other sewers outside the paved areas collect stormwater runoff and channel it to the facility's wastewater treatment system. Some areas not served by sewers collect process and stormwater in sumps, which are then emptied by vacuum truck for delivery to the wastewater treatment system. Tank berms and dikes are used to control other stormwater runoff.

2.3 Hydrogeology

The hydraulic properties of the perched aquifer located above the relatively impermeable Nacimiento Formation were tested by pumping groundwater from wells RW-19 and RW-22. Two types of tests were attempted: a short-term, variable discharge rate (step-drawdown test), and a long-term pumping test.

The objective of the variable-rate test was to estimate the efficiency, or productivity, of the pumping well, which can be determined from the specific capacity (the yield-drawdown relationship). The specific capacity, denoted as Q/s, can be obtained by dividing the discharge rate of the well (Q) by the corresponding drawdown (s) in the pumping well. This can then be used to select groundwater recovery pumps and estimate the sustainable flow rate.

The objective of the long-term aquifer test was to estimate the hydraulic properties of the saturated zone. The following are the most important properties controlling the storage and flow of groundwater in the saturated zone:

Transmissivity Transmissivity is the rate of flow, under a hydraulic gradient equal to one, through a cross-section of unit width over the entire thickness of the aquifer. Transmissivity is the product of the hydraulic conductivity, or permeability (K), and the thickness of the saturated zone (b). It is commonly designated using the symbols T, or Kb, and has the dimensions of volume per time per width of aquifer, e.g., as gallons per day per foot (gpd/ft), or it may be expressed in square feet per day or square meters per day.

Hydraulic Conductivity Hydraulic conductivity is the rate of groundwater flow under a uniform hydraulic gradient of one, through a cross-section of unit area of the saturated zone. It has the dimensions of velocity and may be expressed in feet per day (ft/d) or meters per day (m/d).

Storativity, or Storage Coefficient and Specific Yield The volume of water released or taken into storage per unit surface area of the saturated zone per unit change in the component of head normal to that surface. Both are designated by the symbol S and are dimensionless.

A long-term pumping test can be used to evaluate the aquifer hydraulic parameters of transmissivity, hydraulic conductivity, and storativity (or specific yield) within the pumping radius of influence. Methods have been developed to test the responses of an aquifer to applied stress (pumping). Such testing requires observation wells in the vicinity of the pumping well from which to collect test data (time-drawdown values) for analysis and interpretation of hydraulic parameters.

3.0 AQUIFER PUMPING AND RECOVERY TEST

To develop design parameters for a groundwater containment system in the vicinity of the liquid-phase hydrocarbon plume, hydraulic tests of existing wells were first carried out using additional monitoring points. Three monitoring points (MP), or wells, were constructed near recovery well RW-19. The first monitoring point (well MP-3) was installed 22.5 feet downgradient of recovery well RW-19; the remaining two points, wells MP-4 and MP-5, were installed approximately 24 and 44 feet crossgradient, respectively, from well RW-19. All three monitoring points (MP-3 through MP-5) were constructed of 2-inch internal diameter (ID) PVC casing, and screened from 6 to 31 feet below grade. The locations of the monitoring points were designed to evaluate the homogeneity and isotropy of the aquifer in two perpendicular directions from pumping well RW-19. Well logs for these points are provided in Appendix A.

3.1 Pretest Monitoring

On June 6, 1994, prior to testing, test wells RW-19, MP-3, MP-4 and MP-5 were gauged to measure liquid levels and determine the presence and thickness of separate-phase hydrocarbons (SPH). Liquid levels were approximately 25 feet below ground surface, with SPH (product) present above the water level in these wells. The product thickness was 0.17 feet in well MP-3, and 0.19 and 0.12 feet in wells MP-4 and MP-5, respectively. The maximum product thickness was measured in the recovery well RW-19 (0.46 feet).

To determine the short-term natural liquid level fluctuation in the test wells, pressure transducers were installed in the four test wells (RW-19, MP-3, MP-4, and MP-5) to record total pressure below static liquid levels in the wells. Liquid levels were recorded (using a data logger) as total head, in feet, above the fixed positions of the pressure transducer. The data logger (Campbell Scientific, Inc., model PST8) was programmed to record liquid level changes of 0.01 feet or greater, detected at the pressure transducer. A continuous record of static liquid level (up to four measurements per second, for approximately 20 hours prior to pumping) in each of the four test wells was maintained from June 6 through June 7, 1994. During the recorded pretest

monitoring period, the maximum observed decline in static liquid level was 0.06 feet, or approximately 0.75 inches. Well static liquid levels are shown graphically by well number in Appendix B.

3.2 RW-19 Step-Drawdown Test

A step-drawdown test was performed June 7, 1994 using recovery well RW-19. The test provided discharge rate or well yield data on this well to be used during the second phase of pumping (constant discharge rate pumping test). Before deploying the pump in this well, a product bail-down test was performed to remove SPH (free product) in the well and determine the rate of hydrocarbon recharge in the well under static conditions. A top-filling copper bailer was used to remove the free product from the well. Product recharge, periodically measured using an interface probe, was relatively slow (0.03 feet 30 minutes after bailing, and 0.04 feet 75 minutes after bailing). This product thickness amounts to only approximately 0.06 gallons.

A 10-gallon per minute (gpm) electric submersible pump was used for the step-drawdown test, with the pump intake located approximately 1 foot above the bottom of the well screen. Well construction provided approximately 5.5 feet of water column in the well (above pump intake) available for drawdown. Groundwater was extracted at a constant rate from well RW-19, while liquid levels were recorded continuously in wells RW-19, MP-3, MP-4, and MP-5 using the data logger. Wells were also periodically monitored for product thickness using an interface probe. Pump discharge rates were regulated using a gate valve and monitored using a totalizing flowmeter and a rotameter. Groundwater was pumped through the system and discharged through a hose into a cylindrical steel holding tank.

Pumping from recovery well RW-19 was initiated at 1 gpm (designated as pumping Step 1), and concluded at the end of Step 2, at 2 gpm. Total pumping time was 2 hours (1 hour for each step) (Appendix C). Liquid levels were permitted to recover toward pretest levels between steps 1 and 2, and after Step 2. Product in well RW-19 was bailed prior to Step 2. Due to the small water column in pumping well RW-19, and the progressively increasing thickness of SPH, it was not feasible to pump more than 2 gpm; therefore, a third pumping step was not attempted.

Drawdown was observed in pumping well RW-19 and observation wells MP-3 and MP-4 during pumping steps 1 and 2. A significant increase in SPH was recorded during pumping of well RW-19 (Appendix D), and the observation wells (MP-3, MP-4, and MP-5). Time-drawdown data and change in water levels during recovery are given in Appendix E.

During the first pumping step (1 gpm for 60 minutes), 2.25 feet of product accumulated in well RW-19. This product was then bailed during the recovery period, with approximately 0.08 feet of product remaining prior to Step 2.

By the end of pumping Step 2, liquid hydrocarbons in RW-19, at a thickness of nearly 5 feet , were nearing the level of the pump intake. After completing pumping Step 2, a second product bail-down was performed in well RW-19 to remove accumulated hydrocarbons and determine the rate of recharge following pumping. However, the majority of the product flowed from the well back into the formation, as the water level rise was relatively fast during recovery. The hydrocarbon thickness in the recovery well (0.46 feet) was approximately equal to the pretest level approximately 16 hours after Pumping Step 2.

Product thicknesses in the two observation wells (MP-3 and MP-4) also increased during pumping steps 1 and 2. Comparing product thickness before and after each pumping step, thickness increased in well MP-3 from 0.17 to 0.33 feet during Step 1, and to 0.41 feet after Step 2. Similarly, product thickness in well HP-4 increased from 0.19 to 0.35 feet after Step 1, and to 0.39 feet following Step 2 (2 gpm). Both wells are constructed of 2-inch-ID screen, and located 22.5 feet and 24 feet, respectively, from recovery well RW-19.

No significant increase in product thickness was measured in observation well MP-5, located 44 feet from recovery well RW-19.

3.3 Well RW-22 Pumping Test

Well RW-22 was recently constructed in the northwestern area of site for product/groundwater recovery. The drilling log of well RW-22, along with well construction details, is given in Appendix F. This well was selected for a second segment of the pumping test based on its location (downgradient, northwestern portion of the facility), product thickness (non-detectable) and saturated thickness.

Pumping from recovery well RW-22 was initiated at a variable discharge rate (step-drawdown), beginning with a constant flow rate of 1 gpm at 1739 hours, June 8, 1994. Step 1 lasted for 93 minutes. The flow rate was doubled during Step 2 and was maintained for 133 minutes, during which total water level drawdown was approximately 1.8 feet. The discharge rate was increased to 4 gpm during Step 3, and maintained for 120 minutes, during which, total water level drawdown reached approximately 3.25 feet. Prior to the cessation of pumping, the water level in well RW-22 was relatively stable for approximately 1 hour.

Step-drawdown pumping stopped at 2325 hours on June 8, 1994. Water level recovery was then monitored for 125 minutes, during which water level recovery reached 98 percent of the initial pretest level. Water level field data, recorded using the data logger, were graphed with respect to time, and tabulated as time and water level data (Appendix F).

A constant rate pumping test was initiated at 0130, June 9, 1994, at a constant discharge rate of 4 gpm. The discharge rate was constant, and water level decline was relatively steady during the first sixteen hours of pumping. However, the discharge rate began to decline at 1800 hours,

after 16.5 hours of pumping, due to pump failure. Pumping was subsequently ended at 1815, after 1,005 minutes of constant-rate pumping.

During the final 2.5 hours of pumping, water level fluctuation was within 0.5 inches (between 8.80 feet and 8.84 feet), indicating that a steady-state condition was reached. Based on this data, it was determined that adequate pumping data for the analysis had been acquired, and that deployment of a second pump would not be necessary.

Field discharge/drawdown data (recorded during sustained pumping) indicate that well RW-22 can sustain long-term pumping at 4 gpm.

3.4 Groundwater Quality

Groundwater samples were collected periodically at various times during pumping to chemically characterize the water and determine if changes had taken place during pumping. Each sample was field tested for pH, temperature, and electric conductivity (EC) (as a measure of total dissolved salts in water).

Groundwater temperature ranged between 18.5°C during the early hours of pumping, to 20°C during the afternoon. This daily temperature rise may have affected the flow system, causing an increase in sample temperature. Water in the irrigation canal registered 8.2°C at 0900, increasing to 13.2°C at 1300, and 18.6°C at 1700.

Groundwater pH was neutral at 7.1 during the early hours of pumping, decreasing to 6.8 at 1100, then remained steady for the remainder of pumping test. A pH below 7.0 may be the result of active biological degradation in the aquifer. Canal water pH was 8.2 at 0900, 8.0 at 1300, and 7.8 at 1700 hours.

Groundwater EC was significantly higher than that of the irrigation canal surface water. Groundwater EC registered 1,500 micromhos per centimeter (um/cm) during the first hour of pumping, increasing to 1,800 um/cm between 0400 and 0800, then decreasing to 1,600 um/cm during the latter 6 hours of pumping (1100 to 1700). Compared with the water in the canal (EC=200 um/cm), groundwater contained approximately eight times more dissolved salts than surface water. This higher salinity in groundwater may result from the dissolution of adsorbed salts in the clay and silt units within the aquifer. High groundwater EC therefore indicates that no active infiltration was taking place, and that canal water was not contributing to groundwater flow during the long-term pumping test.

4.0 INTERPRETATION OF PUMPING AND RECOVERY TEST DATA

Water level drawdown during pumping and recovery was analyzed to evaluate aquifer hydraulic parameters (Cooper and Jacob straight-line method; Appendix G). Because the uppermost aquifer is relatively shallow and unconfined, no external factors were expected to affect the water level data recorded by the data logger in either pumping location (well RW-19 and RW-22). However, variable free-product flow into the cone-of-depression during pumping of well RW-19 violates the condition of a gentle water level gradient required for interpretation of water level data recorded during the pumping test. The locations of observation wells RW-23 and MW-9, monitored during pumping of well RW-22, were likely too remote to be encompassed by the cone-of-depression. Therefore, significant drawdown that could be used to interpret pumping test data was not recorded in either well.

4.1 Pumping Well RW-19

In addition to water level monitoring in pumping well RW-19, three observation wells were also used for water level monitoring (within the cone-of-depression). However, only two wells (MP-3 and MP-4, located 22.5 feet and 24 feet from well RW-19), showed significant drawdown and recovery during the test. The time-drawdown data from these two wells fluctuated during the two pumping steps (Appendix E). In addition, the free product thickness in both wells nearly doubled during pumping. For these reasons, time-drawdown data were not used during pumping test interpretation. However, water level recovery following Pumping Step 2, at 2 gpm, was interpreted using the straight line method (Appendix G). Transmissivity values derived from the data evaluation are used to calculate the hydraulic conductivity of the uppermost (tested) saturated zone. The height of the water column in pumping well RW-19, (8 feet) was measured and used in the calculation to represent the thickness of the aquifer. Table 1 summarizes the hydraulic properties of the uppermost aquifer.

TABLE 1

Summary of Hydraulic Properties of the Uppermost Aquifer

Well No.	Transmissivity (Ft^2/day)	Hydraulic Conductivity (Ft/day)	Storativity (Dimensionless)
MP-3	1412	177	0.015
MP-4	1260	158	0.003
RW-22	353	44	NA

The transmissivity and hydraulic conductivity values calculated for wells MP-3 and MP-4 are relatively high, representing permeable sand and gravel. However, the presence of free product

within the cone-of-depression may reduce the total porosity available for groundwater recovery and accelerate the water level recovery rate. This accelerated recovery may create false or exaggerated high transmissivity values which may be 50 to 100 percent higher than the actual water-only transmissivity value at the saturated zone.

The storativity values calculated for wells MP-3 and MP-4 are indicative of unconfined to semi-unconfined conditions in the tested saturated zone. The presence of product on the water table may have led to the storativity values indicating semi-unconfined conditions. No distinct impermeable geologic unit was present above the aquifer which could cause a confining condition.

4.2 Pumping Well RW-22

The specific capacity (SC) (Discharge/drawdown relationship) of well RW-22 was calculated using data from the variable rate pumping test (Figure 3). The SC of well RW-22 increased during the second and third pumping steps, indicating that the well was being developed through removal of fine silt and clay. During the long-term pumping, the SC was approximately 1.0 gallon per minute/ft, indicating that the well has low efficiency. This low efficiency was likely caused by the convergence of groundwater flow within a limited cobbles zone above the relatively impermeable limestone bedrock (see drilling log of well RW-22, Appendix F). Water levels in observation wells MW-9 and MW-23, located northeast and north of pumping well RW-22, were monitored every 2 hours during pumping using an interface probe. Total drawdown in these wells was within the daily decline of water level observed during the pretest monitoring period (Appendix B). This drawdown, within 0.5 inches, does not indicate that the cone-of-depression has expanded to encompass these two wells. Therefore, data from these wells were not used for pumping test data interpretation. No product was measured in either of these wells, either before or during pumping.

Water level recovery data, collected following the long-term constant-rate pumping test, were analyzed using the straight-line method (Appendix G). Residual drawdown was slow during the initial period following pump failure, when the pumping rate declined. Water level recovery (after cessation of pumping) was consistent, representing uniform flow of water toward the cone-of-depression. This latter recovery data were used to calculate recovery per one log cycle, which was used to calculate transmissivity.

The calculated transmissivity for this location (353 ft^2/day) is representative of a sand and gravel unit. This value was used to calculate the hydraulic conductivity of the uppermost 8 feet of the saturated zone (44 feet/day, Table 1). Because well RW-22 is used as a pumping well, the storativity of the aquifer cannot be calculated at this location. However, the geologic setting in this location indicates that the aquifer is unconfined and the specific yield may range between 1 to 20 percent.

5.0 CAPTURE ZONE MODELING OF RECOVERY WELL RW-22

Preliminary modeling (using the FLOWPATH computer code) is used to evaluate the effects of groundwater pumping on water levels of the uppermost aquifer, and to delineate the lateral extent of the capture zone in the vicinity of pumping well RW-22.

Basic hydraulic input for the model was derived from the results of the pumping and recovery test performed June 8, 1994 on recovery well RW-22. The objective of the modeling was to simulate actual field conditions in the uppermost aquifer, approximately 22 to 30 feet below grade, and to predict the impact of pumping on groundwater levels and capture zones within the dissolved plume.

Site-specific aquifer characteristics within the shallow, uppermost aquifer were used in one model (BLOOM1) to simulate natural conditions and evaluate groundwater levels at steady-state conditions after continuous pumping at 4 gallons per minute. Both regional groundwater and the irrigation canal were considered as constant recharge sources.

5.1 Flowpath and Capture Zone Modeling

FLOWPATH is a two-dimensional, numerical aquifer modeling program which calculates steady-state hydraulic head and drawdown distributions, groundwater velocities, pathlines, travel times, capture zones, and water balances throughout the model.

The FLOWPATH static model for this site was developed and tested using constant head boundary conditions and flux nodes to simulate natural, pre-existing steady-state groundwater levels (Appendix H). Following detailed data review and regional hydrologic considerations, water-balance problems were eliminated and sensitivity analysis was satisfactory. The model was correlated with historic and static groundwater flow and gradient beneath the site.

5.2 Flowpath Model Input and Assumptions

The lateral and vertical domain for this model (computer file No. BLOOM1) (Appendix H) was derived from actual field conditions, including the vertical and lateral limits of the aquifer, geologic and hydraulic boundaries, and the presence of the irrigation canal north and northwest of site.

The following summarizes basic model input parameters:

1. General dimensions of the model block are: 2,500 feet in the X-direction (east-west) and 2,000 feet in the Y-direction (north-south), divided into identical grids of 50 feet each for the entire model, and further subdivided into 25, 12.5, and 6.25 grids beneath the site (Appendix H).

2. The superimposed map of the site was digitized by the FLOWPATH model from a pre-existing computer file (ACAD-DXF), using the identical linear scale shown on the map.

3. The upper boundary of the modeled aquifer represents static water level as interpreted from the latest water level measurements (at an elevation of 5,500 feet above mean sea level [MSL]).

4. The lower boundary of both the model and the aquifer is bedrock located at an elevation ranging between 5,481 to 5,485 feet above MSL.

5. Average saturated thickness (b) for the entire model is 15 feet.

6. The hydraulic conductivity (K) is 23.5 ft/day in both X and Y directions.

7. The irrigation canal north of the site, at an elevation of 5,500 feet above MSL, is assumed to be perennial, and is modeled as constant head boundary.

8. Groundwater (water table) gradient beneath the site is approximately 0.002.

9. All sides of the model block are impermeable boundaries, corresponding to flow lines (no groundwater flow boundaries).

10. The southeastern equipotential line of the model (representing water level measured May 24, 1994) consists of constant head nodes located at an assumed elevation of 5,500 feet above MSL.

11. No upper or lower vertical leakage, infiltration, evaporation, or injection is used in any part of the model.

12. Capture zones are defined by well releases of 20 particles at a radius of 4 feet from well RW-22.

13. Only one well (RW-22) was pumped for every simulation (at a constant rate of 5760 gallons per day (gpd)(4 gpm), assuming no well loss and 100 percent penetration through the saturated zone.

14. The simulated aquifer is unconfined (water table condition), extending approximately 50 percent beyond the site in all directions (approximately twice the known dimensions of the aquifer beneath the site).

15. Effective porosity of the aquifer is 0.25.

16. No groundwater or contaminant flow retardation factor was used.

5.3 Results of Capture Zone Modeling

The areal extent of capture in the vicinity of pumping well RW-22 is simulated using 20 particles released to travel in the opposite directions from the well. The radial lines emitted from the well represent the flow path of these particles and the distance traveled in the cone-of-depression.

Seven capture zone simulations were run in FLOWPATH after establishing a steady-state water level over the site. The lateral extents of these capture zones, measured from the pumping well, are listed in Table 2.

TABLE 2

FLOWPATH Model Interpretation of Extent of Capture in the Vicinity of Well RW-22

Duration of Pumping (days)	Extent of Capture (feet)			
	North	East	South	West
30	42	45	45	42
90	75	73	75	73
180	103	105	103	110
365 (1 yr)	145	143	145	143
1,095 (3 yrs)	234	237	221	223
1,825 (5 yrs)	262	307	262	223
3,650 (10 yrs)	303	384	324	223

During the first year of pumping, the shape of the capture zone in the vicinity of well RW-22 was almost circular. However, when the capture zone in the model was extended to the irrigation canal, approximately 223 feet west of well RW-22, capture continued to extend to the north, east, and south. During the third year of pumping, the capture zone reached the irrigation canal east, north, and west of the well. Five additional years of pumping have extended the capture farther south and southeast (Appendix H). No interference (with pumping) was modeled at this stage to simulate multiple pumping wells.

6.0 CONCLUSION

During 5 days of field activities, from June 6 through 10, 1994, two wells were hydraulically tested using a submersible pump, an electronic data logger, and an interface probe (IP). Well RW-19 contained less than 0.5 feet of free product, and monitoring wells MP-3 through MP-5 contained less than 0.25 feet of free product.

Before pumping well RW-19, free product was removed using a product bailer, and monitored using the IP. During the variable-rate pumping test, well RW-19 produced 1 gpm for 1 hour (Step 1), and 2 gpm for an additional hour (Step 2). The pumping test was terminated because the product thickness in the pumping well increased by a factor of ten over its pretest level, and more than doubled in nearby observation wells MP-3 and MP-4.

Well RW-22 was tested using both a variable and constant discharge rate. The discharge rates were 1, 2, and 4 gpm during the variable rate test and 4 gpm during the constant-rate test. No free product was present in this well.

Two nearby wells, RW-23 and MW-9, were monitored during the pumping of well RW-22. Neither of the two wells demonstrated significant drawdown during the long-term, constant-rate pumping test.

Water level recovery data were analyzed to estimate the transmissivity of the uppermost aquifer near wells MP-5, MP-4, and RW-22.

Transmissivity (T) estimates calculated at monitoring wells MP-3 and MP-4 were 1,412 ft^2/day and 1,260 ft^2/day respectively. Hydraulic conductivity (K) was 177 ft/day and 158 ft/day, respectively. Transmissivity calculated at recovery well RW-22 was 353 ft^2/day, and hydraulic conductivity was 44 ft/day. Both values of T and K are indicative of a high-permeability saturated zone, representing sand and gravel deposits.

The fast accumulation of free product in the cone-of-depression during pumping of well RW-19 indicates that dual liquid removal (groundwater and free product) is a feasible active alternative for accelerated collection and removal of free product above the uppermost aquifer. Simultaneous pumping of groundwater and free product (using a dual pump system) can be achieved in locations containing free product above the saturated zone. The number and locations of wells required to contain the entire plume can most accurately be determined using computer models.

Total dissolved salts in the uppermost saturated zone, inferred from the electric conductivity measurements, were approximately eight times that of water in the Hammond Ditch irrigation canal.

Preliminary modeling of the capture zone in the vicinity of pumping well RW-22 (pumping at a rate of 4 gpm) indicates that the groundwater capture zone is circular in area. Initial expansion of the capture zone was not influenced by surface water boundaries. However, after 1 year of pumping, the capture zone extended nearly to the irrigation canal and after 3 years of pumping, the canal began acting as a surface water recharge boundary, contributing to groundwater flow into well RW-22.

As concluded during pumping of well RW-19, dual liquid removal (groundwater and free product) is feasible for this high-permeability saturated zone. The only disadvantage is the cone-of-depression (created by pumping at 4 gpm from one well) will be limited to approximately 30 feet. Groundwater remediation and product removal from the entire plume can best be achieved using a multiple well system. Interference from the cones-of-depression during simultaneous pumping of wells generally causes increased drawdown in the vicinity of the pumping wells.

Multiple well system simulation, as well as optimum groundwater/product containment and removal system design, can best be achieved using flow models. Model output can be used both for flow system engineering design and to more easily predict the progression of remediation. Therefore, modeling of the entire plume is recommended for this site before installation of a groundwater containment and/or removal system.

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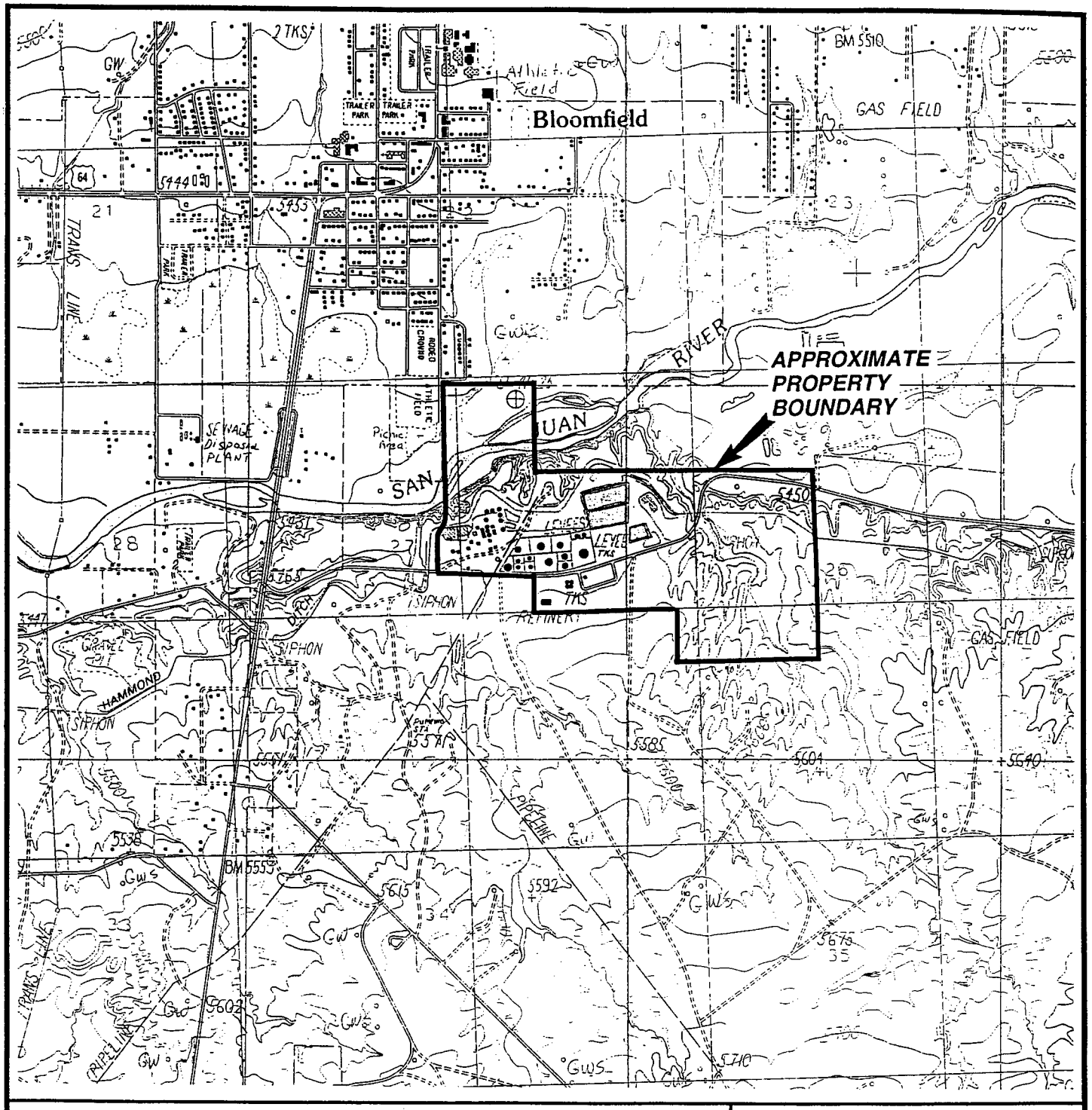
United States Environmental Protection Agency - EPA Contract No. 68-01-7251, Work Assignment No. 92-6L-20.0, Project No. W68446, "Preliminary Review Report/Visual Site Inspection", August 25, 1987.

FIGURES



LEGEND

SITE BOUNDARY

NEW MEXICO

QUADRANGLE LOCATION

N

1000 0 2000

SCALE IN FEET

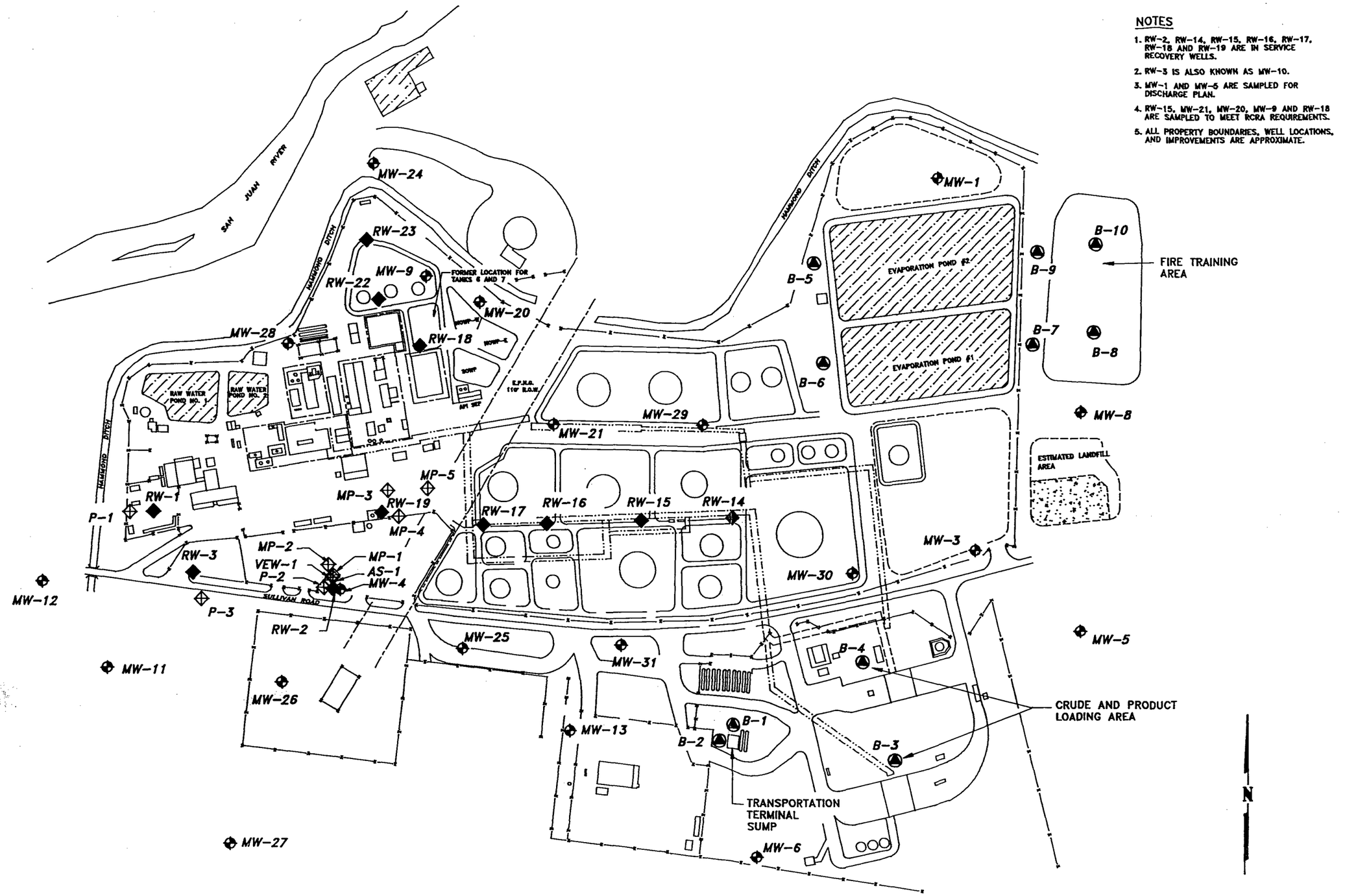
BLOOMFIELD, N. MEX.QUADRANGLE
PROVISIONAL EDITION
1985
36107-F8-TF-024

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, N.M. 87106 (505) 242-3113

SITE LOCATION

DESIGNED BY: CD	DETAILED BY: EF	CHECKED BY:
DATE: 2/2/93	FILE: BL-SITELOC	
PROJECT NO.: 023353014	CONTRACT:	
DRAWING: FIGURE 1	REVISION: –	



NOTES

1. RW-2, RW-14, RW-15, RW-16, RW-17, RW-18 AND RW-19 ARE IN SERVICE RECOVERY WELLS.
2. RW-3 IS ALSO KNOWN AS MW-10.
3. MW-1 AND MW-5 ARE SAMPLED FOR DISCHARGE PLAN.
4. RW-15, MW-21, MW-20, MW-9 AND RW-18 ARE SAMPLED TO MEET RCRA REQUIREMENTS.
5. ALL PROPERTY BOUNDARIES, WELL LOCATIONS, AND IMPROVEMENTS ARE APPROXIMATE.

NO.	DATE	BY	REVISION

LEGEND

- PIPEWAY
- UNDERGROUND PIPEWAY
- FENCE
- MW-1 MONITORING WELL
- RW-1 RECOVERY WELL
- B-1 SOIL BORING
- P-1 PIEZOMETER

ATTENTION

SIGNATURE	DATE
PROJECT GEO:	
PROJECT ENGR:	
PROJECT MGR:	
CLIENT:	

Bloomfield Refining Company
A Gary Energy Corporation Subsidiary
#50 COUNTY ROAD 4990
BLOOMFIELD, NEW MEXICO

GROUNDWATER TECHNOLOGY
2501 YALE BLVD. SE, SUITE 204
ALBUQUERQUE, NEW MEXICO 87106
(505) 242-3113

SOIL BORING/ MONITORING WELL LOCATIONS

DESIGNED BY:	DRAFTED BY:	CHECKED BY:
	J. ML	

DATE:	FILE:
JUNE 10, 1994	MW-LOCA
PROJECT NO.: 023353014	CONTRACT:
DRAWING:	REVISION:

FIGURE 2

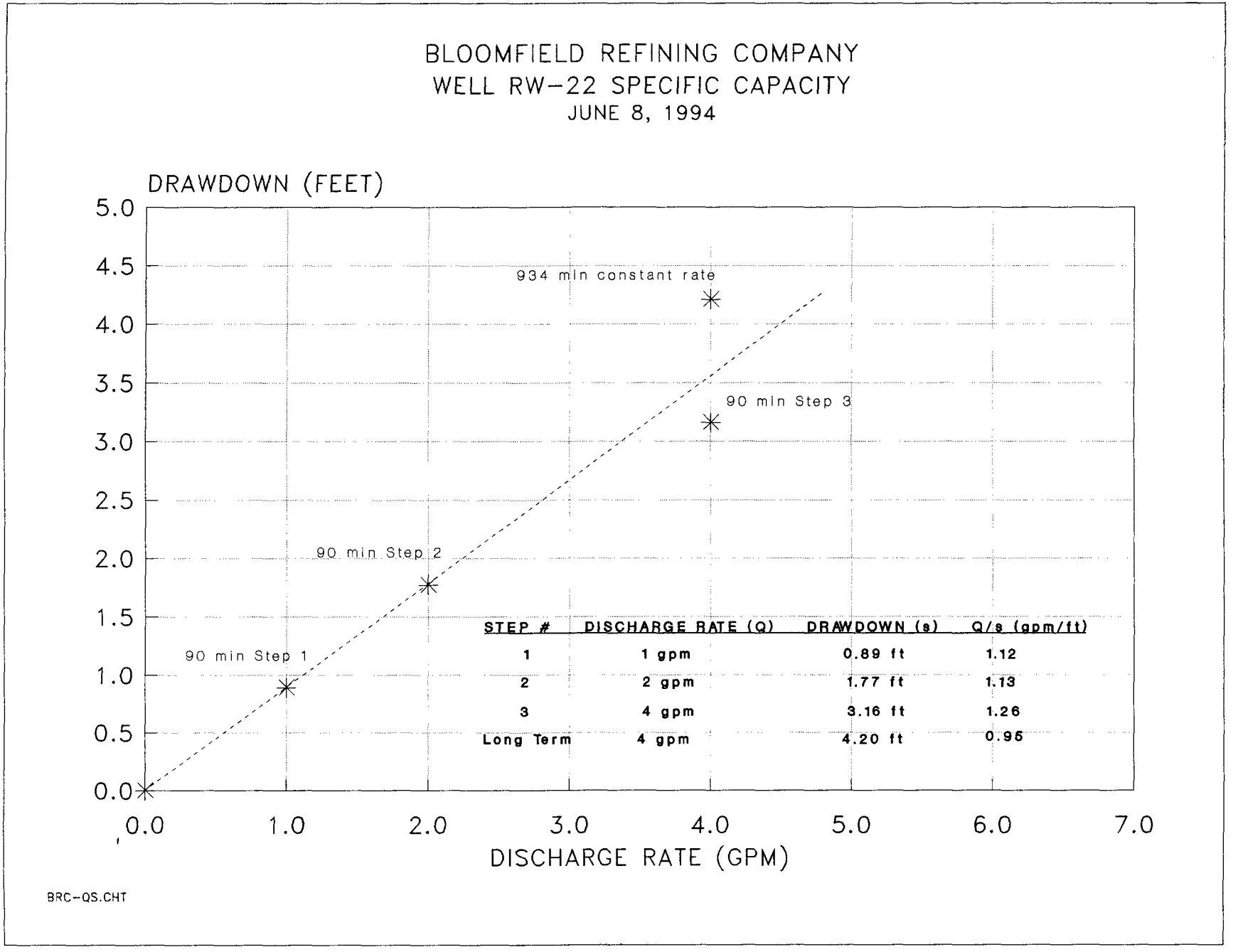

BLOOMFIELD REFINING COMPANY
WELL RW-22 SPECIFIC CAPACITY
JUNE 8, 1994
DRAWDOWN (FEET)
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
934 min constant rate
90 min Step 3
90 min Step 2
90 min Step 1
STEP # | DISCHARGE RATE (Q) | DRAWDOWN (s) | Q/s (gpm/ft)
1 | 1 gpm | 0.89 ft | 1.12
2 | 2 gpm | 1.77 ft | 1.13
3 | 4 gpm | 3.16 ft | 1.26
Long Term | 4 gpm | 4.20 ft | 0.95
0.0
1.0
2.0
3.0
4.0
5.0
6.0
7.0
DISCHARGE RATE (GPM)
BRC-QS.CHT

FIGURE 3

APPENDIX A

WELL LOGS FOR MP-3, MP-4 AND MP-5

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Point MP-3

Project BRC — Owner Bloomfield Refining Company
Location 50 County Road 4990, Bloomfield, New Mexico — Proj. No. 023353014
Surface Elev. ____ — Total Hole Depth 31 ft. — Diameter 10 in.
Top of Casing ____ — Water Level Initial 28 ft. — Static ____
Screen: Dia 2 in. — Length 20 ft. — Type/Size PVC .020 in.
Casing: Dia 2 in. — Length 11 ft. — Type PVC
Fill Material 10/20 Co. Silica — Rig/Core Drill Systems 180
Drill Co. Layne — Method Air Percussion
Driller Gabby Rodriguez — Log By Jerry May — Date 05/17/94 — Permit # ____
Checked By ____ — License No. ____

See Site Map For Boring Location

COMMENTS:

Start at 0950 hrs.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Tan, fine, poorly-graded silty SAND (dry)
2					SM	
4		62				(Same as above)
6						
8					SM/SC	
10		70				Tan, fine, poorly-graded silty/clayey SAND (moist)
12						
14		238			CL	Brown/gray-stained, silty CLAY (moist, low-medium plasticity)
16						
18						
20		61			SP	Tan, fine-coarse, poorly-graded SAND (moist)
22					SP/GP	(Same with gravel and cobbles at 22 +/- feet)
24						

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Point **MP-3**

Project *BRC* Owner *Bloomfield Refining Company*

Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24							
26		516					Tan, fine-coarse, poorly-graded SAND with gravel and cobbles
28		2415	MP-3 -27			SP GP	(Gray-stained at 27 feet) *Groundwater encountered at 28 feet on 5/17/94* Sample MP-2-27 collected at 27' for lab analysis
30							Encountered weathered limestone at 31 feet. End of boring at 31 feet (1125 hrs). Installed well screened from 11 to 31 feet on 5/17/94.
32							
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Point MP-4

Project BRC Owner Bloomfield Refining Company
Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014
Surface Elev. ____ Total Hole Depth 32 ft. Diameter 10 in.
Top of Casing ____ Water Level Initial 28 ft. Static ____
Screen: Dia 2 in. Length 20 ft. Type/Size PVC 0.020 in.
Casing: Dia 2 in. Length 12 ft. Type PVC
Fill Material 10/20 Co. Silica Rig/Core Drill Systems 180
Drill Co. Layne Method Air Percussion
Driller Gabby Rodriguez Log By Jerry May Date 05/17/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

Start at 0845 hrs.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						See well MP-3 for lithology
2						
4						
6						
8						
10						
12						
14						
16						
18						
20						
22						
24						

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Point MP-4

Project BRC Owner Bloomfield Refining Company
Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24							
26							
28							▽ *Groundwater encountered at 28 feet on 5/17/94*
30							
32							Encountered weathered limestone at 32 feet. End of boring at 32 feet (0910 hrs). Installed well screened from 12 to 32 feet on 5/17/94.
34							
36							
38							
40							
42							
44							
46							
48							
50							
52							
54							
56							

Drilling Log

GROUNDWATER TECHNOLOGY

Monitoring Point MP-5

Project BRC Owner Bloomfield Refining Company
Location 50 County Road 4990, Bloomfield, New Mexico Proj. No. 023353014
Surface Elev. ____ Total Hole Depth 31 ft. Diameter 10 in.
Top of Casing ____ Water Level Initial 28 ft. Static ____
Screen: Dia 2 in. Length 20 ft. Type/Size PVC 0.020 in.
Casing: Dia 2 in. Length 11 ft. Type PVC
Fill Material 10/20 Co. Silica Rig/Core Drill Systems 180
Drill Co. Layne Method Air Percussion
Driller Gabby Rodriquez Log By Jerry May Date 05/17/94 Permit # ____
Checked By ____ License No. ____

See Site Map For Boring Location

COMMENTS:

Start at 0720 hrs.

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2							
0							See well MP-3 for lithology
2							
4							
6							
8							
10							
12							
14							
16							
18							
20							
22							
24							

GROUNDWATER TECHNOLOGY

Drilling Log

Monitoring Point **MP-5**

Project *BRC* Owner *Bloomfield Refining Company*

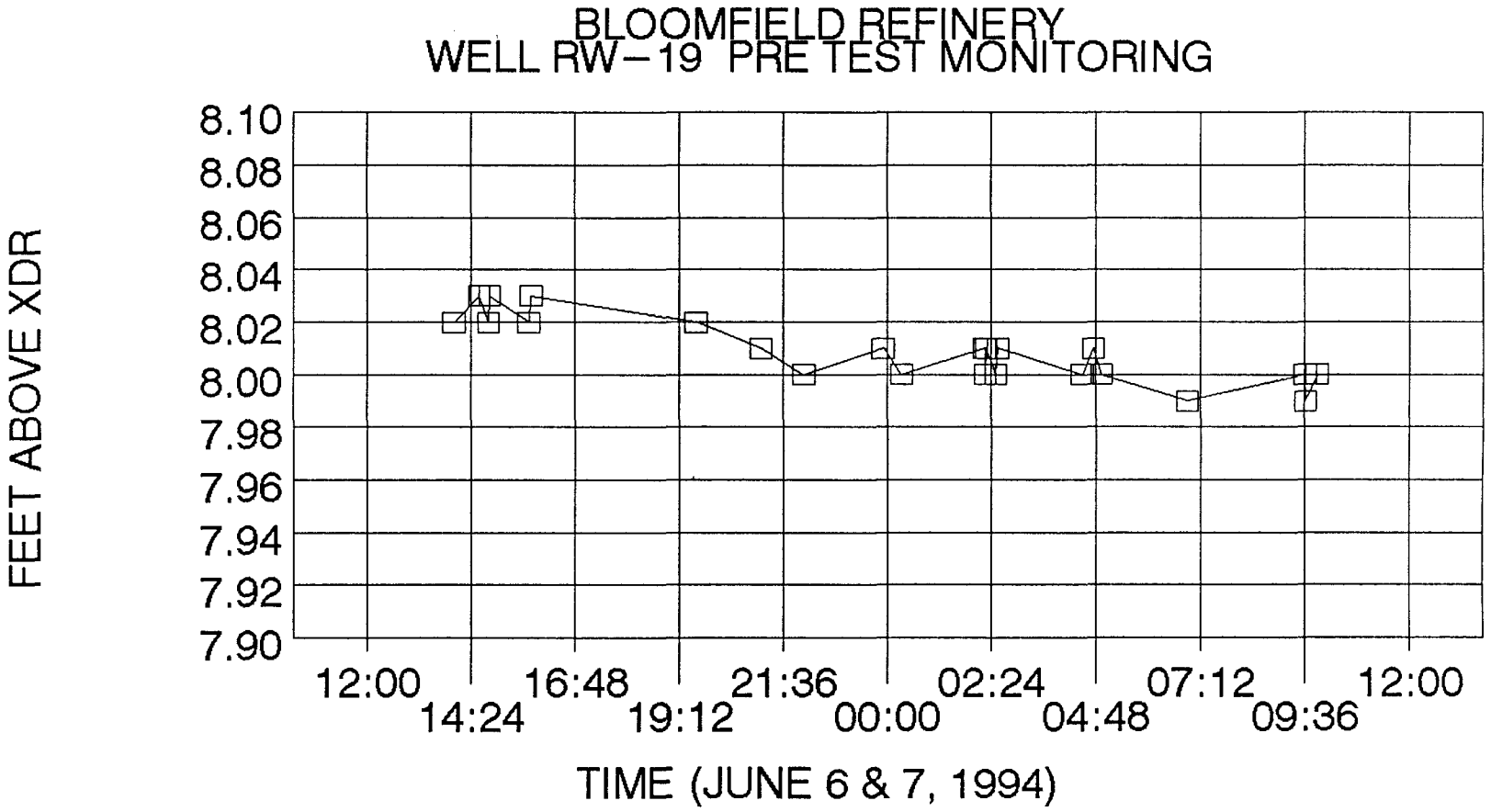
Location *50 County Road 4990, Bloomfield, New Mexico* Proj. No. *023353014*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID	Blow Count/ % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
28							▽ *Groundwater encountered at 28 feet on 5/17/94*
31							Encountered weathered limestone at 31 feet. End of boring at 31 feet (0755 hrs). Installed well screened from 11 to 31 feet on 5/17/94.

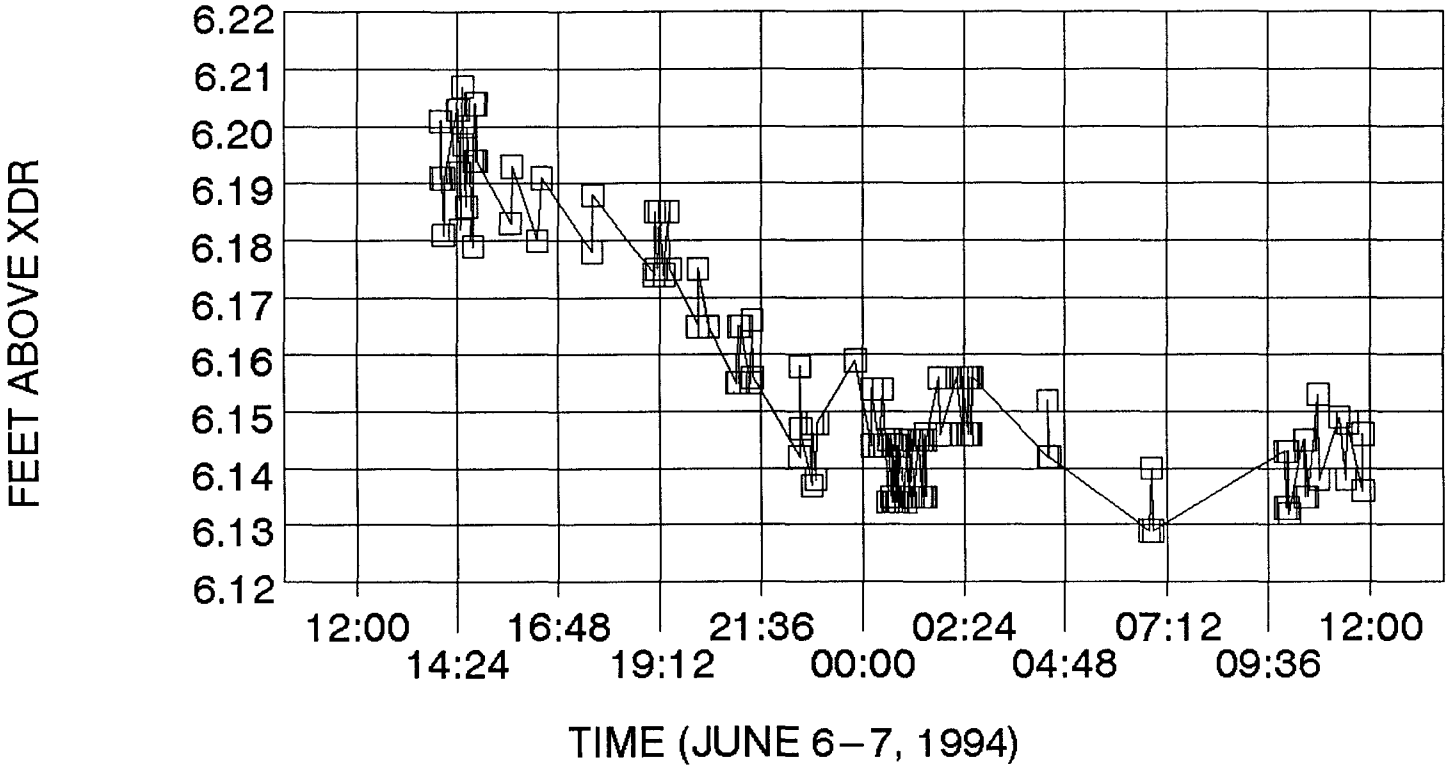
Depth scale: 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56

APPENDIX B

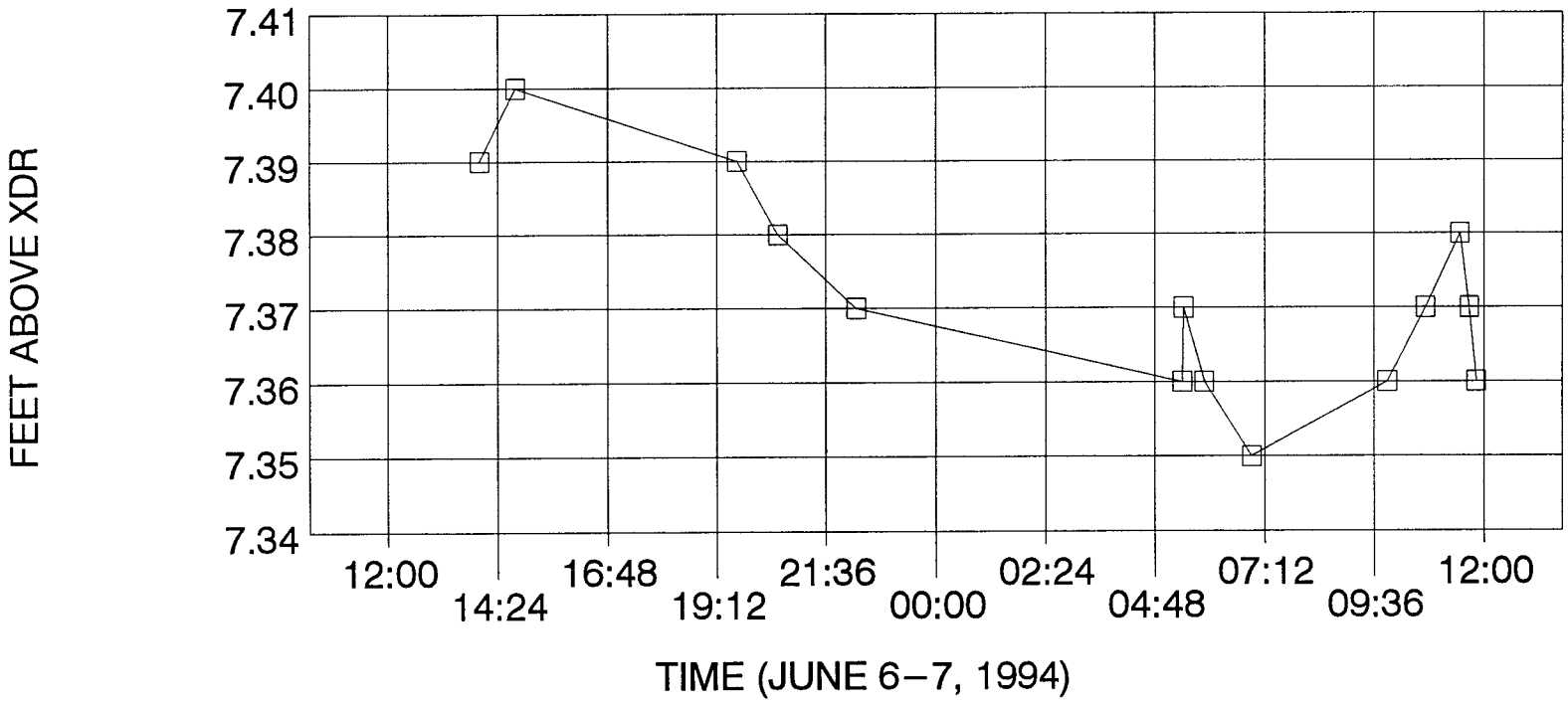
PRE-PUMPING TEST WATER LEVEL MONITORING

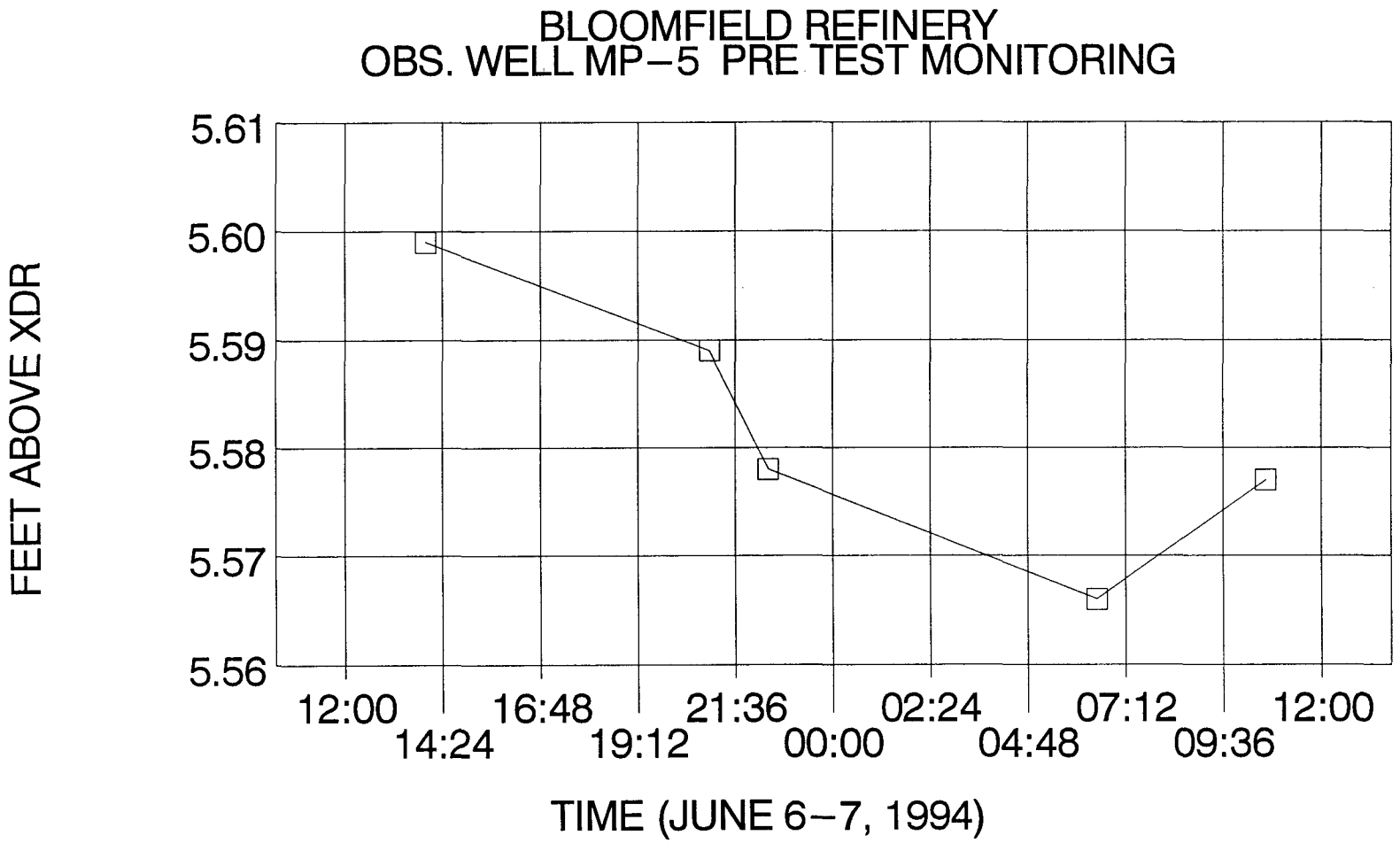

BLOOMFIELD REFINERY
WELL RW-19 PRE TEST MONITORING
FEET ABOVE XDR
8.10
8.08
8.06
8.04
8.02
8.00
7.98
7.96
7.94
7.92
7.90
12:00
14:24
16:48
19:12
21:36
00:00
02:24
04:48
07:12
09:36
12:00
TIME (JUNE 6 & 7, 1994)

BLOOMFIELD REFINERY
OBS. WELL MP-3 PRE TEST MONITORING



BLOOMFIELD REFINERY
OBS. WELL MP-4 PRE TEST MONITORING




BLOOMFIELD REFINERY
OBS. WELL MP-5 PRE TEST MONITORING
FEET ABOVE XDR
5.61
5.60
5.59
5.58
5.57
5.56
12:00
14:24
16:48
19:12
21:36
00:00
02:24
04:48
07:12
09:36
12:00
TIME (JUNE 6-7, 1994)

APPENDIX C

PUMPING WELL RW-19 AND OBSERVATION WELLS MP-3 THROUGH MP-5 PUMPING TEST DATA

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/06/94	14:00:01	8.02	DATA LOGGER ON
06/06/94	14:35:20	8.03	TANK DRAINING @ 1430
06/06/94	14:48:02	8.02	
06/06/94	14:49:20	8.03	
06/06/94	15:43:49	8.02	
06/06/94	15:46:51	8.03	
06/06/94	19:35:44	8.02	
06/06/94	21:05:29	8.01	
06/06/94	22:03:58	8.00	
06/06/94	23:54:22	8.01	
06/07/94	00:20:05	8.00	
06/07/94	02:15:02	8.01	
06/07/94	02:16:03	8.00	
06/07/94	02:18:04	8.01	
06/07/94	02:30:10	8.00	
06/07/94	02:34:12	8.01	
06/07/94	04:30:09	8.00	
06/07/94	04:44:46	8.01	
06/07/94	04:56:22	8.00	
06/07/94	06:54:21	7.99	
06/07/94	09:37:11	8.00	
06/07/94	09:37:42	7.99	
06/07/94	09:53:50	8.00	
06/07/94	09:56:21	8.04	BAIL OFF 0.48' PRODUCT
06/07/94	09:56:51	8.00	
06/07/94	09:57:21	8.03	
06/07/94	09:57:52	8.05	
06/07/94	09:58:22	7.99	
06/07/94	09:58:52	7.93	
06/07/94	09:59:22	8.25	
06/07/94	09:59:53	8.00	
06/07/94	10:00:23	7.94	
06/07/94	10:00:53	8.09	
06/07/94	10:01:23	7.90	
06/07/94	10:01:54	7.97	
06/07/94	10:02:24	7.98	
06/07/94	10:03:24	7.99	
06/07/94	10:11:28	8.00	
06/07/94	10:34:40	8.01	
06/07/94	11:05:25	8.03	
06/07/94	11:21:03	8.81	DEPLOY PUMP IN WELL
06/07/94	11:21:33	8.32	
06/07/94	11:22:03	8.03	
06/07/94	11:22:34	8.06	
06/07/94	11:23:04	8.01	
06/07/94	11:24:04	8.03	
06/07/94	11:25:05	8.04	
06/07/94	11:40:15	8.07	
06/07/94	11:40:15	8.02	
06/07/94	11:40:16	8.04	
06/07/94	11:41:04	8.07	
06/07/94	11:41:04	8.04	
06/07/94	11:41:53	8.08	
06/07/94	11:41:53	8.04	
06/07/94	11:42:57	8.09	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	11:42:58	8.04	
06/07/94	11:44:02	8.07	
06/07/94	11:44:02	8.03	
06/07/94	11:44:03	8.04	
06/07/94	11:44:50	8.02	
06/07/94	11:44:50	8.04	
06/07/94	11:46:09	8.07	
06/07/94	11:46:10	8.00	
06/07/94	11:46:10	8.04	
06/07/94	11:46:55	8.06	
06/07/94	11:46:55	7.99	
06/07/94	11:46:56	8.04	
06/07/94	11:47:51	8.02	
06/07/94	11:47:51	8.04	
06/07/94	11:48:13	7.61	PUMP ON @ 11:48
06/07/94	11:48:13	7.91	
06/07/94	11:48:13	7.82	
06/07/94	11:48:14	7.75	
06/07/94	11:48:14	7.60	
06/07/94	11:48:14	7.55	
06/07/94	11:48:14	7.48	
06/07/94	11:48:15	7.42	
06/07/94	11:48:15	7.30	
06/07/94	11:48:15	7.25	
06/07/94	11:48:16	7.20	
06/07/94	11:48:16	7.14	
06/07/94	11:48:16	7.06	
06/07/94	11:48:17	7.03	
06/07/94	11:48:17	6.97	
06/07/94	11:48:17	6.94	
06/07/94	11:48:18	6.88	
06/07/94	11:48:18	6.86	
06/07/94	11:48:18	6.84	
06/07/94	11:48:20	6.87	
06/07/94	11:48:20	6.91	
06/07/94	11:48:20	6.94	
06/07/94	11:48:21	7.00	
06/07/94	11:48:21	7.02	
06/07/94	11:48:22	7.06	
06/07/94	11:48:22	7.09	
06/07/94	11:48:22	7.10	
06/07/94	11:48:23	7.14	
06/07/94	11:48:23	7.16	
06/07/94	11:48:23	7.19	
06/07/94	11:48:24	7.21	
06/07/94	11:48:24	7.24	
06/07/94	11:48:24	7.26	
06/07/94	11:48:24	7.27	
06/07/94	11:48:25	7.29	
06/07/94	11:48:25	7.32	
06/07/94	11:48:25	7.33	
06/07/94	11:48:26	7.35	
06/07/94	11:48:26	7.36	
06/07/94	11:48:26	7.39	
06/07/94	11:48:27	7.40	
06/07/94	11:48:28	7.43	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	11:48:28	7.46	
06/07/94	11:48:29	7.47	
06/07/94	11:48:29	7.48	
06/07/94	11:48:29	7.50	
06/07/94	11:48:30	7.49	
06/07/94	11:48:30	7.51	
06/07/94	11:48:33	7.53	
06/07/94	11:48:33	7.54	
06/07/94	11:48:33	7.53	
06/07/94	11:48:34	7.52	
06/07/94	11:48:34	7.55	
06/07/94	11:48:34	7.53	
06/07/94	11:48:35	7.52	
06/07/94	11:48:37	7.51	
06/07/94	11:48:38	7.49	
06/07/94	11:48:38	7.51	
06/07/94	11:48:38	7.48	
06/07/94	11:48:39	7.47	
06/07/94	11:48:40	7.46	
06/07/94	11:48:41	7.44	
06/07/94	11:48:42	7.43	
06/07/94	11:48:44	7.41	
06/07/94	11:48:46	7.38	
06/07/94	11:48:46	7.40	
06/07/94	11:48:47	7.38	
06/07/94	11:48:48	7.37	
06/07/94	11:48:49	7.35	
06/07/94	11:48:49	7.37	
06/07/94	11:48:49	7.35	
06/07/94	11:48:50	7.36	
06/07/94	11:48:52	7.38	
06/07/94	11:48:54	7.39	
06/07/94	11:48:54	7.40	
06/07/94	11:48:55	7.42	
06/07/94	11:48:56	7.40	
06/07/94	11:48:56	7.42	
06/07/94	11:48:58	7.44	
06/07/94	11:48:58	7.43	
06/07/94	11:48:58	7.44	
06/07/94	11:48:59	7.45	
06/07/94	11:49:01	7.47	
06/07/94	11:49:02	7.48	
06/07/94	11:49:03	7.50	
06/07/94	11:49:04	7.51	
06/07/94	11:49:04	7.52	
06/07/94	11:49:05	7.53	
06/07/94	11:49:05	7.55	
06/07/94	11:49:06	7.57	
06/07/94	11:49:08	7.58	
06/07/94	11:49:09	7.60	
06/07/94	11:49:10	7.58	
06/07/94	11:49:10	7.60	
06/07/94	11:49:17	7.59	
06/07/94	11:49:19	7.60	
06/07/94	11:49:19	7.59	
06/07/94	11:49:20	7.60	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	11:49:21	7.59	
06/07/94	11:49:27	7.60	
06/07/94	11:49:32	7.61	
06/07/94	11:49:33	7.60	
06/07/94	11:49:36	7.61	
06/07/94	11:49:36	7.60	
06/07/94	11:49:38	7.61	
06/07/94	11:49:43	7.63	
06/07/94	11:49:47	7.64	
06/07/94	11:49:53	7.65	
06/07/94	11:49:54	7.64	
06/07/94	11:49:57	7.65	
06/07/94	11:50:11	7.67	
06/07/94	11:50:17	7.65	
06/07/94	11:50:19	7.67	
06/07/94	11:50:21	7.66	
06/07/94	11:50:21	7.67	
06/07/94	11:50:22	7.65	
06/07/94	11:50:22	7.69	
06/07/94	11:50:23	7.65	
06/07/94	11:50:23	7.68	
06/07/94	11:50:23	7.65	
06/07/94	11:50:24	7.67	
06/07/94	11:50:24	7.66	
06/07/94	11:50:26	7.67	
06/07/94	11:50:32	7.66	
06/07/94	11:50:32	7.67	
06/07/94	11:50:33	7.66	
06/07/94	11:50:38	7.67	
06/07/94	11:51:01	7.66	
06/07/94	11:51:02	7.68	
06/07/94	11:51:02	7.67	
06/07/94	11:51:04	7.68	
06/07/94	11:51:05	7.66	
06/07/94	11:51:08	7.68	
06/07/94	11:51:18	7.66	
06/07/94	11:52:13	7.65	
06/07/94	11:52:16	7.66	
06/07/94	11:52:20	7.65	
06/07/94	11:52:21	7.66	
06/07/94	11:52:22	7.65	
06/07/94	11:52:23	7.67	
06/07/94	11:53:30	7.65	PUMP OFF TO REPAIR
06/07/94	11:53:30	7.67	LEAK IN HOSE
06/07/94	11:53:32	7.65	
06/07/94	11:53:33	7.66	
06/07/94	11:53:34	7.65	
06/07/94	11:53:38	7.64	
06/07/94	11:53:39	7.67	
06/07/94	11:53:39	7.68	
06/07/94	11:53:40	7.70	
06/07/94	11:53:41	7.72	
06/07/94	11:53:42	7.73	
06/07/94	11:53:43	7.74	
06/07/94	11:53:44	7.76	
06/07/94	11:53:45	7.77	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	11:53:46	7.78	
06/07/94	11:53:48	7.80	
06/07/94	11:53:49	7.81	
06/07/94	11:53:51	7.83	
06/07/94	11:53:53	7.84	
06/07/94	11:53:55	7.85	
06/07/94	11:53:59	7.86	
06/07/94	11:54:00	7.88	
06/07/94	11:54:03	7.89	
06/07/94	11:54:09	7.91	
06/07/94	11:54:14	7.92	
06/07/94	11:54:20	7.93	
06/07/94	11:54:34	7.95	
06/07/94	11:54:45	7.96	
06/07/94	11:55:06	7.97	
06/07/94	11:55:33	7.98	
06/07/94	11:56:21	7.97	
06/07/94	11:56:21	7.99	
06/07/94	11:56:55	8.00	
06/07/94	11:57:45	8.08	
06/07/94	11:57:45	8.00	
06/07/94	11:59:01	7.47	STEP 1 @ 11:59; 1 GPM
06/07/94	11:59:02	7.90	
06/07/94	11:59:02	7.84	
06/07/94	11:59:03	7.75	
06/07/94	11:59:03	7.73	
06/07/94	11:59:04	7.70	
06/07/94	11:59:06	7.69	
06/07/94	11:59:10	7.70	
06/07/94	11:59:43	7.69	
06/07/94	11:59:53	7.68	
06/07/94	11:59:54	7.69	
06/07/94	11:59:54	7.68	
06/07/94	11:59:54	7.70	
06/07/94	11:59:55	7.68	
06/07/94	11:59:56	7.69	
06/07/94	11:59:58	7.68	
06/07/94	11:59:59	7.69	
06/07/94	12:00:02	7.68	
06/07/94	12:00:04	7.69	
06/07/94	12:00:05	7.68	
06/07/94	12:00:06	7.69	
06/07/94	12:00:09	7.68	
06/07/94	12:00:14	7.69	
06/07/94	12:00:15	7.68	
06/07/94	12:00:26	7.69	
06/07/94	12:00:27	7.68	
06/07/94	12:00:49	7.67	
06/07/94	12:01:09	7.66	
06/07/94	12:01:11	7.68	
06/07/94	12:01:11	7.66	
06/07/94	12:01:30	7.64	
06/07/94	12:01:30	7.68	
06/07/94	12:01:31	7.66	
06/07/94	12:01:34	7.67	
06/07/94	12:01:53	7.66	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	12:01:54	7.67	
06/07/94	12:01:59	7.65	
06/07/94	12:02:00	7.67	
06/07/94	12:02:02	7.66	
06/07/94	12:02:22	7.64	
06/07/94	12:02:22	7.66	
06/07/94	12:02:24	7.64	
06/07/94	12:02:53	7.66	
06/07/94	12:02:53	7.65	
06/07/94	12:02:57	7.66	
06/07/94	12:02:58	7.65	
06/07/94	12:02:59	7.66	
06/07/94	12:03:00	7.64	
06/07/94	12:03:01	7.66	
06/07/94	12:03:02	7.65	
06/07/94	12:03:06	7.66	
06/07/94	12:03:07	7.65	
06/07/94	12:03:13	7.67	
06/07/94	12:03:13	7.65	
06/07/94	12:03:14	7.67	
06/07/94	12:03:15	7.65	
06/07/94	12:03:15	7.66	
06/07/94	12:03:38	7.65	
06/07/94	12:03:38	7.67	
06/07/94	12:03:38	7.65	
06/07/94	12:03:39	7.67	
06/07/94	12:03:40	7.65	
06/07/94	12:03:41	7.66	
06/07/94	12:03:59	7.65	
06/07/94	12:04:00	7.66	
06/07/94	12:04:07	7.65	
06/07/94	12:04:07	7.66	
06/07/94	12:04:15	7.65	
06/07/94	12:04:15	7.66	
06/07/94	12:04:18	7.65	
06/07/94	12:04:19	7.66	
06/07/94	12:04:26	7.65	
06/07/94	12:04:26	7.66	
06/07/94	12:04:27	7.65	
06/07/94	12:05:38	7.63	
06/07/94	12:06:25	7.64	
06/07/94	12:06:51	7.63	
06/07/94	12:07:12	7.61	
06/07/94	12:07:44	7.63	
06/07/94	12:08:10	7.61	
06/07/94	12:08:21	7.63	
06/07/94	12:10:32	7.61	
06/07/94	12:11:19	7.63	
06/07/94	12:11:24	7.61	
06/07/94	12:12:01	7.62	
06/07/94	12:12:43	7.61	
06/07/94	12:12:59	7.60	
06/07/94	12:13:20	7.61	
06/07/94	12:13:51	7.60	
06/07/94	12:14:18	7.61	
06/07/94	12:14:33	7.60	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	12:15:15	7.61	
06/07/94	12:16:13	7.60	
06/07/94	12:16:34	7.61	
06/07/94	12:16:45	7.59	
06/07/94	12:16:55	7.61	
06/07/94	12:17:06	7.59	
06/07/94	12:17:32	7.60	
06/07/94	12:18:09	7.59	
06/07/94	12:18:19	7.58	
06/07/94	12:18:24	7.59	
06/07/94	12:19:17	7.60	
06/07/94	12:21:07	7.59	
06/07/94	12:21:18	7.60	
06/07/94	12:21:39	7.61	
06/07/94	12:22:05	7.60	
06/07/94	12:22:47	7.61	
06/07/94	12:24:11	7.60	
06/07/94	12:24:37	7.61	
06/07/94	12:25:09	7.62	
06/07/94	12:25:35	7.60	
06/07/94	12:25:45	7.62	
06/07/94	12:26:12	7.60	
06/07/94	12:26:17	7.62	
06/07/94	12:27:36	7.64	
06/07/94	12:27:51	7.62	
06/07/94	12:27:57	7.59	
06/07/94	12:28:02	7.63	
06/07/94	12:28:18	7.61	
06/07/94	12:28:23	7.62	
06/07/94	12:28:33	7.63	
06/07/94	12:29:42	7.62	
06/07/94	12:29:52	7.63	
06/07/94	12:30:24	7.62	
06/07/94	12:30:45	7.63	
06/07/94	12:31:16	7.62	
06/07/94	12:31:32	7.65	
06/07/94	12:32:09	7.62	
06/07/94	12:32:14	7.63	
06/07/94	12:32:35	7.65	
06/07/94	12:32:51	7.64	
06/07/94	12:33:01	7.65	
06/07/94	12:35:07	7.66	
06/07/94	12:37:39	7.65	
06/07/94	12:38:00	7.66	
06/07/94	12:38:11	7.68	
06/07/94	12:38:21	7.67	
06/07/94	12:38:32	7.65	
06/07/94	12:38:37	7.66	
06/07/94	12:39:19	7.68	
06/07/94	12:39:51	7.67	
06/07/94	12:40:06	7.68	
06/07/94	12:40:12	7.66	
06/07/94	12:40:48	7.68	
06/07/94	12:44:55	7.69	
06/07/94	12:45:21	7.67	
06/07/94	12:45:27	7.68	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	12:45:32	7.67	
06/07/94	12:45:58	7.68	
06/07/94	12:49:32	7.70	
06/07/94	12:50:03	7.68	
06/07/94	12:50:33	7.69	
06/07/94	12:53:04	7.73	
06/07/94	12:55:05	7.74	
06/07/94	12:57:36	7.76	
06/07/94	12:58:07	7.74	
06/07/94	12:59:07	7.84	END STEP 1
06/07/94	12:59:37	8.04	STEP 1 RECOVERY
06/07/94	13:00:08	8.09	
06/07/94	13:00:38	8.11	
06/07/94	13:01:08	8.13	
06/07/94	13:01:38	8.15	
06/07/94	13:02:39	8.16	
06/07/94	13:03:09	8.17	
06/07/94	13:04:40	8.19	
06/07/94	13:05:40	8.20	
06/07/94	13:07:11	8.21	
06/07/94	13:09:12	8.23	
06/07/94	13:11:13	8.24	
06/07/94	13:12:14	8.26	
06/07/94	13:12:44	8.24	
06/07/94	13:13:44	8.26	
06/07/94	13:16:16	8.27	
06/07/94	13:18:47	8.28	
06/07/94	13:20:18	8.30	
06/07/94	13:20:48	8.28	
06/07/94	13:22:19	8.29	
06/07/94	13:26:21	8.30	
06/07/94	13:27:51	8.32	
06/07/94	13:31:53	8.33	
06/07/94	13:37:26	8.34	
06/07/94	13:38:57	8.35	
06/07/94	13:42:59	8.36	
06/07/94	13:46:00	8.37	
06/07/94	13:50:02	8.39	
06/07/94	13:53:34	8.40	
06/07/94	13:57:06	8.41	
06/07/94	14:00:07	8.43	
06/07/94	14:00:38	8.42	
06/07/94	14:04:09	8.43	
06/07/94	14:07:11	8.44	
06/07/94	14:12:44	8.46	
06/07/94	14:13:14	8.47	
06/07/94	14:13:44	8.45	END STEP 1 RECOVERY
06/07/94	14:15:45	8.63	BAIL PRODUCT FOR
06/07/94	14:16:15	8.39	STEP 2
06/07/94	14:16:46	8.46	
06/07/94	14:17:16	8.17	
06/07/94	14:17:46	8.42	
06/07/94	14:18:16	8.16	
06/07/94	14:18:47	8.03	
06/07/94	14:19:17	8.25	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	14:19:47	8.44	
06/07/94	14:20:17	8.59	
06/07/94	14:21:18	8.28	
06/07/94	14:21:48	8.44	
06/07/94	14:22:18	8.48	
06/07/94	14:22:49	8.49	
06/07/94	14:24:50	7.93	
06/07/94	14:25:20	7.95	
06/07/94	14:28:21	7.98	PUMP ON FOR STEP 2
06/07/94	14:30:22	7.50	Q = 2GPM @ 14:30
06/07/94	14:30:53	7.37	
06/07/94	14:31:23	7.45	
06/07/94	14:31:53	7.29	
06/07/94	14:32:23	7.23	
06/07/94	14:32:54	7.21	
06/07/94	14:33:54	7.18	
06/07/94	14:34:24	7.15	
06/07/94	14:35:25	7.13	
06/07/94	14:35:55	7.15	
06/07/94	14:36:56	7.13	
06/07/94	14:37:56	7.08	
06/07/94	14:38:26	7.14	
06/07/94	14:39:57	7.09	
06/07/94	14:42:59	7.07	
06/07/94	14:43:29	7.06	
06/07/94	14:43:59	7.05	
06/07/94	14:44:29	7.01	
06/07/94	14:45:00	7.00	
06/07/94	14:45:30	7.02	
06/07/94	14:46:00	6.95	
06/07/94	14:46:30	6.97	
06/07/94	14:47:31	6.95	
06/07/94	14:48:01	6.97	
06/07/94	14:49:02	6.95	
06/07/94	14:50:02	6.92	
06/07/94	14:50:32	6.90	
06/07/94	14:51:03	6.88	
06/07/94	14:53:04	6.85	
06/07/94	14:54:34	6.83	
06/07/94	14:55:05	6.82	
06/07/94	14:55:35	6.74	
06/07/94	14:56:05	6.79	
06/07/94	14:56:35	6.77	
06/07/94	14:58:06	6.75	
06/07/94	14:58:36	6.74	
06/07/94	14:59:07	6.71	
06/07/94	14:59:37	6.68	
06/07/94	15:00:07	6.65	
06/07/94	15:00:37	6.59	
06/07/94	15:01:08	6.64	
06/07/94	15:01:38	6.72	
06/07/94	15:02:08	6.78	PRODUCT PUMPING
06/07/94	15:02:38	6.81	
06/07/94	15:03:09	6.98	
06/07/94	15:03:39	6.92	
06/07/94	15:04:09	6.98	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	15:04:39	6.95	
06/07/94	15:05:10	6.88	
06/07/94	15:05:40	6.80	
06/07/94	15:06:10	6.75	
06/07/94	15:06:40	6.62	
06/07/94	15:07:11	6.60	
06/07/94	15:08:41	6.59	
06/07/94	15:13:44	6.57	
06/07/94	15:15:45	6.55	
06/07/94	15:16:15	6.59	
06/07/94	15:16:45	6.56	
06/07/94	15:18:16	6.57	
06/07/94	15:19:47	6.55	
06/07/94	15:21:18	6.53	
06/07/94	15:23:19	6.52	
06/07/94	15:24:19	6.55	
06/07/94	15:25:20	6.56	
06/07/94	15:25:50	6.54	
06/07/94	15:26:20	6.55	
06/07/94	15:30:22	7.17	
06/07/94	15:30:52	7.48	PUMP OFF, END STEP 2
06/07/94	15:31:23	7.69	STEP 2 RECOVERY
06/07/94	15:32:23	7.74	
06/07/94	15:32:53	7.77	
06/07/94	15:33:24	7.79	
06/07/94	15:33:54	7.80	
06/07/94	15:34:54	7.83	
06/07/94	15:35:55	7.85	
06/07/94	15:36:25	7.87	
06/07/94	15:36:55	7.89	
06/07/94	15:38:56	7.91	
06/07/94	15:40:27	7.93	
06/07/94	15:43:59	7.95	
06/07/94	15:44:59	7.97	
06/07/94	15:45:30	7.95	
06/07/94	15:46:30	7.97	
06/07/94	15:48:31	7.98	
06/07/94	15:51:02	8.00	
06/07/94	15:51:33	7.99	
06/07/94	15:52:03	8.00	
06/07/94	15:54:34	8.01	
06/07/94	15:57:36	8.02	
06/07/94	16:01:07	8.04	
06/07/94	16:04:09	8.05	
06/07/94	16:05:09	8.03	
06/07/94	16:12:13	8.05	
06/07/94	16:18:46	8.06	
06/07/94	16:25:50	8.07	
06/07/94	16:26:20	8.05	
06/07/94	16:28:21	8.11	PULL PUMP
06/07/94	16:28:51	7.83	
06/07/94	16:29:21	7.85	
06/07/94	16:29:52	7.71	
06/07/94	16:30:22	7.47	
06/07/94	16:30:52	7.85	
06/07/94	16:31:22	5.83	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-19 PUMPING TEST DATA
JUNE 6-7, 1994

DATE	TIME	FEET	REMARKS
06/07/94	16:31:53	5.53	
06/07/94	16:32:23	5.67	BAIL PRODUCT DOWN
06/07/94	16:32:53	5.21	
06/07/94	16:33:23	8.05	
06/07/94	16:34:54	8.07	
06/07/94	16:37:25	8.08	
06/07/94	16:37:56	7.98	
06/07/94	16:38:26	7.80	
06/07/94	16:38:56	8.02	
06/07/94	16:39:26	8.32	
06/07/94	16:39:57	8.02	
06/07/94	16:40:27	7.97	
06/07/94	16:40:57	8.25	
06/07/94	16:41:27	7.86	
06/07/94	16:41:58	8.02	
06/07/94	16:42:28	8.14	
06/07/94	16:42:58	7.82	
06/07/94	16:43:28	8.02	
06/07/94	16:43:59	8.16	
06/07/94	16:44:29	7.90	
06/07/94	16:44:59	8.03	
06/07/94	16:45:29	8.06	
06/07/94	16:46:30	8.08	
06/07/94	16:48:31	8.09	
06/07/94	17:04:09	8.10	
06/07/94	17:19:46	8.11	
06/07/94	17:55:04	8.12	
06/07/94	18:28:51	8.14	
06/07/94	18:33:23	8.12	
06/07/94	18:52:32	8.14	
06/07/94	18:54:03	8.13	
06/07/94	19:48:00	8.14	
06/07/94	20:14:13	8.13	
06/07/94	20:45:59	8.14	
06/07/94	21:05:38	8.13	
06/07/94	21:51:01	8.11	
06/07/94	23:18:14	8.12	
06/08/94	04:47:58	8.11	
06/08/94	05:37:52	8.10	
06/08/94	08:50:00	8.10	END OF FILE

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-3 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/06/94	14:00:01	6.201	DATA LOGGER ON
06/06/94	14:00:03	6.191	PRE TEST MONITORING
06/06/94	14:00:10	6.201	
06/06/94	14:00:36	6.191	
06/06/94	14:00:56	6.201	
06/06/94	14:00:57	6.191	
06/06/94	14:04:53	6.181	
06/06/94	14:04:56	6.191	
06/06/94	14:23:10	6.203	
06/06/94	14:23:16	6.192	
06/06/94	14:25:59	6.203	
06/06/94	14:26:51	6.192	
06/06/94	14:27:59	6.182	
06/06/94	14:28:15	6.192	
06/06/94	14:31:14	6.207	DRAIN HOLDING TANK
06/06/94	14:32:27	6.197	
06/06/94	14:37:05	6.186	
06/06/94	14:38:08	6.200	
06/06/94	14:46:38	6.179	
06/06/94	14:46:48	6.194	
06/06/94	14:48:33	6.204	
06/06/94	14:49:20	6.194	
06/06/94	14:51:21	6.204	
06/06/94	14:52:03	6.194	
06/06/94	15:40:48	6.183	
06/06/94	15:42:18	6.193	
06/06/94	16:19:37	6.180	
06/06/94	16:24:39	6.191	
06/06/94	17:37:15	6.178	
06/06/94	17:37:46	6.188	
06/06/94	19:04:29	6.174	
06/06/94	19:05:29	6.185	
06/06/94	19:08:31	6.175	
06/06/94	19:11:32	6.185	
06/06/94	19:19:06	6.174	
06/06/94	19:25:39	6.185	
06/06/94	19:27:40	6.175	
06/06/94	20:05:59	6.165	
06/06/94	20:07:00	6.175	
06/06/94	20:21:37	6.165	
06/06/94	21:00:56	6.155	
06/06/94	21:03:28	6.165	
06/06/94	21:04:28	6.155	
06/06/94	21:06:59	6.165	
06/06/94	21:21:37	6.155	
06/06/94	21:23:07	6.166	
06/06/94	21:24:08	6.156	
06/06/94	22:30:41	6.142	
06/06/94	22:31:11	6.158	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-3 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/06/94	22:32:12	6.147	
06/06/94	22:47:49	6.137	
06/06/94	22:48:20	6.148	
06/06/94	22:53:22	6.138	
06/06/94	22:55:53	6.148	
06/06/94	23:49:50	6.159	
06/07/94	00:13:02	6.144	
06/07/94	00:13:32	6.154	
06/07/94	00:24:37	6.144	
06/07/94	00:28:39	6.154	
06/07/94	00:32:11	6.144	
06/07/94	00:35:43	6.134	
06/07/94	00:37:44	6.145	
06/07/94	00:39:45	6.135	
06/07/94	00:41:46	6.145	
06/07/94	00:42:16	6.134	
06/07/94	00:42:46	6.144	
06/07/94	00:44:17	6.134	
06/07/94	00:47:19	6.144	
06/07/94	00:47:49	6.134	
06/07/94	00:49:20	6.144	
06/07/94	00:49:50	6.134	
06/07/94	00:50:20	6.144	
06/07/94	00:50:50	6.134	
06/07/94	00:52:21	6.144	
06/07/94	01:00:25	6.134	
06/07/94	01:00:55	6.145	
06/07/94	01:05:28	6.135	
06/07/94	01:06:58	6.145	
06/07/94	01:07:29	6.135	
06/07/94	01:10:30	6.145	
06/07/94	01:12:31	6.135	
06/07/94	01:19:35	6.145	
06/07/94	01:23:37	6.135	
06/07/94	01:24:07	6.145	
06/07/94	01:25:38	6.135	
06/07/94	01:27:08	6.145	
06/07/94	01:28:39	6.135	
06/07/94	01:29:09	6.146	
06/07/94	01:29:40	6.135	
06/07/94	01:30:10	6.145	
06/07/94	01:49:19	6.156	
06/07/94	01:50:20	6.146	
06/07/94	02:14:32	6.156	
06/07/94	02:22:36	6.146	
06/07/94	02:23:06	6.156	
06/07/94	02:29:39	6.146	
06/07/94	02:30:10	6.156	
06/07/94	02:30:40	6.146	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-3 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/07/94	02:31:10	6.156	
06/07/94	02:33:41	6.146	
06/07/94	02:35:12	6.156	
06/07/94	02:35:42	6.146	
06/07/94	02:36:43	6.156	
06/07/94	04:24:06	6.142	
06/07/94	04:24:36	6.152	
06/07/94	04:26:37	6.142	
06/07/94	06:47:17	6.129	
06/07/94	06:50:49	6.140	
06/07/94	06:52:20	6.129	
06/07/94	09:58:22	6.143	
06/07/94	09:59:53	6.133	
06/07/94	10:01:54	6.143	
06/07/94	10:02:54	6.133	
06/07/94	10:04:25	6.143	
06/07/94	10:04:55	6.132	
06/07/94	10:26:06	6.145	
06/07/94	10:27:06	6.135	
06/07/94	10:28:07	6.145	
06/07/94	10:30:38	6.135	
06/07/94	10:46:16	6.153	
06/07/94	10:46:46	6.138	
06/07/94	11:16:31	6.149	
06/07/94	11:25:05	6.138	
06/07/94	11:28:06	6.148	
06/07/94	11:49:27	6.136	
06/07/94	11:49:42	6.146	
06/07/94	11:50:49	6.136	
06/07/94	11:51:32	6.146	
06/07/94	11:51:37	6.136	
06/07/94	11:51:40	6.146	
06/07/94	11:51:47	6.136	STEP 1 @ 11:59
06/07/94	12:08:31	6.124	
06/07/94	12:09:13	6.134	
06/07/94	12:10:21	6.124	
06/07/94	12:21:28	6.114	
06/07/94	12:22:52	6.124	
06/07/94	12:24:32	6.114	
06/07/94	12:28:28	6.124	
06/07/94	12:29:21	6.114	
06/07/94	12:47:31	6.099	
06/07/94	12:48:02	6.109	
06/07/94	12:52:34	6.099	
06/07/94	12:53:04	6.109	STEP 1 ENDS @ 12:59
06/07/94	13:13:44	6.120	
06/07/94	13:37:56	6.131	
06/07/94	13:39:27	6.121	
06/07/94	13:43:29	6.132	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-3 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/07/94	14:13:14	6.143	
06/07/94	14:38:57	6.133	STEP 2 @ 14:30
06/07/94	14:40:58	6.123	
06/07/94	14:47:01	6.113	
06/07/94	14:47:31	6.123	
06/07/94	14:50:02	6.113	
06/07/94	14:56:05	6.098	
06/07/94	15:06:10	6.083	
06/07/94	15:19:17	6.073	
06/07/94	15:25:20	6.063	
06/07/94	15:39:57	6.078	STEP 2 ENDS @ 15:30
06/07/94	15:46:00	6.088	
06/07/94	15:46:30	6.078	
06/07/94	15:47:31	6.088	
06/07/94	15:53:03	6.098	
06/07/94	16:00:37	6.108	
06/07/94	16:05:09	6.118	
06/07/94	16:07:10	6.108	
06/07/94	16:19:47	6.118	
06/07/94	17:03:08	6.129	
06/07/94	17:22:48	6.139	
06/07/94	18:25:19	6.149	
06/07/94	18:26:19	6.138	
06/07/94	18:28:51	6.149	
06/07/94	18:29:51	6.138	
06/07/94	21:22:47	6.128	
06/08/94	04:49:59	6.116	
06/08/94	06:18:43	6.103	
06/08/94	06:45:26	6.113	
06/08/94	07:13:10	6.099	
06/08/94	07:13:40	6.109	
06/08/94	07:30:18	6.099	
06/08/94	07:30:48	6.109	
06/08/94	07:38:22	6.099	
06/08/94	07:39:23	6.110	
06/08/94	07:39:53	6.100	
06/08/94	07:45:56	6.110	
06/08/94	07:48:27	6.100	
06/08/94	07:48:57	6.110	
06/08/94	07:49:28	6.100	
06/08/94	07:49:58	6.110	
06/08/94	07:51:29	6.100	
06/08/94	08:02:04	6.110	
06/08/94	08:02:34	6.100	
06/08/94	08:08:37	6.110	
06/08/94	08:09:07	6.100	
06/08/94	08:19:43	6.111	
06/08/94	08:20:43	6.100	
06/08/94	08:21:44	6.111	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-3 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/08/94	08:22:44	6.100	
06/08/94	08:38:52	6.111	
06/08/94	08:39:22	6.100	
06/08/94	08:42:54	6.115	
06/08/94	08:43:24	6.100	
06/08/94	08:44:25	6.110	
06/08/94	08:44:55	6.100	
06/08/94	08:46:26	6.110	
06/08/94	08:46:56	6.100	
06/08/94	08:49:27	6.110	
06/08/94	08:51:59	6.100	
06/08/94	08:52:59	6.110	END OF FILE

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-4 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/06/94	14:00:01	7.39	DATA LOGGER ON
06/06/94	14:46:43	7.40	PRE TEST MONITORING
06/06/94	19:38:15	7.39	
06/06/94	20:32:42	7.38	
06/06/94	22:15:33	7.37	
06/07/94	05:23:36	7.36	
06/07/94	05:25:37	7.37	
06/07/94	05:52:20	7.36	
06/07/94	06:54:21	7.35	
06/07/94	09:52:49	7.36	
06/07/94	10:43:14	7.37	
06/07/94	11:28:37	7.38	
06/07/94	11:40:37	7.37	
06/07/94	11:50:12	7.36	
06/07/94	11:53:36	7.35	STEP 1 @ 11:59
06/07/94	12:04:20	7.34	
06/07/94	12:11:35	7.33	
06/07/94	12:17:42	7.32	
06/07/94	12:33:17	7.31	
06/07/94	12:46:09	7.30	
06/07/94	13:05:40	7.31	STEP 1 ENDS @ 12:59
06/07/94	13:11:13	7.32	
06/07/94	13:16:46	7.33	
06/07/94	13:28:52	7.34	
06/07/94	13:43:29	7.35	
06/07/94	14:01:08	7.36	
06/07/94	14:02:08	7.34	
06/07/94	14:02:39	7.36	
06/07/94	14:21:18	7.37	
06/07/94	14:33:24	7.36	STEP 2 @ 14:30
06/07/94	14:34:55	7.35	
06/07/94	14:36:25	7.33	
06/07/94	14:39:27	7.32	
06/07/94	14:41:28	7.31	
06/07/94	14:44:29	7.30	
06/07/94	14:47:31	7.29	
06/07/94	14:50:32	7.28	
06/07/94	14:54:04	7.27	
06/07/94	14:57:36	7.26	
06/07/94	15:01:38	7.25	
06/07/94	15:08:41	7.23	
06/07/94	15:16:15	7.22	
06/07/94	15:22:48	7.21	
06/07/94	15:34:24	7.23	STEP 2 ENDS @ 15:30
06/07/94	15:36:55	7.24	
06/07/94	15:39:27	7.25	
06/07/94	15:41:58	7.26	
06/07/94	15:46:00	7.27	
06/07/94	15:48:31	7.29	

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL MP-4 DATA
JUNE 6-8, 1994

DATE	TIME	FEET	REMARKS
06/07/94	15:55:04	7.30	
06/07/94	15:57:36	7.31	
06/07/94	16:03:39	7.32	
06/07/94	16:26:50	7.33	
06/07/94	16:48:31	7.34	
06/07/94	17:08:41	7.35	
06/07/94	17:47:00	7.36	
06/07/94	21:33:52	7.35	
06/07/94	22:16:13	7.34	
06/07/94	23:28:19	7.35	
06/08/94	04:56:02	7.34	
06/08/94	05:50:29	7.33	END OF FILE

APPENDIX D

PRODUCT ACCUMULATION RATE IN PUMPING WELL RW-19 DURING PUMPING AND RECOVERY TEST

BLOOMFIELD REFINERY
WELL RW-19 STEP-DRAWDOWN TEST
STEP 1 JUNE 7, 1994

TIME	DTP FEET	DTW FEET	PT FEET	PUMPING MINS	HR	MIN	REMARKS
11:15:00	-27.74	-27.78	0.04		11	15	INITIAL LEVEL
11:59:00	-27.74	-27.78	0.04	0	11	59	PUMP ON @ 1 GPM
12:17:00	-28.20	-28.61	0.41	18	12	17	
12:28:00	-28.03	-29.09	1.06	29	12	28	
12:31:00	-28.02	-29.29	1.27	32	12	31	
12:38:00	-27.96	-29.55	1.59	39	12	38	
12:49:00	-27.91	-29.97	2.06	50	12	49	
12:57:00	-27.84	-30.09	2.25	58	12	57	
12:59:00				60	12	59	PUMP OFF
13:02:00	-27.50	-29.41	1.91	3	13	2	RECOVERY
13:06:00	-27.51	-29.22	1.71	7	13	6	
13:12:00	-27.55	-28.99	1.44	13	13	12	
13:20:00	-27.57	-28.80	1.23	21	13	20	
13:30:00	-27.59	-28.65	1.06	31	13	30	
13:45:00	-27.60	-28.49	0.89	46	13	45	
14:00:00	-27.62	-28.38	0.76	61	14	0	
14:10:00	-27.62	-28.33	0.71	71	14	10	END OF FILE

DTP = DEPTH TO PRODUCT

DTW = DEPTH TO WATER

PT = PRODUCT THICKNESS

BLOOMFIELD REFINERY
WELL RW-19 STEP-DRAWDOWN TEST
STEP 2 JUNE 7, 1994

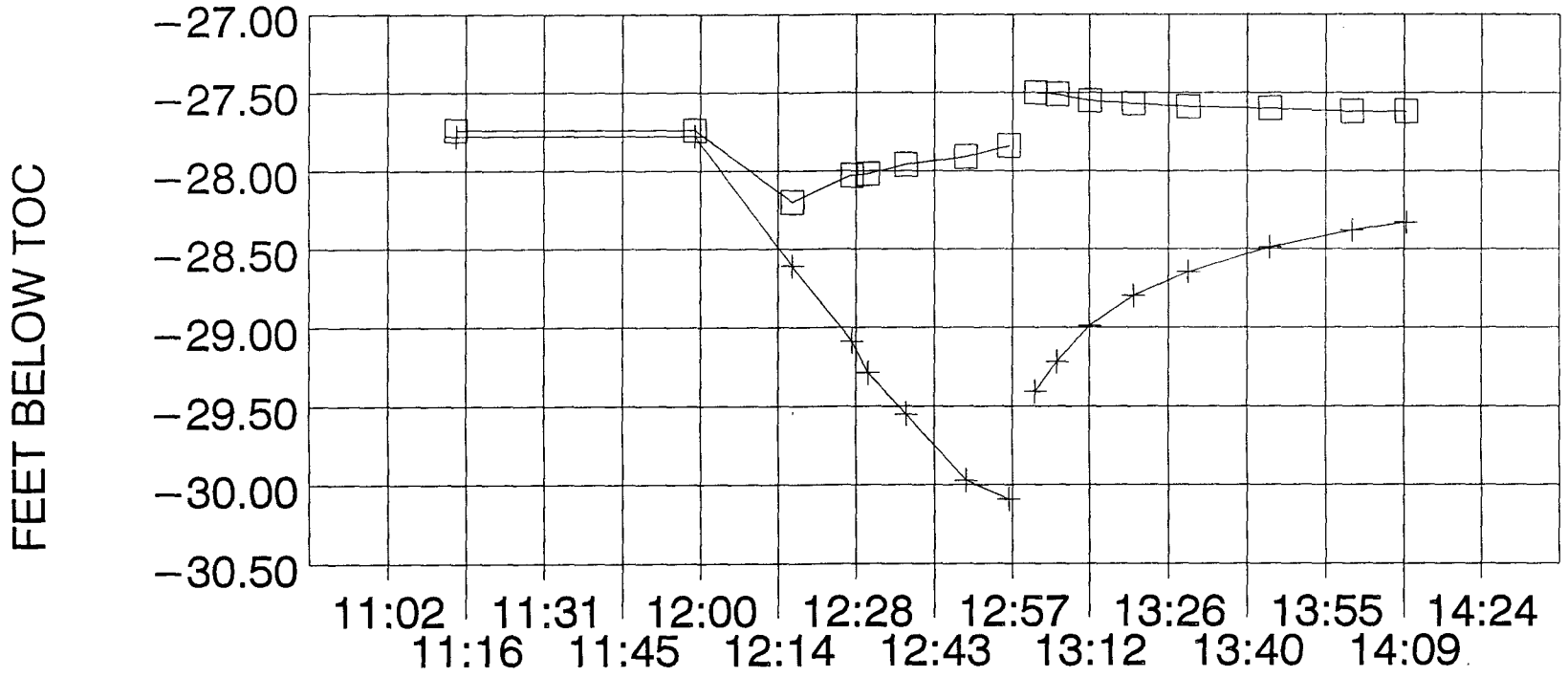
TIME	DTP FEET	DTW FEET	PT FEET	MINS	HR	MIN	REMARKS
14:23:00	-27.75	-27.83	0.08		14	23	INITIAL LEVEL
14:30:00	-27.75	-27.83	0.08	0	14	30	PUMP ON @ 2 GPM
14:36:00	-28.57	-29.22	0.65	6	14	36	
14:45:00	-28.44	-30.90	2.46	15	14	45	
14:50:00	-28.34	-31.65	3.31	20	14	50	
14:55:00	-28.28	-32.48	4.20	25	14	55	
15:00:00	-28.23			30	15	0	
15:02:00	-28.16			32	15	2	
15:04:00		-33.50			15	4	DTW IS AN ESTIMATE
15:12:00	-28.18	-33.50	5.32	42	15	12	DTW IS AN ESTIMATE
15:30:00				60	15	30	PUMP OFF
15:31:00	-27.31			1	15	31	RECOVERY
15:32:00		-31.30		2	15	32	
15:34:00		-30.65		4	15	34	
15:35:00	-27.47	-30.35	2.88	5	15	35	
15:36:00	-27.50	-30.05	2.55	6	15	36	
15:38:00	-27.53	-29.80	2.27	8	15	38	
15:40:00	-27.54	-29.57	2.03	10	15	40	
15:45:00	-27.57	-29.25	1.68	15	15	45	
15:50:00	-27.60	-28.96	1.36	20	15	50	
16:00:00	-27.62	-28.72	1.10	30	16	0	
16:25:00	-27.65	-28.43	0.78	55	16	25	END OF FILE

DTP = DEPTH TO PRODUCT

DTW = DEPTH TO WATER

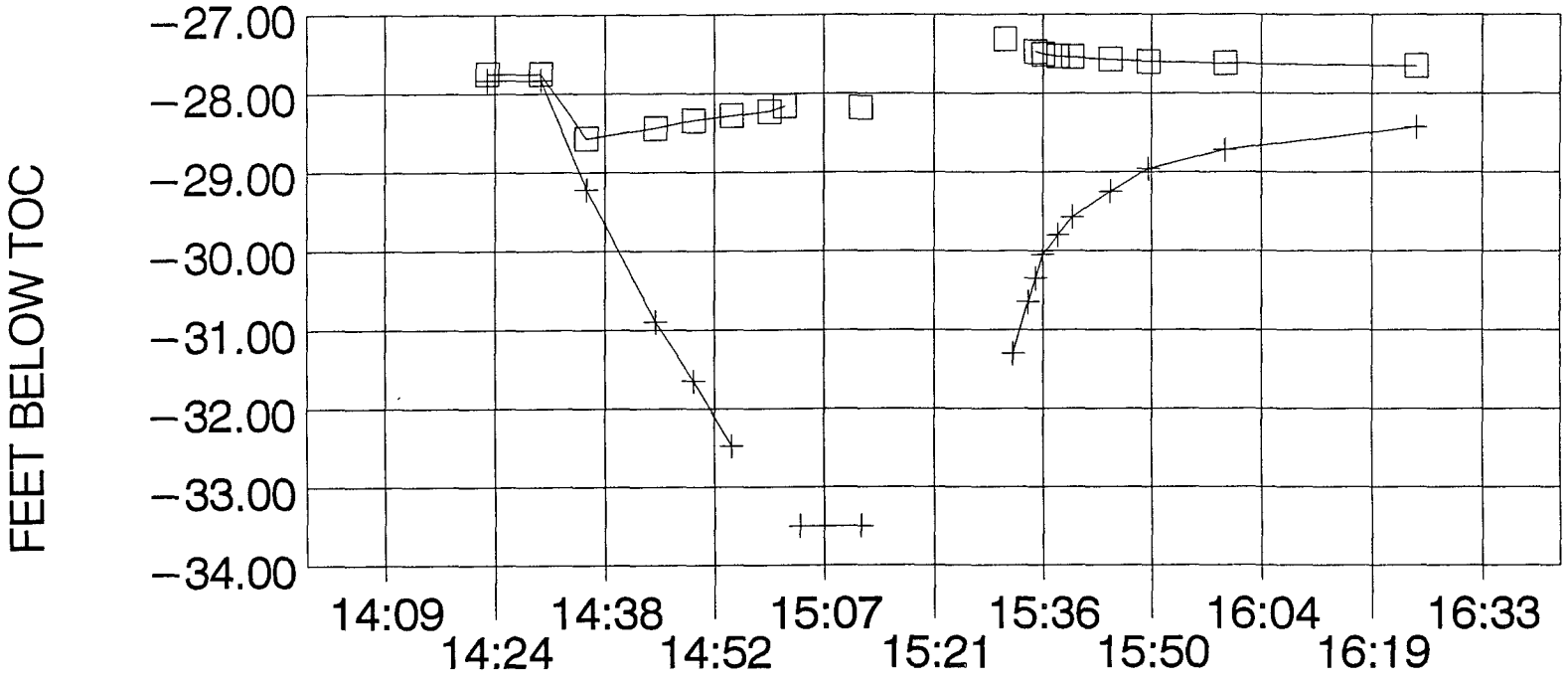
PT = PRODUCT THICKNESS

BLOOMFIELD REFINERY WELL RW-19
STEP-DRAWDOWN TEST, STEP 1: 6/7/94



RW19-1.WK1

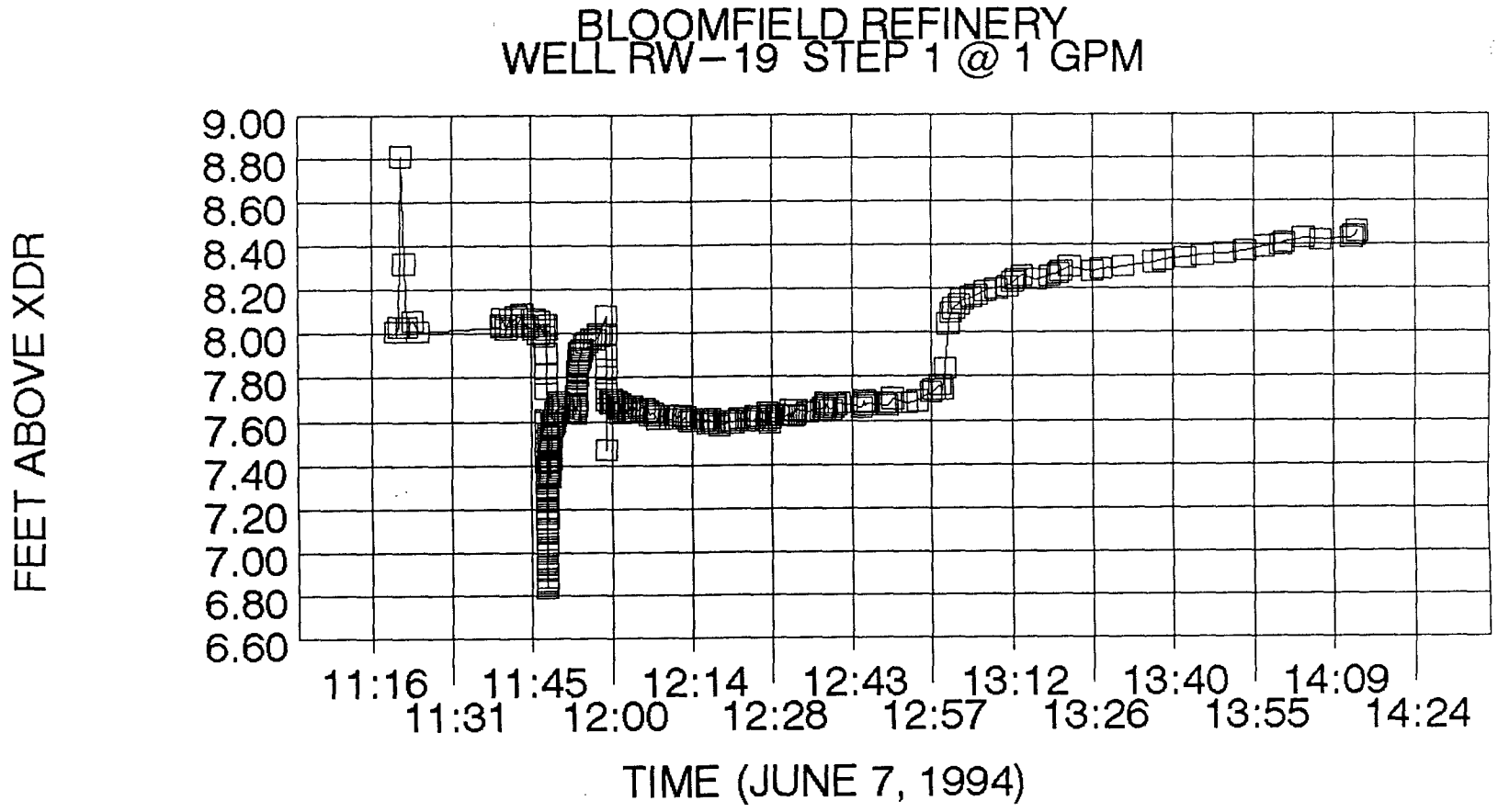
BLOOMFIELD REFINERY WELL RW-19
STEP-DRAWDOWN TEST, STEP 2: 6/7/94

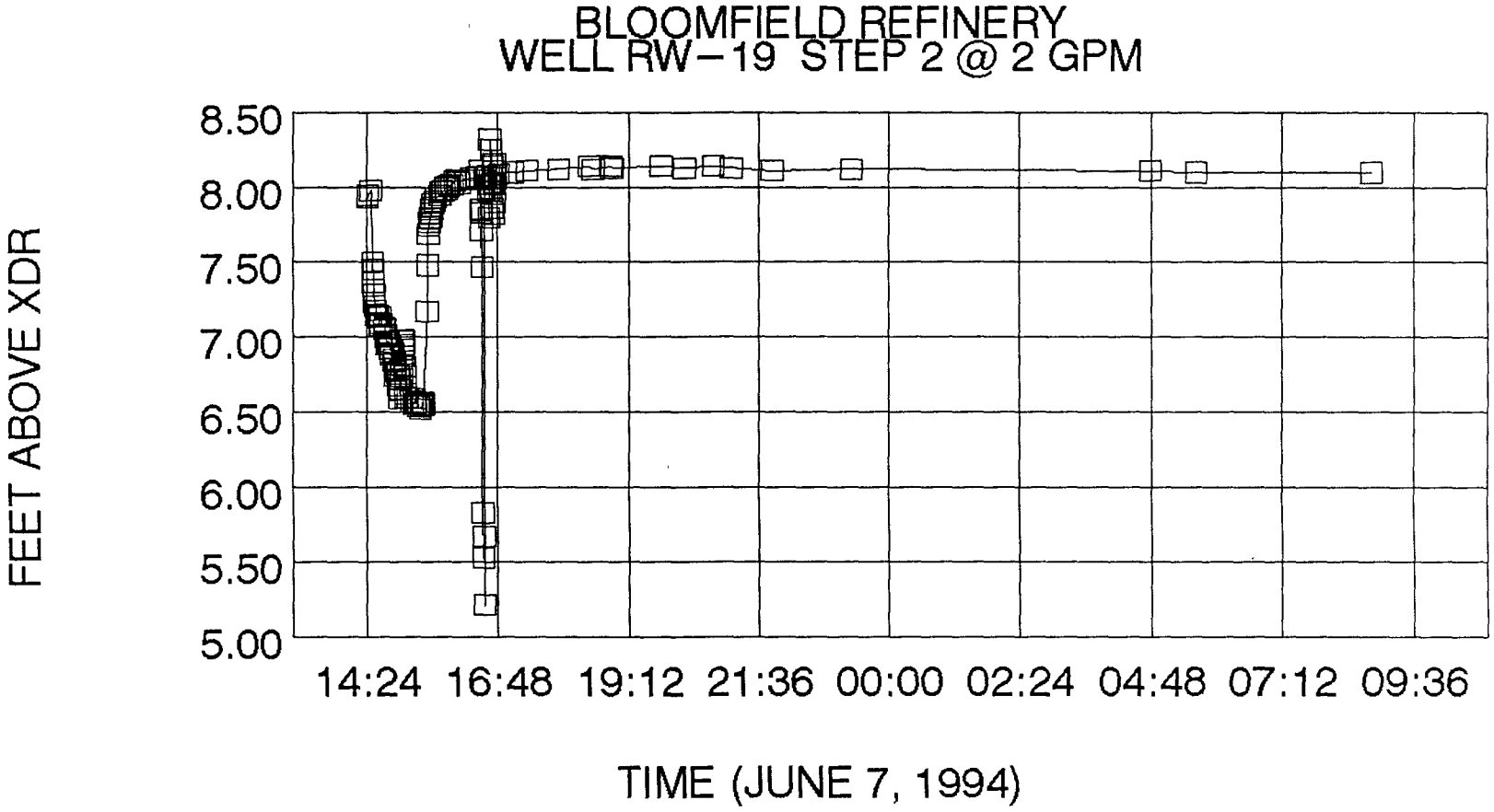


RW19-2.WK1

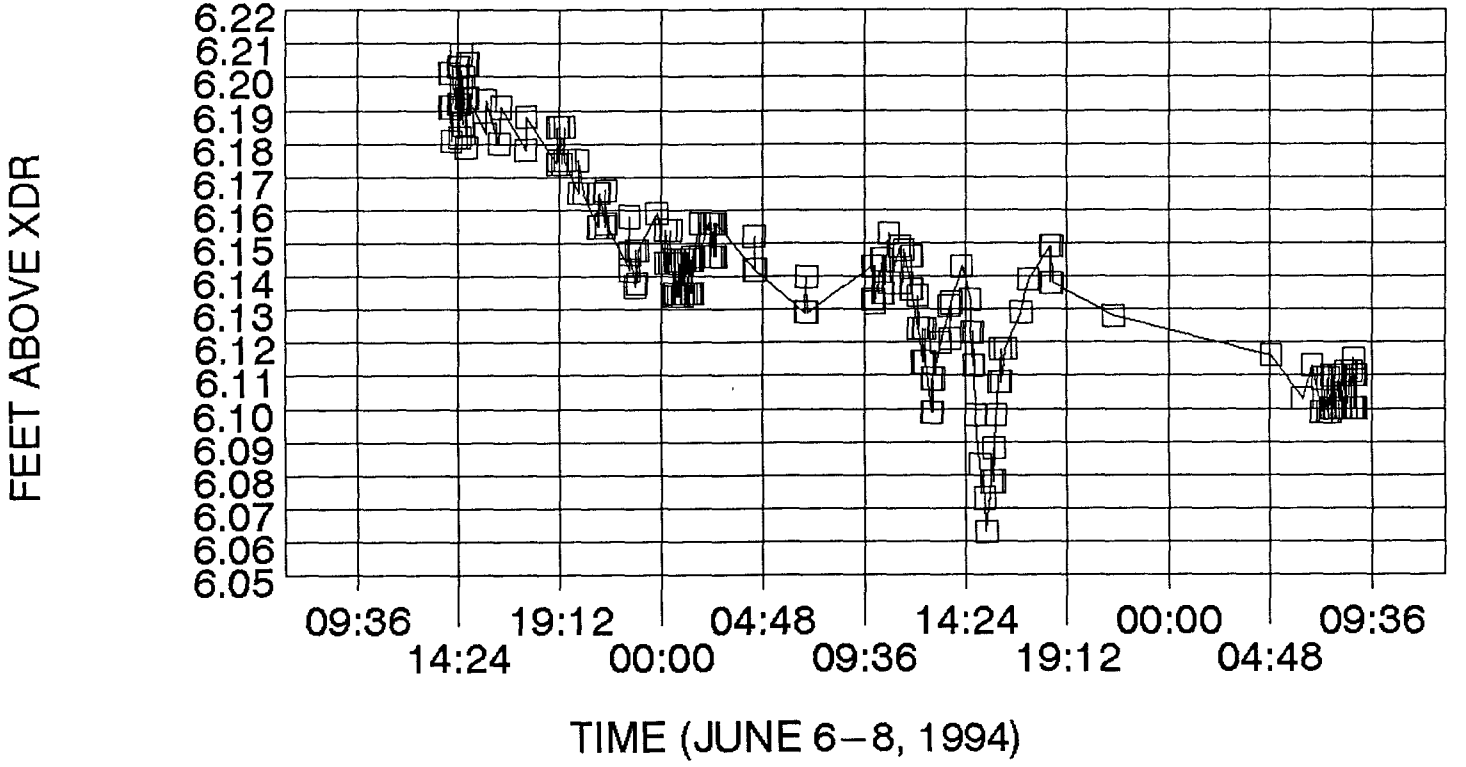
APPENDIX E

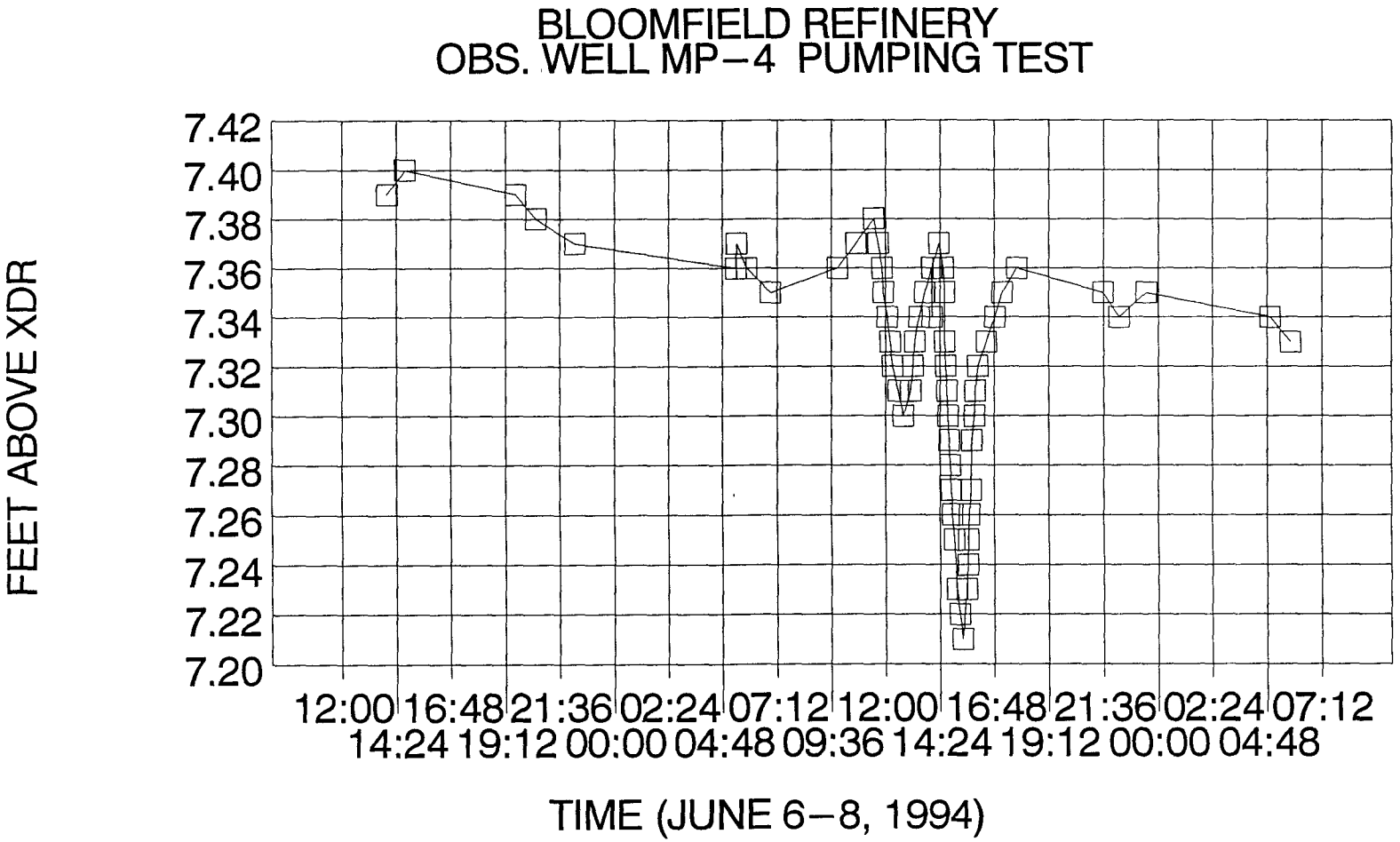
GRAPHS OF PUMPING AND RECOVERY TEST DATA OF WELLS RW-19, MP-3, MP-4 AND MP-5

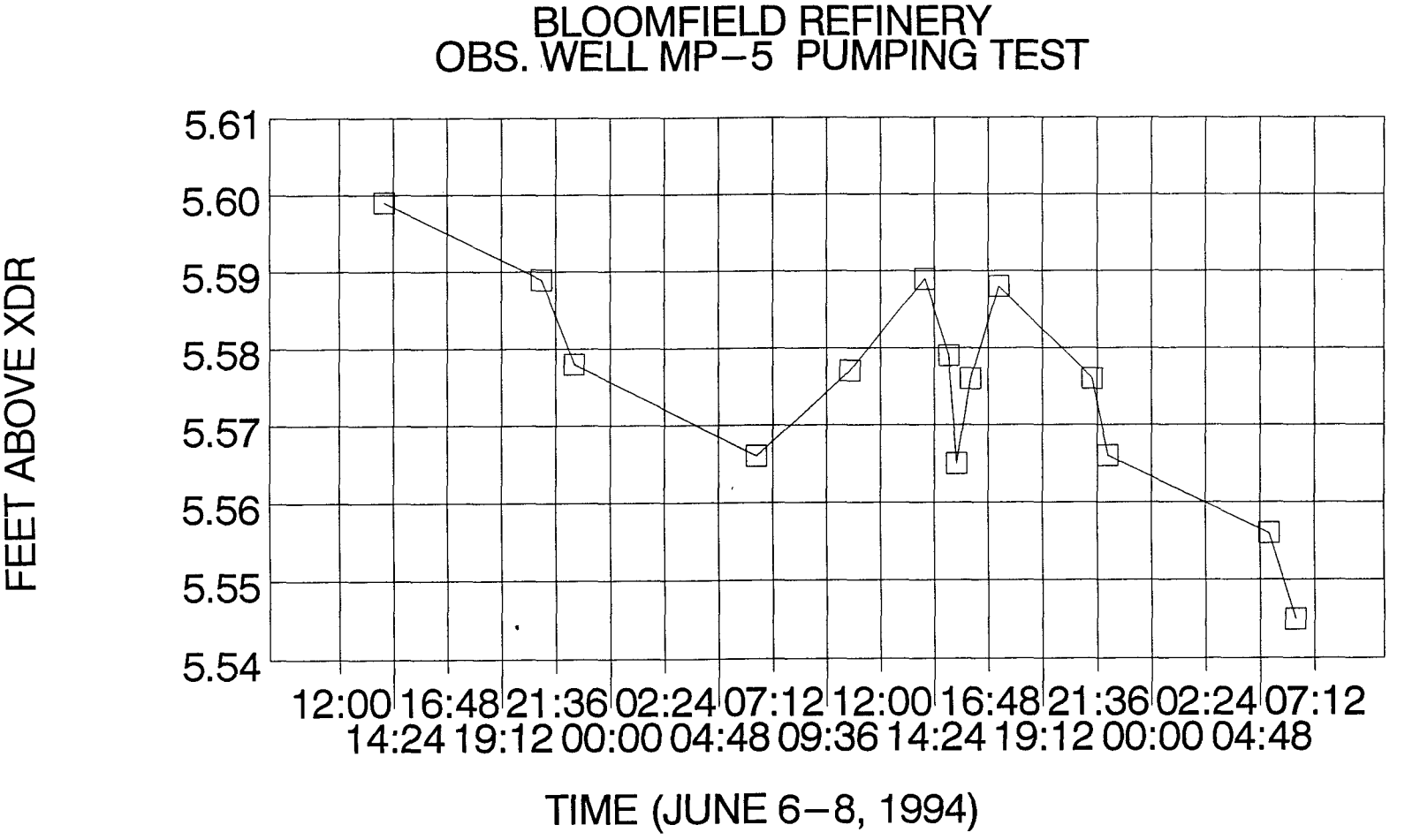

BLOOMFIELD REFINERY
WELL RW-19 STEP 1 @ 1 GPM
FEET ABOVE XDR
9.00
8.80
8.60
8.40
8.20
8.00
7.80
7.60
7.40
7.20
7.00
6.80
6.60
11:16
11:31
11:45
12:00
12:14
12:28
12:43
12:57
13:12
13:26
13:40
13:55
14:09
14:24
TIME (JUNE 7, 1994)


BLOOMFIELD REFINERY
WELL RW-19 STEP 2 @ 2 GPM
FEET ABOVE XDR
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
14:24
16:48
19:12
21:36
00:00
02:24
04:48
07:12
09:36
TIME (JUNE 7, 1994)

BLOOMFIELD REFINERY
OBS. WELL MP-3 PUMPING TEST




BLOOMFIELD REFINERY
OBS. WELL MP-4 PUMPING TEST
FEET ABOVE XDR
7.42
7.40
7.38
7.36
7.34
7.32
7.30
7.28
7.26
7.24
7.22
7.20
12:00 16:48 21:36 02:24 07:12 12:00 16:48 21:36 02:24 07:12
14:24 19:12 00:00 04:48 09:36 14:24 19:12 00:00 04:48
TIME (JUNE 6-8, 1994)


BLOOMFIELD REFINERY
OBS. WELL MP-5 PUMPING TEST
FEET ABOVE XDR
5.61
5.60
5.59
5.58
5.57
5.56
5.55
5.54
12:00 16:48 21:36 02:24 07:12 12:00 16:48 21:36 02:24 07:12
14:24 19:12 00:00 04:48 09:36 14:24 19:12 00:00 04:48
TIME (JUNE 6-8, 1994)

APPENDIX F

RECOVERY WELL RW-22 DRILLING LOG AND RECOVERY TEST DATA

GROUNDWATER TECHNOLOGY

Drilling Log

Recovery Well RW-22

Project Bloomfield/50 CR4990 Owner Bloomfield Refining Co.
Location Bloomfield, New Mexico Proj. No. 023353014
Surface Elev. 5518.05 ft. Total Hole Depth 34 ft. Diameter 10 in.
Top of Casing 5521.05 ft. Water Level Initial 19 ft. Static
Screen: Dia 6 in. Length 16 ft. Type/Size FRE/0.020 in.
Casing: Dia 6 in. Length 17/2 ft. Type FRE
Fill Material 12/20 Co. Silica Rig/Core Speedstar 15-THH
Drill Co. Beeman Bros. Method Air Percussion
Driller Leo Beeman Log By Jerry May Date 07/19/93 Permit #
Checked By License No.

See Site Map For Boring Location

COMMENTS:

Start @ 1230 hrs. 2 ft silt leg installed from 31 to 33 feet

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
-2						
0						Tan SILT (moist)
2						
4						Same as above
6		214			ML	
8						
10		46				Same as above
12						Gray COBBLES (trace or no fines)
14						
16		NA			GW	
18						Light gray-stained poorly-graded fine SAND with trace of gravel (moist-wet)
20		1,450			SP	▽ *Groundwater encountered at 19' on 7/19/93*
22						Dark-gray-stained COBBLES with trace fines (moist)
24					GW	

GROUNDWATER TECHNOLOGY

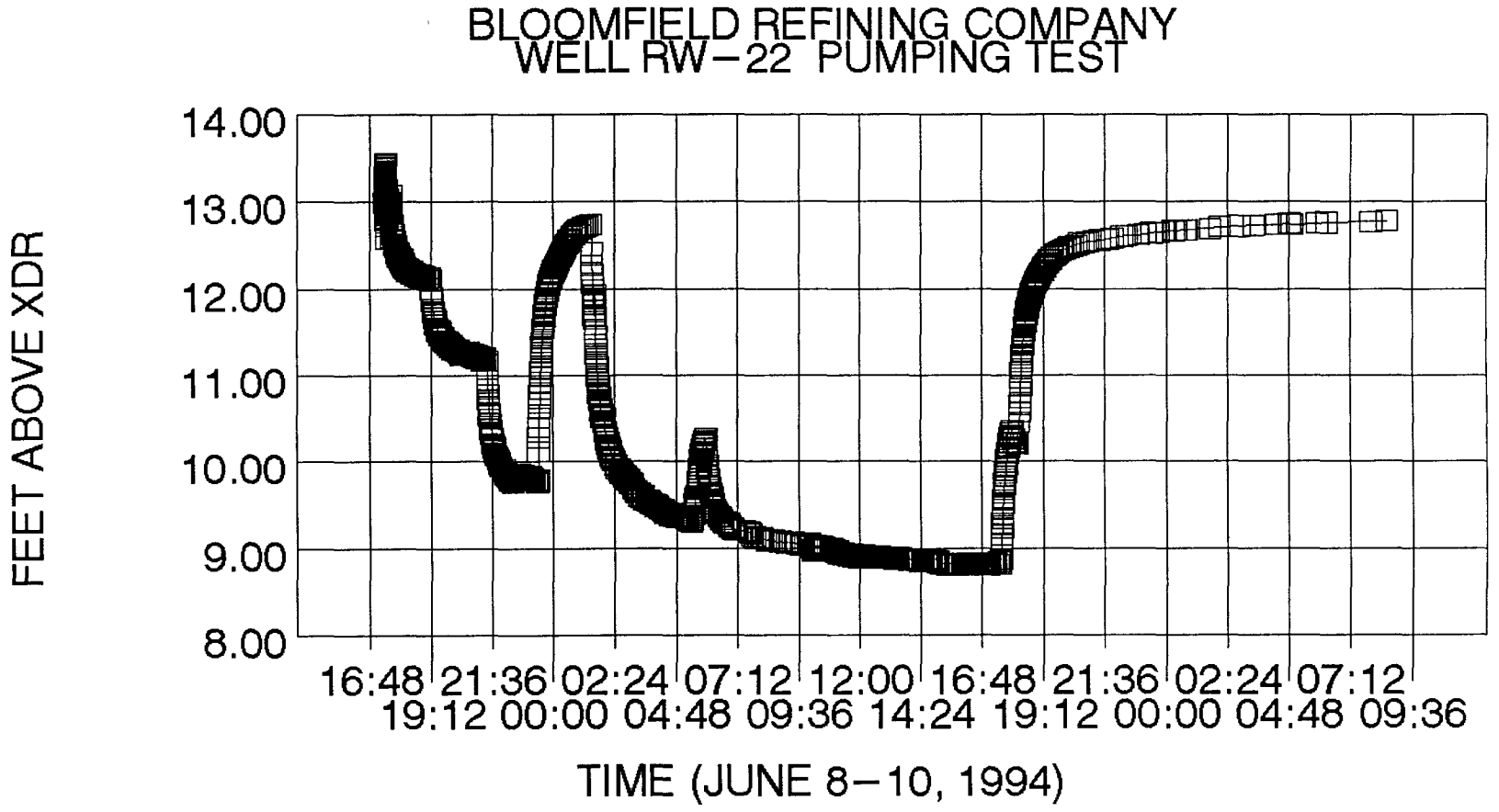
Drilling Log

Recovery Well **RW-22**

Project *Bloomfield/50 CR4990* Owner *Bloomfield Refining Co.*

Location *Bloomfield, New Mexico* Proj. No. *023353014*

Depth (ft.)	Well Completion	PID (ppm)	Sample ID / Blow Count / % Recovery	Graphic Log	USCS Class.	Description (Color, Texture, Structure) Trace < 10%, Little 10% to 20%, Some 20% to 35%, And 35% to 50%
24						
26		1,146			GW	Encountered weathered limestone (moist)
28						(Dry at 28 feet)
30		858				
32						
34		96				End of boring at 34 feet (1355 hrs.). Installed recovery well screened from 15 to 31 feet on 7/19/93.
36						
38						
40						
42						
44						
46						
48						
50						
52						
54						
56						


BLOOMFIELD REFINING COMPANY
WELL RW-22 PUMPING TEST
FEET ABOVE XDR
14.00
13.00
12.00
11.00
10.00
9.00
8.00
16:48 21:36 02:24 07:12 12:00 16:48 21:36 02:24 07:12
19:12 00:00 04:48 09:36 14:24 19:12 00:00 04:48 09:36
TIME (JUNE 8-10, 1994)

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/08/94	17:20:00	13.00	LOGGER ON				
06/08/94	17:23:38	13.09					
06/08/94	17:23:39	13.05					
06/08/94	17:23:39	13.17					
06/08/94	17:23:39	13.10					
06/08/94	17:23:39	13.17					
06/08/94	17:23:40	13.21					
06/08/94	17:23:40	13.19					
06/08/94	17:23:40	13.20					
06/08/94	17:23:40	13.21					
06/08/94	17:23:41	13.19					
06/08/94	17:23:41	13.30					
06/08/94	17:23:42	13.20					
06/08/94	17:23:42	13.32					
06/08/94	17:23:42	13.30					
06/08/94	17:23:43	13.31					
06/08/94	17:23:43	13.34					
06/08/94	17:23:43	13.36					
06/08/94	17:23:44	13.34					
06/08/94	17:23:44	13.20					
06/08/94	17:23:44	13.33					
06/08/94	17:23:44	13.30					
06/08/94	17:23:45	13.25					
06/08/94	17:23:45	13.31					
06/08/94	17:23:45	13.26					
06/08/94	17:23:45	13.28					
06/08/94	17:23:46	13.09					
06/08/94	17:23:46	13.38					
06/08/94	17:23:46	13.32					
06/08/94	17:23:46	13.19					
06/08/94	17:23:47	13.13					
06/08/94	17:23:47	13.34					
06/08/94	17:23:47	13.24					
06/08/94	17:23:47	13.02					
06/08/94	17:23:48	13.29					
06/08/94	17:23:48	13.21					
06/08/94	17:23:48	13.43					
06/08/94	17:23:48	13.32					
06/08/94	17:23:49	13.15					
06/08/94	17:23:49	12.94					
06/08/94	17:23:49	13.26					
06/08/94	17:23:49	13.23					
06/08/94	17:23:50	13.27					
06/08/94	17:23:50	13.34					
06/08/94	17:23:50	13.09					
06/08/94	17:23:51	13.34					
06/08/94	17:23:51	13.19					
06/08/94	17:23:51	13.12					
06/08/94	17:23:52	13.20					
06/08/94	17:23:52	13.04					
06/08/94	17:23:52	13.28					
06/08/94	17:23:52	13.12					
06/08/94	17:23:53	13.18					
06/08/94	17:23:53	13.15					
06/08/94	17:23:54	13.17					
06/08/94	17:23:54	13.11					
06/08/94	17:23:54	13.15					
06/08/94	17:23:54	13.12					
06/08/94	17:23:56	13.09					
06/08/94	17:23:56	13.12					
06/08/94	17:23:56	13.11					
06/08/94	17:23:59	13.09					
06/08/94	17:24:00	13.14					
06/08/94	17:24:01	13.07					
06/08/94	17:24:01	13.05					
06/08/94	17:24:01	13.12					
06/08/94	17:24:01	13.00					
06/08/94	17:24:02	13.12					
06/08/94	17:24:02	13.08					
06/08/94	17:24:03	13.10					
06/08/94	17:24:04	13.05					
06/08/94	17:24:04	13.06					
06/08/94	17:24:04	13.11					
06/08/94	17:24:04	13.08					

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	17:24:05	13.40					
06/08/94	17:24:05	13.02					
06/08/94	17:24:05	12.99					
06/08/94	17:24:05	13.08					
06/08/94	17:24:06	13.11					
06/08/94	17:24:06	12.98					
06/08/94	17:24:06	13.21					
06/08/94	17:24:06	12.97					
06/08/94	17:24:07	13.14					
06/08/94	17:24:07	13.10					
06/08/94	17:24:07	13.22					
06/08/94	17:24:07	13.25					
06/08/94	17:24:08	13.19					
06/08/94	17:24:08	12.98					
06/08/94	17:24:08	13.06					
06/08/94	17:24:08	13.09					
06/08/94	17:24:09	13.15					
06/08/94	17:24:09	13.13					
06/08/94	17:24:09	13.07					
06/08/94	17:24:09	13.19					
06/08/94	17:24:10	13.08					
06/08/94	17:24:10	13.15					
06/08/94	17:24:10	12.86					
06/08/94	17:24:11	13.19					
06/08/94	17:24:11	13.03					
06/08/94	17:24:11	13.06					
06/08/94	17:24:11	13.11					
06/08/94	17:24:12	13.13					
06/08/94	17:24:12	13.11					
06/08/94	17:24:12	13.17					
06/08/94	17:24:12	13.12					
06/08/94	17:24:13	13.33					
06/08/94	17:24:13	13.10					
06/08/94	17:24:13	12.96					
06/08/94	17:24:13	13.06					
06/08/94	17:24:14	13.14					
06/08/94	17:24:14	13.12					
06/08/94	17:24:14	13.10					
06/08/94	17:24:15	13.12					
06/08/94	17:24:15	13.14					
06/08/94	17:24:16	13.10					
06/08/94	17:24:16	13.12					
06/08/94	17:24:16	13.10					
06/08/94	17:24:18	13.09					
06/08/94	17:24:18	13.10					
06/08/94	17:24:19	13.08					
06/08/94	17:24:19	13.13					
06/08/94	17:24:19	13.08					
06/08/94	17:24:20	13.12					
06/08/94	17:24:20	13.15					
06/08/94	17:24:20	13.03					
06/08/94	17:24:20	13.25					
06/08/94	17:24:21	12.99					
06/08/94	17:24:21	13.21					
06/08/94	17:24:21	13.06					
06/08/94	17:24:21	13.11					
06/08/94	17:24:22	13.09					
06/08/94	17:24:22	12.98					
06/08/94	17:24:22	13.11					
06/08/94	17:24:22	13.06					
06/08/94	17:24:23	13.13					
06/08/94	17:24:23	12.90					
06/08/94	17:24:23	13.30					
06/08/94	17:24:23	13.34					
06/08/94	17:24:24	12.98					
06/08/94	17:24:24	13.15					
06/08/94	17:24:24	13.06					
06/08/94	17:24:24	13.04					
06/08/94	17:24:25	13.32					
06/08/94	17:24:25	12.90					
06/08/94	17:24:25	13.08					
06/08/94	17:24:25	13.12					
06/08/94	17:24:26	13.09					
06/08/94	17:24:26	13.02					

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/08/94	17:24:26	13.32					
06/08/94	17:24:26	13.01					
06/08/94	17:24:27	13.08					
06/08/94	17:24:27	13.12					
06/08/94	17:24:27	13.08					
06/08/94	17:24:27	13.10					
06/08/94	17:24:29	13.08					
06/08/94	17:24:30	13.10					
06/08/94	17:24:30	13.08					
06/08/94	17:24:35	13.07					
06/08/94	17:24:36	13.06					
06/08/94	17:24:37	12.79					
06/08/94	17:24:37	13.44					
06/08/94	17:24:37	13.04					
06/08/94	17:24:37	13.01					
06/08/94	17:24:38	13.13					
06/08/94	17:24:38	13.06					
06/08/94	17:24:38	13.07					
06/08/94	17:24:39	12.87					
06/08/94	17:24:39	13.32					
06/08/94	17:24:39	13.11					
06/08/94	17:24:39	13.01					
06/08/94	17:24:40	13.11					
06/08/94	17:24:40	13.07					
06/08/94	17:24:40	13.08					
06/08/94	17:24:41	13.07					
06/08/94	17:24:54	13.06					
06/08/94	17:25:04	13.05					
06/08/94	17:25:06	13.06					
06/08/94	17:25:08	13.05					
06/08/94	17:25:43	13.04					
06/08/94	17:25:44	13.02					
06/08/94	17:25:44	12.58					
06/08/94	17:25:44	12.77					
06/08/94	17:25:44	13.44					
06/08/94	17:25:45	12.89					
06/08/94	17:25:45	13.04					
06/08/94	17:25:45	13.03					
06/08/94	17:25:45	12.98					
06/08/94	17:25:46	13.00					
06/08/94	17:25:46	13.01					
06/08/94	17:25:47	13.03					
06/08/94	17:25:48	12.73					
06/08/94	17:25:48	12.98					
06/08/94	17:25:49	13.36					
06/08/94	17:25:49	12.87					
06/08/94	17:25:49	12.98					
06/08/94	17:25:50	13.00					
06/08/94	17:25:50	13.01					
06/08/94	17:25:52	12.93					
06/08/94	17:25:52	13.00					
06/08/94	17:25:52	13.11					
06/08/94	17:25:52	12.96					
06/08/94	17:25:53	13.00					
06/08/94	17:25:55	12.90					
06/08/94	17:25:55	13.19					
06/08/94	17:25:55	12.94					
06/08/94	17:25:56	13.00					
06/08/94	17:26:00	13.01					
06/08/94	17:26:01	12.93					
06/08/94	17:26:01	13.03					
06/08/94	17:26:01	13.01					
06/08/94	17:26:01	12.99					
06/08/94	17:26:02	13.02					
06/08/94	17:26:02	12.98					
06/08/94	17:26:02	13.12					
06/08/94	17:26:03	13.00					
06/08/94	17:26:03	13.01					
06/08/94	17:26:16	12.98					
06/08/94	17:26:16	13.11					
06/08/94	17:26:16	12.98					
06/08/94	17:26:17	13.04					
06/08/94	17:26:17	13.02					
06/08/94	17:26:17	13.01					

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	17:26:18	12.99					
06/08/94	17:26:18	13.10					
06/08/94	17:26:18	12.99					
06/08/94	17:26:18	13.03					
06/08/94	17:26:19	13.01					
06/08/94	17:26:19	13.00					
06/08/94	17:26:20	13.02					
06/08/94	17:26:21	13.04					
06/08/94	17:26:21	13.00					
06/08/94	17:26:21	13.02					
06/08/94	17:26:43	13.00					
06/08/94	17:26:44	13.02					
06/08/94	17:26:44	13.00					
06/08/94	17:26:44	13.02					
06/08/94	17:26:45	13.00					
06/08/94	17:26:46	13.03					
06/08/94	17:26:46	12.82					
06/08/94	17:26:46	13.02					
06/08/94	17:26:46	13.01					
06/08/94	17:26:47	13.02					
06/08/94	17:26:47	13.01					
06/08/94	17:26:49	13.02					
06/08/94	17:26:49	13.05					
06/08/94	17:26:49	13.03					
06/08/94	17:26:50	12.92					
06/08/94	17:26:50	13.06					
06/08/94	17:26:50	13.02					
06/08/94	17:26:51	12.90					
06/08/94	17:26:51	13.03					
06/08/94	17:26:51	13.01					
06/08/94	17:26:59	13.02					
06/08/94	17:26:59	13.01					
06/08/94	17:27:00	13.02					
06/08/94	17:27:01	12.99					
06/08/94	17:27:01	13.14					
06/08/94	17:27:01	12.91					
06/08/94	17:27:02	12.86					
06/08/94	17:27:02	13.03					
06/08/94	17:27:02	13.01					
06/08/94	17:27:14	13.02					
06/08/94	17:27:14	12.88					
06/08/94	17:27:14	13.03					
06/08/94	17:27:15	12.85					
06/08/94	17:27:15	13.03					
06/08/94	17:27:16	13.01					
06/08/94	17:27:34	13.00					
06/08/94	17:27:35	13.01					
06/08/94	17:27:59	13.00					
06/08/94	17:28:12	13.01					
06/08/94	17:28:13	13.00					
06/08/94	17:28:16	13.02					
06/08/94	17:28:17	13.00					
06/08/94	17:29:15	13.04					
06/08/94	17:29:15	13.01					
06/08/94	17:29:37	13.02					
06/08/94	17:29:37	13.00					
06/08/94	17:29:37	13.01					
06/08/94	17:29:41	13.00					
06/08/94	17:29:41	12.99					
06/08/94	17:29:41	13.00					
06/08/94	17:29:43	13.03					
06/08/94	17:29:43	13.01					
06/08/94	17:29:44	13.02					
06/08/94	17:29:44	13.04					
06/08/94	17:29:44	12.98					
06/08/94	17:29:45	13.01					
06/08/94	17:29:45	13.00					
06/08/94	17:29:46	13.01					
06/08/94	17:30:34	13.00					
06/08/94	17:32:46	12.99					
06/08/94	17:32:47	13.00					
06/08/94	17:33:02	12.99					
06/08/94	17:33:02	13.00					
06/08/94	17:33:30	12.98					

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/08/94	17:33:31	13.00					
06/08/94	17:34:45	12.99					
06/08/94	17:34:47	13.00					
06/08/94	17:35:05	12.99					
06/08/94	17:35:06	13.00					
06/08/94	17:35:08	12.99					
06/08/94	17:35:18	13.00					
06/08/94	17:35:31	12.99					
06/08/94	17:35:32	13.00					
06/08/94	17:35:36	12.99					
06/08/94	17:35:39	13.00					
06/08/94	17:35:42	12.99					
06/08/94	17:35:44	13.00					
06/08/94	17:35:45	12.99					
06/08/94	17:35:47	13.00					
06/08/94	17:35:59	12.99					
06/08/94	17:36:03	13.00					
06/08/94	17:36:05	12.99					
06/08/94	17:36:05	13.00					
06/08/94	17:36:11	12.99					
06/08/94	17:36:17	13.00					
06/08/94	17:36:19	12.99					
06/08/94	17:36:25	13.00					
06/08/94	17:36:30	12.99					
06/08/94	17:36:33	13.00					
06/08/94	17:36:33	12.99					
06/08/94	17:36:47	13.00					
06/08/94	17:36:53	12.99					
06/08/94	17:36:59	13.00					
06/08/94	17:37:13	12.99					
06/08/94	17:39:00	13.00	PUMP ON @ 17:39	0.0			0.00
06/08/94	17:39:09	12.60	STEP 1: Q = 1GPM	0.1			0.40
06/08/94	17:39:10	13.07		0.2			-0.07
06/08/94	17:39:10	12.89		0.2			0.11
06/08/94	17:39:10	12.91		0.2			0.09
06/08/94	17:39:10	12.86		0.2			0.14
06/08/94	17:39:11	12.84		0.2			0.16
06/08/94	17:39:11	12.81		0.2			0.19
06/08/94	17:39:11	12.79		0.2			0.21
06/08/94	17:39:11	12.76		0.2			0.24
06/08/94	17:39:12	12.74		0.2			0.26
06/08/94	17:39:12	12.72		0.2			0.28
06/08/94	17:39:12	12.71		0.2			0.29
06/08/94	17:39:13	12.68		0.2			0.32
06/08/94	17:39:13	12.66		0.2			0.34
06/08/94	17:39:14	12.65		0.2			0.35
06/08/94	17:39:14	12.63		0.2			0.37
06/08/94	17:39:16	12.64		0.3			0.36
06/08/94	17:39:16	12.66		0.3			0.34
06/08/94	17:39:17	12.67		0.3			0.33
06/08/94	17:39:18	12.69		0.3			0.31
06/08/94	17:39:19	12.67		0.3			0.33
06/08/94	17:39:20	12.69		0.3			0.31
06/08/94	17:39:21	12.68		0.3			0.32
06/08/94	17:39:21	12.69		0.3			0.31
06/08/94	17:39:23	12.71		0.4			0.29
06/08/94	17:39:25	12.72		0.4			0.28
06/08/94	17:39:29	12.71		0.5			0.29
06/08/94	17:39:29	12.73		0.5			0.27
06/08/94	17:39:33	12.74		0.5			0.26
06/08/94	17:39:33	12.73		0.5			0.27
06/08/94	17:39:34	12.74		0.6			0.26
06/08/94	17:39:35	12.73		0.6			0.27
06/08/94	17:39:37	12.72		0.6			0.28
06/08/94	17:39:37	12.74		0.6			0.26
06/08/94	17:39:53	12.75		0.9			0.25
06/08/94	17:39:53	12.73		0.9			0.27
06/08/94	17:39:55	12.74		0.9			0.26
06/08/94	17:40:05	12.73		1.1			0.27
06/08/94	17:40:10	12.72		1.2			0.28
06/08/94	17:40:25	12.74		1.4			0.26
06/08/94	17:40:40	12.73		1.7			0.27
06/08/94	17:40:50	12.70		1.8			0.30
06/08/94	17:41:05	12.69		2.1			0.31

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DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	17:41:25	12.67		2.4			0.33
06/08/94	17:42:20	12.66		3.3			0.34
06/08/94	17:42:25	12.64		3.4			0.36
06/08/94	17:43:20	12.63		4.3			0.37
06/08/94	17:43:35	12.61		4.6			0.39
06/08/94	17:43:55	12.60		4.9			0.40
06/08/94	17:44:10	12.58		5.2			0.42
06/08/94	17:44:25	12.57		5.4			0.43
06/08/94	17:45:50	12.56		6.8			0.44
06/08/94	17:46:05	12.55		7.1			0.45
06/08/94	17:46:35	12.53		7.6			0.47
06/08/94	17:46:50	12.52		7.8			0.48
06/08/94	17:47:35	12.53		8.6			0.47
06/08/94	17:47:55	12.52		8.9			0.48
06/08/94	17:48:05	12.51		9.1			0.49
06/08/94	17:48:40	12.49		9.7			0.51
06/08/94	17:48:55	12.50		9.9			0.50
06/08/94	17:49:45	12.49		10.7			0.51
06/08/94	17:50:30	12.48		11.5			0.52
06/08/94	17:51:05	12.46		12.1			0.54
06/08/94	17:51:35	12.44		12.6			0.56
06/08/94	17:52:00	12.43		13.0			0.57
06/08/94	17:52:10	12.42		13.2			0.58
06/08/94	17:52:35	12.43		13.6			0.57
06/08/94	17:53:20	12.42		14.3			0.58
06/08/94	17:53:55	12.41		14.9			0.59
06/08/94	17:54:00	12.39		15.0			0.61
06/08/94	17:54:15	12.42		15.2			0.58
06/08/94	17:54:45	12.41		15.7			0.59
06/08/94	17:54:50	12.39		15.8			0.61
06/08/94	17:54:55	12.38		15.9			0.62
06/08/94	17:55:05	12.39		16.1			0.61
06/08/94	17:55:25	12.41		16.4			0.59
06/08/94	17:56:10	12.39		17.2			0.61
06/08/94	17:57:25	12.38		18.4			0.62
06/08/94	17:58:00	12.36		19.0			0.64
06/08/94	17:58:25	12.37		19.4			0.63
06/08/94	17:59:00	12.36		20.0			0.64
06/08/94	17:59:25	12.37		20.4			0.63
06/08/94	18:00:00	12.36		21.0			0.64
06/08/94	18:00:10	12.34		21.2			0.66
06/08/94	18:01:10	12.32		22.2			0.68
06/08/94	18:02:00	12.35		23.0			0.65
06/08/94	18:02:20	12.32		23.3			0.68
06/08/94	18:02:30	12.31		23.5			0.69
06/08/94	18:03:10	12.33		24.2			0.67
06/08/94	18:03:50	12.32		24.8			0.68
06/08/94	18:04:25	12.30		25.4			0.70
06/08/94	18:04:30	12.29		25.5			0.71
06/08/94	18:04:40	12.31		25.7			0.69
06/08/94	18:05:00	12.29		26.0			0.71
06/08/94	18:05:15	12.28		26.2			0.72
06/08/94	18:05:35	12.30		26.6			0.70
06/08/94	18:05:45	12.31		26.7			0.69
06/08/94	18:05:55	12.30		26.9			0.70
06/08/94	18:06:10	12.29		27.2			0.71
06/08/94	18:07:00	12.30		28.0			0.70
06/08/94	18:07:50	12.29		28.8			0.71
06/08/94	18:08:05	12.27		29.1			0.73
06/08/94	18:08:20	12.26		29.3			0.74
06/08/94	18:08:30	12.29		29.5			0.71
06/08/94	18:08:40	12.26		29.7			0.74
06/08/94	18:09:05	12.28		30.1			0.72
06/08/94	18:09:55	12.27		30.9			0.73
06/08/94	18:10:05	12.25		31.1			0.75
06/08/94	18:11:25	12.24		32.4			0.76
06/08/94	18:12:00	12.25		33.0			0.75
06/08/94	18:12:15	12.26		33.2			0.74
06/08/94	18:12:45	12.25		33.8			0.75
06/08/94	18:12:55	12.24		33.9			0.76
06/08/94	18:13:00	12.23		34.0			0.77
06/08/94	18:13:45	12.24		34.8			0.76
06/08/94	18:14:00	12.23		35.0			0.77
06/08/94	18:16:25	12.21		37.4			0.79

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DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	18:16:40	12.23		37.7			0.77
06/08/94	18:17:10	12.24		38.2			0.76
06/08/94	18:17:30	12.22		38.5			0.78
06/08/94	18:17:40	12.24		38.7			0.76
06/08/94	18:18:05	12.21		39.1			0.79
06/08/94	18:18:20	12.22		39.3			0.78
06/08/94	18:18:40	12.24		39.7			0.76
06/08/94	18:19:00	12.22		40.0			0.78
06/08/94	18:19:15	12.21		40.2			0.79
06/08/94	18:19:30	12.23		40.5			0.77
06/08/94	18:19:55	12.21		40.9			0.79
06/08/94	18:20:00	12.23		41.0			0.77
06/08/94	18:20:30	12.22		41.5			0.78
06/08/94	18:21:00	12.20		42.0			0.80
06/08/94	18:24:00	12.19		45.0			0.81
06/08/94	18:25:00	12.22		46.0			0.78
06/08/94	18:26:30	12.20		47.5			0.80
06/08/94	18:27:00	12.22		48.0			0.78
06/08/94	18:28:00	12.17		49.0			0.83
06/08/94	18:28:30	12.21		49.5			0.79
06/08/94	18:29:30	12.19		50.5			0.81
06/08/94	18:30:30	12.18		51.5			0.82
06/08/94	18:32:30	12.17		53.5			0.83
06/08/94	18:34:00	12.19		55.0			0.81
06/08/94	18:34:30	12.18		55.5			0.82
06/08/94	18:35:00	12.16		56.0			0.84
06/08/94	18:35:30	12.18		56.5			0.82
06/08/94	18:36:00	12.17		57.0			0.83
06/08/94	18:36:30	12.15		57.5			0.85
06/08/94	18:37:00	12.16		58.0			0.84
06/08/94	18:37:30	12.15		58.5			0.85
06/08/94	18:38:00	12.18		59.0			0.82
06/08/94	18:39:00	12.15		60.0			0.85
06/08/94	18:39:30	12.17		60.5			0.83
06/08/94	18:40:30	12.15		61.5			0.85
06/08/94	18:42:00	12.16		63.0			0.84
06/08/94	18:42:30	12.17		63.5			0.83
06/08/94	18:43:30	12.14		64.5			0.86
06/08/94	18:44:00	12.16		65.0			0.84
06/08/94	18:45:00	12.15		66.0			0.85
06/08/94	18:45:30	12.17		66.5			0.83
06/08/94	18:46:30	12.14		67.5			0.86
06/08/94	18:47:00	12.16		68.0			0.84
06/08/94	18:50:00	12.13		71.0			0.87
06/08/94	18:50:30	12.16		71.5			0.84
06/08/94	18:51:30	12.13		72.5			0.87
06/08/94	18:52:00	12.15		73.0			0.85
06/08/94	18:52:30	12.16		73.5			0.84
06/08/94	18:54:00	12.13		75.0			0.87
06/08/94	18:54:30	12.16		75.5			0.84
06/08/94	18:55:30	12.13		76.5			0.87
06/08/94	18:56:00	12.15		77.0			0.85
06/08/94	18:56:30	12.13		77.5			0.87
06/08/94	18:57:30	12.12		78.5			0.88
06/08/94	18:58:00	12.15		79.0			0.85
06/08/94	18:58:30	12.12		79.5			0.88
06/08/94	18:59:30	12.15		80.5			0.85
06/08/94	19:00:00	12.13		81.0			0.87
06/08/94	19:03:30	12.11		84.5			0.89
06/08/94	19:04:00	12.13		85.0			0.87
06/08/94	19:06:30	12.14		87.5			0.86
06/08/94	19:09:30	12.11		90.5			0.89
06/08/94	19:10:30	12.14		91.5			0.86
06/08/94	19:11:30	12.11		92.5			0.89
06/08/94	19:12:00	12.11	STEP 2 @ 19:12	93.0			0.89
06/08/94	19:12:30	12.01	Q = 2 GPM	0.5			0.99
06/08/94	19:13:00	11.95		1.0			1.05
06/08/94	19:13:30	11.94		1.5			1.06
06/08/94	19:14:00	11.91		2.0			1.09
06/08/94	19:14:30	11.90		2.5			1.10
06/08/94	19:15:00	11.87		3.0			1.13
06/08/94	19:15:30	11.77		3.5			1.23
06/08/94	19:16:30	11.75		4.5			1.25
06/08/94	19:17:30	11.74		5.5			1.26

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06/08/94	19:18:00	11.73		6.0			1.27
06/08/94	19:18:30	11.70		6.5			1.30
06/08/94	19:20:00	11.67		8.0			1.33
06/08/94	19:21:00	11.66		9.0			1.34
06/08/94	19:21:30	11.64		9.5			1.36
06/08/94	19:22:00	11.62		10.0			1.38
06/08/94	19:22:30	11.63		10.5			1.37
06/08/94	19:23:00	11.60		11.0			1.40
06/08/94	19:24:30	11.58		12.5			1.42
06/08/94	19:27:00	11.56		15.0			1.44
06/08/94	19:28:00	11.52		16.0			1.48
06/08/94	19:30:30	11.51		18.5			1.49
06/08/94	19:31:00	11.53		19.0			1.47
06/08/94	19:31:30	11.49		19.5			1.51
06/08/94	19:33:00	11.48		21.0			1.52
06/08/94	19:33:30	11.50		21.5			1.50
06/08/94	19:34:00	11.47		22.0			1.53
06/08/94	19:34:30	11.46		22.5			1.54
06/08/94	19:37:30	11.44		25.5			1.56
06/08/94	19:40:00	11.43		28.0			1.57
06/08/94	19:40:30	11.41		28.5			1.59
06/08/94	19:41:00	11.45		29.0			1.55
06/08/94	19:42:30	11.41		30.5			1.59
06/08/94	19:44:00	11.40		32.0			1.60
06/08/94	19:44:30	11.41		32.5			1.59
06/08/94	19:46:30	11.39		34.5			1.61
06/08/94	19:49:00	11.38		37.0			1.62
06/08/94	19:49:30	11.40		37.5			1.60
06/08/94	19:50:30	11.38		38.5			1.62
06/08/94	19:51:30	11.37		39.5			1.63
06/08/94	19:52:00	11.35		40.0			1.65
06/08/94	19:52:30	11.37		40.5			1.63
06/08/94	19:53:30	11.35		41.5			1.65
06/08/94	19:54:30	11.38		42.5			1.62
06/08/94	19:55:00	11.36		43.0			1.64
06/08/94	19:56:30	11.35		44.5			1.65
06/08/94	19:57:30	11.37		45.5			1.63
06/08/94	19:58:00	11.35		46.0			1.65
06/08/94	19:58:30	11.33		46.5			1.67
06/08/94	19:59:00	11.36		47.0			1.64
06/08/94	19:59:30	11.33		47.5			1.67
06/08/94	20:00:30	11.36		48.5			1.64
06/08/94	20:01:00	11.33		49.0			1.67
06/08/94	20:02:00	11.35		50.0			1.65
06/08/94	20:02:30	11.33		50.5			1.67
06/08/94	20:03:00	11.31		51.0			1.69
06/08/94	20:03:30	11.34		51.5			1.66
06/08/94	20:04:00	11.31		52.0			1.69
06/08/94	20:04:30	11.33		52.5			1.67
06/08/94	20:05:00	11.30		53.0			1.70
06/08/94	20:05:30	11.33		53.5			1.67
06/08/94	20:06:00	11.30		54.0			1.70
06/08/94	20:06:30	11.32		54.5			1.68
06/08/94	20:12:30	11.29		60.5			1.71
06/08/94	20:15:00	11.30		63.0			1.70
06/08/94	20:15:30	11.29		63.5			1.71
06/08/94	20:16:30	11.27		64.5			1.73
06/08/94	20:17:00	11.29		65.0			1.71
06/08/94	20:17:30	11.27		65.5			1.73
06/08/94	20:18:00	11.29		66.0			1.71
06/08/94	20:18:30	11.30		66.5			1.70
06/08/94	20:19:00	11.26		67.0			1.74
06/08/94	20:19:30	11.28		67.5			1.72
06/08/94	20:20:00	11.27		68.0			1.73
06/08/94	20:21:00	11.28		69.0			1.72
06/08/94	20:21:30	11.26		69.5			1.74
06/08/94	20:23:00	11.24		71.0			1.76
06/08/94	20:23:30	11.27		71.5			1.73
06/08/94	20:24:30	11.26		72.5			1.74
06/08/94	20:25:00	11.27		73.0			1.73
06/08/94	20:26:00	11.24		74.0			1.76
06/08/94	20:26:30	11.25		74.5			1.75
06/08/94	20:28:00	11.24		76.0			1.76
06/08/94	20:28:30	11.26		76.5			1.74

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DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	20:29:00	11.25		77.0			1.75
06/08/94	20:30:00	11.27		78.0			1.73
06/08/94	20:30:30	11.26		78.5			1.74
06/08/94	20:31:30	11.28		79.5			1.72
06/08/94	20:32:00	11.25		80.0			1.75
06/08/94	20:32:30	11.27		80.5			1.73
06/08/94	20:34:30	11.25		82.5			1.75
06/08/94	20:35:00	11.28		83.0			1.72
06/08/94	20:35:30	11.25		83.5			1.75
06/08/94	20:36:00	11.26		84.0			1.74
06/08/94	20:36:30	11.24		84.5			1.76
06/08/94	20:38:30	11.26		86.5			1.74
06/08/94	20:39:30	11.27		87.5			1.73
06/08/94	20:40:30	11.26		88.5			1.74
06/08/94	20:42:00	11.23		90.0			1.77
06/08/94	20:42:30	11.25		90.5			1.75
06/08/94	20:43:00	11.24		91.0			1.76
06/08/94	20:44:00	11.26		92.0			1.74
06/08/94	20:45:00	11.23		93.0			1.77
06/08/94	20:47:30	11.24		95.5			1.76
06/08/94	20:48:30	11.25		96.5			1.75
06/08/94	20:49:00	11.22		97.0			1.78
06/08/94	20:49:30	11.24		97.5			1.76
06/08/94	20:50:30	11.22		98.5			1.78
06/08/94	20:51:00	11.25		99.0			1.75
06/08/94	20:51:30	11.23		99.5			1.77
06/08/94	20:54:30	11.22		102.5			1.78
06/08/94	20:57:00	11.21		105.0			1.79
06/08/94	20:57:30	11.22		105.5			1.78
06/08/94	20:58:30	11.21		106.5			1.79
06/08/94	20:59:00	11.23		107.0			1.77
06/08/94	20:59:30	11.21		107.5			1.79
06/08/94	21:00:30	11.23		108.5			1.77
06/08/94	21:01:00	11.20		109.0			1.80
06/08/94	21:01:30	11.22		109.5			1.78
06/08/94	21:02:00	11.20		110.0			1.80
06/08/94	21:03:00	11.22		111.0			1.78
06/08/94	21:04:00	11.20		112.0			1.80
06/08/94	21:04:30	11.22		112.5			1.78
06/08/94	21:05:00	11.20		113.0			1.80
06/08/94	21:05:30	11.22		113.5			1.78
06/08/94	21:06:30	11.19		114.5			1.81
06/08/94	21:08:00	11.21		116.0			1.79
06/08/94	21:08:30	11.20		116.5			1.80
06/08/94	21:11:00	11.21		119.0			1.79
06/08/94	21:11:30	11.19		119.5			1.81
06/08/94	21:12:00	11.20		120.0			1.80
06/08/94	21:12:30	11.17		120.5			1.83
06/08/94	21:13:00	11.21		121.0			1.79
06/08/94	21:13:30	11.19		121.5			1.81
06/08/94	21:15:30	11.18		123.5			1.82
06/08/94	21:16:00	11.19		124.0			1.81
06/08/94	21:16:30	11.20		124.5			1.80
06/08/94	21:17:00	11.17		125.0			1.83
06/08/94	21:18:00	11.21		126.0			1.79
06/08/94	21:18:30	11.18		126.5			1.82
06/08/94	21:19:00	11.20		127.0			1.80
06/08/94	21:20:00	11.18		128.0			1.82
06/08/94	21:20:30	11.19		128.5			1.81
06/08/94	21:24:00	11.17		132.0			1.83
06/08/94	21:25:00	11.12	STEP 3 @ 21:25	133.0			1.88
06/08/94	21:25:30	10.94	Q = 4 GPM	0.5			2.06
06/08/94	21:26:00	10.84		1.0			2.16
06/08/94	21:26:30	10.78		1.5			2.22
06/08/94	21:27:00	10.72		2.0			2.28
06/08/94	21:27:30	10.68		2.5			2.32
06/08/94	21:28:00	10.65		3.0			2.35
06/08/94	21:28:30	10.61		3.5			2.39
06/08/94	21:29:00	10.58		4.0			2.42
06/08/94	21:29:30	10.56		4.5			2.44
06/08/94	21:30:00	10.54		5.0			2.46
06/08/94	21:30:30	10.50		5.5			2.50
06/08/94	21:31:30	10.44		6.5			2.56
06/08/94	21:32:00	10.42		7.0			2.58

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
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DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	21:32:30	10.41		7.5			2.59
06/08/94	21:33:00	10.38		8.0			2.62
06/08/94	21:33:30	10.39		8.5			2.61
06/08/94	21:34:00	10.37		9.0			2.63
06/08/94	21:35:00	10.34		10.0			2.66
06/08/94	21:35:30	10.32		10.5			2.68
06/08/94	21:36:00	10.29		11.0			2.71
06/08/94	21:36:30	10.26		11.5			2.74
06/08/94	21:37:00	10.28		12.0			2.72
06/08/94	21:37:30	10.27		12.5			2.73
06/08/94	21:38:30	10.21		13.5			2.79
06/08/94	21:39:30	10.19		14.5			2.81
06/08/94	21:40:00	10.18		15.0			2.82
06/08/94	21:40:30	10.20		15.5			2.80
06/08/94	21:41:00	10.16		16.0			2.84
06/08/94	21:41:30	10.18		16.5			2.82
06/08/94	21:42:00	10.14		17.0			2.86
06/08/94	21:42:30	10.17		17.5			2.83
06/08/94	21:43:00	10.13		18.0			2.87
06/08/94	21:44:00	10.11		19.0			2.89
06/08/94	21:45:00	10.10		20.0			2.90
06/08/94	21:45:30	10.08		20.5			2.92
06/08/94	21:48:00	10.06		23.0			2.94
06/08/94	21:49:30	10.03		24.5			2.97
06/08/94	21:50:30	10.05		25.5			2.95
06/08/94	21:51:00	10.02		26.0			2.98
06/08/94	21:51:30	10.03		26.5			2.97
06/08/94	21:52:00	10.01		27.0			2.99
06/08/94	21:52:30	9.99		27.5			3.01
06/08/94	21:53:00	10.01		28.0			2.99
06/08/94	21:53:30	9.99		28.5			3.01
06/08/94	21:54:00	9.97		29.0			3.03
06/08/94	21:54:30	9.99		29.5			3.01
06/08/94	21:55:00	9.97		30.0			3.03
06/08/94	21:55:30	9.95		30.5			3.05
06/08/94	21:56:00	9.97		31.0			3.03
06/08/94	21:56:30	9.98		31.5			3.02
06/08/94	21:57:00	9.95		32.0			3.05
06/08/94	21:59:00	9.94		34.0			3.06
06/08/94	22:02:00	9.91		37.0			3.09
06/08/94	22:03:30	9.89		38.5			3.11
06/08/94	22:04:30	9.91		39.5			3.09
06/08/94	22:06:00	9.89		41.0			3.11
06/08/94	22:08:00	9.87		43.0			3.13
06/08/94	22:08:30	9.85		43.5			3.15
06/08/94	22:09:00	9.87		44.0			3.13
06/08/94	22:09:30	9.85		44.5			3.15
06/08/94	22:10:00	9.84		45.0			3.16
06/08/94	22:10:30	9.85		45.5			3.15
06/08/94	22:13:30	9.83		48.5			3.17
06/08/94	22:14:00	9.85		49.0			3.15
06/08/94	22:14:30	9.81		49.5			3.19
06/08/94	22:15:00	9.84		50.0			3.16
06/08/94	22:15:30	9.81		50.5			3.19
06/08/94	22:16:00	9.83		51.0			3.17
06/08/94	22:17:30	9.80		52.5			3.20
06/08/94	22:18:00	9.82		53.0			3.18
06/08/94	22:18:30	9.78		53.5			3.22
06/08/94	22:19:00	9.80		54.0			3.20
06/08/94	22:19:30	9.81		54.5			3.19
06/08/94	22:20:00	9.78		55.0			3.22
06/08/94	22:20:30	9.81		55.5			3.19
06/08/94	22:21:00	9.78		56.0			3.22
06/08/94	22:22:00	9.79		57.0			3.21
06/08/94	22:23:30	9.77		58.5			3.23
06/08/94	22:24:00	9.79		59.0			3.21
06/08/94	22:24:30	9.77		59.5			3.23
06/08/94	22:25:30	9.76		60.5			3.24
06/08/94	22:26:00	9.78		61.0			3.22
06/08/94	22:27:00	9.80		62.0			3.20
06/08/94	22:27:30	9.82		62.5			3.18
06/08/94	22:28:00	9.80		63.0			3.20
06/08/94	22:28:30	9.83		63.5			3.17
06/08/94	22:29:00	9.80		64.0			3.20

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/08/94	22:29:30	9.83		64.5			3.17
06/08/94	22:30:00	9.81		65.0			3.19
06/08/94	22:30:30	9.83		65.5			3.17
06/08/94	22:31:00	9.81		66.0			3.19
06/08/94	22:31:30	9.84		66.5			3.16
06/08/94	22:32:30	9.82		67.5			3.18
06/08/94	22:33:00	9.85		68.0			3.15
06/08/94	22:33:30	9.82		68.5			3.18
06/08/94	22:34:30	9.85		69.5			3.15
06/08/94	22:35:00	9.82		70.0			3.18
06/08/94	22:35:30	9.83		70.5			3.17
06/08/94	22:36:00	9.85		71.0			3.15
06/08/94	22:36:30	9.83		71.5			3.17
06/08/94	22:37:00	9.84		72.0			3.16
06/08/94	22:37:30	9.83		72.5			3.17
06/08/94	22:38:00	9.85		73.0			3.15
06/08/94	22:39:30	9.83		74.5			3.17
06/08/94	22:40:00	9.85		75.0			3.15
06/08/94	22:40:30	9.83		75.5			3.17
06/08/94	22:41:00	9.86		76.0			3.14
06/08/94	22:41:30	9.82		76.5			3.18
06/08/94	22:42:00	9.85		77.0			3.15
06/08/94	22:43:00	9.83		78.0			3.17
06/08/94	22:43:30	9.85		78.5			3.15
06/08/94	22:44:00	9.82		79.0			3.18
06/08/94	22:44:30	9.84		79.5			3.16
06/08/94	22:45:30	9.82		80.5			3.18
06/08/94	22:47:00	9.84		82.0			3.16
06/08/94	22:47:30	9.83		82.5			3.17
06/08/94	22:48:00	9.81		83.0			3.19
06/08/94	22:48:30	9.83		83.5			3.17
06/08/94	22:49:00	9.82		84.0			3.18
06/08/94	22:50:00	9.84		85.0			3.16
06/08/94	22:50:30	9.82		85.5			3.18
06/08/94	22:51:00	9.85		86.0			3.15
06/08/94	22:51:30	9.82		86.5			3.18
06/08/94	22:52:30	9.84		87.5			3.16
06/08/94	22:53:00	9.81		88.0			3.19
06/08/94	22:53:30	9.83		88.5			3.17
06/08/94	22:54:00	9.82		89.0			3.18
06/08/94	22:55:00	9.84		90.0			3.16
06/08/94	22:55:30	9.81		90.5			3.19
06/08/94	22:56:00	9.83		91.0			3.17
06/08/94	22:57:30	9.82		92.5			3.18
06/08/94	22:58:30	9.84		93.5			3.16
06/08/94	22:59:00	9.81		94.0			3.19
06/08/94	23:00:30	9.83		95.5			3.17
06/08/94	23:01:30	9.81		96.5			3.19
06/08/94	23:02:30	9.83		97.5			3.17
06/08/94	23:03:00	9.81		98.0			3.19
06/08/94	23:05:00	9.79		100.0			3.21
06/08/94	23:05:30	9.83		100.5			3.17
06/08/94	23:06:00	9.80		101.0			3.20
06/08/94	23:06:30	9.83		101.5			3.17
06/08/94	23:07:00	9.80		102.0			3.20
06/08/94	23:08:00	9.81		103.0			3.19
06/08/94	23:09:00	9.79		104.0			3.21
06/08/94	23:09:30	9.82		104.5			3.18
06/08/94	23:10:00	9.81		105.0			3.19
06/08/94	23:10:30	9.79		105.5			3.21
06/08/94	23:11:30	9.81		106.5			3.19
06/08/94	23:12:30	9.79		107.5			3.21
06/08/94	23:13:00	9.78		108.0			3.22
06/08/94	23:13:30	9.80		108.5			3.20
06/08/94	23:14:00	9.78		109.0			3.22
06/08/94	23:15:00	9.80		110.0			3.20
06/08/94	23:15:30	9.78		110.5			3.22
06/08/94	23:21:00	9.77		116.0			3.23
06/08/94	23:21:30	9.78		116.5			3.22
06/08/94	23:22:00	9.79		117.0			3.21
06/08/94	23:22:30	9.76		117.5			3.24
06/08/94	23:23:00	9.79		118.0			3.21
06/08/94	23:24:30	9.77		119.5			3.23
06/08/94	23:25:00	9.79	PUMP OFF @ 23:25	120.0			3.21

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
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DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/08/94	23:25:30	10.12	RECOVERY	0.5			2.88
06/08/94	23:26:00	10.28		1.0			2.72
06/08/94	23:26:30	10.40		1.5			2.60
06/08/94	23:27:00	10.51		2.0			2.49
06/08/94	23:27:30	10.62		2.5			2.38
06/08/94	23:28:00	10.69		3.0			2.31
06/08/94	23:28:30	10.78		3.5			2.22
06/08/94	23:29:00	10.85		4.0			2.15
06/08/94	23:29:30	10.92		4.5			2.08
06/08/94	23:30:00	10.99		5.0			2.01
06/08/94	23:30:30	11.04		5.5			1.96
06/08/94	23:31:00	11.09		6.0			1.91
06/08/94	23:31:30	11.15		6.5			1.85
06/08/94	23:32:00	11.21		7.0			1.79
06/08/94	23:32:30	11.26		7.5			1.74
06/08/94	23:33:00	11.30		8.0			1.70
06/08/94	23:33:30	11.34		8.5			1.66
06/08/94	23:34:00	11.39		9.0			1.61
06/08/94	23:34:30	11.42		9.5			1.58
06/08/94	23:35:00	11.47		10.0			1.53
06/08/94	23:35:30	11.50		10.5			1.50
06/08/94	23:36:00	11.54		11.0			1.46
06/08/94	23:36:30	11.56		11.5			1.44
06/08/94	23:37:00	11.60		12.0			1.40
06/08/94	23:37:30	11.63		12.5			1.37
06/08/94	23:38:00	11.65		13.0			1.35
06/08/94	23:38:30	11.68		13.5			1.32
06/08/94	23:39:00	11.70		14.0			1.30
06/08/94	23:39:30	11.72		14.5			1.28
06/08/94	23:40:00	11.75		15.0			1.25
06/08/94	23:40:30	11.77		15.5			1.23
06/08/94	23:41:00	11.80		16.0			1.20
06/08/94	23:42:00	11.82		17.0			1.18
06/08/94	23:42:30	11.85		17.5			1.15
06/08/94	23:43:00	11.87		18.0			1.13
06/08/94	23:44:00	11.90		19.0			1.10
06/08/94	23:44:30	11.91		19.5			1.09
06/08/94	23:45:30	11.94		20.5			1.06
06/08/94	23:46:00	11.96		21.0			1.04
06/08/94	23:47:00	11.98		22.0			1.02
06/08/94	23:48:00	12.01		23.0			0.99
06/08/94	23:49:00	12.04		24.0			0.96
06/08/94	23:50:00	12.06		25.0			0.94
06/08/94	23:51:30	12.07		26.5			0.93
06/08/94	23:52:30	12.09		27.5			0.91
06/08/94	23:53:30	12.11		28.5			0.89
06/08/94	23:54:30	12.13		29.5			0.87
06/08/94	23:55:30	12.14		30.5			0.86
06/08/94	23:57:00	12.16		32.0			0.84
06/08/94	23:58:00	12.18		33.0			0.82
06/08/94	23:59:30	12.20		34.5			0.80
06/09/94	00:01:00	12.21		36.0			0.79
06/09/94	00:03:30	12.23		38.5			0.77
06/09/94	00:04:30	12.24		39.5			0.76
06/09/94	00:05:30	12.25		40.5			0.75
06/09/94	00:06:00	12.26		41.0			0.74
06/09/94	00:07:00	12.28		42.0			0.72
06/09/94	00:09:30	12.30		44.5			0.70
06/09/94	00:11:00	12.31		46.0			0.69
06/09/94	00:12:00	12.32		47.0			0.68
06/09/94	00:13:00	12.33		48.0			0.67
06/09/94	00:14:00	12.35		49.0			0.65
06/09/94	00:15:30	12.36		50.5			0.64
06/09/94	00:17:30	12.38		52.5			0.62
06/09/94	00:19:00	12.39		54.0			0.61
06/09/94	00:20:30	12.40		55.5			0.60
06/09/94	00:22:00	12.42		57.0			0.58
06/09/94	00:23:00	12.43		58.0			0.57
06/09/94	00:24:30	12.45		59.5			0.55
06/09/94	00:26:00	12.46		61.0			0.54
06/09/94	00:28:00	12.48		63.0			0.52
06/09/94	00:29:30	12.50		64.5			0.50
06/09/94	00:31:00	12.51		66.0			0.49
06/09/94	00:32:30	12.52		67.5			0.48

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
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				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/09/94	00:33:30	12.53		68.5			0.47
06/09/94	00:35:00	12.55		70.0			0.45
06/09/94	00:37:00	12.56		72.0			0.44
06/09/94	00:39:30	12.57		74.5			0.43
06/09/94	00:41:00	12.58		76.0			0.42
06/09/94	00:42:30	12.60		77.5			0.40
06/09/94	00:44:00	12.61		79.0			0.39
06/09/94	00:47:30	12.62		82.5			0.38
06/09/94	00:49:30	12.63		84.5			0.37
06/09/94	00:52:00	12.65		87.0			0.35
06/09/94	00:55:00	12.66		90.0			0.34
06/09/94	00:57:00	12.67		92.0			0.33
06/09/94	01:02:00	12.69		97.0			0.31
06/09/94	01:08:00	12.70		103.0			0.30
06/09/94	01:13:30	12.71		108.5			0.29
06/09/94	01:19:30	12.73		114.5			0.27
06/09/94	01:27:00	12.74	END RECOVERY	122.0			0.26
06/09/94	01:30:00	12.42	CONSTANT RATE TEST	125.0			0.58
06/09/94	01:30:30	12.42	PUMP ON @ 01:30	0.5			0.58
06/09/94	01:31:00	12.27		1.0			0.73
06/09/94	01:31:30	12.16	Q = 4 GPM	1.5			0.84
06/09/94	01:32:00	12.07		2.0			0.93
06/09/94	01:32:30	11.99		2.5			1.01
06/09/94	01:33:00	11.92		3.0			1.08
06/09/94	01:33:30	11.86		3.5			1.14
06/09/94	01:34:00	11.81		4.0			1.19
06/09/94	01:34:30	11.74		4.5			1.26
06/09/94	01:35:00	11.70		5.0			1.30
06/09/94	01:35:30	11.68		5.5			1.32
06/09/94	01:36:00	11.85		6.0			1.15
06/09/94	01:36:30	11.83		6.5			1.17
06/09/94	01:37:00	11.93		7.0			1.07
06/09/94	01:37:30	11.89		7.5			1.11
06/09/94	01:38:00	11.65		8.0			1.35
06/09/94	01:38:30	11.53		8.5			1.47
06/09/94	01:39:00	11.45		9.0			1.55
06/09/94	01:39:30	11.36		9.5			1.64
06/09/94	01:40:00	11.30		10.0			1.70
06/09/94	01:40:30	11.25		10.5			1.75
06/09/94	01:41:00	11.19		11.0			1.81
06/09/94	01:41:30	11.15		11.5			1.85
06/09/94	01:42:00	11.10		12.0			1.90
06/09/94	01:42:30	11.07		12.5			1.93
06/09/94	01:43:00	11.02		13.0			1.98
06/09/94	01:43:30	10.99		13.5			2.01
06/09/94	01:44:00	10.95		14.0			2.05
06/09/94	01:44:30	10.91		14.5			2.09
06/09/94	01:45:00	10.87		15.0			2.13
06/09/94	01:46:00	10.83		16.0			2.17
06/09/94	01:46:30	10.80		16.5			2.20
06/09/94	01:47:00	10.78		17.0			2.22
06/09/94	01:47:30	10.75		17.5			2.25
06/09/94	01:48:00	10.71		18.0			2.29
06/09/94	01:48:30	10.70		18.5			2.30
06/09/94	01:49:00	10.67		19.0			2.33
06/09/94	01:49:30	10.66		19.5			2.34
06/09/94	01:50:00	10.63		20.0			2.37
06/09/94	01:50:30	10.61		20.5			2.39
06/09/94	01:51:00	10.59		21.0			2.41
06/09/94	01:52:00	10.55		22.0			2.45
06/09/94	01:53:00	10.53		23.0			2.47
06/09/94	01:53:30	10.51		23.5			2.49
06/09/94	01:54:00	10.54		24.0			2.46
06/09/94	01:54:30	10.55		24.5			2.45
06/09/94	01:56:00	10.54		26.0			2.46
06/09/94	01:57:30	10.53		27.5			2.47
06/09/94	01:59:00	10.51		29.0			2.49
06/09/94	01:59:30	10.46		29.5			2.54
06/09/94	02:00:00	10.42		30.0			2.58
06/09/94	02:00:30	10.39		30.5			2.61
06/09/94	02:01:00	10.37		31.0			2.63
06/09/94	02:02:00	10.35		32.0			2.65
06/09/94	02:03:00	10.32		33.0			2.68
06/09/94	02:03:30	10.30		33.5			2.70

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DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/09/94	02:04:30	10.28		34.5			2.72
06/09/94	02:05:00	10.26		35.0			2.74
06/09/94	02:05:30	10.24		35.5			2.76
06/09/94	02:06:30	10.22		36.5			2.78
06/09/94	02:07:30	10.20		37.5			2.80
06/09/94	02:08:30	10.19		38.5			2.81
06/09/94	02:09:30	10.17		39.5			2.83
06/09/94	02:10:00	10.15		40.0			2.85
06/09/94	02:12:30	10.13		42.5			2.87
06/09/94	02:13:30	10.11		43.5			2.89
06/09/94	02:14:30	10.09		44.5			2.91
06/09/94	02:16:00	10.07		46.0			2.93
06/09/94	02:17:00	10.05		47.0			2.95
06/09/94	02:19:00	10.04		49.0			2.96
06/09/94	02:20:00	10.03		50.0			2.97
06/09/94	02:22:00	10.01		52.0			2.99
06/09/94	02:24:30	9.97		54.5			3.03
06/09/94	02:26:30	9.96		56.5			3.04
06/09/94	02:27:30	9.94		57.5			3.06
06/09/94	02:29:30	9.92		59.5			3.08
06/09/94	02:34:00	9.90		64.0			3.10
06/09/94	02:34:30	9.89		64.5			3.11
06/09/94	02:35:00	9.91		65.0			3.09
06/09/94	02:35:30	9.89		65.5			3.11
06/09/94	02:38:00	9.87		68.0			3.13
06/09/94	02:38:30	9.89		68.5			3.11
06/09/94	02:39:30	9.86		69.5			3.14
06/09/94	02:40:30	9.88		70.5			3.12
06/09/94	02:41:30	9.85		71.5			3.15
06/09/94	02:42:00	9.86		72.0			3.14
06/09/94	02:44:00	9.85		74.0			3.15
06/09/94	02:45:30	9.83		75.5			3.17
06/09/94	02:47:00	9.82		77.0			3.18
06/09/94	02:48:00	9.83		78.0			3.17
06/09/94	02:49:00	9.82		79.0			3.18
06/09/94	02:51:00	9.79		81.0			3.21
06/09/94	02:51:30	9.81		81.5			3.19
06/09/94	02:52:00	9.79		82.0			3.21
06/09/94	02:52:30	9.81		82.5			3.19
06/09/94	02:54:00	9.80		84.0			3.20
06/09/94	02:54:30	9.78		84.5			3.22
06/09/94	02:55:00	9.80		85.0			3.20
06/09/94	02:55:30	9.77		85.5			3.23
06/09/94	02:57:00	9.79		87.0			3.21
06/09/94	02:58:00	9.77		88.0			3.23
06/09/94	02:59:00	9.75		89.0			3.25
06/09/94	03:00:30	9.74		90.5			3.26
06/09/94	03:02:00	9.75		92.0			3.25
06/09/94	03:02:30	9.74		92.5			3.26
06/09/94	03:03:00	9.75		93.0			3.25
06/09/94	03:03:30	9.73		93.5			3.27
06/09/94	03:04:00	9.74		94.0			3.26
06/09/94	03:05:00	9.73		95.0			3.27
06/09/94	03:05:30	9.74		95.5			3.26
06/09/94	03:06:30	9.70		96.5			3.30
06/09/94	03:08:00	9.69		98.0			3.31
06/09/94	03:09:30	9.68		99.5			3.32
06/09/94	03:11:30	9.66		101.5			3.34
06/09/94	03:13:00	9.65		103.0			3.35
06/09/94	03:14:30	9.66		104.5			3.34
06/09/94	03:15:00	9.64		105.0			3.36
06/09/94	03:16:00	9.65		106.0			3.35
06/09/94	03:17:00	9.63		107.0			3.37
06/09/94	03:17:30	9.64		107.5			3.36
06/09/94	03:19:30	9.63		109.5			3.37
06/09/94	03:21:00	9.61		111.0			3.39
06/09/94	03:22:00	9.63		112.0			3.37
06/09/94	03:22:30	9.60		112.5			3.40
06/09/94	03:26:00	9.59		116.0			3.41
06/09/94	03:26:30	9.60		116.5			3.40
06/09/94	03:27:00	9.59		117.0			3.41
06/09/94	03:30:30	9.60		120.5			3.40
06/09/94	03:31:00	9.58		121.0			3.42
06/09/94	03:31:30	9.57		121.5			3.43

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06/09/94	03:32:00	9.58		122.0			3.42
06/09/94	03:32:30	9.56		122.5			3.44
06/09/94	03:38:30	9.55		128.5			3.45
06/09/94	03:41:00	9.54		131.0			3.46
06/09/94	03:42:30	9.55		132.5			3.45
06/09/94	03:43:30	9.54		133.5			3.46
06/09/94	03:46:00	9.53		136.0			3.47
06/09/94	03:47:30	9.51		137.5			3.49
06/09/94	03:48:30	9.53		138.5			3.47
06/09/94	03:50:00	9.51		140.0			3.49
06/09/94	03:51:00	9.52		141.0			3.48
06/09/94	03:53:00	9.50		143.0			3.50
06/09/94	03:53:30	9.52		143.5			3.48
06/09/94	03:54:30	9.50		144.5			3.50
06/09/94	03:55:00	9.51		145.0			3.49
06/09/94	03:57:00	9.50		147.0			3.50
06/09/94	03:58:30	9.49		148.5			3.51
06/09/94	03:59:00	9.50		149.0			3.50
06/09/94	04:01:00	9.48		151.0			3.52
06/09/94	04:01:30	9.50		151.5			3.50
06/09/94	04:02:00	9.49		152.0			3.51
06/09/94	04:03:30	9.47		153.5			3.53
06/09/94	04:04:00	9.49		154.0			3.51
06/09/94	04:05:00	9.47		155.0			3.53
06/09/94	04:07:00	9.46		157.0			3.54
06/09/94	04:09:00	9.45		159.0			3.55
06/09/94	04:09:30	9.46		159.5			3.54
06/09/94	04:10:30	9.45		160.5			3.55
06/09/94	04:15:00	9.43		165.0			3.57
06/09/94	04:15:30	9.45		165.5			3.55
06/09/94	04:16:00	9.43		166.0			3.57
06/09/94	04:17:30	9.44		167.5			3.56
06/09/94	04:18:30	9.43		168.5			3.57
06/09/94	04:19:30	9.42		169.5			3.58
06/09/94	04:20:30	9.40		170.5			3.60
06/09/94	04:21:30	9.42		171.5			3.58
06/09/94	04:23:30	9.39		173.5			3.61
06/09/94	04:24:00	9.41		174.0			3.59
06/09/94	04:24:30	9.40		174.5			3.60
06/09/94	04:26:00	9.41		176.0			3.59
06/09/94	04:27:00	9.40		177.0			3.60
06/09/94	04:28:00	9.39		178.0			3.61
06/09/94	04:33:30	9.37		183.5			3.63
06/09/94	04:35:00	9.39		185.0			3.61
06/09/94	04:35:30	9.38		185.5			3.62
06/09/94	04:36:00	9.40		186.0			3.60
06/09/94	04:38:30	9.38		188.5			3.62
06/09/94	04:39:00	9.39		189.0			3.61
06/09/94	04:40:30	9.38		190.5			3.62
06/09/94	04:45:30	9.37		195.5			3.63
06/09/94	04:46:30	9.38		196.5			3.62
06/09/94	04:47:00	9.37		197.0			3.63
06/09/94	04:47:30	9.38		197.5			3.62
06/09/94	04:49:00	9.36		199.0			3.64
06/09/94	04:50:00	9.37		200.0			3.63
06/09/94	04:54:00	9.38		204.0			3.62
06/09/94	04:54:30	9.36		204.5			3.64
06/09/94	04:55:00	9.38		205.0			3.62
06/09/94	04:55:30	9.37		205.5			3.63
06/09/94	04:58:00	9.38		208.0			3.62
06/09/94	04:59:00	9.36		209.0			3.64
06/09/94	04:59:30	9.38		209.5			3.62
06/09/94	05:00:00	9.36		210.0			3.64
06/09/94	05:04:00	9.35		214.0			3.65
06/09/94	05:05:00	9.37		215.0			3.63
06/09/94	05:05:30	9.35		215.5			3.65
06/09/94	05:07:30	9.37		217.5			3.63
06/09/94	05:10:00	9.36		220.0			3.64
06/09/94	05:10:30	9.35		220.5			3.65
06/09/94	05:11:00	9.36		221.0			3.64
06/09/94	05:11:30	9.37		221.5			3.63
06/09/94	05:12:00	9.35		222.0			3.65
06/09/94	05:12:30	9.34		222.5			3.66
06/09/94	05:15:00	9.32		225.0			3.68

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06/09/94	05:15:30	9.34		225.5			3.66
06/09/94	05:16:00	9.33		226.0			3.67
06/09/94	05:19:30	9.31		229.5			3.69
06/09/94	05:23:00	9.32		233.0			3.68
06/09/94	05:24:00	9.31		234.0			3.69
06/09/94	05:25:00	9.30		235.0			3.70
06/09/94	05:26:00	9.32		236.0			3.68
06/09/94	05:27:30	9.35		237.5			3.65
06/09/94	05:28:00	9.38		238.0			3.62
06/09/94	05:28:30	9.41		238.5			3.59
06/09/94	05:29:00	9.44		239.0			3.56
06/09/94	05:29:30	9.46		239.5			3.54
06/09/94	05:30:00	9.47		240.0			3.53
06/09/94	05:30:30	9.48		240.5			3.52
06/09/94	05:31:00	9.50		241.0			3.50
06/09/94	05:31:30	9.52		241.5			3.48
06/09/94	05:32:00	9.53		242.0			3.47
06/09/94	05:32:30	9.55		242.5			3.45
06/09/94	05:34:00	9.57		244.0			3.43
06/09/94	05:34:30	9.58		244.5			3.42
06/09/94	05:35:30	9.60		245.5			3.40
06/09/94	05:36:30	9.61		246.5			3.39
06/09/94	05:37:30	9.63		247.5			3.37
06/09/94	05:38:30	9.64		248.5			3.36
06/09/94	05:39:30	9.72		249.5			3.28
06/09/94	05:40:00	9.77		250.0			3.23
06/09/94	05:40:30	9.80		250.5			3.20
06/09/94	05:41:00	9.83		251.0			3.17
06/09/94	05:41:30	9.86		251.5			3.14
06/09/94	05:42:00	9.88		252.0			3.12
06/09/94	05:42:30	9.90		252.5			3.10
06/09/94	05:43:00	9.92		253.0			3.08
06/09/94	05:43:30	9.95		253.5			3.05
06/09/94	05:44:00	9.96		254.0			3.04
06/09/94	05:44:30	9.99		254.5			3.01
06/09/94	05:45:00	10.00		255.0			3.00
06/09/94	05:45:30	10.02		255.5			2.98
06/09/94	05:46:00	10.04		256.0			2.96
06/09/94	05:47:00	10.06		257.0			2.94
06/09/94	05:47:30	10.08		257.5			2.92
06/09/94	05:48:00	10.09		258.0			2.91
06/09/94	05:49:00	10.11		259.0			2.89
06/09/94	05:49:30	10.12		259.5			2.88
06/09/94	05:50:30	10.15		260.5			2.85
06/09/94	05:51:00	10.16		261.0			2.84
06/09/94	05:52:00	10.18		262.0			2.82
06/09/94	05:53:00	10.20		263.0			2.80
06/09/94	05:54:00	10.21		264.0			2.79
06/09/94	05:55:00	10.23		265.0			2.77
06/09/94	05:55:30	10.24		265.5			2.76
06/09/94	05:57:00	10.26		267.0			2.74
06/09/94	05:58:30	10.27		268.5			2.73
06/09/94	05:59:30	10.11		269.5			2.89
06/09/94	06:00:00	10.06		270.0			2.94
06/09/94	06:00:30	10.01		270.5			2.99
06/09/94	06:01:00	9.96		271.0			3.04
06/09/94	06:01:30	9.93		271.5			3.07
06/09/94	06:02:00	9.90		272.0			3.10
06/09/94	06:02:30	9.87		272.5			3.13
06/09/94	06:03:00	9.85		273.0			3.15
06/09/94	06:03:30	9.82		273.5			3.18
06/09/94	06:04:00	9.80		274.0			3.20
06/09/94	06:04:30	9.78		274.5			3.22
06/09/94	06:05:00	9.76		275.0			3.24
06/09/94	06:05:30	9.75		275.5			3.25
06/09/94	06:06:00	9.73		276.0			3.27
06/09/94	06:06:30	9.72		276.5			3.28
06/09/94	06:07:00	9.70		277.0			3.30
06/09/94	06:07:30	9.68		277.5			3.32
06/09/94	06:08:30	9.67		278.5			3.33
06/09/94	06:09:00	9.65		279.0			3.35
06/09/94	06:10:00	9.63		280.0			3.37
06/09/94	06:10:30	9.62		280.5			3.38
06/09/94	06:11:00	9.61		281.0			3.39

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06/09/94	06:11:30	9.59		281.5			3.41
06/09/94	06:12:30	9.57		282.5			3.43
06/09/94	06:13:30	9.54		283.5			3.46
06/09/94	06:14:00	9.52		284.0			3.48
06/09/94	06:14:30	9.51		284.5			3.49
06/09/94	06:15:30	9.50		285.5			3.50
06/09/94	06:16:00	9.48		286.0			3.52
06/09/94	06:17:30	9.45		287.5			3.55
06/09/94	06:19:00	9.44		289.0			3.56
06/09/94	06:21:00	9.42		291.0			3.58
06/09/94	06:22:00	9.41		292.0			3.59
06/09/94	06:24:00	9.39		294.0			3.61
06/09/94	06:26:30	9.37		296.5			3.63
06/09/94	06:29:30	9.36		299.5			3.64
06/09/94	06:32:30	9.35		302.5			3.65
06/09/94	06:34:30	9.33		304.5			3.67
06/09/94	06:36:30	9.32		306.5			3.68
06/09/94	06:39:00	9.30		309.0			3.70
06/09/94	06:42:30	9.29		312.5			3.71
06/09/94	06:44:00	9.30		314.0			3.70
06/09/94	06:46:30	9.29		316.5			3.71
06/09/94	06:49:30	9.27		319.5			3.73
06/09/94	06:51:00	9.28		321.0			3.72
06/09/94	06:51:30	9.27		321.5			3.73
06/09/94	06:53:00	9.26		323.0			3.74
06/09/94	06:53:30	9.25		323.5			3.75
06/09/94	06:55:30	9.24		325.5			3.76
06/09/94	07:00:00	9.23		330.0			3.77
06/09/94	07:02:00	9.22		332.0			3.78
06/09/94	07:06:00	9.20		336.0			3.80
06/09/94	07:07:00	9.21		337.0			3.79
06/09/94	07:26:00	9.20		356.0			3.80
06/09/94	07:38:30	9.19		368.5			3.81
06/09/94	07:39:00	9.18		369.0			3.82
06/09/94	07:42:00	9.17		372.0			3.83
06/09/94	07:44:30	9.16		374.5			3.84
06/09/94	07:46:00	9.14		376.0			3.86
06/09/94	07:51:30	9.13		381.5			3.87
06/09/94	07:52:00	9.14		382.0			3.86
06/09/94	07:53:00	9.13		383.0			3.87
06/09/94	08:00:00	9.11		390.0			3.89
06/09/94	08:02:00	9.13		392.0			3.87
06/09/94	08:09:00	9.12		399.0			3.88
06/09/94	08:10:00	9.13		400.0			3.87
06/09/94	08:12:30	9.11		402.5			3.89
06/09/94	08:21:30	9.09		411.5			3.91
06/09/94	08:22:30	9.10		412.5			3.90
06/09/94	08:26:30	9.09		416.5			3.91
06/09/94	08:35:00	9.08		425.0			3.92
06/09/94	08:36:00	9.09		426.0			3.91
06/09/94	08:36:30	9.08		426.5			3.92
06/09/94	08:37:00	9.09		427.0			3.91
06/09/94	08:37:30	9.08		427.5			3.92
06/09/94	08:51:30	9.07		441.5			3.93
06/09/94	08:53:30	9.08		443.5			3.92
06/09/94	08:55:30	9.07		445.5			3.93
06/09/94	09:07:00	9.06		457.0			3.94
06/09/94	09:22:30	9.07		472.5			3.93
06/09/94	09:27:30	9.06		477.5			3.94
06/09/94	09:33:00	9.04		483.0			3.96
06/09/94	09:41:30	9.03		491.5			3.97
06/09/94	09:45:00	9.04		495.0			3.96
06/09/94	09:52:30	9.03		502.5			3.97
06/09/94	09:58:00	9.04		508.0			3.96
06/09/94	09:59:00	9.06		509.0			3.94
06/09/94	10:00:30	9.04		510.5			3.96
06/09/94	10:02:00	9.06		512.0			3.94
06/09/94	10:02:30	9.04		512.5			3.96
06/09/94	10:04:00	9.02		514.0			3.98
06/09/94	10:04:30	9.01		514.5			3.99
06/09/94	10:07:00	8.99		517.0			4.01
06/09/94	10:07:30	8.98		517.5			4.02
06/09/94	10:09:00	8.97		519.0			4.03
06/09/94	10:09:30	8.98		519.5			4.02

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06/09/94	10:10:00	8.97		520.0			4.03
06/09/94	10:11:30	8.99		521.5			4.01
06/09/94	10:13:30	9.01		523.5			3.99
06/09/94	10:15:30	9.02		525.5			3.98
06/09/94	10:16:00	8.99		526.0			4.01
06/09/94	10:17:00	9.01		527.0			3.99
06/09/94	10:20:00	9.03		530.0			3.97
06/09/94	10:20:30	9.01		530.5			3.99
06/09/94	10:22:00	9.02		532.0			3.98
06/09/94	10:25:30	9.01		535.5			3.99
06/09/94	10:26:30	9.03		536.5			3.97
06/09/94	10:28:30	9.01		538.5			3.99
06/09/94	10:29:00	9.03		539.0			3.97
06/09/94	10:30:30	9.02		540.5			3.98
06/09/94	10:33:30	9.00		543.5			4.00
06/09/94	10:34:30	9.01		544.5			3.99
06/09/94	10:37:00	9.00		547.0			4.00
06/09/94	10:48:30	8.99		558.5			4.01
06/09/94	10:50:30	9.00		560.5			4.00
06/09/94	10:52:30	8.99		562.5			4.01
06/09/94	10:53:00	9.00		563.0			4.00
06/09/94	10:55:00	8.98		565.0			4.02
06/09/94	10:55:30	8.99		565.5			4.01
06/09/94	10:57:30	8.98		567.5			4.02
06/09/94	10:58:30	8.99		568.5			4.01
06/09/94	10:59:30	8.97		569.5			4.03
06/09/94	11:01:30	8.96		571.5			4.04
06/09/94	11:03:30	8.97		573.5			4.03
06/09/94	11:04:00	8.95		574.0			4.05
06/09/94	11:07:00	8.97		577.0			4.03
06/09/94	11:08:00	8.95		578.0			4.05
06/09/94	11:08:30	8.94		578.5			4.06
06/09/94	11:09:00	8.96		579.0			4.04
06/09/94	11:12:30	8.94		582.5			4.06
06/09/94	11:13:00	8.93		583.0			4.07
06/09/94	11:15:00	8.94		585.0			4.06
06/09/94	11:19:00	8.92		589.0			4.08
06/09/94	11:20:00	8.94		590.0			4.06
06/09/94	11:20:30	8.92		590.5			4.08
06/09/94	11:22:00	8.95		592.0			4.05
06/09/94	11:25:00	8.94		595.0			4.06
06/09/94	11:27:30	8.92		597.5			4.08
06/09/94	11:29:00	8.94		599.0			4.06
06/09/94	11:29:30	8.92		599.5			4.08
06/09/94	11:31:00	8.94		601.0			4.06
06/09/94	11:32:00	8.92		602.0			4.08
06/09/94	11:33:30	8.93		603.5			4.07
06/09/94	11:34:30	8.91		604.5			4.09
06/09/94	11:37:00	8.93		607.0			4.07
06/09/94	11:38:30	8.91		608.5			4.09
06/09/94	11:39:00	8.93		609.0			4.07
06/09/94	11:40:00	8.91		610.0			4.09
06/09/94	11:40:30	8.92		610.5			4.08
06/09/94	11:43:00	8.90		613.0			4.10
06/09/94	11:44:00	8.93		614.0			4.07
06/09/94	11:47:00	8.91		617.0			4.09
06/09/94	11:50:30	8.90		620.5			4.10
06/09/94	11:51:30	8.91		621.5			4.09
06/09/94	11:54:30	8.90		624.5			4.10
06/09/94	11:56:00	8.92		626.0			4.08
06/09/94	11:56:30	8.90		626.5			4.10
06/09/94	11:57:00	8.91		627.0			4.09
06/09/94	11:59:30	8.89		629.5			4.11
06/09/94	12:00:00	8.91		630.0			4.09
06/09/94	12:01:00	8.92		631.0			4.08
06/09/94	12:03:30	8.90		633.5			4.10
06/09/94	12:05:00	8.92		635.0			4.08
06/09/94	12:08:00	8.90		638.0			4.10
06/09/94	12:09:00	8.91		639.0			4.09
06/09/94	12:10:30	8.90		640.5			4.10
06/09/94	12:11:00	8.92		641.0			4.08
06/09/94	12:13:00	8.91		643.0			4.09
06/09/94	12:17:30	8.90		647.5			4.10
06/09/94	12:28:00	8.91		658.0			4.09

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06/09/94	12:29:00	8.89		659.0			4.11
06/09/94	12:32:00	8.91		662.0			4.09
06/09/94	12:33:30	8.89		663.5			4.11
06/09/94	12:34:00	8.91		664.0			4.09
06/09/94	12:35:30	8.89		665.5			4.11
06/09/94	12:39:00	8.91		669.0			4.09
06/09/94	12:40:00	8.89		670.0			4.11
06/09/94	12:40:30	8.90		670.5			4.10
06/09/94	12:42:00	8.89		672.0			4.11
06/09/94	12:43:00	8.90		673.0			4.10
06/09/94	12:43:30	8.89		673.5			4.11
06/09/94	12:46:00	8.91		676.0			4.09
06/09/94	12:48:00	8.89		678.0			4.11
06/09/94	12:50:00	8.90		680.0			4.10
06/09/94	12:52:00	8.89		682.0			4.11
06/09/94	12:54:00	8.88		684.0			4.12
06/09/94	12:57:00	8.90		687.0			4.10
06/09/94	13:01:00	8.88		691.0			4.12
06/09/94	13:02:00	8.90		692.0			4.10
06/09/94	13:02:30	8.88		692.5			4.12
06/09/94	13:04:30	8.89		694.5			4.11
06/09/94	13:08:30	8.88		698.5			4.12
06/09/94	13:09:00	8.90		699.0			4.10
06/09/94	13:09:30	8.88		699.5			4.12
06/09/94	13:11:00	8.89		701.0			4.11
06/09/94	13:12:30	8.88		702.5			4.12
06/09/94	13:13:00	8.89		703.0			4.11
06/09/94	13:13:30	8.88		703.5			4.12
06/09/94	13:14:00	8.90		704.0			4.10
06/09/94	13:15:00	8.88		705.0			4.12
06/09/94	13:15:30	8.90		705.5			4.10
06/09/94	13:18:00	8.88		708.0			4.12
06/09/94	13:19:00	8.90		709.0			4.10
06/09/94	13:19:30	8.89		709.5			4.11
06/09/94	13:21:00	8.87		711.0			4.13
06/09/94	13:21:30	8.89		711.5			4.11
06/09/94	13:23:00	8.90		713.0			4.10
06/09/94	13:23:30	8.89		713.5			4.11
06/09/94	13:26:30	8.88		716.5			4.12
06/09/94	13:27:30	8.90		717.5			4.10
06/09/94	13:30:00	8.88		720.0			4.12
06/09/94	13:36:30	8.87		726.5			4.13
06/09/94	13:37:00	8.89		727.0			4.11
06/09/94	13:38:00	8.87		728.0			4.13
06/09/94	13:42:00	8.88		732.0			4.12
06/09/94	13:43:00	8.87		733.0			4.13
06/09/94	13:45:00	8.88		735.0			4.12
06/09/94	13:49:00	8.87		739.0			4.13
06/09/94	13:52:00	8.88		742.0			4.12
06/09/94	13:54:00	8.87		744.0			4.13
06/09/94	13:55:30	8.88		745.5			4.12
06/09/94	13:56:30	8.86		746.5			4.14
06/09/94	13:57:00	8.88		747.0			4.12
06/09/94	14:00:30	8.87		750.5			4.13
06/09/94	14:02:00	8.88		752.0			4.12
06/09/94	14:05:30	8.87		755.5			4.13
06/09/94	14:10:30	8.88		760.5			4.12
06/09/94	14:11:00	8.86		761.0			4.14
06/09/94	14:14:30	8.88		764.5			4.12
06/09/94	14:15:00	8.86		765.0			4.14
06/09/94	14:16:00	8.88		766.0			4.12
06/09/94	14:19:00	8.87		769.0			4.13
06/09/94	14:19:30	8.88		769.5			4.12
06/09/94	14:21:30	8.87		771.5			4.13
06/09/94	14:22:30	8.85		772.5			4.15
06/09/94	14:33:00	8.84		783.0			4.16
06/09/94	14:34:00	8.86		784.0			4.14
06/09/94	14:37:00	8.87		787.0			4.13
06/09/94	14:39:00	8.85		789.0			4.15
06/09/94	14:39:30	8.87		789.5			4.13
06/09/94	14:40:30	8.88		790.5			4.12
06/09/94	14:41:00	8.85		791.0			4.15
06/09/94	14:42:00	8.87		792.0			4.13
06/09/94	14:52:00	8.86		802.0			4.14

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06/09/94	14:52:30	8.88		802.5			4.12
06/09/94	14:55:00	8.86		805.0			4.14
06/09/94	14:56:00	8.87		806.0			4.13
06/09/94	14:58:30	8.86		808.5			4.14
06/09/94	15:01:00	8.85		811.0			4.15
06/09/94	15:02:30	8.83		812.5			4.17
06/09/94	15:03:00	8.85		813.0			4.15
06/09/94	15:04:00	8.84		814.0			4.16
06/09/94	15:04:30	8.83		814.5			4.17
06/09/94	15:09:30	8.82		819.5			4.18
06/09/94	15:10:00	8.83		820.0			4.17
06/09/94	15:10:30	8.82		820.5			4.18
06/09/94	15:11:30	8.83		821.5			4.17
06/09/94	15:12:30	8.82		822.5			4.18
06/09/94	15:14:00	8.83		824.0			4.17
06/09/94	15:16:00	8.82		826.0			4.18
06/09/94	15:20:30	8.81		830.5			4.19
06/09/94	15:23:30	8.82		833.5			4.18
06/09/94	15:26:00	8.80		836.0			4.20
06/09/94	15:26:30	8.82		836.5			4.18
06/09/94	15:29:00	8.81		839.0			4.19
06/09/94	15:30:00	8.82		840.0			4.18
06/09/94	15:30:30	8.81		840.5			4.19
06/09/94	15:31:30	8.82		841.5			4.18
06/09/94	15:34:30	8.81		844.5			4.19
06/09/94	15:36:00	8.83		846.0			4.17
06/09/94	15:37:00	8.81		847.0			4.19
06/09/94	15:37:30	8.83		847.5			4.17
06/09/94	15:38:00	8.81		848.0			4.19
06/09/94	15:39:30	8.82		849.5			4.18
06/09/94	15:42:30	8.81		852.5			4.19
06/09/94	15:47:00	8.82		857.0			4.18
06/09/94	15:48:00	8.80		858.0			4.20
06/09/94	15:49:30	8.82		859.5			4.18
06/09/94	15:50:00	8.81		860.0			4.19
06/09/94	15:51:30	8.83		861.5			4.17
06/09/94	15:54:00	8.81		864.0			4.19
06/09/94	15:55:00	8.83		865.0			4.17
06/09/94	15:56:00	8.81		866.0			4.19
06/09/94	15:59:30	8.83		869.5			4.17
06/09/94	16:00:30	8.82		870.5			4.18
06/09/94	16:03:30	8.83		873.5			4.17
06/09/94	16:04:30	8.82		874.5			4.18
06/09/94	16:05:30	8.83		875.5			4.17
06/09/94	16:06:30	8.82		876.5			4.18
06/09/94	16:08:00	8.83		878.0			4.17
06/09/94	16:10:00	8.81		880.0			4.19
06/09/94	16:12:00	8.83		882.0			4.17
06/09/94	16:14:00	8.81		884.0			4.19
06/09/94	16:14:30	8.83		884.5			4.17
06/09/94	16:16:30	8.81		886.5			4.19
06/09/94	16:19:00	8.82		889.0			4.18
06/09/94	16:20:00	8.81		890.0			4.19
06/09/94	16:23:00	8.82		893.0			4.18
06/09/94	16:24:00	8.83		894.0			4.17
06/09/94	16:24:30	8.81		894.5			4.19
06/09/94	16:25:00	8.83		895.0			4.17
06/09/94	16:27:00	8.81		897.0			4.19
06/09/94	16:29:30	8.83		899.5			4.17
06/09/94	16:30:30	8.81		900.5			4.19
06/09/94	16:31:30	8.83		901.5			4.17
06/09/94	16:32:00	8.81		902.0			4.19
06/09/94	16:42:30	8.80		912.5			4.20
06/09/94	16:44:30	8.81		914.5			4.19
06/09/94	16:47:30	8.83		917.5			4.17
06/09/94	16:49:00	8.80		919.0			4.20
06/09/94	16:49:30	8.82		919.5			4.18
06/09/94	16:50:00	8.81		920.0			4.19
06/09/94	16:52:30	8.83		922.5			4.17
06/09/94	16:53:30	8.82		923.5			4.18
06/09/94	16:54:00	8.83		924.0			4.17
06/09/94	16:57:00	8.80		927.0			4.20
06/09/94	16:59:00	8.82		929.0			4.18
06/09/94	17:02:00	8.80		932.0			4.20

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				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/09/94	17:02:30	6.82		932.5			4.18
06/09/94	17:03:00	6.81		933.0			4.19
06/09/94	17:03:30	6.82		933.5			4.18
06/09/94	17:04:00	6.80		934.0			4.20
06/09/94	17:04:30	6.82		934.5			4.18
06/09/94	17:06:30	6.81		936.5			4.19
06/09/94	17:09:00	6.83		939.0			4.17
06/09/94	17:10:30	6.81		940.5			4.19
06/09/94	17:11:00	6.82		941.0			4.18
06/09/94	17:13:30	6.81		943.5			4.19
06/09/94	17:16:30	6.83		946.5			4.17
06/09/94	17:17:00	6.81		947.0			4.19
06/09/94	17:19:00	6.83		949.0			4.17
06/09/94	17:24:30	6.81		954.5			4.19
06/09/94	17:26:00	6.84		956.0			4.16
06/09/94	17:29:00	6.82		959.0			4.18
06/09/94	17:29:30	6.84		959.5			4.16
06/09/94	17:30:30	6.85		960.5	0.5	1921.00	4.15
06/09/94	17:32:30	6.87		962.5	2.5	385.00	4.13
06/09/94	17:33:30	9.05		963.5	3.5	275.29	3.95
06/09/94	17:34:00	9.15		964.0	4.0	241.00	3.85
06/09/94	17:34:30	9.23		964.5	4.5	214.33	3.77
06/09/94	17:35:00	9.28		965.0	5.0	193.00	3.72
06/09/94	17:35:30	9.34		965.5	5.5	175.55	3.66
06/09/94	17:36:00	9.40		966.0	6.0	161.00	3.60
06/09/94	17:36:30	9.45		966.5	6.5	148.69	3.55
06/09/94	17:37:00	9.49		967.0	7.0	138.14	3.51
06/09/94	17:37:30	9.52		967.5	7.5	129.00	3.48
06/09/94	17:38:00	9.55		968.0	8.0	121.00	3.45
06/09/94	17:38:30	9.59		968.5	8.5	113.94	3.41
06/09/94	17:39:00	9.63		969.0	9.0	107.67	3.37
06/09/94	17:39:30	9.68		969.5	9.5	102.05	3.32
06/09/94	17:40:00	9.70		970.0	10.0	97.00	3.30
06/09/94	17:40:30	9.73		970.5	10.5	92.43	3.27
06/09/94	17:41:00	9.76		971.0	11.0	88.27	3.24
06/09/94	17:41:30	9.79		971.5	11.5	84.48	3.21
06/09/94	17:42:00	9.82		972.0	12.0	81.00	3.18
06/09/94	17:42:30	9.84		972.5	12.5	77.80	3.16
06/09/94	17:43:00	9.86		973.0	13.0	74.85	3.14
06/09/94	17:43:30	9.89		973.5	13.5	72.11	3.11
06/09/94	17:44:00	9.91		974.0	14.0	69.57	3.09
06/09/94	17:44:30	9.94		974.5	14.5	67.21	3.06
06/09/94	17:45:00	9.96		975.0	15.0	65.00	3.04
06/09/94	17:45:30	9.99		975.5	15.5	62.94	3.01
06/09/94	17:46:00	10.00		976.0	16.0	61.00	3.00
06/09/94	17:46:30	10.03		976.5	16.5	59.18	2.97
06/09/94	17:47:00	10.05		977.0	17.0	57.47	2.95
06/09/94	17:47:30	10.07		977.5	17.5	55.86	2.93
06/09/94	17:48:00	10.09		978.0	18.0	54.33	2.91
06/09/94	17:48:30	10.11		978.5	18.5	52.89	2.89
06/09/94	17:49:30	10.14		979.5	19.5	50.23	2.86
06/09/94	17:50:30	10.16		980.5	20.5	47.83	2.84
06/09/94	17:51:00	10.17		981.0	21.0	46.71	2.83
06/09/94	17:52:00	10.21		982.0	22.0	44.64	2.79
06/09/94	17:52:30	10.22		982.5	22.5	43.67	2.78
06/09/94	17:53:00	10.23		983.0	23.0	42.74	2.77
06/09/94	17:54:00	10.25		984.0	24.0	41.00	2.75
06/09/94	17:54:30	10.26		984.5	24.5	40.18	2.74
06/09/94	17:55:00	10.28		985.0	25.0	39.40	2.72
06/09/94	17:55:30	10.29		985.5	25.5	38.65	2.71
06/09/94	17:57:00	10.31		987.0	27.0	36.56	2.69
06/09/94	17:57:30	10.33		987.5	27.5	35.91	2.67
06/09/94	17:59:00	10.36		989.0	29.0	34.10	2.64
06/09/94	18:00:30	10.30		990.5	30.5	32.48	2.70
06/09/94	18:01:00	10.27		991.0	31.0	31.97	2.73
06/09/94	18:02:00	10.26		992.0	32.0	31.00	2.74
06/09/94	18:03:00	10.25		993.0	33.0	30.09	2.75
06/09/94	18:04:00	10.23		994.0	34.0	29.24	2.77
06/09/94	18:05:00	10.22		995.0	35.0	28.43	2.78
06/09/94	18:09:00	10.20		999.0	39.0	25.62	2.80
06/09/94	18:11:30	10.22		1001.5	41.5	24.13	2.78
06/09/94	18:12:30	10.20		1002.5	42.5	23.59	2.80
06/09/94	18:15:00	10.46	PUMP OFF @ 18:15	1005.0	45.0	22.33	2.54
06/09/94	18:15:30	10.46	RECOVERY	1005.5	45.5	22.10	2.54

BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

DATE	TIME	FEET	REMARKS	t MINUTES	t' MINUTES	t/t'	s FEET
06/09/94	18:16:00	10.58		1006.0	46.0	21.87	2.42
06/09/94	18:16:30	10.66		1006.5	46.5	21.65	2.34
06/09/94	18:17:00	10.74		1007.0	47.0	21.43	2.26
06/09/94	18:17:30	10.80		1007.5	47.5	21.21	2.20
06/09/94	18:18:00	10.87		1008.0	48.0	21.00	2.13
06/09/94	18:18:30	10.92		1008.5	48.5	20.79	2.08
06/09/94	18:19:00	10.97		1009.0	49.0	20.59	2.03
06/09/94	18:19:30	11.03		1009.5	49.5	20.39	1.97
06/09/94	18:20:00	11.07		1010.0	50.0	20.20	1.93
06/09/94	18:20:30	11.12		1010.5	50.5	20.01	1.88
06/09/94	18:21:00	11.16		1011.0	51.0	19.82	1.84
06/09/94	18:21:30	11.20		1011.5	51.5	19.64	1.80
06/09/94	18:22:00	11.24		1012.0	52.0	19.46	1.76
06/09/94	18:22:30	11.27		1012.5	52.5	19.29	1.73
06/09/94	18:23:00	11.31		1013.0	53.0	19.11	1.69
06/09/94	18:23:30	11.34		1013.5	53.5	18.94	1.66
06/09/94	18:24:00	11.37		1014.0	54.0	18.78	1.63
06/09/94	18:24:30	11.40		1014.5	54.5	18.61	1.60
06/09/94	18:25:00	11.42		1015.0	55.0	18.45	1.58
06/09/94	18:25:30	11.45		1015.5	55.5	18.30	1.55
06/09/94	18:26:00	11.48		1016.0	56.0	18.14	1.52
06/09/94	18:26:30	11.50		1016.5	56.5	17.99	1.50
06/09/94	18:27:00	11.52		1017.0	57.0	17.84	1.48
06/09/94	18:27:30	11.54		1017.5	57.5	17.70	1.46
06/09/94	18:28:00	11.56		1018.0	58.0	17.55	1.44
06/09/94	18:28:30	11.58		1018.5	58.5	17.41	1.42
06/09/94	18:29:00	11.60		1019.0	59.0	17.27	1.40
06/09/94	18:29:30	11.62		1019.5	59.5	17.13	1.38
06/09/94	18:30:00	11.64		1020.0	60.0	17.00	1.36
06/09/94	18:30:30	11.65		1020.5	60.5	16.87	1.35
06/09/94	18:31:00	11.67		1021.0	61.0	16.74	1.33
06/09/94	18:32:00	11.70		1022.0	62.0	16.48	1.30
06/09/94	18:33:00	11.73		1023.0	63.0	16.24	1.27
06/09/94	18:33:30	11.74		1023.5	63.5	16.12	1.26
06/09/94	18:34:00	11.76		1024.0	64.0	16.00	1.24
06/09/94	18:34:30	11.77		1024.5	64.5	15.88	1.23
06/09/94	18:35:00	11.78		1025.0	65.0	15.77	1.22
06/09/94	18:36:00	11.80		1026.0	66.0	15.55	1.20
06/09/94	18:36:30	11.81		1026.5	66.5	15.44	1.19
06/09/94	18:37:00	11.83		1027.0	67.0	15.33	1.17
06/09/94	18:37:30	11.84		1027.5	67.5	15.22	1.16
06/09/94	18:38:00	11.85		1028.0	68.0	15.12	1.15
06/09/94	18:39:00	11.87		1029.0	69.0	14.91	1.13
06/09/94	18:39:30	11.88		1029.5	69.5	14.81	1.12
06/09/94	18:40:30	11.89		1030.5	70.5	14.62	1.11
06/09/94	18:41:30	11.91		1031.5	71.5	14.43	1.09
06/09/94	18:42:00	11.92		1032.0	72.0	14.33	1.08
06/09/94	18:43:30	11.94		1033.5	73.5	14.06	1.06
06/09/94	18:44:00	11.95		1034.0	74.0	13.97	1.05
06/09/94	18:45:00	11.96		1035.0	75.0	13.80	1.04
06/09/94	18:46:30	11.98		1036.5	76.5	13.55	1.02
06/09/94	18:48:00	12.00		1038.0	78.0	13.31	1.00
06/09/94	18:49:00	12.01		1039.0	79.0	13.15	0.99
06/09/94	18:50:00	12.02		1040.0	80.0	13.00	0.98
06/09/94	18:51:30	12.04		1041.5	81.5	12.78	0.96
06/09/94	18:53:00	12.05		1043.0	83.0	12.57	0.95
06/09/94	18:55:00	12.08		1045.0	85.0	12.29	0.92
06/09/94	18:57:00	12.09		1047.0	87.0	12.03	0.91
06/09/94	18:58:30	12.11		1048.5	88.5	11.85	0.89
06/09/94	19:00:00	12.12		1050.0	90.0	11.67	0.88
06/09/94	19:01:30	12.13		1051.5	91.5	11.49	0.87
06/09/94	19:03:30	12.15		1053.5	93.5	11.27	0.85
06/09/94	19:05:00	12.17		1055.0	95.0	11.11	0.83
06/09/94	19:07:00	12.19		1057.0	97.0	10.90	0.81
06/09/94	19:09:00	12.20		1059.0	99.0	10.70	0.80
06/09/94	19:11:00	12.21		1061.0	101.0	10.50	0.79
06/09/94	19:12:00	12.22		1062.0	102.0	10.41	0.78
06/09/94	19:13:30	12.24		1063.5	103.5	10.28	0.76
06/09/94	19:16:30	12.25		1066.5	106.5	10.01	0.75
06/09/94	19:17:30	12.27		1067.5	107.5	9.93	0.73
06/09/94	19:19:00	12.28		1069.0	109.0	9.81	0.72
06/09/94	19:21:00	12.29		1071.0	111.0	9.65	0.71
06/09/94	19:22:30	12.30		1072.5	112.5	9.53	0.70
06/09/94	19:25:30	12.32		1075.5	115.5	9.31	0.68

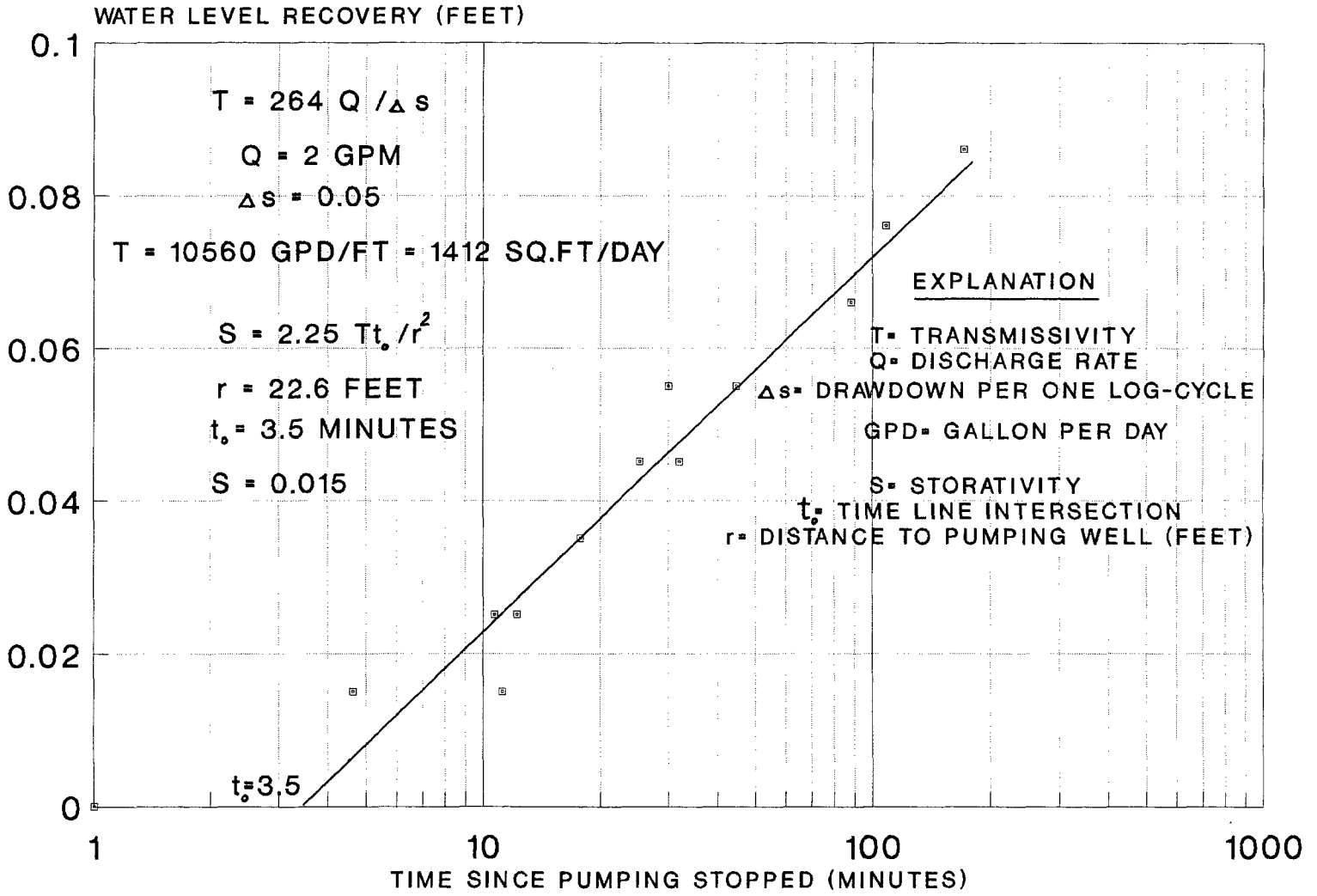
BLOOMFIELD REFINING COMPANY, BLOOMFIELD, NM
WELL RW-22 PUMPING TEST DATA
JUNE 8-10, 1994

				t	t'		s
DATE	TIME	FEET	REMARKS	MINUTES	MINUTES	t/t'	FEET
06/09/94	19:27:30	12.33		1077.5	117.5	9.17	0.67
06/09/94	19:30:00	12.34		1080.0	120.0	9.00	0.66
06/09/94	19:32:00	12.36		1082.0	122.0	8.87	0.64
06/09/94	19:33:30	12.37		1083.5	123.5	8.77	0.63
06/09/94	19:38:30	12.38		1088.5	128.5	8.47	0.62
06/09/94	19:41:00	12.39		1091.0	131.0	8.33	0.61
06/09/94	19:44:00	12.40		1094.0	134.0	8.16	0.60
06/09/94	19:48:00	12.42		1098.0	138.0	7.96	0.58
06/09/94	19:53:00	12.43		1103.0	143.0	7.71	0.57
06/09/94	19:59:30	12.44		1109.5	149.5	7.42	0.56
06/09/94	20:04:30	12.46		1114.5	154.5	7.21	0.54
06/09/94	20:11:00	12.47		1121.0	161.0	6.96	0.53
06/09/94	20:15:30	12.48		1125.5	165.5	6.80	0.52
06/09/94	20:22:00	12.49		1132.0	172.0	6.58	0.51
06/09/94	20:30:30	12.50		1140.5	180.5	6.32	0.50
06/09/94	20:35:30	12.52		1145.5	185.5	6.18	0.48
06/09/94	20:46:00	12.53		1156.0	196.0	5.90	0.47
06/09/94	20:55:30	12.54		1165.5	205.5	5.67	0.46
06/09/94	21:11:00	12.55		1181.0	221.0	5.34	0.45
06/09/94	21:24:30	12.56		1194.5	234.5	5.09	0.44
06/09/94	21:43:00	12.57		1213.0	253.0	4.79	0.43
06/09/94	21:53:30	12.58		1223.5	263.5	4.64	0.42
06/09/94	22:15:30	12.60		1245.5	285.5	4.36	0.40
06/09/94	22:28:00	12.61		1258.0	298.0	4.22	0.39
06/09/94	22:55:30	12.62		1285.5	325.5	3.95	0.38
06/09/94	23:12:00	12.63		1302.0	342.0	3.81	0.37
06/09/94	23:26:00	12.64		1316.0	356.0	3.70	0.36
06/09/94	23:42:30	12.65		1332.5	372.5	3.58	0.35
06/10/94	00:17:00	12.67		1367.0	407.0	3.36	0.33
06/10/94	00:18:00	12.66		1368.0	408.0	3.35	0.34
06/10/94	00:22:30	12.67		1372.5	412.5	3.33	0.33
06/10/94	00:44:00	12.68		1394.0	434.0	3.21	0.32
06/10/94	00:46:30	12.67		1396.5	436.5	3.20	0.33
06/10/94	00:48:00	12.68		1398.0	438.0	3.19	0.32
06/10/94	01:43:30	12.69		1453.5	493.5	2.95	0.31
06/10/94	02:05:00	12.71		1475.0	515.0	2.86	0.29
06/10/94	02:51:00	12.72		1521.0	561.0	2.71	0.28
06/10/94	03:25:00	12.73		1555.0	595.0	2.61	0.27
06/10/94	04:17:30	12.74		1607.5	647.5	2.48	0.26
06/10/94	04:48:30	12.75		1638.5	678.5	2.41	0.25
06/10/94	04:55:00	12.74		1645.0	685.0	2.40	0.26
06/10/94	05:53:30	12.75		1703.5	743.5	2.29	0.25
06/10/94	06:15:00	12.76		1725.0	765.0	2.25	0.24
06/10/94	07:58:30	12.77		1828.5	868.5	2.11	0.23
06/10/94	08:36:30	12.78	END OF FILE	1866.5	906.5	2.06	0.22

APPENDIX G

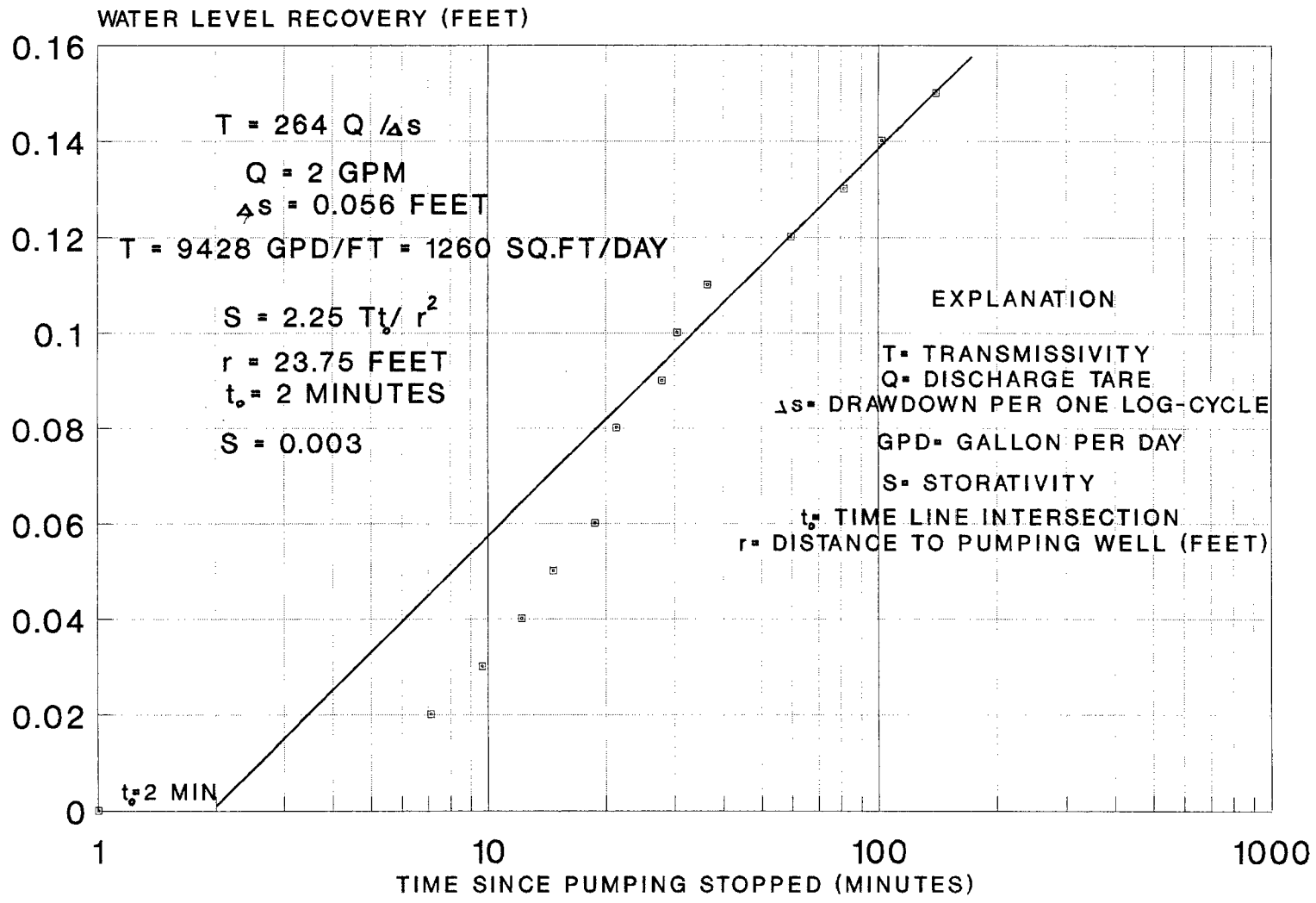
ANALYSIS OF OBSERVATION WELL MP-3, MP-4 AND PUMPING WELL RW-22 WATER LEVEL RECOVERY DATA USING JACOB'S STRAIGHT LINE METHOD

BLOOMFIELD REFINARY COMPANY, NEW MEXICO
WELL MP-3 RECOVERY (JUNE 8, 1994)



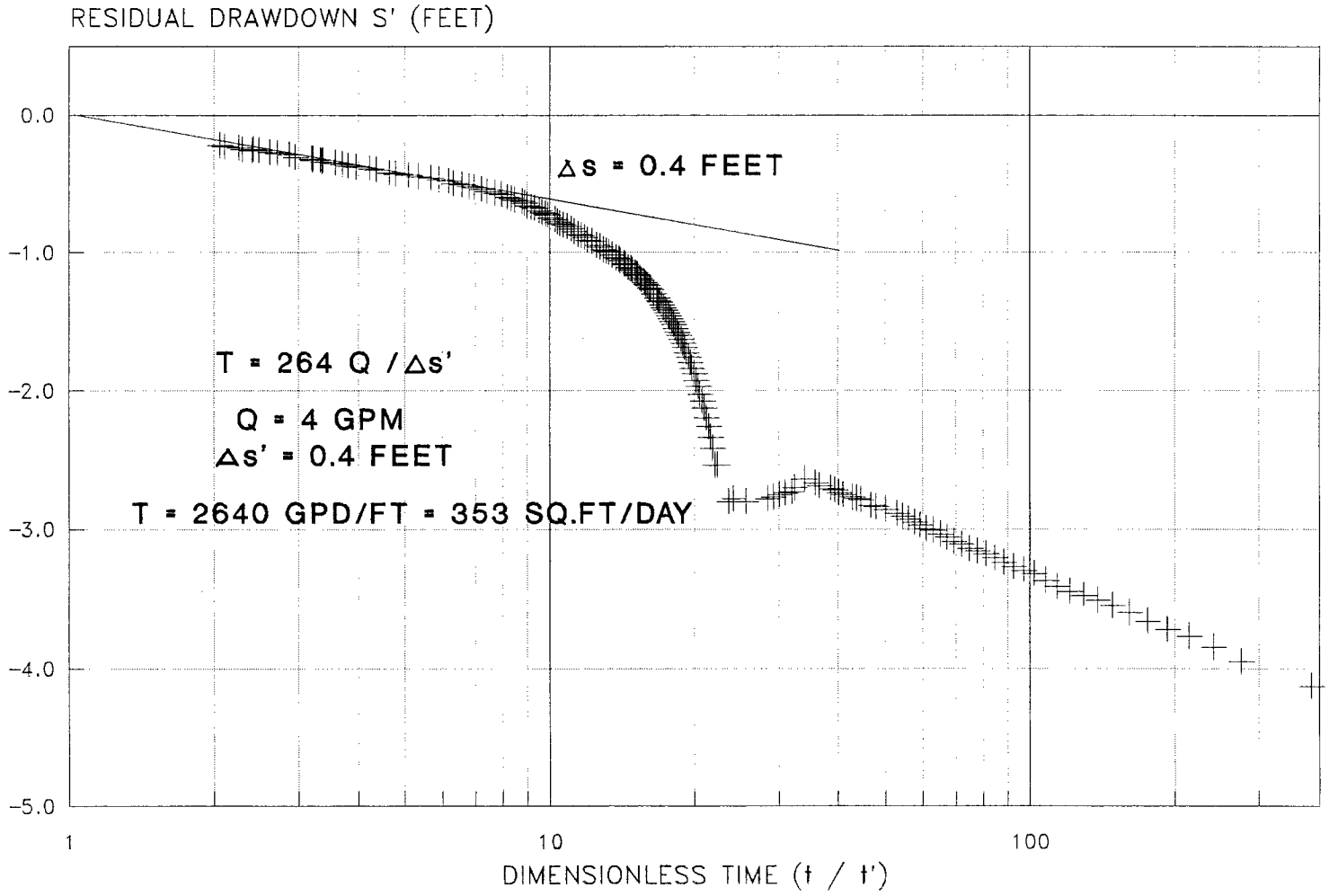
C:\PROJECTS\BLOOMNM\MP3R.CHT

BLOOMFIELD REFINARY COMPANY, NEM MEXICO
WELL MP-4 RECOVERY (JUNE 8, 1994)



C:\PROJECTS\BLOOMNM\MP4R.CHT

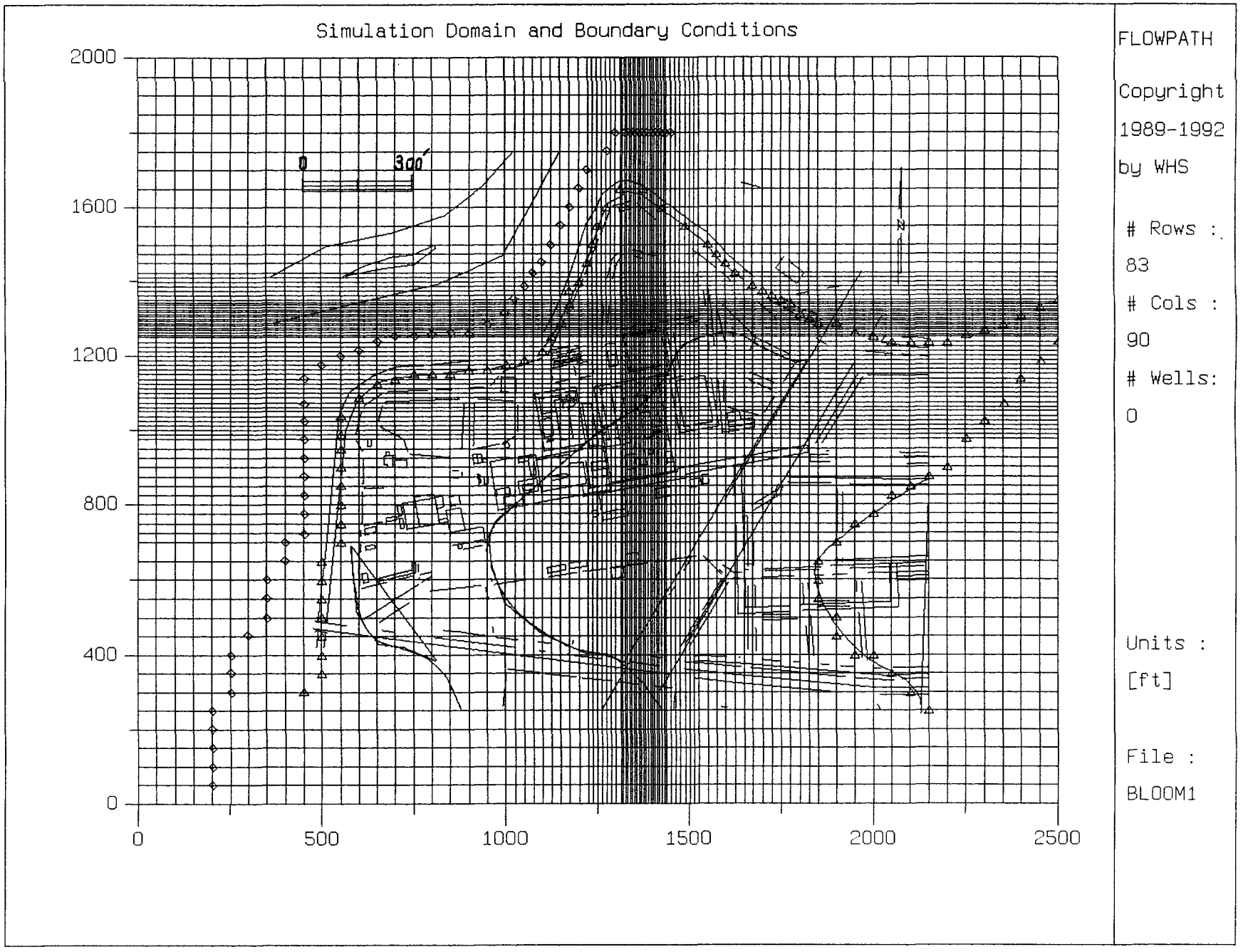
BLOOMFIELD REFINING COMPANY, NEW MEXICO
WELL RW-22 WATER LEVEL RECOVERY
JUNE 9 AND 10, 1994

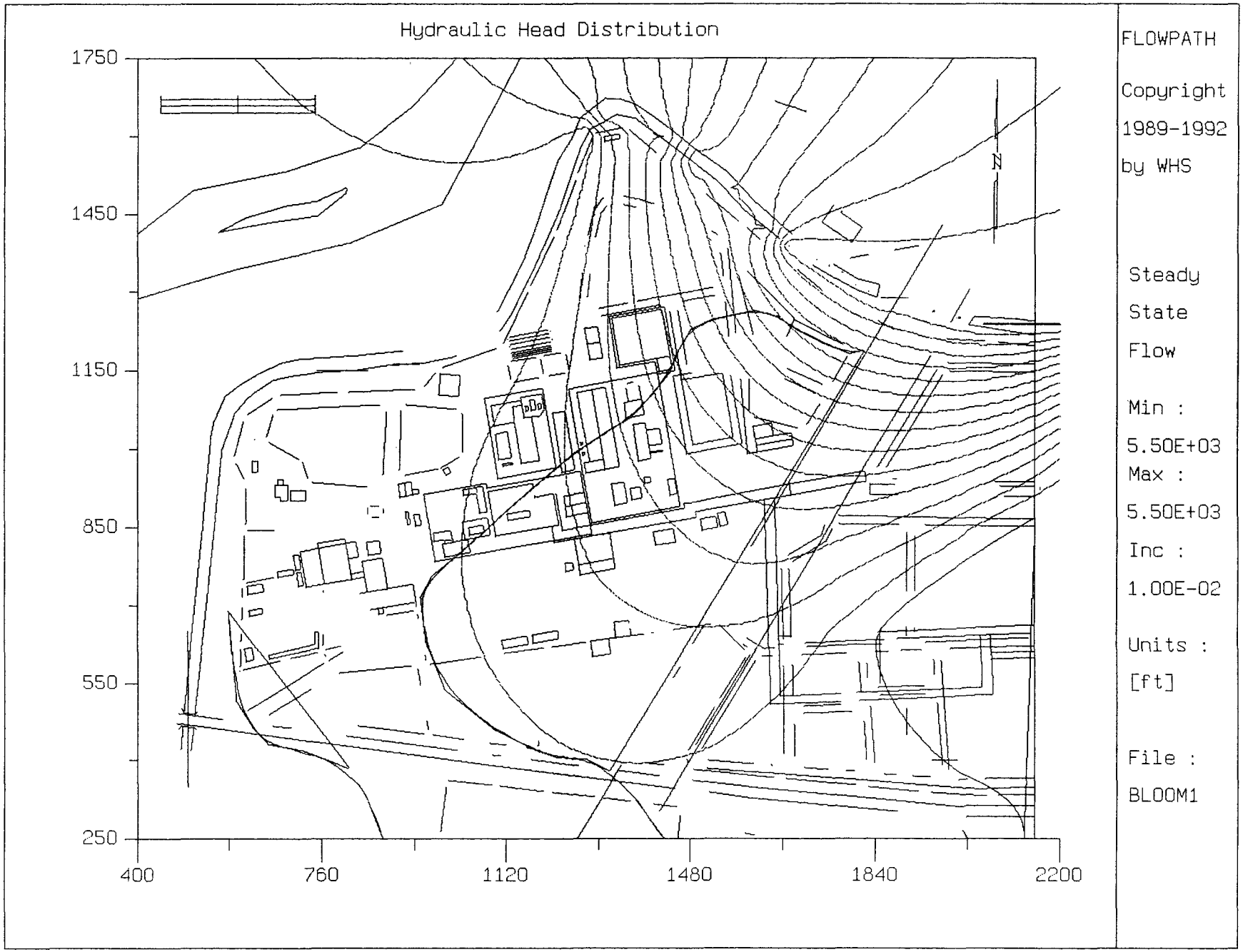


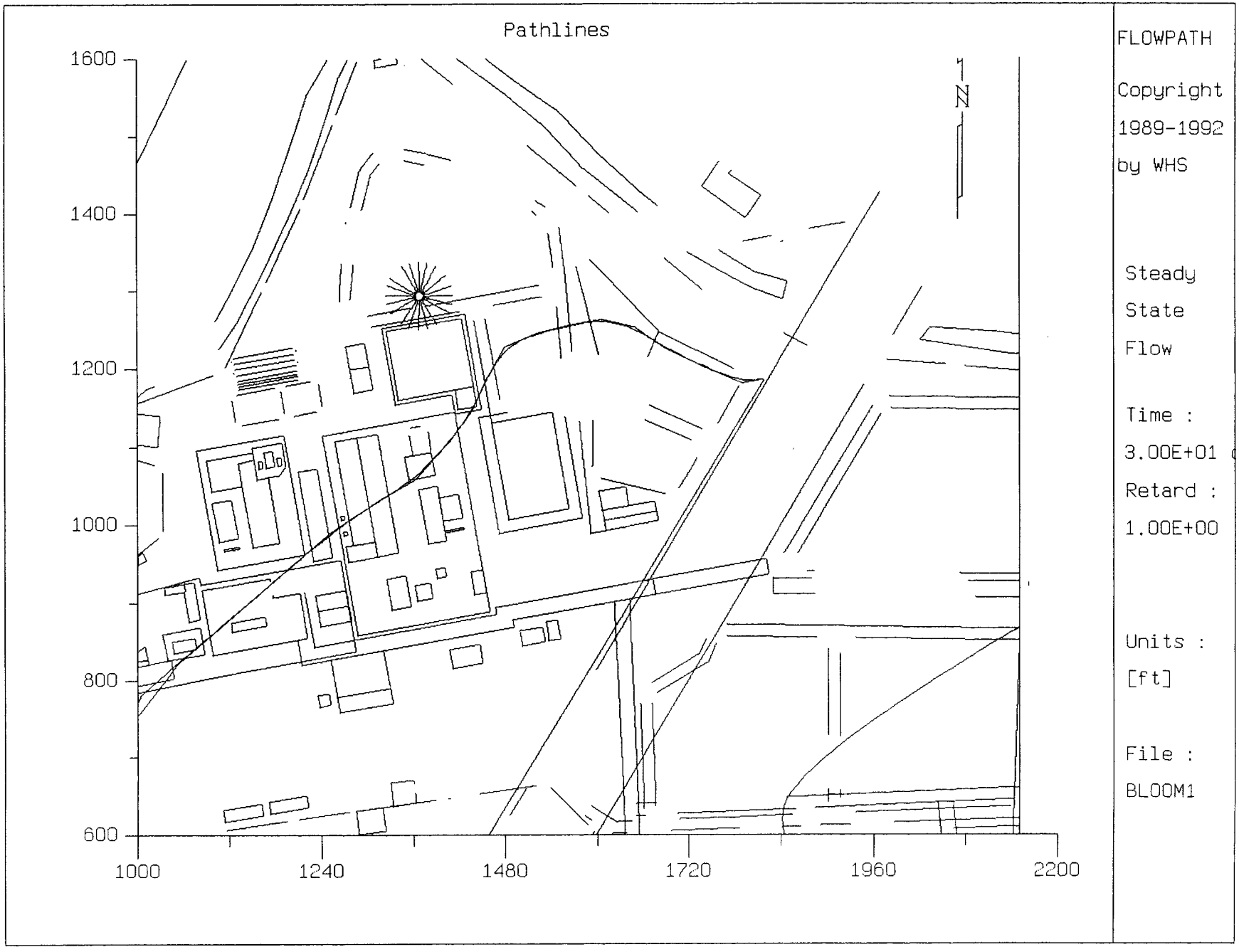
C:\PROJECTS\BLOOMNM\RW22RESD.CHT

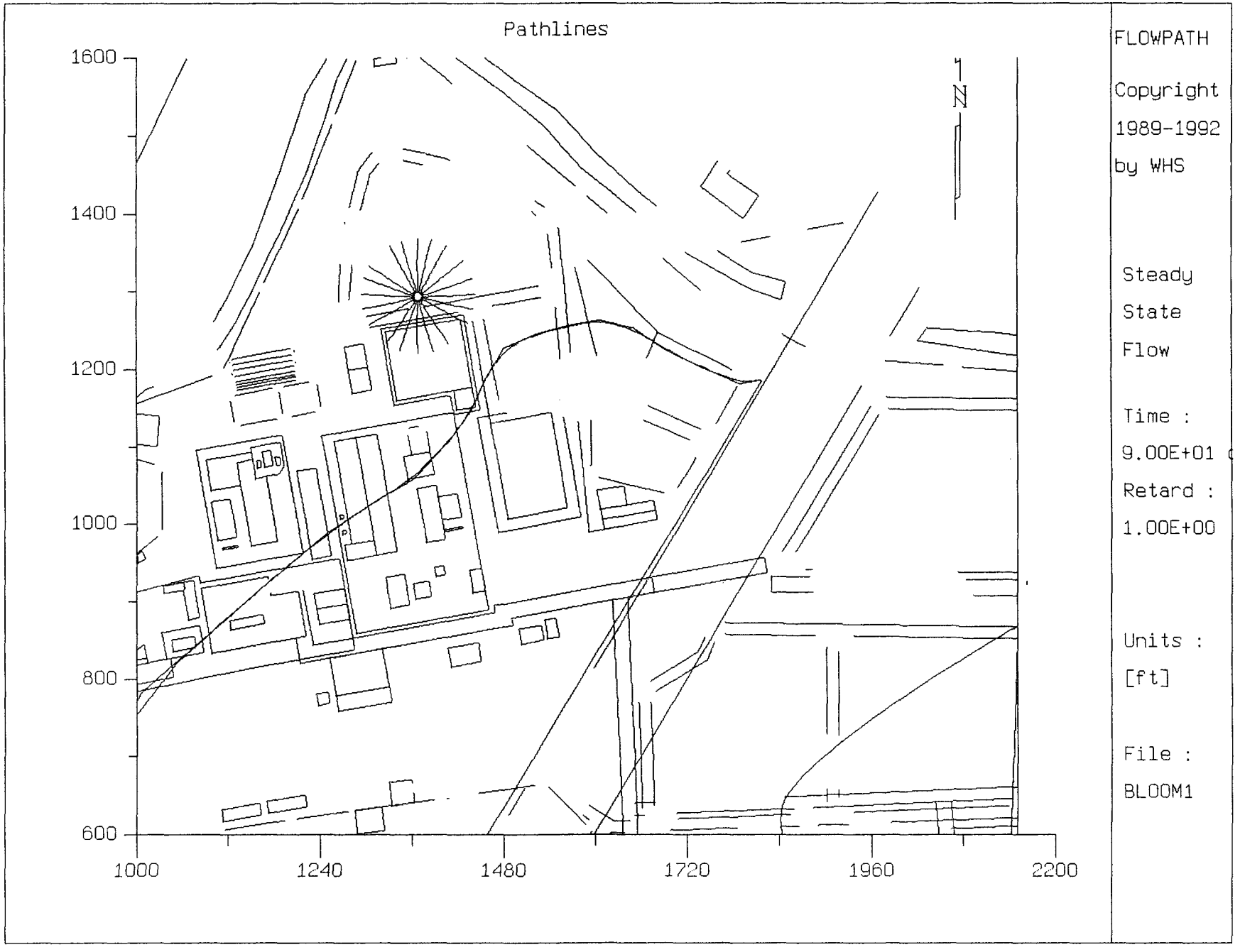
APPENDIX H

MODEL ANALYSIS

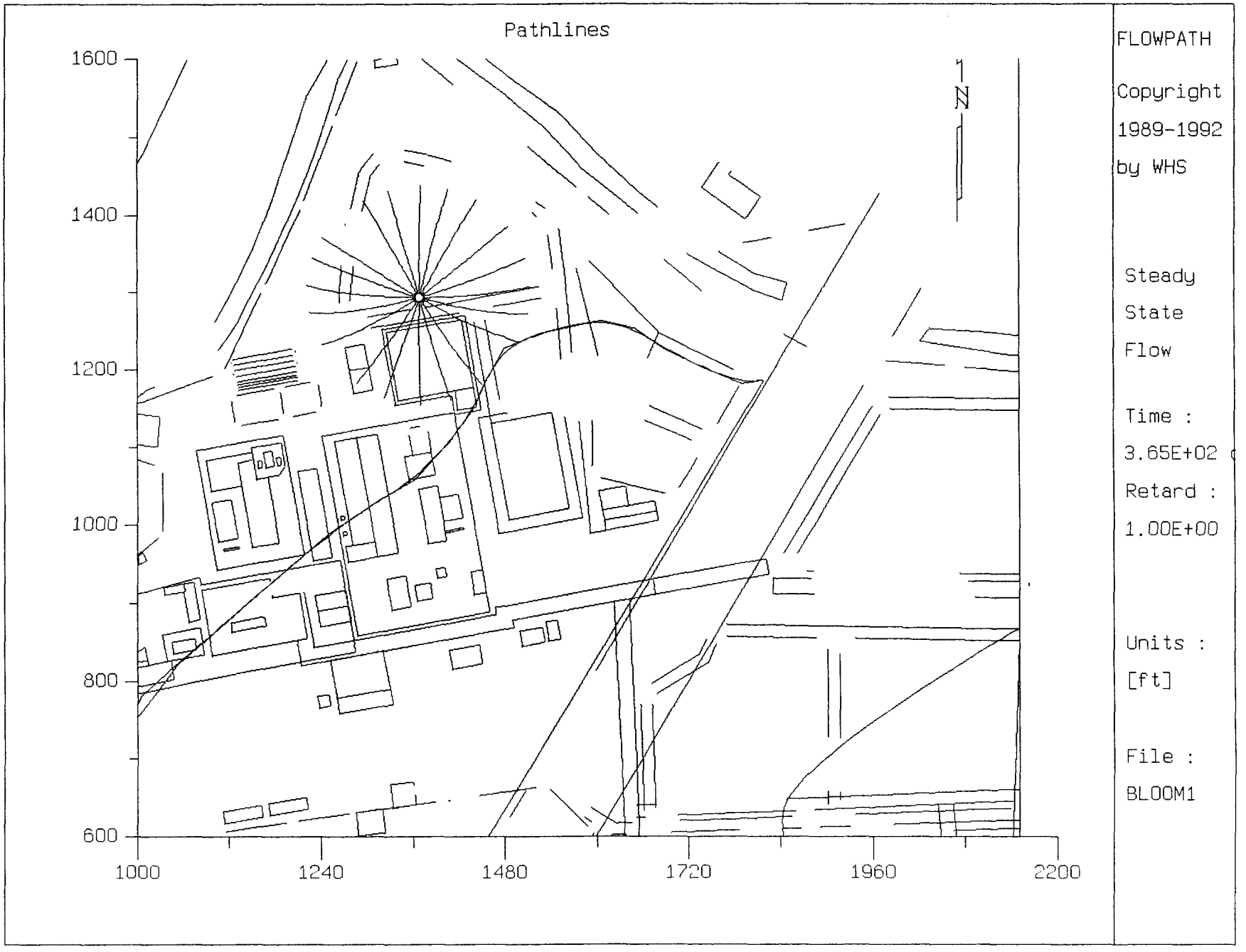

Simulation Domain and Boundary Conditions
2000
1600
1200
800
400
0
0
500
1000
1500
2000
2500
0
300'
N
FLOWPATH
Copyright
1989-1992
by WHS
Rows :
83
Cols :
90
Wells:
0
Units :
[ft]
File :
BLOOM1

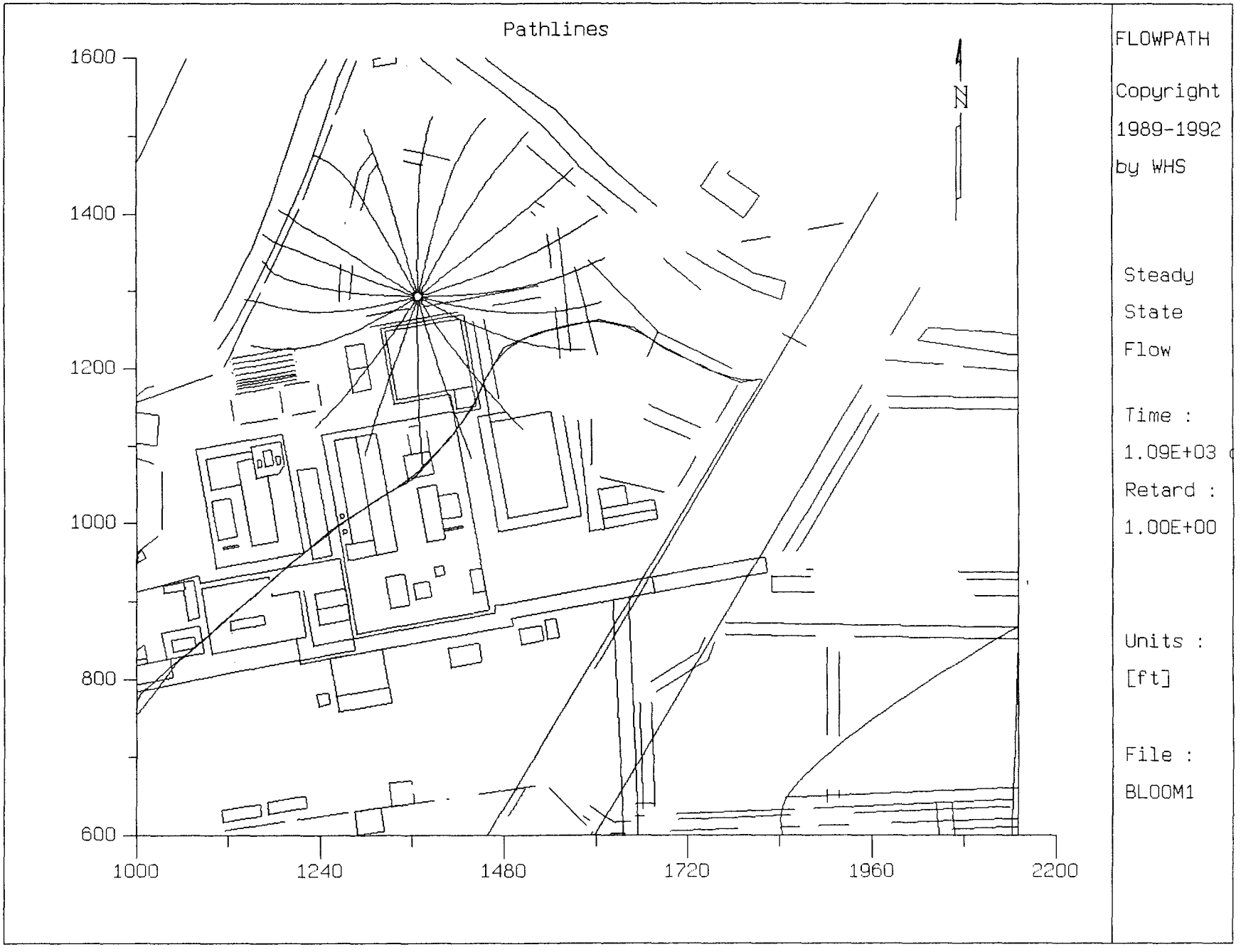

Hydraulic Head Distribution
1750
1450
1150
850
550
250
400
760
1120
1480
1840
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Min :
5.50E+03
Max :
5.50E+03
Inc :
1.00E-02
Units :
[ft]
File :
BLOOM1

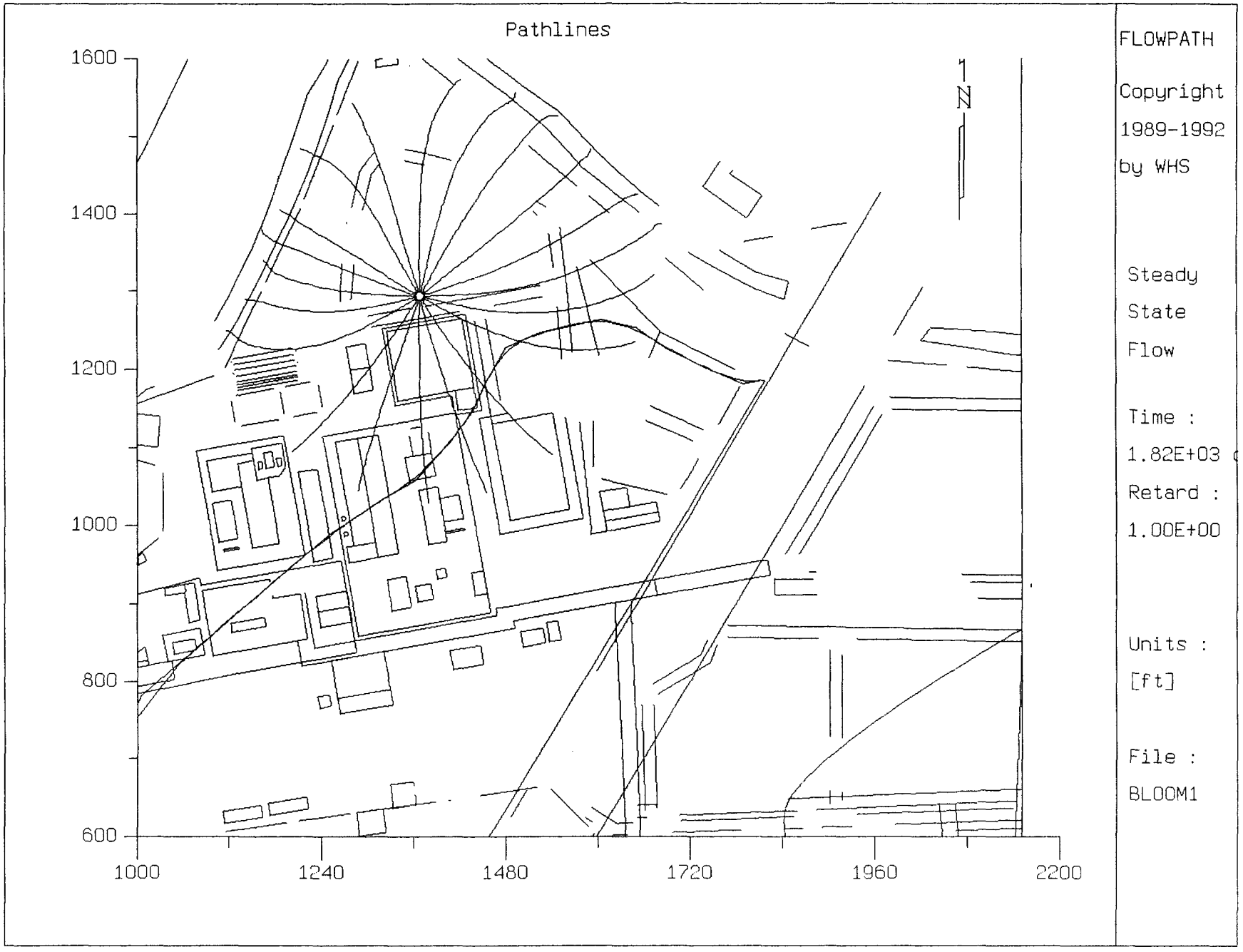

Pathlines
1600
1400
1200
1000
800
600
1000
1240
1480
1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
3.00E+01
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1

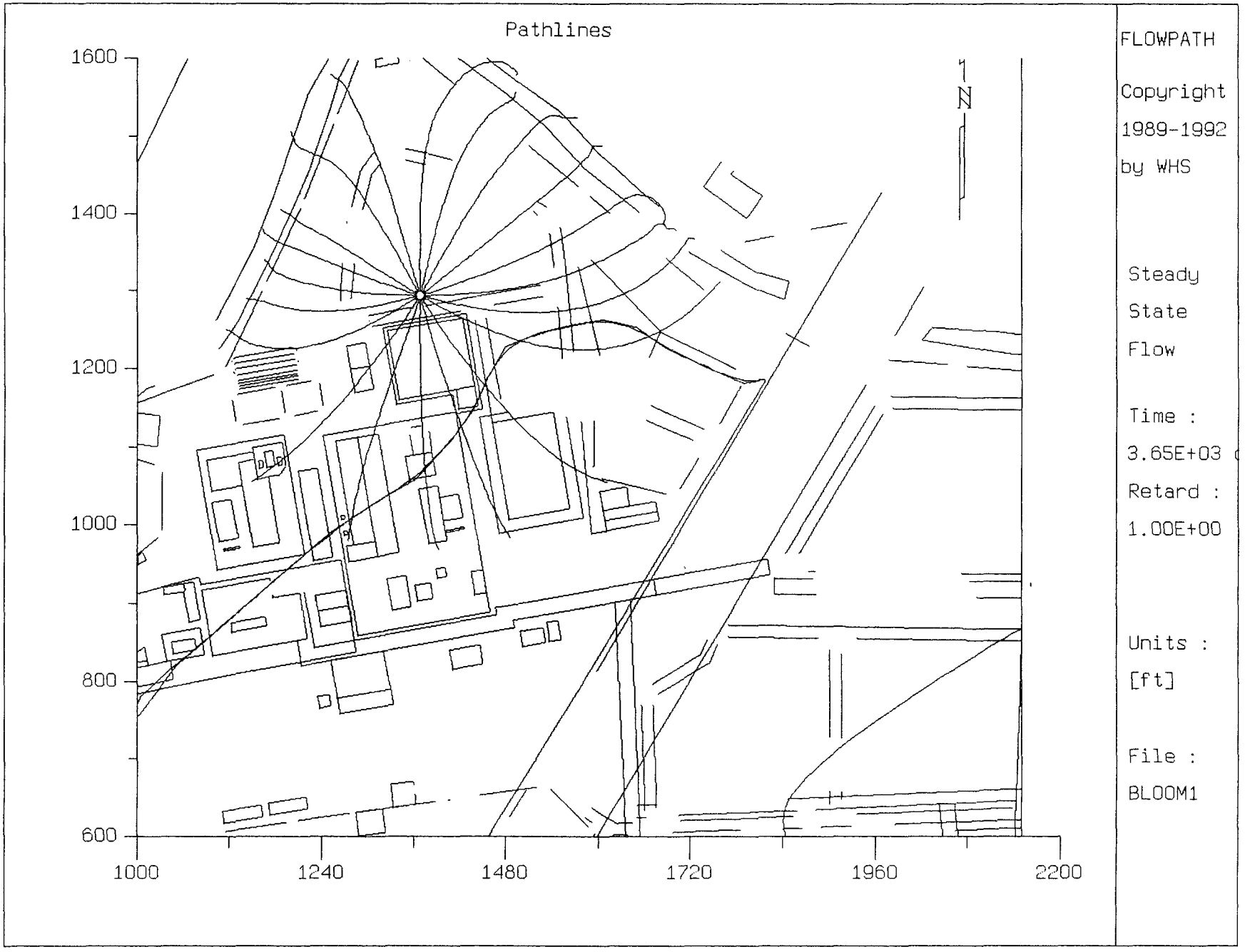

Pathlines
1600
1400
1200
1000
800
600
1000
1240
1480
1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
9.00E+01
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1


Pathlines
1600
1400
1200
1000
800
600
1000
1240
1480
1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
1.80E+02
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1


Pathlines
1600
1400
1200
1000
800
600
1000
1240
1480
1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
3.65E+02
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1


Pathlines
1600
1400
1200
1000
800
600
1000
1240
1480
1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
1.09E+03
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1


Pathlines
1600
1400
1200
1000
800
600
1000
1240
1480
1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
1.82E+03
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1


Pathlines
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1200
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800
600
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1240
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1720
1960
2200
N
FLOWPATH
Copyright
1989-1992
by WHS
Steady
State
Flow
Time :
3.65E+03
Retard :
1.00E+00
Units :
[ft]
File :
BLOOM1